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MEETING, IN THE SEVERAL SECTIONS, TOGETHER WITH THE
MEDICAL LITERATURE OF THE PERIOD.

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JOHN B. HAMILTON, M.D., LL.D.

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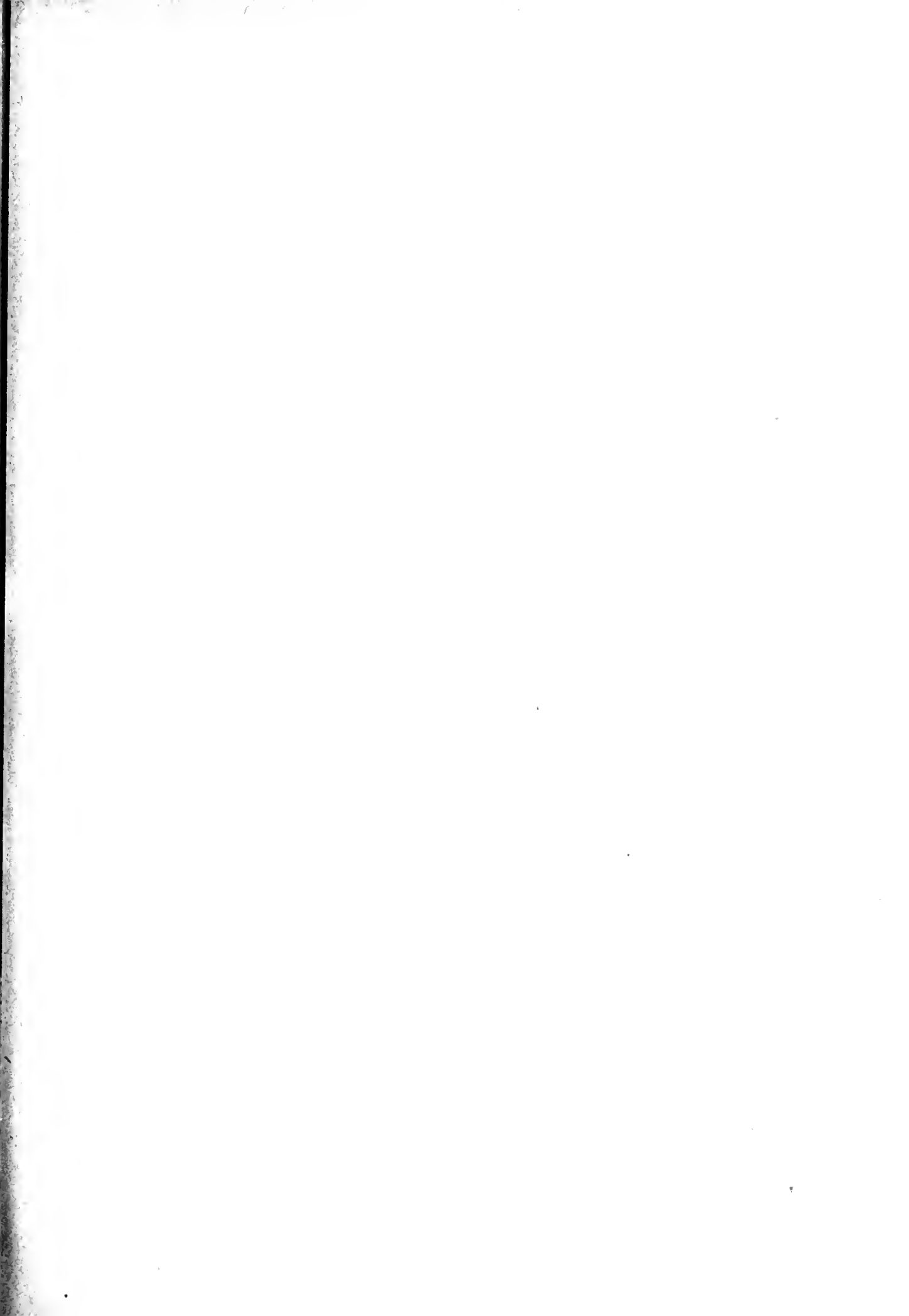
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ORIGINAL ARTICLES.

EXAMINATIONS IN MEDICINE.

AN ENQUIRY INTO THEIR INFLUENCE UPON MEDICAL EDUCATION AND THE BEST METHODS OF CON- DUCTING THEM.

Read at the Second Pan-American Medical Congress, Mexico,
Nov. 16, 1896.

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My subject, that of examinations for medical men, can not fail to have engaged the attention, the very earnest attention, of each one of us at some period of our career. All of us have undergone the trial. Some of the younger physicians present may even now have recently passed through some such ordeal or are about to do so, and none of us are so old as not to have lively recollections of our experiences in this regard.

It has been said that the present is an age of examinations. They have without doubt become greatly multiplied in recent times, and the reason is not difficult to find. The rapid expansion of the bounds of human knowledge leading to widened and prolonged preparation for the professions, especially that of medicine; the institution of the Civil Service, aiming to fill offices by merit and not by favor; increased competition, have all naturally led to more numerous and severer tests of proficiency and fitness.

The attainment of the degree of Doctor of Medicine and entrance upon the practice of the profession are guarded among all advanced peoples and civilized nations by a careful examination into the qualifications of the candidate. Nor would we have it otherwise. The student and candidate of today becomes the practitioner and teacher of tomorrow, and while the former feels the pressure of the ordeal he is undergoing, the latter feels the importance both to the body of which he is a member and to the community at large of thoroughness and care in the selection of those who are to be admitted to the responsibilities and duties of the practicing physician.

The subject of examination needs to be looked at from two points of view, the point of view of the candidate and that of the examiner, and they are naturally very different. The examination presents diverse aspects as regarded by the two classes most directly interested. Much of the strain experienced by those undergoing examination for medical positions is unavoidable because inseparable from the circumstances under which the examinations are held. The candidate can not divest himself of the importance to his future career of the result at stake. He is perhaps competing for the degree which is to mark his entrance into the profession and to which he has devoted years of hard work; for one of the much sought hospital appointments with its opportunities for professional improvement; for some municipal or State position

with its fixed and certain compensation; for license under the State Board, or for entrance into one of the National Services, the Army, the Navy, etc., which service may have for him special attractions. The candidate can not forget the importance of the occasion, and this necessarily makes it a most anxious one. It comes, too, usually at an age when calmness and self-control have not yet been acquired and are hardly to be expected.

Nor, it must be remembered, does all the strain and labor fall to the share of the candidate. The examiner has his full share, if he faithfully execute his most delicate and responsible duty. As we shall see more particularly hereafter, his part requires careful preparation as well as the exercise of patience, tact and sound judgment.

Let us look into the methods of medical examination now in use. Let us inquire how they can be best adapted to fulfill the end in view, to accomplish the purpose for which they were instituted, the selection of competent men, and how, while fulfilling adequately this purpose, unnecessary strain and labor upon the examiner and examined may be avoided. Our investigation may, it is hoped, clear up some misunderstanding on the part of those presenting themselves for examination as to its scope and their true relation to the persons who are conducting it. If this can be done and the two parties concerned be put more *en rapport*, a highly desirable result will be effected.

The examinations of the undergraduates in medicine and those held at the end of his course for his degree, first claim consideration. Of late, both in this country and abroad, the view has been advanced that these medical examinations as now conducted have an injurious influence upon the preparation of the candidate for his future work, that they lead to the habit of cramming and memorizing facts as laid down in books. It is said that the importance of examination has become so much exaggerated that the student thinks the thing to be attained is passing the examination rather than the acquirement of sound knowledge and practical training; that even if facilities for practical work are given the student, his mind is ever on the necessity of preparation for the examination ahead, rather than on the careful observation of the clinical cases and of the prosecution of the practical work at hand. It is feared that the present system loses sight to some extent of the true function of medical instruction, which is not so much to fill the student with knowledge as to train his mind, his hand and all his senses, and to bring him into actual contact, under guidance, with the diseases, injuries and emergencies that he may hereafter be called upon to treat.

Jonathan Hutchinson, late President of the Royal College of Surgeons, has pointedly drawn attention to this in his address before the Liverpool Medical Col-

lege in October, 1895, on examinations as an aid to education. He says:

"The scope of the examination in prospect has been all-powerful in determining that of the previous course of study. 'This I shall want'; 'that I shall not be asked,' have been the ever-present motives in the selection of subjects for reading and thought. Whatever was deemed not likely to be questioned about has been ruthlessly put aside, whatever its intrinsic interest. The demands of the examiner set the pace of study, and the breadth of the examination determines the narrowness, or otherwise, of the student's education."

Mr. Hutchinson advocates, in order to reduce the evils of which he complains, the substitution of written for oral questions, and the institution of objective or practical examinations as far as possible. He makes the rather novel suggestion that the written questions should not be prepared by the examiners nor at the time of examination, but carefully framed in advance and published in volumes, the number of questions to cover the ground very extensively and to be largely in excess of the needs of any one examination; that from these volumes the desired questions be selected. He thinks this system would lead to more patient and careful testing of qualifications; since examiners are usually very busy men and can not give sufficient time to this important task. He further advocates the so-called divided examinations; the examinations being held along through the student's course and not crowded into one short period at the close.

Mr. T. Pridgon Teale, F.R.C.S, Member of the General Medical Council of Great Britain, introduced a resolution at a meeting of that body in June last advocating a change in its methods of examination. He supported it by some forcible remarks upon the need of reform. He stated that the number of rejections had been doubled in the last twenty years, and the stringency of examinations greatly increased, and that these rejections brought no corresponding advantage to the profession, while they added unnecessarily to the time and expense required to pass the ordeal. He believes that examinations are too exacting and that unsuitable questions are asked, that the examinations are too hurried and hence an element of chance has been introduced, that "good men fail to pass and unfit men, from a talent for cramming, manage to answer questions a little too well to justify rejection." He dwells on the interference with clinical work and practical training which results from the necessity for preparing for these numerous examinations. "Students," he says, "are overworked and badly worked."

Mr. Tobin of Dublin, in an address delivered at St. Vincent's Hospital, 1895, speaks in a similar vein.

Sir William Stokes describes the examination ever impending and kept in constant mind by the student as "the sword of Damocles."

Articles have appeared in some American journals drawing attention to this subject. A writer in the *New York Medical Journal*, June 20, 1896, says: "Examinations are directed too much to finding out what a man's stock of memorized facts amounts to and too little to finding out how far he has learned the art of studying by himself and how well qualified he is by natural gifts."

It may be that the evils complained of do not exist to the same extent in the United States as in Europe, yet the remarks of the eminent physicians and teach-

ers quoted give valuable warning of dangers to be avoided, and suggest possible improvements of our methods.

Let us consider the most important points as to methods used. Although my remarks on this subject are naturally based on experience gained on boards of examination of young medical men applying for admission to the medical staff of the army, they will for the most part, it is believed, be applicable to medical examinations in general. I desire to say briefly here that the method pursued in the army examinations have been evolved from long experience of the department, examinations having been held from a very early period of its history. Although they are not perfect nor all that could be desired, still they combine, it is believed, the most important elements, are practical as well as theoretical and accomplish the ends in view quite as satisfactorily as can perhaps be expected under existing circumstances.

In the first place it is important that the scope of a medical examination shall be so arranged as to determine the fitness of the candidate for the particular position or duties in question and not for any other. The examination for the degrees is designed simply to test the candidate's thorough acquaintance with the branches taught in the college curriculum and to ascertain if he has availed himself faithfully of the practical advantages afforded him. Examination in outside or preliminary branches should come at the beginning of his medical career, though it too often is not required at all. Neither in this nor in the examination for hospital appointments is it desirable to go into the literary or physical qualifications of the candidate.

The conditions are different as regards the medical staff, and these conditions are sometimes not understood by medical gentlemen applying for admission. The service may require exposure to extremes of heat and cold and to great fatigue, and the young medical officer must be thoroughly able to do duty under all circumstances. The government in appointing a medical officer takes him for life, if he desires to stay and is worthy of being retained, and it is essential that he shall be not only sound in health at the time, but free from any defect or incipient disease that is likely to disable him and render him useless and a burden upon the nation. A very considerable number of candidates find themselves thrown out by the physical examination who might be spared the expense and trouble of presenting themselves had they appreciated the necessity of a thoroughly good physique. Persons have been known to present themselves for examination with gross defects such as hernia, ankylosed joints, mutilated hands and serious defects of vision and hearing.

The preliminary examination of candidates for the medical staff in subjects of general education, such as arithmetic, geography, history and literature, has sometimes excited surprise. It seems to some not only unnecessary, but almost an indignity to subject a medical man to such an ordeal. It is to be remembered, however, that the army examination is practically open to all graduates and that the possession of a degree in medicine does not, under the present system of medical education in the United States, guarantee the amount of liberal cultivation or even of general information, which all will agree is essential for a scientific man. The army medical man becomes the associate of educated men, of officers who have

been trained at West Point, and it is clearly important he should be a man of equal culture.

The preliminary examination referred to is intended to ascertain this and does not require special preparation. It is not too much to ask, for instance, that the candidate shall be able to add and subtract fractions and understand the rule of three, that he shall have at least some knowledge of his own country and of the more important geographic features beyond these limits; that, for instance he does not locate Plymouth Rock on the coast of Virginia, nor the city of Vera Cruz on the coast of Peru; has a generally correct idea of the origin and course of the Mississippi River and can locate the Mediterranean Sea, etc. He ought not to complain if required to give at least a general idea of the most important events in the history of his country and of the world, such as the Declaration of Independence, the war of 1812, the reign of Queen Elizabeth of England or the battle of Waterloo. To say, as a candidate has been known to do, that at the great engagement referred to, George Washington was in command of one of the opposing armies, is certainly hardly allowable. Of literature, too, the candidate is expected to have such a knowledge as a gentleman acquires in ordinary reading. He should at least know the names and chief works of prominent authors. Certainly a physician can lay no claim to be an educated man if he knows nothing of Shakespeare, of Milton, of Cervantes, of Molière, of Schiller, of Prescott, of Longfellow, etc., and yet such ignorance is occasionally found among candidates for the medical staff.

If the medical colleges of the country held a preliminary examination before matriculation and required a certain standard of general education to be attained, as some colleges now do, and as it is hoped all eventually will, this inquiry into the preliminary education might be waived in the case of applicants for the army medical service. The day will probably come when a degree in the arts may be required of all candidates as is now done for entrance to the Johns Hopkins Medical College, but at present it is not possible.

It is much to be desired that the time of the examiners and of the candidates should not be taken up by such non-medical branches, but devoted to medicine and surgery alone. As a step in this direction the applicant for the army medical staff is now allowed, if he desires it, to take his physical and preliminary examination at some military station near his home under the supervision of the post medical officer. A considerable number of applicants are thereby saved unnecessary expense and disappointment.

The plan of dividing the examination for the medical degree, already practiced, it is understood, in some countries of Europe and in Mexico and Cuba, and now coming into use in the United States, so that examinations are held during the course instead of being crowded together at the end, is believed to be a good one. Medical education now extends over so large a field and so long a period that such division of the examination seems almost necessary. It has the advantage of giving more time and therefore more thoroughness to each examination and lessens the strain upon the candidates. In army examinations it is impracticable to any great extent, but the preliminary examination referred to, held near the candidate's home, partially carries out the idea.

The question of the relative value of written and

oral examinations is one that has received much attention and excited much discussion. In former times the oral was the usual method, but in late years as competition has increased and the necessity for closer scrutiny has arisen the written examination has come more and more into favor. There can be no doubt that the written examination has many advantages. It is in many respects a fairer test, as thereby the candidate is placed more at his ease and is better able to show what he knows than under the excitement and hurry of oral questioning. It largely eliminates the element of nervousness and puts the diffident man and the confident one more nearly on an equality. It affords the best means of determining the comparative merits of several candidates who may be examined together, since all are given the same questions. Granting these advantages to the written method, the oral examination can not, for army examinations at least, be wholly abandoned. By it the examiner is brought into close personal contact with the candidate, can insist on direct answers to his questions, can ascertain if the applicant is certain of his answers and his reasons therefore, can better estimate how much he simply remembers and how much he carries with him for use, can test his presence of mind and thus better judge the young man's capacity for the work he may be called on to do. A combination of the written and oral methods is for the reasons stated the best, and is now practiced in the examinations for the army.

The way in which either mode of examination is carried out is perhaps of more importance than the choice between them. It is highly important that the questions, either written or oral, should be planned with great care. It will not do to leave their preparation until the time of the examination, as they are then apt to be hastily and carelessly framed and to repeat too frequently questions already asked. It may well take almost as much pains and time for the examiner to prepare his written questions as for the candidate to answer them. The art of question making is by no means a natural gift or one that can be taken up by any one without study. It costs time and labor to select questions so that they shall well cover the various divisions of the subject, and to frame them so that they shall be clear and promptly understood by the candidate, call for exactly what the examiner desires to know and not invite too discursive writing whereby the candidate may try to hide his ignorance of the main point. A good plan is to prepare, for weeks in advance and at one's leisure, numerous written questions extended over a wide field so that all the important branches of the subject may be represented and then at the time of examination to select and arrange a set containing the desired number.

No advantage is seen in the plan adopted in some medical examinations of placing before the candidate a number of questions from which he is allowed to select and required to answer a certain percentage. The privilege of such selection favors the candidates least well prepared and in a competitive examination prevents any exact judgment of the relative merits of the written answers.

The examination by oral questions requires equal care exercised in a somewhat different way. The examiner should prepare himself beforehand and have by him a memorandum of the topics upon which he intends to question. If he does not do this he is sure to repeat himself. The examiner's favorite questions

soon become known to intending candidates and are specially prepared for. The greatest tact is necessary in the conduct of an oral examination, a tact born of right feeling but attaining its highest development only by cultivation. The questioner's manner should be calm, quiet and courteous, have no appearance of hurry, and it need hardly be added he should avoid anything like trying to show his own superior knowledge or the candidate's ignorance. His object is to find out what the person under examination knows and to do this must put him under the circumstances most favorable for finding out. A great deal depends upon the way the oral examination is opened, upon the first question. A first question misunderstood may so confuse and puzzle the young man that it may be impossible to get anything intelligible out of him. The questions should be clear and definite, and generally, at first at least, call for brief and definite answers. To begin, as an excellent surgeon but tactless examiner has been known to do, by asking the candidate, "What do you know about the brain?" is simply to render the candidate almost incapable of reply. A wise plan is to spend a few minutes in general inquiries on matters not directly connected with the subject of examination and, if possible, to get the candidate fairly entered upon it, without his being conscious of beginning.

Of still greater importance is the subject of the practical or objective examination as it has been called as distinguished from the examination by written and oral questions. The development of the practical side of medical education, and the greatly increased attention paid to laboratory and clinical work in the curriculum of our medical colleges is a source of just pride and congratulation. We recognize now that it is not enough for the medical student to listen to lectures, he must not only be told what to do and how to do it, but trained in doing it under the instructor's guidance. Yet it is probable that our tests of his practical ability have hardly kept pace with the facilities afforded him for obtaining it and that professional examinations still bring out rather what a candidate remembers than what he can do. It is manifestly impossible, from the want of time and other circumstances surrounding an examination, to make actual practical tests of the young physician's ability to deal with all the conditions and emergencies which he may encounter hereafter. The examination by questions must necessarily still be largely depended on, yet it would seem possible to test his practical acquaintance with laboratory work, and to ascertain how he can diagnose and treat disease and injuries at the bedside, and perform operations on the cadaver, to a greater extent than is now practiced.

No one is now allowed to present himself for examination by the Army Medical Board unless he has at least one year's hospital experience or its equivalent in private practice. Practical tests are therefore an essential part of the work of the Board, the candidate being required to examine patients at the bedside, and his method of diagnosis and treatment carefully scrutinized. The performance of operations on the cadaver is also required. It has not infrequently happened that an applicant for the medical corps has passed successfully the written and oral examinations but has shown at the bedside or in the operating room such unreadiness for practical work as to cause his rejection.

This paper can hardly close without some sugges-

tions for the special benefit of the person who is under examination.

First as to the candidate's preparation. It may be said that a thoroughly qualified physician needs no preparation; still the candidate, if he has time, will prudently look into the requirements as far as he may be able to discover them. It is generally easy to do so, as these requirements are often fully made known in advance and sample questions published. He should then endeavor carefully to meet these requirements, to supply his defects and honestly to qualify himself not only to pass the required examination but for the career he hopes to enter upon. This is a very different thing from cramming to answer the questions that may be propounded. Special instructions and special courses so far as they add to the candidate's knowledge and his practical skill are good and valuable. If their purpose is simply to enable the candidate to pass an examination, to stuff him full of the answers to questions that are known to have been asked by previous boards and may therefore be asked again, without reference to his general training, they are bad and useless. The tendency of most persons who make a business of preparing candidates for examinations is to train too fine, so to speak, to magnify the importance of their help by crowding the student with a mass of minutiae and valueless detail, neglecting the general principles and wider knowledge which is not only of the first importance but more likely to be of use at the examination.

In presenting himself for examination the candidate should stand squarely on his own merits; an introduction to a member of the board is well enough but voluminous and extravagant recommendations do harm rather than good. It is well known that they are to be had for the asking and have therefore but little weight. Reliance upon such outside influence is apt to make the examiner think it is needed. Politics and social influence have no weight in determining the candidate's success or failure. Let him enter the examination with a determination to do the best he can and to appear exactly as he is without pretence or exaggeration. Let him remember the old proverb. "One can take out of a cask only what has been put into it," or as the Spanish forcibly put it, "La cuba siempre huele del vino que contuvo." It is true there are constitutionally timid men, but knowledge and practice give a confidence which nothing else will.

Further, let him not delude himself with the idea that success depends on luck and not on merit, for in proportion as he cherishes that opinion will sound preparation be neglected. He may have full reliance upon the fairness of the board, and should disabuse himself of the thought that examiners are unfriendly or are trying to puzzle him. It is quite the contrary. The board can have no possible object in rejecting a worthy candidate. The very object of their appointment is to obtain, not to exclude men.

The questions given out, especially those requiring written answers, are usually framed with care and demand definite answers. Their purport should be studied carefully and exact answers given without guessing or hedging. A diffuse reply upon some side topic to cover up ignorance upon the main one, is a waste of time and deceives no one. The candidate will as an honorable man accept no aid from comrades or memoranda, even if he is not prevented from doing so.

A serious mistake often made by gentlemen under examination is that of studying hard just before and during the intervals of the examination. The man who during examination week sits up all night to supply his supposed defects not only does not add to his stock of permanent and useful knowledge but usually brings on such a state of nervous confusion and strain that he can not call up the knowledge he actually has. It is of the first consequence for success under an examination, especially a prolonged examination, that the candidate should have a clear head. Overwork at the time of examination, largely self-imposed as I have indicated, is by no means a small factor in the failure of well-trained and promising candidates.

The points to which I would in conclusion draw especial attention are as follows:

That medical examinations as now conducted often have an injurious effect upon the student's preparation, leading to cramming and interfering with practical work.

That for life positions, such as the army medical staff, an examination into physical condition is necessary; and under the existing requirements of medical colleges, in general education also; that examinations should be held at the close of instruction in each subject and not altogether just before the degree is given.

That in the examinations by questions, both the written and oral methods should be practiced, each having distinct advantages, and that the preparation of questions requires great care.

That practical tests of the candidate's readiness for his future work are of the highest importance, being probably still too much neglected.

That the preparation of the candidate should be for the position rather than for the examination, that he should rely on his own merits and not on influence, trust to the fairness of his examiners and avoid all extra work at time of the ordeal.

FRENKEL'S TREATMENT OF ATAXIA BY MEANS OF EXERCISE.

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Heiden, Switzerland, situated 2,500 feet above the sea level, overlooking the beautiful Lake Constance and the five cantons bordering it, formerly had the reputation of being a whey cure. It became especially popular through the annual visits of Albrecht Von Graefe, the so-called "Father of Ophthalmology," who sought rest and recreation among its peaceful hills. A horde of patients and medical disciples followed in his wake, so that it soon became the Mecca for oculists and afflicted ones seeking their aid. Its excellent location, its salubrious climate and its hotel facilities induced Dr. Frenkel to select it for his field of work during the summer.

During a seven weeks' sojourn at Heiden this summer, I had an opportunity, through the courtesy extended me by Dr. Frenkel, of observing daily his new method of treating locomotor ataxia due to tabes dorsalis. So excellent were some of the results obtained under my personal observation, that I thought it would interest American physicians to know of Frenkel's method of correcting one of the most annoying disturbances of tabes; the one, at least, which interferes most seriously with the ordinary routine of life, namely, the ataxia.

A vast number of therapeutic measures have been introduced to combat the disease. They have been summarized by such universal writers as Leyden and Erb as, the "mercurial treatment (which, in Erb's opinion, ranks first in importance, since over two-thirds of 700 cases of tabes dorsalis reported by him were due to syphilis): treatment by internal medication, as for instance silver nitrate; injections of animal extract à la Brown-Séquard; thermal baths such as Oeynhausen, Nauheim, Kissingen, Aix; hydrotherapeutics; sea baths; Kneip's cure; massage; electrotherapeutics; nerve stretching of Langenbach; suspension, introduced by Motschutkowski; orthopedic treatment of Hessing," etc. The mere fact that so many methods of treatment are in vogue, is sufficient proof that none is satisfactory, and this is the conclusion that is reached in the above mentioned monographs.

Frenkel, realizing how few were the cures effected by all the methods used, disregarded the disease proper and turned his attention to the correction of its most annoying feature. The method which he has so scientifically evolved is the result of an observation made during the treatment of one of his tabetic patients. At the first examination, the patient was unable to correctly perform the simple test of stretching out both arms and with closed eyes bringing the tips of the extended index fingers together. Much to Frenkel's surprise, at the second examination, a few weeks later, the patient performed the test admirably, and upon inquiry stated that he had repeatedly tried the movement at home. Frenkel related an amusing incident to me which bears on the matter in question. A now well-known professor of nervous diseases carefully prepared his maiden lecture and selected a number of tabetic patients to illustrate various ataxic movements. He inadvertently told the patients what special purpose they were to serve. The demonstration was a perfect failure, owing to the efficient manner in which the patients had overcome the ataxic movements through constant practice days before the lecture was delivered. The reason of the unsuccessful demonstration dawned upon the professor after hearing of Frenkel's method.

The thought that naturally arose in Frenkel's mind after observing his patient was: If one symptom due to incoördination can be cured, why not every one?

In the *Semaine Médicale*, March 25, 1896, appeared an article on "Cerebral Exercise," in which Frenkel states: "One of the fundamental properties of nerve tissue is to retain impressions made upon it. When these same impressions are frequently repeated, a permanent change is wrought in the nervous apparatus, which in the domain of association of ideas is translated as memory and in the domain of motor functions calls forth coördinated movements. It is thus that the physiologic rôle of habit, exercise, education is explained."

Coördination is acquired only after years of practice. Every single movement of the body is learned. We are born with a complete set of muscles, but how to use them each one must learn. The various movements of our body, even the simplest ones, call into play certain muscles and groups of muscles. Their harmonious action, directed by the senses, may be called "coördination" or coördinated action. Through practice this harmonious action, this coördination, can be increased to a marvelous degree. We need only cite the homely examples mentioned by Frenkel and Hirsch-

berg. The infant learning to walk; the child to play piano; the juggler; the tight-rope walker. The infant in his first attempts to walk is decidedly ataxic. The tight-rope walker performs his, to us less agile persons, difficult feats, only after having learned to bring into harmonious action the numerous groups of muscles required, directed by the different senses. Beginners in the art of writing, of dancing, of rope walking, are ataxic compared to experts.

All movements are controlled by the sense of sight and the muscular sense. The oftener any action is performed the more perfect its execution, and the more mechanical it appears. Finally the controlling influence of the sense of vision and the muscular sense is lost sight of, and the movement is termed automatic, as for instance writing, walking, playing an instrument. When, however, one of the controlling influences is disturbed or impaired, as for instance the muscle sense in tabes, the movements lose their *finesse* , become coarse or incoördinate. The other sense, that of vision, is called into play to enable the patient to gauge his movements to this means. It is well known that an ataxic person becomes more so when the controlling influence of vision is excluded by closing his eyes.

The ataxia of tabes is accounted for by Leyden,¹ by a loss or impairment of the sensibility. Erb and Charcot attribute it to a primary lesion of the center of coördination itself or its paths.

Frenkel believes that a mental or psycho-motor element plays an important rôle in coördinated movements, consisting of the idea of the act, the voluntary effort necessary to accomplish it, and the consciousness of having effected it. This being, according to Frenkel's idea, the physiologic action of coördination, he bases his therapeutic reëducation upon the same principle. By a series of graduated exercises the patient, by calling into play certain groups of muscles, stimulates certain nerve centers in which these movements originate, thus giving rise to what Frenkel terms *gymnastique cérébrale* .

Frenkel assumes that in but very few cases of tabes, an entire destruction of the sensory tract of the cord ensues. In the great majority of cases there are still bundles of the sensory fibers intact, whose functions have probably been annulled through a temporary pathologic change or by lack of use. Be that as it may, stimulation through gymnastics is intended to revive and possibly intensify their action. Leyden terms Frenkel's treatment compensatory treatment.

Attention is called to the great influence of the will power. This plays an important rôle in all exercises, and must never be lost sight of, either by the physician or by the patient.

Frenkel distinguishes three kinds of movements, 1, simple contractions of the muscle, such as extending or flexing a finger; 2, simple coördinate movements, more complicated movements than the first mentioned ones, such as placing in turn the tip of each finger on thumb nail of the same hand; 3, complicated coördinated movements, as writing, drawing.

These three kinds of movements must be practiced every day. The various exercises performed by Frenkel's patients are described by Hirschberg, who supervised their execution under Frenkel's instruction, at the Salpêtrière.

Before detailing them it may be well to sound a note of warning. These exercises are expected to be

performed with the greatest exactness and with a constant expenditure of will power, and are thus extremely fatiguing. Consequently the patient must be restrained from over-doing even if he feels no consciousness of fatigue (I will touch on this later). Patient must rest a few minutes, if not longer, between all exercises. The simplest exercises are first tried, the more difficult ones later on. It stands to reason that exercises are chosen to meet the individual needs of each patient. There are two classes of exercises, those performed in and those performed out of bed.

In bed, the patient is called upon to flex, extend, abduct and adduct each leg separately and then both simultaneously. The knees and hips are likewise exercised. The patient is asked to place the heel of one foot on the big toe of the other foot. Place heel upon knee of the other leg and then slowly travel from the ridge of the tibia toward the ankle. Exercises are made alternately, first with one leg, then with the other one, with open and with closed eyes. These exercises are attempted over and over again, every morning a half hour, with frequent rests between times. Patient is encouraged to persevere until he succeeds.

The exercises in the turning hall are repeated twice a day, a half hour in the morning and again a half hour in the afternoon.

1. Patient is placed with his back to a chair, heels together, then seats himself slowly in the chair and is then made to rise in the same careful manner. No cane is used. If patient can not stand an attendant is placed at either side of him to support him if necessary.

2. One leg is placed at an ordinary walking step in front of the other, and then placed with great exactness back into its original position. Same exercise is then performed with other leg. The patient, if necessary, supports himself with a cane or otherwise.

3. Walks three paces slowly and with precision.

4. Rest in standing position, one foot before the other; with hands placed akimbo he flexes his knees and slowly raises himself again.

5. Patient, as in exercise number 2, advances one foot, then returns it to its original position, and then puts it one step behind the other one. This exercise is usually a very difficult one, requiring as it does a great deal of balancing power.

6. Walk twenty steps as in exercise number 3.

7. Number 2 performed without a cane.

8. Stand without a cane, with feet placed together and hands on hips.

9. Stand without a cane, feet separated; various movements with the arms, grasping objects, forcing back outstretched hand of physician, etc.

10. Maintain same position as in number 9, flexing trunk forward, backward, to the right and to the left.

11. Exercise number 9 with feet together.

12. Exercise number 10 with feet together.

13. Walk along a painted line on the floor, patient supported by a cane.

14. Same without a cane.

Exercises for the fingers and arms are also employed, based on the above mentioned principles. The author of this method of treatment has invented a number of inexpensive apparatus. I will mention one or two: Balls of different sizes are suspended by strings. The balls are set in motion and the patient is requested to grasp between finger and thumb a given one. A board containing a number of holes in which are fitted

¹ Frenkel, Münchener Med. Wochenschrift, No. 52, 1890.

violin keys or stops is placed before the patient. He is ordered to remove and replace certain specified numbered stops. He holds the hand behind the head and at the word of command slowly or rapidly executes the desired movement. The original position of the hand excludes the controlling influence of vision. An endless variety of similar exercises can be introduced to meet the requirements of every case.

I saw several tabetics practicing the parade-march step. One patient, while walking briskly the length of the hall, had chairs and other obstacles put into his path. To avoid these he had constantly to change his position as though he were walking in crowded streets. Regularity, slowness, precision, are the important features of these exercises which the physician impresses on his patient.

It is not my intention to detail cases recorded in literature in proof of the efficacy of this method. Suffice it to say that men like Leyden, Erb, Raymond and Hirschberg, and others, speak of it in terms of highest praise, and report a number of cases of practical cures of the ataxia.

Leyden² says: "To my mind, it is only in this or some similar manner that one will attain the best results possible in the therapeutics of tabes."

I will, however, briefly recount a few general impressions I received while almost daily observing the patients at their exercises. Most of the afflicted individuals were chronic cases, some having made the round of many of the noted neurologists in Europe. All were from the so-called better class of society, professors, judges, militia officers, officials and business men. Probably the most striking effect after a few weeks treatment was the revival of the patient's hopes. Men who had been confined to roller chairs for years, who had needed the aid of attendants to dress and to retire, developed a surprising amount of energy and spirit when they realized that they could again perform simple movements without aid and coordinately. This state of mind aided materially in furthering their progress.

A number of the better informed patients realized that the treatment was only intended to cure the ataxia, but it was just this feature of the disease which had prevented them from following their vocation and from finding enjoyment in life; and the visible improvement gave them new hope, at least for some relief, if not the entire cure of the ataxia. The moral influence was great. The confidence of the patients was restored. Instead of continually seeking the aid of an attendant or a cane they began attempting things themselves.

On my walks from the hotel to the turning hall I was often accompanied by a strong looking, young Serbian. Repeatedly I had found him seated before the hotel waiting me. He was a tabetic patient, but walked quite well with his cane. One day we met Dr. Frenkel when entering the turning hall; he chided the Serbian for waiting for me, explaining to me that the patient had once fallen, and ever since had been afraid to walk alone. The presence of an infant at his side restored his confidence. A few weeks later the patient's confidence in himself was so much restored, that I often met him taking long walks only supported by his cane.

The time required before any improvement is visible, varies greatly, depending naturally, firstly, upon

his condition and secondly, upon the temperament of the patient. I have in mind a patient 45 years old, who when I arrived at Heiden spent most of his days in a roller chair and could with difficulty, supported by a cane, drag his legs one hundred paces. After four weeks he walked the length of the long turning hall unsupported by his cane. Another patient who had been lifted bodily out of his roller chair and carried up the steps into the hall, and had there been supported through the exercises, by means of a broad belt which had been fastened about his body and to which handles had been attached, so that the attendants might hold him up, walked up the steps of the turning hall, six weeks later, supported only by his cane. Another case was an old and feeble man who after three months practice in Paris performed all the feats in a most perfect manner. He walked along a painted band on the floor, four or five inches broad, backward and forward and never overstepped the borders. He stood perfectly rigid on either foot, the other one flexed, without losing his balance. He fenced with an opponent, readily assuming the various attitudes. He danced a polka at a ball given at the Freihof hotel. For a more detailed account of other cases I refer you to the literature.

The patients after having mastered the details of the exercises are supposed to continue them conscientiously in their own homes.

Frankel placed at my disposal a manuscript of a paper soon to be published in the *Berliner Medizinische Wochenschrift*. In this, he accounts for the purported failures of his method of treatment, by attributing so-called failures to two causes:

The faulty selection of exercises for individual patients. As stated in the beginning, it is a matter of greatest importance to begin with the simplest exercises, and then adopt them to meet the individual needs of each case. The second cause of failure is attributed to patient's loss of sense of fatigue. Owing to the destruction or interruption of the centripetal nerve path, the patient, having lost his muscle sense, is no longer conscious of fatigue. Consequently if not forced to rest, he will do too much and greatly injure himself. *Over-taxation must never take place*, in every instance must be carefully avoided and guarded against. After exercising patient ought to rest for an hour or two, ought never immediately attempt long walks.

When a relaxed condition of the muscles and tendons exist, massage and other gentle stimulation is resorted to.

Frenkel has recently called attention to an heretofore unmentioned symptom of tabes hypotonus. This is manifested by patient's ability to make more than normal exercising with his limbs.

A normal individual lying flat on his back, can but lift his legs so that it is at right angle with the trunk. A tabetic patient of high degree, brings the leg nearer the trunk. I saw a photograph of an exaggerated case of hypotonus; the patient was an inmate of the Salpêtrière and could place his straightened leg on his trunk, so as to make it touch the shoulder. Hypotonus is due to the relaxed conditions of the tendons of the joints.

There are but very few contraindications to treatment and exist only in cases where the atrophy of the muscles, disease or deformities of the joints render the use of limbs impossible.

Frenkel objects to gymnastics and turning for

² Leyden: Ueber die Behandlung der Tabes Dorsalis. Berl. Klin. Wochenschrift, No. 17, 1892.

tabetic patients and in evidence of the dangers attending each exercise, quotes a number of cases of fractures resulting therefrom.

In conclusion I need hardly state that the above is merely a sketch of the new method of treatment of ataxia due to tabes. For the benefit of those who desire fuller information, I affix a complete list of articles bearing on the subject, which have appeared up to date.

Berlin, November, 1896.

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ETIOLOGY, PATHOLOGY AND DIAGNOSIS OF APPENDICITIS.

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If we would correctly estimate the tendencies of appendicitis it will be through an understanding of its etiology, pathology and diagnosis. As the varying anatomy and relations of the appendix have much to do with the origin, course and recognition of appendicitis they should receive some consideration. The appendix is an organ absolutely without function. For this reason nature is attempting to rid herself permanently of its presence. At the present rate it will be many generations before it is accomplished, and until then physicians must continue its study. All organs without functional activity have less resistance to abnormal processes than those which are functionally active.

Every conceivable position is occupied by the appendix, but usually its base is in the right iliac fossa. Its tip may be anywhere that its length, from one to six inches, may enable it to reach. In the female its proximal opening into the cecum is said to be somewhat larger than in the male. Thus, other things being equal, the woman has a little better chance of recovering than the man with appendicitis. We usually find the appendix is as strictly an intraperitoneal organ as any part of the small intestine, or we may find that the serous coat of the cecum stretches over its proximal third or half, while the balance is intraperitoneal. The serous investment of the cecum may be continuous with the iliac fossa, directly across and in front of the appendix, and in that way comes only in contact with the anterior surface of the appendix and the latter really has only two investing coats, mucous and muscular, and is consequently extraperitoneal. Its drainage is often against gravity and around sharp angles, obstructed by pressure and position with a muscular wall usually less developed than any other part of the intestinal tube. The longitudinal bands on the ascending colon are directly continuous over the cecum to the appendix and are there-

fore the most important guides to finding the appendix. Lack of this simple anatomic point may compel a long search for this little organ, which should be instantly followed to its cecal attachments, where inflammatory processes have not destroyed this landmark. The cecal attachment of the appendix is usually on a line between the anterior superior iliac spine and the umbilicus, and about two and one-half inches from the spine. The appendix has a mesentery of its own of varying extent.

When its mesentery extends entirely to the appendix tip the nourishment for the organ is the best possible. Frequently the mesentery extends but a short way and the distal portion receives only such blood supply as can be carried by the coats to the distal end. Thus should sudden swelling occur from any cause the tense peritoneal investment at once strangulates the distal end and favors perforation and the passage of pathogenic bacteria, if not immediate gangrene of the entire distal portion beyond the mesentery.

The caliber of the tube is normally so small that no great amount of swelling of mucosa is required to produce complete occlusion. The peritoneal investment is tense but will permit of great distention if the pressure from within comes on very slowly, but if rapid it yields by rents occurring at one or various points. Stercoral calculi are the principal foreign bodies now recognized as etiologic factors in the production of appendicitis. To these add the anatomic disadvantages under which is placed the extension by direct continuity of all forms of inflammation from the colon, mechanical pressure from fecal accumulations in the ascending colon, and in the female extension of inflammatory processes from uterine adnexa; we have nearly the sum total of appendicitis etiology.

Pathologic varieties. Its pathology is: 1. That of the ordinary cecal and colonic troubles by continuity of tissue due to digestive disturbances of all kinds. These are usually primarily of the milder or catarrhal variety. 2. Ulcerative, in which one or more or all of the coats may be lost at one or many places. 3. Obliterans, which is simply a variety of the ulcerative. 4. Gangrenous.

The catarrhal may occur without leaving behind it any appreciable lesion or may lead to either of the other forms.

Where ulceration or gangrene does not occur there would seem to be in every case a lowered vital resistance with great liability to recurrence of other attacks. So marked is this tendency to recurrence, even in the mildest cases, that hardly any physician considers a case of catarrhal appendicitis is cured unless three or four years have passed without attack.

This lowered resistance in the appendix would appear in these cases to be analogous to that found in the catarrhal inflammations found in pharyngeal mucosa rather than to gross anatomic lesions.

The ulcerative form may follow in the wake of the catarrhal by pressure depriving the mucosa in various ways of its blood supply or by direct action of an irritant. This process may remain limited to the mucosa and in its repair cause the third variety, obliterans, by adhesions of the walls of the tube. Should this begin at the distal end, repeated attacks, if perforation or migration of septic material does not occur, will effect a cure by obliteration. Should it occur at the proximal end the same result is still possible but not likely, for the septic material caught beyond the point of occlusion can by no plan, except abscess for-

mation, be evacuated unless the neighboring lymphatics be for a long time loaded with septic materials constantly liable to destroy life by abscess rupture. When the case progresses in this manner to complete obliteration by either plan, a recognized rare occurrence, the cure is complete and permanent.

When the ulcerative process is slow, whether the appendix be *intra-* or *extra-peritoneal* the general peritoneal cavity is protected as a rule for a considerable time by inflammatory exudate, but when rapid the general peritoneal cavity may be involved in twelve to forty-eight hours. Slow progress of the inflammatory process favors the development of tolerance by the peritoneum in the neighborhood of the trouble.

Gangrene, whether involving a considerable portion of the appendix or but a very small area, is usually due to sudden deprivation of its blood supply, because of its absent or limited mesentery or to pressure necrosis, either of which may permit the passage of the most virulent infection to the peritoneal cavity in a few hours before sufficient time has elapsed for inflammatory exudate to throw out a protecting barrier of any kind. Rapid swelling of the appendix may so weaken all the coats that a serous exudate between and within them favors the culture and passage of pathogenic bacteria and septic material which may produce general and usually fatal peritonitis without solution of continuity in any coat of the organ. The recognition of the colon bacillus in many internal organs without any appreciable lesions has compelled caution in attaching so much importance to it in lesions about the appendix, as has been given it in the past. We should justly consider it of secondary importance in inflammatory trouble about the appendix and its presence due more to accident than as a causative factor (Welch). They are prone to collect in parts already invaded by other organisms, or weakened by injury. If the appendix be *intra-peritoneal* it is, other things being equal, more liable when inflamed to produce an abscess that will be followed by general or local peritonitis. It is also in its earlier stages easier of surgical access.

When the cecum and appendix receive an extension of the peritoneum from the colon to the iliac fossa on their anterior surface, abscesses forming about the appendix are almost sure to be *extra-peritoneal* and may spread great distances, dissecting up the peritoneum, going down into the pelvis, up behind the colon and well across toward the median line, and still show but little tendency to rupture. Appendix abscesses so placed cause no inflammatory, agglutinating exudate to be thrown out into the peritoneal cavity and the intestines are consequently free from adhesions. The intestines are carried up in front of the tumor and may give at all points tympanitic resonance. At the base of the appendix where the mesentery diverges to encircle the organ there are in all cases properly but two coats, and a very large number of abscesses which form about the appendix have their apparent connection with the appendix only at this point, and are for that reason usually approachable *extra-peritoneally*.

This is probably one of the reasons why it was so long before the influence of the appendix was discovered in the production of the purulent accumulations in and about the cecum. The perforation of the two inner coats may occur at any point and yet the inflammatory perforation products be carried under

the serous coat the entire length of the appendix in the loose connective tissue space between the diverging layers of its mesentery to the much greater loose connective tissue space about the appendix and cecum, where the pus may burrow almost without resistance till large accumulations take place as in the *extra-peritoneal* variety above mentioned.

Diagnosis.—If the pathology of appendicitis here given may seem obscure and confusing, it will be vastly more so when the diagnostician undertakes to clinically recognize these varieties. In fact we may say at the outset that the diagnosis of appendicitis is usually fairly accurate, but the diagnostic differentiation of its pathology is not yet possible. Pain is always present at the beginning of appendicitis, but is often remote from the location of the appendix. Frequently the pain is severe about the umbilicus, but the local tenderness will correspond to the position of the appendix and is usually midway between the anterior superior spine and the umbilicus. The muscular tissue of the abdominal wall early gives evidence, in increased resistance to manipulation, of the presence of trouble in the right iliac fossa. The pain may soon fix itself in the right iliac fossa. Nausea and vomiting are almost always present as an early symptom, but may permanently disappear within twenty-four hours without other amelioration in the patient's condition. Neither the presence of constipation or diarrhea aids us in the diagnosis of appendicitis, unless the latter be sufficient to empty the alimentary canal and aid in the palpation of the abdominal contents. Tenderness in the right iliac fossa may be said to be always present. Palpation of the appendix without considerable enlargement of the organ or abscess formation is rarely possible. It should, however, always be attempted, and by placing the fingers of the right hand upon the abdomen and making steady, firm pressure downward just to the outer side of the umbilicus, draw the hand downward and to the right toward the iliac spine, and as the spinal column, external iliac artery, psoas muscle, appendix, etc., are successively crossed a lateral motion of the hand parallel with the long axis of the body should be made, so as to detect any abnormal condition of each tissue or organ before it is allowed to escape from under the fingers.

A distinct tumor is rare before the third day. Dullness is not found if the appendix is behind the cecum (Shrady). Fluctuation does not occur until suppuration is far advanced. Examination of a large appendicular abscess must be made with caution to avoid rupture, especially in the case of a large tumor with evidence of pronounced sepsis, when the tension is so pronounced as to overcome or to have greatly retarded its blood supply and the temperature has fallen to or near normal. The patient feels almost well, the physician is led to doubt his diagnosis and to advise the patient and his friends to delay radical measures. This is the calm that so often precedes the fatal storm. When the blood pressure was so great or the abscess tension was so great as to limit absorption of septic material into the system, the blood supply was also reduced and the vitality of the abscess wall so low as to prevent further exudation to strengthen weak points (Harris), and palpation must be very gentle or entirely interdicted because this choking of the blood supply from the abscess pressure having stopped the formation of plastic exudate for the protection of the general peritoneal cavity, rupture is

imminent. Careful attention to the history and examination should enable one to readily differentiate appendicitis from psoas abscess, morbus coxarius, renal and biliary colic, tubal and ovarian disease, intussusception, carcinoma of the colon and cecum, typhoid fever and floating kidney. Peri-nephritic abscess occurring on the right side might readily deceive one as to its origin. The mistake, however, would be of no moment, for the indications in each would be practically the same. When pain is produced in the right iliac fossa by pressure on the left side of the abdomen we should be suspicious of appendicitis.

To sum up the diagnostic symptoms upon which we must rely to recognize appendicitis I mention: 1, pain; 2, nausea and vomiting; 3, tenderness and muscular resistance in the right iliac fossa; 4, palpation, tumefaction, fluctuation; 5, septic manifestations.

OF WHAT USE IS SURGICAL TREATMENT IN OVARIAN NEUROSES?

Read before the Nebraska State Medical Society, at Lincoln, Neb.
May 19, 1896.

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The term *neurosis*, as commonly used by the profession, has an indefinite meaning. It may mean a pain, severe or slight, of a "neuralgic character." It is often applied to irregular functional disturbances, as for example, the gastro-intestinal functions, which may be perfect to-day, less so to-morrow, violently disturbed the next day, and normal the fourth, without any assignable cause. Neurosis may mean emotional manifestations, for example, irritability of temper, explosions of unprovoked grief, attacks of epileptiform convulsions, such psychic disturbances as melancholia and maniacal conditions. Ecstasy, delirium, hallucinations and trance have been called by that convenient term. It is often applied to that indefinite symptom-complex, known as neurasthenia, or more popularly called hysteria. In short, no matter what the train of symptoms may have been, when it seemed impossible to find structural changes due to inflammatory processes, acute or chronic, or when it could not be shown that there existed an atypical cell proliferation in the form of a neoplasm, or other new formation, it has been the custom to speak of it as neurosis, or a neurotic condition. When there has been observed pain, aberration of glandular or organic function; psychic or mental disturbances, convulsive manifestations, without discernible organic structural changes, that much abused term, *neurosis*, has been found of great convenience.

Under the modern system of specialism, when each organ has its special custodian, whose sole duty seems to be to stand as a guardian angel over that which he has selected and adopted, it seems clear to each specialist that this long train of neurotic symptoms, are nothing more nor less than reflexes (another term used with so much delight, and no more understood than the other), beginning in that particular organ which happens to be the pet of a given specialist. There is such a strong tendency for every specialist to attempt to look into the human body, through his own little speculum.

The ophthalmologist, if he can find nothing visible

by external inspection or ophthalmoscopic examination, discovers slight errors of refraction or accommodation, and in that, a reflex neurosis which explains that headache, the disinclination for work or pleasure.

The otologist is sure to find the origin for vertigo and fretfulness in the ear.

The rhinologist is positive that the dyspnea and its accompanying train of symptoms, originate in the deflected septum, spurs, thickened turbinated tissue and post-nasal adenoids.

The lung and heart specialist is inclined to ignore what the aforesaid authorities have diagnosticated, for he hears through his stethoscope sounds that explain all.

The gastro-intestinal authority finds matters very plain. He removes the stomach contents after giving a test meal, and with reagents and microscope, and possibly, if he be well advanced and properly equipped, he may employ the gastroscope, and the gyromele. He indicates to you as plainly as the writing on the wall, what is at the bottom of the trouble.

The official specialist is positive, beyond all powers of argument, that all neuroses, and even appendicitis, begin in the external orifices.

The gynecologists, and nearly one-half of the physicians of our cities are professed gynecologists, never fail to trace an ache, or pain to the pelvic organs. The uterus and its adnexa are centers, which, to their minds, control every function in a woman's body. Every ache and pain is a neurosis, and when located in a region remote from the pelvis, is a reflex condition. Under the head of neurosis, according to our enterprising and pushing gynecologist, is included a wide range of disorders, and I fear, a multitude of sins.

When we view this vast subject from the standpoint of the true gynecologist (not the six weeks' policlinic fledgeling, but I mean the earnest, honest, broad minded, careful, painstaking, scientific gynecologist, whose specialty is the culmination of a wide experience as a general practitioner, and whose skill as a specialist is the outcome of a long and large experience at the bedside), we soon find that we must eliminate the larger portion of nervous manifestations, from our consideration, as diseases originating strictly from the organs of generation which are frequently denominated as ovarian neuroses.

Under the caption of ovarian neuroses, we may include all such affections as are characterized by primary pain or other disturbances, referable to the ovarian regions, unattended by inflammation or any ascertainable structural lesion.

If we adhere strictly to this definition, we will find that the vast majority of the gynecologic cases that come to us, are of a neurotic character. The pelvic distress and hypersthesis, local or diffused, is in a large portion of cases, unaccompanied by structural change. Nearly all these cases complain of distress involving, one, and in some cases, nearly every vital organ in their bodies.

For convenience of description, in our discussion we may adopt the classification of Baldy: 1, neurasthenia; 2, hystero-epilepsy; 3, psychoses-insanity.

The more modern, more esthetic, and possibly more scientific appellation, neurasthenia, has largely displaced the term hysteria. The latter has become to be regarded as a reflection upon the mental balance of the sufferer, and is often means a forfeiture of sympathy on the part of her friends. But to designate the long and variable train of nervous and mental

disorders, as neurasthenia makes her an object of solicitude and the tenderest care from the side of her friends, and stamps the doctor, in the estimation of all concerned, as a skillful diagnostician and a profound physician. While hysteria and neurasthenia are described under separate heads, still when we study their symptomatology we find that both have much in common. We find in hysteria (Webber) "an almost innumerable variety of symptoms, which may be analyzed in a general way into signs of increase, diminution, or perversion of various nervous functions. It is commonly classed as a functional nervous disease, and has no recognizable pathologic anatomy. Postmortem investigation gives no clew to the morbid process."

For neurasthenia (James J. Putnam) we find "certain states of the nervous system of which the anatomic basis is unknown, but which is characterized on the one hand by lack of vigor, efficiency and endurance, affecting usually a large number of nervous functions, and on the other hand, by signs of active derangement, which in part seem to occur as positive symptoms, and in part are due to failure of the mutual control which the different parts of the nervous system afford each other in health."

When we make a critical analysis of the cases that come to us for treatment, we find that nearly two-thirds of them belong under the above headings. Their subjective symptoms are innumerable, their objective signs, aside from feebleness and palor due usually to too close confinement and inactivity, are few. Among the endless subjective symptoms, a few usually predominate and are referred to some special organ, and in these progressive days, when pelvic organs have met with such terrible onslaught and have been so persistently directed to the pelvis, the poor sufferer being a woman, naturally thinks of those organs which make her such. She seeks comfort and advice from the specialist, and he being ambitious and anxious to distinguish himself, and being imbued with the idea that the culmination of all skill is in blood, seldom fails to find something in the pelvis, that, to his mind, solves the entire condition and offers him opportunity for sanguinary achievements. If he does not find a laceration of cervix uteri or perineum which need repair, it is a metritis, that must undergo the ordeal of curettement, and if not that, a thickening in one or both broad ligaments, which means chronic salpingo-ovaritis, and if he be an up-to-date specialist, he can invariably diagnose adhesions; or he finds adherent flexions and versions. The diagnosis having been completed a grave prognosis made, an operation is urged as the only means of cure, and often the only possible means of saving life, for blood he craves, and nothing short of blood will appease his craving. The frightened patient gives her consent. Elaborate preparations are made; a half dozen or more colleagues are invited to witness the marvelous feat. The operator clad in spotless gown, in his sterilized hand he holds aloft a gleaming, keen-edged knife. He calls *time*; with a sweep or two of the knife the peritoneal cavity is open; two fingers are rapidly thrust into the sacred recesses of the pelvic cavity; an unoffending ovary and tube, a marvel of perfect anatomic form, is drawn forth and instantly pronounced cystic; it is tied off by a specially devised method, cut away and the pedicle dropped. The same procedure is followed on the other side. To vary the condition and to give proof of his wonderful knowledge of morbid structure,

he unhesitatingly pronounces the second ovary (which really does not differ from the first) to be scirrhotic. Abdominal wound closed by a new method, dressing applied and the time-keeper announces the startling information, "*seven minutes!*" A triumph of modern surgery and individual dexterity! Patient is put to bed, recovery uneventful, discharged, *cured* on the fourteenth day. Cured, did you say? By that you mean that her neurasthenic manifestations have vanished. Did you ever see one of these chronic sufferers cured in fourteen days? When Lawson Tait only a few years ago published his remarkable tables, of a hundred or more cases in a table, and we found that 98 out of 100 cases were discharged cured, you and I, in our verdant simplicity imagined that when he said *cured*, it meant to be relieved from all pain and distress, and the departed bloom of youth had returned. And when we found that our cases had not been cured in six months or a year, and some were even worse, it slowly dawned upon us, that "*cured*" in published statistics, meant a survival of the surgical ordeal only. When we examined the appendages removed by the aforesaid seven minutes operation, we found that what we had been taught to be normal, unruptured Graafian follicles had suddenly, according to the aforesaid operator, become cysts. The old sites of the ruptured follicles had become evidences of a "fibrous condition," which was proof positive of scirrhotic. The Fallopian tubes were open at both ends and otherwise so perfect as to delight the teacher of anatomy who is in search of normal specimens to demonstrate to his class. One well-known surgeon, after he had removed the uterine appendages, found that what the textbooks describe as sites of newly ruptured Graafian follicles, an ulceration of the ovaries. Who has not seen several pairs of such ovaries with open Fallopian tubes, with beautifully branching fimbriae, exhibited before medical societies, as the result of a half-day's labor. You and I have no hesitancy in pronouncing them to be normal, and we ask why were they taken out? The answer can always be anticipated. "Why, she had ovarian neuralgia;" the "cystic" and "scirrhotic" condition caused reflex neuroses!

We have often wondered why operators in comparatively small towns have such a large proportion of pus tubes among their abdominal cases. Recently we had some light thrown on this point by an operator, who, in a country district where specific infection is a rarity, removed in ten minutes uterine appendages identically like those described in the foregoing seven-minute operation. The operator carefully squeezed the Fallopian tube from its fimbriated toward its uterine end, and succeeded in pressing out of it a very few drops of fluid that had a very slight opaque appearance; instantly the diagnosis of pyosalpinx was made. The microscope was superfluous with a surgeon who possessed such microscopic vision.

If we could examine all the specimens removed from cases in the many reported "series" where the mortality is small we would find a large proportion to be those of absolutely normal uterine appendages. Have you taken pains to follow the subsequent history of these cases? You will find that a large proportion, the majority of them, are not benefited. Many have been made worse. Why? If these cases had been carefully investigated, the conclusion would have been forced upon the operator that the local pain was only a *local expression of a general nervous condition*. In these cases we sometimes have persistent pain in the

stomach, liver, heart, lungs, head, arms and legs. Why not extirpate or amputate one or more of these occasionally. But the resourceful gynecologist promptly decides that the pain in these various organs are of a reflex nature, which take their origin in the womb or ovaries. Poor maligned organs, "more sinned against than sinning!"

A few years ago I had occasion to do a successful Morton's operation in a case of metatarsalgia in the left foot of a young married woman. The uterus had been faithfully painted with silver nitrate solution twice a week for several months by a "gynecologist," under the supposition that the pain in the foot and calf of the leg was a uterine reflex.

About a year or more ago I was visited by an unmarried lady, who had suffered for several years from general nervous debility, probably due to over mental strain and deficient physical activity. She had some pelvic pain, somewhat exaggerated during the menstrual period; she had undergone much local treatment of the form termed "uterine tinkering" by Lawson Tait. She was referred to me for operation because drugs, which had been given chiefly in the form of high potencies, $1 \times 500,000$, had not cured her. On bimanual examination the pelvic organs, which could be unusually well palpated, were found to be absolutely normal. Her chief complaint was gastro-intestinal disorders, obstinate habitual constipation. These had been regarded as due to reflexes. She was advised to return, with a written opinion, to her physician (who had given her no treatment but had referred her to me). She failed to follow my advice; she sought another operator, who promptly removed her ovaries and tubes, collected a large fee and discharged her *cured*. A few weeks ago she appeared in my office again. A nervous, fretful, emotional, broken down woman. No, hardly a woman, for that which distinguished her sex had been taken from her, without any compensation for her loss. If her tubes and ovaries had undergone structural changes, as the result of disease, she was unsexed already, and to have removed them would have given her health, but to remove her normal uterine adnexa the surgeon is directly responsible for the aggravated neurosis. As she sat in the chair bemoaning her fate and denouncing her surgeon, she cried: "If I had only followed your advice! What shall I do? What shall I do?" I have seen many such cases, and I am sure other doctors have seen similar cases that have been operated on. My personal experience in abdominal work began when pelvic surgery, aside from the removal of large ovarian cysts, was in its infancy. Shortly after the field had been opened by Beatty, Tait and Hegar, for the removal of diseased uterine adnexa. We all of us looked to these men for guidance. While their lists of cases were long ones, the information they conveyed was imperfect and meagre and referred only to the immediate results of the operation. Little or nothing could be learned regarding the ultimate outcome. We were compelled to learn much by our own experience, we had no precedents established as we have today. In my anxiety to relieve suffering I frequently operated on cases belonging to the class under discussion, but the ultimate outcome was usually so unsatisfactory that with accumulating experience with each succeeding year I refused to operate on cases that I would have advised surgical procedure in the preceding.

I unhesitatingly declare that all cases in which no

structural changes in the pelvic organs can be made out, should not be subjected to operation, and in cases where under mistaken diagnosis the abdomen is opened and the appendages found to be normal they should not be removed, no matter what the local subjective symptoms. The experience of such men as Gill Wylie, Boldt, Howard Kelley, Charles Noble, Baldy and many others, has shown that no benefit can be expected, but the cases are often made worse.

Trachelorrhaphy.—An operation which in popularity stands next before salpingo-ovarectomy is trachelorrhaphy. A minor operation which every tyro can do, and illustrates the ready credulity of the average patient. It brings the operator as large a fee as the average abdominal section, and has established the reputation of many a man as a "fine surgeon," who would shrink from an ordinary amputation.

Every laceration, however slight, must be repaired, upon the assertion that nerve endings are adherent to the cicatrix, which if they have not already produced, soon will cause a neurosis and innumerable reflexes. This operation, when done according to the indications laid down by Emmet, is useful, but as usually done is useless in four-fifths of the cases, as proven by the results.

Hystero-epilepsy.—According to Charcot and his pupils, hystero-epilepsy "is distinctly a symptom of hysteria, and in no way confounded with epilepsy, when it assumes its typical form." . . . "The seizure is usually preceded by a change in disposition, perhaps for some days, and more directly by an aura, abdominal or epigastric, which affords the patient time to seek a position of safety. The attack proper is divided into four periods: 1, the epileptoid; 2, the period of contortions and great movements; 3, the period of emotional attitudes; 4, the period of delirium" (G. L. Walton). "During the intervals between the attacks the patient suffers from incomplete hysteric hemianesthesia, ovarian hyperesthesia and other hysteric symptoms . . . The aura, which is in the nature of a globus hystericus, seems to proceed from the affected ovary. The patient shrieks and falls insensible, and tonic spasms result; this is quickly followed by clonic spasms and these are succeeded by muscular relaxation, stertorous respiration and coma. The second stage (phase des grands mouvements) consists of movements which are rhythmical or disordered, and which are sometimes violent and ludicrous. The next stage (phase des attitudes passionnelles) is marked by a rapid succession of attitudes and gestures which suggest the term phase of *lubricity*. Hallucinations of terror, sorrow, joy, etc., follow. The paroxysms may recur frequently and may be provoked by slight pressure upon the ovarian region on certain hyperesthetic spots; sudden and firm compression of the ovary will sometimes arrest a paroxysm" (Foster).

Charcot and his followers believed that this affection had its origin in the womb and its appendages. This view seemed confirmed by the observation that the attacks often became worse during the menstrual period. When abdominal section became a comparatively safe procedure, surgeons did not hesitate to drag forth and remove tubes and ovaries that were often models of anatomic perfection. Occasionally a case was benefited and sometimes cured. These were reported with all the extravagance of which the English language is capable; and many more were reported before sufficient time had elapsed to note if

the case had even been temporarily benefited. One of the blots of this progressive period in medicine is the premature report of cases.

But what became of the fifty that were not benefited and not reported, but were permitted to wend their miserable way, unpublished and uncured? Hence those of us of more limited opportunities and less experience were led into the error of holding up to our distracted patients a light of hope that burned a short while, then flickered feebly and went out. Have you ever experienced the despair that follows hope, the darkness that succeeds a dazzling light?

My own experience comprises eight cases. When we study these cases we find, in all, the attacks were aggravated during the menstrual period. In seven the attacks occurred between the periods. In one only during the period. In six the attacks could be brought on by compression of one or both ovaries. In the one case where the attacks occurred during the period only, a complete cure has been effected. In one case, that of a married lady, mother of eight children, the attacks sometimes numbered two or three during an hour. After five years, I was informed that she seldom has more than one convulsion during twenty-four hours, "but that they are very much milder." We see she is not cured. The chief benefit that has been derived is that she can not propagate any more of her kind. In the remaining six cases we imagined for a time that they were improved, but gradually relapsed into their former condition.

When we take into consideration that some of these cases recover spontaneously, we wonder whether those which are seemingly benefited by an operation might not have recovered without one. My own limited experience is not encouraging. On consultation of recent literature I find the results of those operators of large experience is no more encouraging, and I find that the weight of opinion is in favor of surgery only in such cases where the attacks are confined *entirely* to the menstrual period. In all other cases it is worse than useless to operate.

Even the insane woman has not escaped the enterprising abdominal surgeon. He studied his cases profoundly and selected carefully such in whom the mental disturbance seemed worse during the menstrual period. They were often reported improved immediately after operation, but we have been kept in the dark in reference to the ultimate outcome. My own experience has taught me that it is an exceedingly hazardous procedure to operate on man or woman who has exhibited unusual mental "peculiarities." It has been my misfortune to have had four cases of post-operative insanity. The immediate recovery in all the cases was uneventful. Convalescence had practically been completed when mental disturbance appeared. Without any evidence to the contrary, I feel that we are not justified in doing salpingo-oovectomy on the insane women, except for organic changes, no matter how aggravated her condition during the period, if she is not perfectly sane during the inter-menstrual time. In cases where insanity occurred only during the flow we might expect recovery after inducing a premature menopause by operative interference. You ask why in the face of this evidence do men continue to mutilate women for functional disorders? We may answer:

1. Inexperience and mistaken diagnosis. No man should begin pelvic work until after many years of general practice, until he has served a long appren-

ticeship with an experienced diagnostician and operator, so that he may avoid the pitfalls into which those of us have fallen when there were no precedents to guide us. The opportunity for acquiring diagnostic skill in our large medical centers is almost unlimited, but it requires time and patience to acquire it. The great trouble about our post-graduate teaching is, that somehow, although the opportunities for becoming proficient in diagnosis are abundant, the student returns to his chosen field with his head full of technique and not enough of diagnostic landmarks.

2. The desire to do many abdominal sections and to show a low mortality ratio in his reports. At this time nothing is more tiring and time-robbing in our society meetings than to report a long series of abdominal sections, each case differing from every other in the list. A surgeon who aims to do many laparotomies always does many useless ones. Such a surgeon takes his own reputation solely into account, irrespective of what benefits his patients may derive. His policy is a short-sighted one. His selfishness predominates in all his work. His many needless operations will in the end cost him his reputation, for which he has so zealously and short-sightedly labored.

3. The prospects of a good fee. The man who is prompted chiefly by a fee (and we know of such) is unworthy of the confidence of his patients and his fellow practitioners. He should be relegated to that oblivion from which he came.

4. The pleadings of the patient. Who can sit unmoved when the poor suffer who has exhausted many methods of treatment without relief appeals to you as a surgeon. I have often found that it required more courage to refuse an operation than to do one. Surgeons should lay sentiment aside at such a time and look the stern facts in the face and decide accordingly.

5. The fear of losing your patient, that she may go to another surgeon. Have the courage of your convictions, state them frankly and plainly and in the end you will be the gainer; subsequent patients will place confidence in your opinion.

We have endeavored to point out what must *not* be done for these cases. And now more than ever, the great question confronts us. What can we do for these unhappy beings?

Experience has shown us that the surgery of the present is a failure. We must seek in other directions and for other means which may offer a hope of relief. We have seen that the majority of these cases with functional disturbances are inactive physically and mentally; they are anemic, have muscular atony, poor circulation, gastro-intestinal distress, especially obstinate constipation. It has been my practice for years to insist on some form of physical exercise. If the case is too feeble to do this alone begin with the aid of an assistant, who aids in the various passive and active movements, followed by massage. Later, various forms of gymnastics; then riding, walking in the open air. But the difficulty has been the patient soon ceases to be interested and she returns to her old condition. Of late I have succeeded better. I have prescribed that fascinating and popular modern innovation, the bicycle, one of the most useful machines invented in the last century. In nearly every case the patient has forgotten her medicine and her doctor, and goes wheeling merrily along, with new interest, new plans for life and happiness and better health.

In this dissertation, it has been my aim to call attention to some of the abuses in our profession. If I have been severe in some of my statements they have been prompted by motives for the improvement of surgery. I have not spared myself. I have frankly spoken of my failures in the hope that my small contributions might assist us in the future to avoid a useless method and search along new lines. As broad and progressive surgeons we must become, first of all, diagnosticians, not along special and narrow lines, but must be willing to give the time to study and learn the nature of all diseases to which the body is heir, and all possible means for their proper recognition. The gynecologist, especially, should have a most thorough knowledge of neurology, gastro-intestinal diseases and affections of the urinary tract. Unless we are thus prepared we will be blunderers, groping mostly in the dark, and our therapeutics will be solely experimental. I am confident, however, that even now we have at our command the means which can and will remove from our profession the stigma of an inexact science. Much has been done for the cure of woman's ills in the last decade. We have only begun to find means for the relief from suffering in her who is the better, nobler and kinder half of humanity. She who is man's inspiration, his joy and his hope.

EXTRA-UTERINE PREGNANCY.

Read before the State Medical Association of Missouri, May 19, 1896.

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In fulfilling the functions for which the sex was created, no accident more dreadful can befall a woman than that of extra-uterine pregnancy. She may have reason to suspect that pregnancy has occurred, but in that fact she finds nothing to excite apprehension of the future. On the contrary it may kindle in her bosom the fondest aspirations of motherhood; the instincts of maternity may arouse in her heart the tenderest emotions and visions of that supreme happiness which fill the soul of the mother, when, having passed the period of probation, she clasps her firstborn to her breast with rapture. Should she already have been a mother, there is nothing different from past experiences and she has no dread of the future. Soon the inevitable catastrophe comes, it may be with the suddenness of the lightning's flash: an agony of pain, collapse and death. It may be all so sudden and violent that no chance of rescue is offered. Yet this is not always so, not even perhaps in a large proportion of cases. The clinical history and certain significant symptoms often serve to warn the practitioner, and woe to his patient if they are not quickly heeded and promptly acted upon. He is confronted with a grave responsibility and if he fails to grasp the situation or misinterprets the symptoms, a life is sacrificed.

Six cases have fallen under my care. Of these, two died and four recovered. Not the least instructive of these are the two fatal cases, both of which I believe would have recovered had I not followed the teachings of the time, which I am now convinced were erroneous.

The first case I have given somewhat in detail because the clinical history is obscure, and I believe I did not adopt the course best adapted to secure the recovery of my patient.

Case 1.—Mrs. G. C., aged 43 years, mother of four children, the youngest of whom is ten months old, was taken on Oct. 28, 1890, with severe pains in the pelvis, and I was sent for. I found that she had menstruated at the fifth, sixth and seventh month after her last delivery although still nursing her child, but for the last three months had missed her periods. During this time she had had no symptoms to induce her to believe herself pregnant, except the failure of the menses to appear. Upon making a digital examination I found the uterus somewhat enlarged. I could feel no swelling or enlargement outside of the uterus. I ordered quiet and anodyne enemata, which relieved her. On November 5, I was called in haste to see her, the husband stating that she was suffering greatly and was quite faint. I found her crying out in an agony of pain located in the pelvis, her pulse feeble, her skin cool and pale and in a condition of partial collapse. I could feel no swelling or tumor outside of the uterus but a soft fullness in Douglas' cul-de-sac. The pain, when the finger was brought in contact with the roof of the vagina, was excruciating. She vomited once or twice. The diagnosis was tubal pregnancy with rupture of the sac with hemorrhage into the pelvis. I proposed abdominal section, to which they readily consented. The hygienic surroundings were very bad, but with the aid of Dr. H. S. Brookes and two medical students, I proceeded to make an incision four inches in length. Upon opening the abdomen a quantity of blood gushed out, confirming at once the diagnosis. The sac was found connected with the right Fallopian tube. The mass was brought up and the pedicle tied with a double ligature. The tumor was then cut off. The pelvic cavity was then freely douched with hot water and Thiersch's fluid. The greatest difficulty was experienced in removing the clots, which came away in large quantities. When it was supposed that all had been removed further exploration revealed additional clots firmly adherent to the intestines, which had to be picked off with the fingers, doubtless leaving many others. A drainage tube was placed to the bottom of Douglas' cul-de-sac and the wound closed. The woman was placed in bed in good condition and Mr. Koch left in charge. The patient was comparatively quiet up to five o'clock next morning when he left, and having no regular nurse she was left alone. The next morning I found that she had deranged the dressings leaving the wound uncovered and the tube had been nearly forced out by her rolling and tossing about the bed; this could only be imperfectly replaced. I made an attempt to replace the tube in which I only partially succeeded. At 6 p.m. of the following day the temperature was 101 F., pulse 143. Later the septic symptoms became more pronounced and she died.

Case 2.—Some four or five years ago I was called in consultation, and learned from the attending physician the following history: The woman, about 30 or 40 years of age, had missed one menstrual period. The day previous to that upon which I saw her she had gone to the basement of the house and while there was seized with a sharp, cutting pain in the pelvis accompanied by faintness. After a short time she went up stairs and was again seized with severe pain and faintness compelling her to send for her physician. He found her suffering greatly, with rapid pulse and symptoms of collapse. He gave her anodynes for the relief of the pain and enjoined quiet. The next day, he sent for me. The patient had rapid pulse, great prostration, abdomen distended, but with marked dullness in the suprapubic region. I diagnosed tubal pregnancy with rupture of the sac and large extravasation of blood and suggested operation. There was some delay in operating, which was done after dark and with a poor light. On opening the abdomen the blood spurted out. I fished up the ruptured sac as rapidly as I could and tied it off. I sought to get rid of the large amount of blood in the abdomen by washing it out with hot water, using eight to ten gallons for the purpose. I gave it up in despair of getting the abdomen clean, as clots continued to be found adherent to the intestines, which could only be removed by the fingers. Putting in a drainage tube, stitching up the wound and applying antiseptic dressing, the patient was put to bed, hot bottles applied and other measures taken to bring about reaction, but all to no purpose, as she failed to rally and died in the night.

I received the next day a journal in which a practitioner had had a case precisely similar. Having opened the abdomen and removed the ruptured sac, he found the patient's condition such that it was necessary to terminate the operation at once if he wished to get her off the table alive. He hastily removed with his hands as much blood as he could, closed the wound and put the patient to bed, and fortunately she rallied and recovered.

I have not forgotten the lesson and have done no *flushing* since in these cases.

Case 3.—Mrs. M., aged 35 years, mother of four children, had missed one period and suspected herself pregnant. About ten days after she should have been unwell she was seized with pain and faintness. When I saw her the pulse was quickened but of fair volume; the abdomen in the suprapubic region tender, more marked upon the left side. There was bloody flow per vaginam. No enlargement of the uterus could be recognized, but there was great tenderness in the pelvis, most marked upon the left side. I advised operation and performed it the next morning. Blood issued from the abdomen as soon as the peritoneum was opened. The tumor formed by the sac was pulled up out of the wound, a Tait ligature applied and the mass removed. A rent in the sac showed the source of the hemorrhage. The pelvis was sponged out and the wound closed. An uninterrupted recovery followed.

Case 4.—Mrs. K., aged 25 years, had never been pregnant. Had missed one period and about a week after was taken with pain in the pelvis and a vaginal flow. In spite of the measures instituted by her physician, the flow continued, accompanied by pain, for three weeks, when I was sent for. I found extreme tenderness in the pelvis, more marked upon the left side. No tumor could be felt, but a soft, baggy fullness. I diagnosed tubal pregnancy, with slight rupture of the sac, and advised operation. The next day I operated. I found a sac larger than a hen's egg with a slight rupture and about a pint of blood in the pelvis. The tumor was drawn up out of the pelvis, a Tait ligature applied, the blood sponged out and the opening closed. The patient recovered and three months ago was delivered of a healthy child at full time. Mother and child doing well.

Case 5.—Mrs. H., aged 30, mother of one child. On the 27th day of June, 1895, two weeks after she should have been unwell, she was taken with severe pain, some faintness, followed by the appearance of a bloody flow from the vagina. I was called and explained to her my fears of an extra-uterine pregnancy, but as the symptoms subsided in a few days I thought I might be mistaken. Mrs. H. having suffered from constipation, resorted to the use of an enema. While upon the commode she was seized with violent pain and great faintness. I was immediately notified and found her pale, with cold extremities, feeble pulse and pain. I explained to her that an immediate operation was necessary. An abdominal section was made: blood presented at the opening in the abdomen and two fingers pressed into the pelvis detected the sac connected with the right Fallopian tube. This was tied off, the blood sponged out and the abdomen closed with silkworm gut. Patient recovered.

Case 6.—Mrs. P., aged 30, mother of one child. Had a miscarriage about one year ago. Menstruated last, Dec. 29, 1895. Toward the latter part of January, having passed her menstrual period, she had nausea, slight enlargement of the breasts etc., and believed herself to be pregnant. About the 8th of February, 1896, she went to Indiana. While on the train she became unwell, the flow stopping and recurring without cause and accompanied with much more pain than usual. The flow continued for nearly three weeks. On February 27 she ate rather heartily. Soon after she was seized with acute pain in the region of the left ovary. This was accompanied by nausea, vomiting, feeble pulse, faintness and pallor. Dr. T. A. Martin of St. Louis was summoned, who kindly furnished me with notes of the case. "Three days after the attack, I saw her in the condition above noted, pulse very feeble and faintings occurred upon the slightest exertion. The abdomen was tympanitic and extremely tender upon pressure. Diagnosis: Tubal pregnancy, rupture of sac, internal hemorrhage and peritonitis. I did not see her again until March 29. I found her still pale, pulse 110, temperature 101.5 degrees F., abdomen tender and dark blood constantly being discharged from the vagina. I could detect a slight swelling occupying nearly the center of the abdomen, extending slightly above the pubes and seemingly attached and continuous with the fundus of the womb." I saw the case with Dr. Martin on the first of April. A distinct tumor could be felt a little to the right of median line and in front of uterus. At short intervals severe pains would come in left pelvic region and extend down left leg.

The next day, assisted by Drs. Martin, Geitz, Schlueter and Henke, I opened the abdomen in the median line. Extensive adhesions from recent inflammation were found. The sac was found in front of the uterus, the latter crowded back into the pelvis. Some adhesions of the omentum to the tumor required tying off and some effort was necessary to detach the sac from the surrounding parts and to drag it up and tie it off with the Tait knot. Considerable blood was found in the pelvis and the rent in the sac from which it had escaped was plainly visible. The fetus was found escaping from the hemorrhagic mass which filled and protruded from the rent in the

sac. Some of the blood clots in the pelvis had undergone changes so that they scarcely looked like blood. The pelvis was sponged out with iodoform gauze and closed with silkworm gut. Recovery took place without any untoward symptom.

It will be seen from a study of the cases I have reported that the clinical history presents a striking similarity. Given a woman who has menstruated pretty regularly, who has had some endometritis (mucous), who has passed the menstrual period a week or ten days, who may or may not have experienced some of the usual symptoms of pregnancy, such as morning sickness, enlargement of breasts, etc. Let such a case be taken with a sharp, cutting pain in the pelvis, accompanied by great faintness and followed by a menstrual flow and possibly by recurring pains of threatened miscarriage and associated with such tenderness upon digital examination as to suggest a pelvic peritonitis, and we have the strongest grounds for making a diagnosis of extra-uterine pregnancy, with rupture of the sac. Should we hesitate to act upon these symptoms and conclude to await further developments, we shall find within a few days a repetition, more pronounced, of these symptoms—violent pain in the pelvis, faintness and collapse, weak pulse, great restlessness, extremities cold, sighing respiration—in short, the symptoms of hemorrhage added to shock caused by the rupture of the sac.

Unfortunately the practitioner may be confronted at the very outset with these alarming symptoms and may find his patient almost in *extremis* when called in to see her, no pulse or one scarcely perceptible, cold, clammy skin and profound collapse.

The practitioner is justified when called to a case of a woman who has experienced a violent pain in the pelvis, with great faintness, bordering upon collapse, and who, he finds, has missed one period for a week or more, who finds extreme tenderness in the pelvis upon palpation, who also finds in connection with these symptoms those simulating a possible threatened miscarriage, he is justified in making a diagnosis of extra-uterine pregnancy, and it is his duty to perform celiotomy and rescue his patient ere it is too late from the imminent danger with which she is threatened. He must not allow himself to be misled by the symptoms simulating miscarriage. Miscarriage in a healthy woman who has never miscarried before, can often be traced to some cause. Nor does it come on suddenly with such violent pain and threatened collapse.

Then too, the principles of modern surgery are applicable here as well. It has crystallized almost into an axiom in abdominal surgery that sudden, violent pain in the belly, emphasized in its significance by marked general disturbance, is warrant for, if it does not demand, an exploration. As Tait says, "Absolute accuracy of diagnosis in the abdomen is very far from being possible; only the ignorant assert that it is and only fools wait for it."

Even if there be a lingering doubt in his mind as to the accuracy of his diagnosis by reason of some missing link, it is still his duty to explore the pelvis and find out the trouble, since it is certain that some serious accident has happened, the consequence of which can be rectified by immediate operation.

An exploratory operation *per se*, under proper antiseptic precautions, adds nothing to the danger of the situation, while the threatened danger of his patient is too great to permit of hesitation.

In those cases where the symptoms which confront the practitioner are those of profound collapse, it becomes a question as to what course to pursue. Shall he operate at once at the risk of extinguishing the feeble spark of life, or shall he wait and endeavor to secure reaction, partial at least, before doing so? In my opinion, the latter course is the wiser. He should remember, however, that the shock is primarily due to the rupture and that the collapse is prolonged and deepened secondarily by the internal hemorrhage. As soon as there is some return of the pulse he should open the abdomen, seek for the sac, ligate close to the uterus and remove it, thereby stopping all further hemorrhage.

It was formerly advised to wash out the blood, insert a tube and drain. I believe this bad practice. In the first case I report, had I been content with simply sponging out the pelvis, accurately closing the wound, the uncovering of the wound would not have been followed by infection, and the patient would probably have recovered.

The practitioner should then sponge the abdomen as rapidly as possible with aseptic gauze, and having removed all that he can readily get rid of without prolonging the process, should close the abdomen without drainage.

The blood left is not septic and will be absorbed, and all the more readily, too, if the peritoneum be not disturbed by the flushing. If the patient has lost a great deal of blood and the abdomen is full of it, as in the second case I have reported, no amount of flushing will remove it all, and precious time is lost in the attempt. All that can be readily removed by the hands and by sponging, should be quickly cleared out, the wound closed and the patient put to bed. Hot bottles and strychnin, digitalis and whisky, should be resorted to hypodermically as may be necessary to sustain the heart's action and favor reaction.

It has been my fortune to meet with one case of abdominal pregnancy where the fetus had reached full term before its death. The case was brought to me in 1885 with what was supposed to be an ovarian tumor. I found a tumor which extended transversely from the left lumbar region to beyond the median line, and from the brim of the pelvis below to the margin of the ribs above. She had had it for fifteen years. Lately she had complained a great deal of colicky pains and troublesome constipation. The colicky pains had been so distressing that she had become addicted to the use of morphin to relieve them, and this in turn had promoted the constipation. The tumor had a very hard and smooth surface with somewhat irregular borders. Over the surface of the tumor there was dullness at some points, resonance at others. After explaining to her that it was very doubtful if it could be removed, I proposed an exploratory incision, to which she assented. I found that the omentum and small intestines were adherent to it; in fact, it seemed imbedded in them. It presented a somewhat broad, flattened, smooth surface which looked like bone or cartilage. Suffice it to say that it was clearly inadvisable to attempt its removal. The wound was stitched up and healed by first intention. Great irritability of stomach persisted, her strength failed and she died two weeks after the operation. A postmortem examination was made and the bones of a fetal skull at full term was found, with traces of the legs and arms. In connection with the left ovary there seemed to be a piece of the bone of an arm.

Between this and the mass above there was no apparent connection whatever. Evidently there had been a tubal pregnancy of left side with rupture of the sac, the fetus having survived the rupture and continued to develop to full term in the abdomen, when death ensued.

Two other cases have fallen under my care, both of which I believe to have been tubal pregnancy with rupture.

Mrs. H., aged about 35 years, mother of five children, had eaten a hearty dinner including corn. In the evening she suffered from considerable disturbance of the bowels. While in the water closet she was taken with violent pains in the abdomen, with great prostration, vomiting, etc. When called to see her the next morning, Sept. 9, 1895, I found her almost pulseless, cold, clammy skin, suppression of urine and great tenderness of abdomen. There was also some bloody discharge from the vagina. This condition deterred me from attempting an operation. She never rallied, and died on September 14, five days from the time of the attack. No autopsy.

Mrs. D., aged 26, mother of three children. Had one miscarriage between the first and second child. Had passed her menstrual period some four or five days when the flow commenced, which she regarded as delayed menstruation. This continued for four days. November 15, 1895, it stopped suddenly. She supposed she had taken cold, especially as she had some pain. On November 18 she was taken with severe pain in the left pelvis which "doubled her up," as she expressed it, accompanied with some faintness and also diarrhea. I saw her in the afternoon. There was still pain, tenderness very great upon digital examination and upon suprapubic palpation, with quickened pulse, etc. I mentioned my suspicion of extra-uterine pregnancy, and suggested laparotomy, which she emphatically declined. In the meantime there was a return of the bloody flow. She had some fever for a few days, temperature reaching 103 F. and pulse 130. The flow continued for about three weeks. She gradually got better. Some fullness and great tenderness in left pelvic region, and which has not yet, May 21, entirely disappeared.

That some accident happened in this case, I think, can not be questioned. The clinical history, symptoms and subsequent history point to extra-uterine pregnancy.

MODERN METHODS OF TREATING THE MAXILLARY AND OTHER SINUSES OF THE CRANIUM.

Read in the Section on Dental and Oral Surgery, at the Forty seventh Annual Meeting of the American Medical Association held at Atlanta, Ga., May 5-8, 1896.

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Pathology.—The diseases to which the sinuses of the head are liable are many. The most common, however, are empyema, tumors and necrosis of the walls from syphilis, mentioned in the order of their importance and frequency of occurrence.

Empyema antri is a suppurative condition and arises in the maxillary sinus, in a large proportion of cases from infection through dental abscesses, although the records show a considerable number of cases that can be traced to the extension of disease from the nasal cavity. In some instances the local inflammation undoubtedly arises from occlusion of the osteum maxillare by polypi or inflammation and decomposition of the retained secretion of the cavity walls. The most common cause of obstruction of the natural outlets of the antri is nasal polypi situated around the opening. The final result in any case is suppuration within the cavity of the antrum.

In chronic empyematous conditions of the antral cavity the lining membrane is generally found to be thickened and spongy in character, the caliber of the

cavity in some cases is considerably reduced thereby. In not a few cases necrosis of the bony walls, results from the internal disease.

More or less intense neuralgias following the course of the nerve supply, together with sympathetic affections of the eye, resulting through the intimate nerve supply or caused by pressure of the inclosed pus upon the floor of the orbit, which also forms the roof of the antrum are found. These conditions are generally unilateral as empyema of the antrum is seldom bilateral.

Symptomatology.—The symptoms may be divided into two classes dependent upon whether there is occlusion of the osteum maxillare or not. In most cases it can also be said that the difference in symptomatology depends upon whether the disease arises from a dental or a nasal source, as occlusion of the osteum maxillare is most commonly, if not entirely, found accompanying the inroad of the disease from the nasal cavity.

Where obstruction of the natural outlet exists, there is a greater or less accumulation of matter within the cavity, with consequent pressure upon contiguous parts and more or less marked facial neuralgia. In some instances where the empyematous condition becomes chronic, necrosis of the osseous walls, most commonly on the nasal side, results and a copious discharge occurs into the nasal cavity. When the quantity of pus is large and does not find free outlet it may produce absorption of the orbital plate and infiltration into the tissues about the eye, in some cases producing glaucoma by involving the optic nerve.

In other instances the frontal sinus of the same side becomes involved as do also the sphenoidal sinuses, accompanied by marked supra-orbital neuralgia.

In empyema antri, without closure of the osteum maxillare, there is a more or less constant discharge of pus from the affected side, especially when patients lie upon the opposite side, a position seldom assumed because the discharge annoys them to such an extent they can not sleep. As a result of the constant discharge of pus into the throat, more or less interference of the general health follows. Dyspepsia and poisoning of the whole system results, which is indicated by a decided cachexia especially noticeable by the yellow appearance of the conjunctiva.

Diagnosis involves a differential consideration of the symptoms present in empyema of the several cavities of the head, including the diseases of the nasal fossa.

As pain is one of the constant symptoms, we use that as the first basis of comparison.

The diagnosis may also be established by exclusion, beginning with the maxillary sinus. Many different ways have been advocated to establish a diagnosis of empyema of the antrum. The simplest method is that of tapping with a curved hypodermic needle, through the nasal membrane, making the puncture in the inferior or middle meatus, and directing the point of the needle backward and downward. If there is pus present it may be accurately ascertained by such means.

Not every case of empyema antri should be opened, and great care should be used in making a diagnosis. Acute cases seldom come into our hands, by reason of the fact that nature restores the parts to a bearable if not a normal condition, and this fact should teach us a lesson regarding surgical interference in acute cases.

Transillumination has been advocated by some, but

has failed in the hands of even the most expert specialists when put into actual practice. I have used it in several cases but with indifferent success. In one case it was used before tapping and drawing off a considerable quantity of pus, and then again afterward, but no noticeable difference in the appearance could be observed.

The one remaining condition to be differentiated from suppuration of the antrum is fetid ozena. Rhinoscopic examination will, in all cases, establish the diagnosis, as in the latter condition the disease of the mucous membrane will be readily observed, and, in all probability, found to be bilateral; while empyema antri is, in a large per cent. of cases unilateral.

The greatest difficulty in the diagnosis is found where complications arise by reason of several of the cavities being diseased at the same time. These cases do not come to the dental practitioner for treatment as often as they pass into the hands of the nose and throat specialist. Empyematous conditions of the antrum are generally of a purulent nature from the beginning, by reason of the fact that the cause generally lies in the discharge of a collection of pus from an alveolar abscess into the antrum.

Treatment of these cases is best directed from within the oral cavity, although the same methods may be adopted of introducing a tube through the nasal septum as before described. This is preferable to sacrificing a fairly good tooth or even trephining the outer plate in the region of the canine fossa. The latter should invariably be done, if the patient, for cosmetic reasons, objects to having the tube exposed upon the face, for if it is introduced through the outer plate it may be entirely concealed within the mouth. The method to be adopted is as follows: Select a trephine and a flexible rubber catheter of the same caliber, No. 7 or 8 being the size I generally use, and place them in an antiseptic solution.

Have the patient rinse the mouth thoroughly with a borated soda solution or listerin; dip the trephine in carbolic acid solution 5 per cent, or inject the tissue in the region where it is intended to insert the instrument with a 4 per cent. cocain solution and then make the opening and apply first dressing through this; then insert the tube, which should be ligated to a band or clasp that had previously been made and cemented to a conveniently located tooth. A short piece of tube or piping should be soldered to the band before putting it in place. The rubber tube should be about three or three and one-half inches in length, so as to enter the antrum from one-half to three-fourths of an inch and leave two inches outside. The free end should be kept plugged with a soft wooden pin, so as to prevent the saliva and air from entering, both of which may become a source of infection.

After placing the tube, the antrum should again be washed out thoroughly with a biborate of soda solution, the fluid to be introduced through the tube and allowed to flow out through the natural opening into the nasal cavity, the patient being instructed to incline the head forward. If the opening is found to be closed or too small to permit the fluid, on which the pus freely floats, to pass out, then a freer opening should be made. After the cavity has been thoroughly cleansed by the soda solution, a 3 per cent. pyrozone solution should be introduced and permitted sufficient time to disintegrate the remaining pus, if any, after which as a final dressing some bland antiseptic, such

as a well diluted listerin, should be thrown into the cavity, and allowed to remain.

If the patient is told to lean forward when the washing out process is begun no part of the discharge will pass into the mouth or throat, a point that will be greatly appreciated. In like manner tubes may be inserted into all the cavities of the cranium and the cavities should be washed out two or three times a day. By aid of the tube this may be done by the patient or some member of the family and the case need not be seen by the practitioner more than twice or three times a week at the most.

If there is any odor at the second sitting, perman-ganate of potash should be substituted for the listerin, for a few days. As soon as the quantity of pus becomes lessened, then a stimulating antiseptic should be substituted. I do not know any that is better than sozo-iodol and its compounds. Sozo-iodol and bismuth in acute cases, sozo-iodol and mercury for sub-acute, and sozo-iodol and zinc for chronic cases. These should be used in the strength of about one-half grain to the ounce of distilled water. All solutions should be warmed before using, including the H_2O_2 , which may be done by placing the vessel containing the fluid in a dish of hot water.

If neuralgia follows the washing process, it is generally indicative that the astringent solution is too strong.

A DISCUSSION ON ANATOMY OF THE ANTRUM OF HIGHMORE.

Read in the Section on Dental and Oral Surgery, at the Forty-seventh Annual Meeting of the American Medical Association at Atlanta, Ga., May 5-8, 1896.

BY M. H. FLETCHER, M.S., M.D., D.D.S.
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The two following quotations are from the discussion on a paper by the present author, entitled "What a Dentist saw in Examining 500 Crania," read before the Mississippi Valley Dental Association, April 18, 1895.

Dr. J. E. Cravens: "I believe that if the Doctor had examined the skulls in the living subjects he would have found his proposition a mistake. I believe that nature never pushed the apex of a tooth root into the Highmorian cavity, without a bony protection, however thin. She never completed the apex of the root of a tooth in the mucous membrane alone."

Dr. H. A. Smith: "I doubt very much the entire absence of bone. If the position taken by Dr. Fletcher is true it may account for certain lesions, phases of facial neuralgia. I doubt very much if the root of a tooth ever penetrates the antrum. You must have a thin covering of bone. The bone of the antrum is proliferated by its own periosteum, and does not depend on any tissue of the teeth. If you take those skulls and examine the roots of the teeth you assume that they never had a covering of bone, but they may have had, even though it was as thin as paper. If you examine those skulls, where the bone is denuded it is so thin that in the dry state it falls away. An observation made on a dry skull is not conclusive. If it is true that the roots will penetrate the antrum it will account for a great many of those cases of facial neuralgia."

These criticisms were brought out by the following statement made in the paper referred to:

Dr. M. H. Fletcher: "As to diseases of the antrum, it seems to me that these people were remarkably

exempt, when we consider that they could have had no surgical or medical attention, and also that about 25 per cent. of them had abscessed upper molars. This fact is significant when it is claimed by the majority of authors that diseases of the antrum come more frequently from this class of teeth than from any other source. This series of examinations show that out of the 252 cases of abscessed upper molars, only 12 perforated the antrum. This would seem a remarkably small number and indicate that abscessed teeth do not cause antral trouble as often in comparison with other causes of inflammation of this cavity as most authors maintain they do."

My reasons for believing that the teeth may often be affected by diseases of the antrum are strengthened by considering a certain feature of the anatomy of the parts, mentioned by Gray, and omitted by most other anatomists, that, "in some cases the floor is perforated by the teeth in this situation." I found this to be the condition in twenty cases, showing that about 4 per cent. of persons have, normally, nothing covering the apices of these teeth but mucous membrane (I wish to say that the statistics on this particular point are not accurate, on account of the inability to see into the antrum, in an unbroken skull). Many skulls were broken, however, so that the examinations could be thoroughly made on this point, as well as others, and when they were not broken the sense of touch was used to determine the presence of bony processes, septa and the general form of the cavity, and the normal openings above the teeth, as far as possible. It was also observed that these normal openings occurred where the floor of the antrum was comparatively flat, and not where there was a conical process, and that these cases where the conical processes occurred were almost invariably covered with a considerable thickness of bone.

These conditions being present, it would seem a natural result when the mucous membrane of the floor of the antrum becomes broken down, for the blood and nerve supply of teeth (so perforating the floor) to be interfered with, and possibly entirely destroyed, since the apical foramen of the teeth must be exposed to these destructive influences. In cases of occlusion of the ostium maxillare and other openings into the nose, the antrum may become tensely engorged, and under this condition if there be no bony covering to the apex of the teeth, it would be more or less driven from its socket and become very sore to the touch.

It is my belief that if accurate statistics could be had they would indicate that the exciting causes of diseases of the antrum is ten to one in favor of intranasal disorders. I make this statement, taking into consideration the large per cent. of teeth that are known to perforate the bony floor of the antrum, for my observations also show that a much larger number of teeth are denuded of bone on the buccal surface of the alveolus, hence, the large preponderance of abscessed teeth which discharge in this locality, a place where one familiar with the disease invariably looks for a fistulous opening. In this situation, if the bone is not entirely absent in some spot, it is so thin that it offers to internal pressure the least possible resistance of any other part of the sockets of the teeth.

During the discussion of the paper referred to I corrected the statement that "These cases have, normally, nothing covering the apieces of the teeth, but mucous membrane." The words mucous mem-

brane should read soft tissues, meaning periodontal and mucous membrane.

I was led to the above statement from the fact that many instances were found (about 4 per cent.) where the apices of the teeth perforated the bony floor of the antrum, having no bony covering, and by close examination it seems clear to me that this condition obtained during life, especially since one case was found among the recent specimens of the Army Medical Museum when the skulls and recent specimens were being examined.

Within the past few weeks I have examined twenty more recent subjects on this point as well as others, and found a case where nothing but soft tissue covered the apex of a buccal root of a first molar. These two cases show that such a condition does obtain during life, and furnish a good foundation for the belief, that when skulls are found with no bony covering to the apices of the teeth, that during life they probably had no other covering than soft tissue.

Since writing the paper referred to, three cases of empyema of the maxillary sinus have come under my observation, none of which were in any way traceable to disorders of the teeth, but in each one the exciting cause was intranasal; thus adding to the evidence that the trouble is due in the larger number of cases to intranasal disorders, as claimed in former papers.

Illuminating these cavities by the mouth lamp, is a most valuable adjunct to diagnostic symptoms; the three cases referred to, all threw the diagnostic shadow.

THE TECHNIQUE OF RESECTIONS OF THE SKULL.

BY ALLEN DEVILBISS, M.D.
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Surgical work should not be undertaken until the nature and location of the disease is first determined. In a limited number of cases it may be advisable to remove portions of the cranial bone or bones for explorative purposes. Localization of cerebral functions has made it possible in certain cases to make an accurate diagnosis. There are large portions of the cortex, that the functions of are not understood, but the sensor motor area, the visual area, the speech area, the auditory area, and the areas of sensations of smell and taste are known, and these facts in connection with the various symptoms will generally guide to a correct idea of the nature and situation of the lesion.

Trephining may be performed for the removal of foreign substances, spicula of bone, depressed bone, blood clot, the opening of an abscess, the removal of cysts, excision of tumors, for the relief of intracranial pressure, for drainage, etc. Any one of the conditions just mentioned may be the cause of epilepsy, insanity, paralysis, or most any of the brain lesions with which we have to contend.

While I do think that we should not hasten to operate in all cases, yet we must remember there is danger in delay. Delay of surgical interference in recent fractures has often resulted in death or brought about conditions that make death preferable to life. We should not hesitate to open the mastoid cells when there exists an abscess. If done early, it is sure to prevent further mischief, but if left alone quite a proportion go on to infection of the lateral sinus, meningitis or abscess of the brain. The suc-

cess of cerebral operation depends upon every detail of aseptic surgery being carried out to perfection.

The marking off on the scalp, for the fissures of Rolando and Sylvius, is necessary in many cases and should be done before giving the anesthetic. To accomplish this, various rules have been given. Owing to the difference in shape and size of the head no land marks can be taken that are constant in their relations to the fissures, but are sufficiently so for surgical purposes. The plan that I have used is principally one of my own, and I think, it is quite definite and not complicated. I use a flexible metallic tape for measuring, and tincture of iodine for marking. First, measure from the glabella over the top of the head to the occipital protuberance, half of the whole distance plus one-half inch back will correspond to the upper end of the fissure of Rolando; mark this point, then place one end of the flexible measure upon the point marked, and carry it along the side of the head down to the angle of the mouth. Make a mark by this line at a point, three and one-half inches from the mark on the median line. The imaginary line

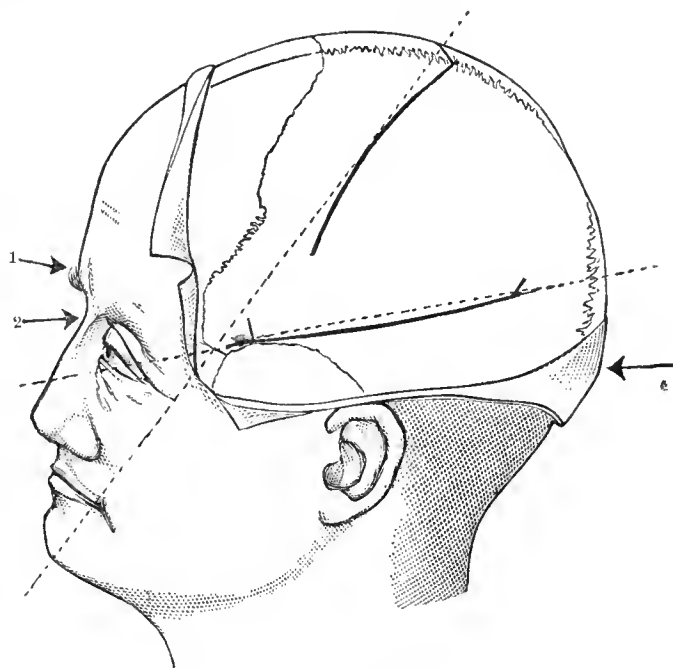


FIG. 1.—1, Glabella; 2, Nasion; 3, Inion.

between the points marked will lie over the fissure of Rolando except at its lower portion which is more vertical. To find the fissure of Sylvius place one end of the tape at the lower end of the nasal bone, carry it along in line with the external angular process of the frontal bone to a point three-fourths of an inch below the parietal eminence; then make a mark at a point one and one-fourth inch back from the external angular process. From this point count off four inches and mark. A line drawn from one of these points to the other will correspond to the fissure of Sylvius. The anterior limb of the fissure is about two inches behind the external angular process. By continuing the Sylvian line to the median line we form a junction at the point where lies the parieto-occipital fissure.

All the areas now known can be located with a definite relation to these three fissures; hence no further rules are necessary. With the landmark made for the fissures and the patient anesthetized, we are ready to make the incision through soft parts.

This may be done with one stroke of the knife. We are now ready to make the initial opening through the bone to the dura. This can be accomplished in several ways. After trying the various devices used, I prefer to use a small-sized cone-shaped trephine, three-eighths of an inch on its face, which makes an opening of sufficient size to allow the easy passage of the lower jaw of the forceps down to the dura. Its advantages over other trephines are: 1. Its centering point can be held in position until placed upon the part to be operated upon, and when it has cut deep enough for fixation, the centering point may be removed. 2. The central opening being carried twice the length of the cutting cylinder with a recess above the cutting part to allow the bone button to be shoved up through and fall out, which makes it easy to clean.

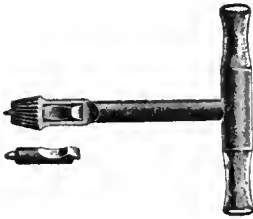


FIGURE 2.

While most operations can be made by the hand trephine, the advantage of drills used by power will be readily seen, especially in cases of mastoid diseases, where there are symptoms of cerebral disease, yet the symptoms are not distinct enough to warrant



FIGS. 3 and 4.

the initial opening to be made direct, the mastoid being first opened and then extended as far as is found necessary.

I have one small drill for making explorative openings, also for enlarging them. It widens from the

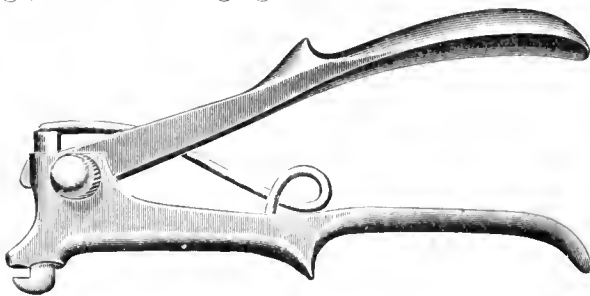


FIGURE 5.

point up and has a cutting edge on its end and side. This causes it to lock and stop when the point is ready to pass through the bone; there being no more bone to cut with the point, the side of the drill is pressed into the wall of the hole. This stops its revolving just when the hole is completed, or when there is only a thin sheet of bone not thicker than writing paper left, which may be pushed out with a probe-pointed drill, or cut out with a stop drill by holding it back so that it can cut but little at each revolution to prevent its locking. In this way, the first opening is made without danger of wounding the tissue beneath the bone. When using this drill it is best to instruct the person furnishing the power to

stop turning as soon as the drill locks. By so doing there will be no unnecessary strain upon the cable. I also have one side-cutting probe-pointed drill that I use wherever there would be danger in wounding tissue by the one with the sharp end. They do the work in less time than it can be done with the chisel or gouge and without jarring. They are now machine ground and are very accurate and will not heat if run at a proper speed. The harder the bone the less speed should be used. The same law that governs the speed in drilling metal applies to the drilling of bone. When the initial opening is made directly through the skull bone to the dura and I wish to enlarge it, or cut a slot out or make a trap-door, I use a bone-cutting forceps that I have devised for this purpose. It will cut a slot in any direction desired. The lower jaw shoves the piece cut off out through the upper jaw, leaving the edge of the bone smooth next the dura. The under-surface of the lower jaw being round and smooth serves as a dural separator. The leverage is such that there is no difficulty in biting through. After the slot is two inches long, it is best to take

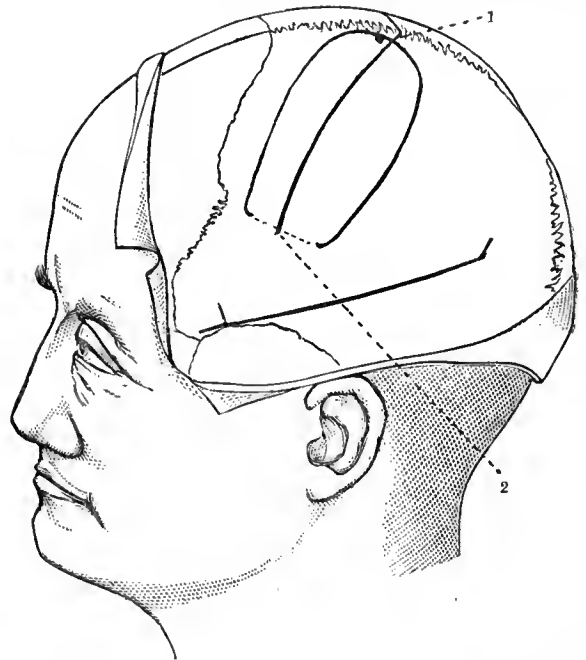


FIG. 6.—1, Point of initial opening; 2, Fracture line. Forceps should be turned at each end of fracture line as shown.

side bites so as to make an opening large enough for the lower jaw to pass through and not go back to the place of beginning. It can be made aseptic, as its parts separate by removing the thumb screw. I use a jaw that cuts one-eighth of an inch. Some prefer one only one-sixteenth inch so as to have bony union instead of fibrous.

The lower jaw is made so that it does not fit closely the opening in the upper one. By having a little space left it clears itself better and yet leaves the bone smooth next the dura. There may be slight nicking of the external surface of the bone, which is immaterial. I have used the lower jaw flat upon its face and also deeply cupped. I find that this makes but little difference in regard to the smoothness of the surface or the ease with which it is accomplished. I have used it many times and I find no bleeding from the diploe. It is prevented on account of the way it shoves the bone out. When making a trap-door brain operation of sufficient size to cover motor

areas, situated along the fissure of Rolando, say two by three inches, I have adopted the following plan: Make an opening at the center of the upper end of the portion to be turned over; then take the forceps and bite out piece after piece until the point to be fractured across is reached; then turn the forceps in the direction of the line to be fractured and take a bite or two; next cut out from the central opening to a point where the other end of the fractured line is to be, take a side bite or two in the same manner as done upon the other side. This leaves the part to be fractured across weaker than at any other point and can be easily broken. Next take a vectus and lift or pry it up and break it over. After completing the work necessary within, the flap may be returned. The fractured end may be placed even (or up, if need be, to increase intracranial room), and the rough surface of the fractured parts will hold it in place, if pressure be maintained until it is put in proper position. The semi-circular or horse-shoe-shaped bone flap with soft tissues attached and continuous with the scalp at its base which contains the blood supply for the parts,

in from five to ten minutes. That there are more permanent cures made by this plan of operating I have described, I can not say, but I can say that death and other bad results from shock incident to the prolonged use of the mallet and chisel may be prevented.

Many surgeons have used it in making craniectomies and proved its usefulness; but this is not its only field, it extends to thoracoplasty and laminectomy and all bones that are thin enough to come within its jaws.

When in Chicago recently I found this instrument in use in several of the schools.

CATAPHORESIS.

Read in the Section on Dental and Oral Surgery, at the Forty-seventh Annual Meeting of the American Medical Association, held at Atlanta, Ga., May 5-8, 1896.

BY HENRY W. GILLETT, D.M.D.

NEWPORT, R. I.

The primary facts upon which the present practice of cataphoresis are based were first discovered, nearly forty years ago, by Dr. B. W. Richardson. The development of practical results from these facts has been slow, but the past five or six years have added much to the general knowledge and application of them.

The fact that the galvanic current does, under proper conditions, carry with it into the tissues of the body, fluids and the substances they may hold in solution, is now sufficiently well known and accepted. The practical realization and use of this fact has not been general for numerous reasons, but now that the principles of the process are becoming more widely understood, it seems quite probable that some of the most important applications of this method of medication will be in the treatment of the oral tissues.

The dentine of the human tooth, which, for generations, we have been wont to consider practically impenetrable by drugs, has, by reason of our better understanding of the process of cataphoresis, changed its relative position, and may now be considered one of the tissues easily penetrated and influenced by drugs.

The very fact that has made it impossible for us to cause absorption of drugs into dentine, namely, its comparative non-vascularity, is an aid when we apply them by cataphoresis. Into a very vascular tissue it is difficult to feed a cocaine solution with sufficient rapidity to produce a deep effect, because the blood current washes it away and spreads it through the system. In dentine this does not occur.

There are material differences necessary in the apparatus to be used with success for treating sensitive dentine, and that which may be used for other tissues. For some subjects almost any voltage of current may be used if it is choked down in quantity; but a large percentage of the subjects who most need the aid of this method will be found too sensitive to the effect of the galvanic current to allow of its use on sensitive dentine, unless the apparatus is so arranged that the voltage may be reduced to a very low point at the start, and gradually increased, in small steps, to a point where it will be efficient in producing cataphoric effects in a reasonable time. McGraw used the ordinary battery apparatus in 1888 for treatment of dentine, but gave it up because of crudeness of apparatus. With such apparatus it is necessary to either commence with the full voltage, or to add it in

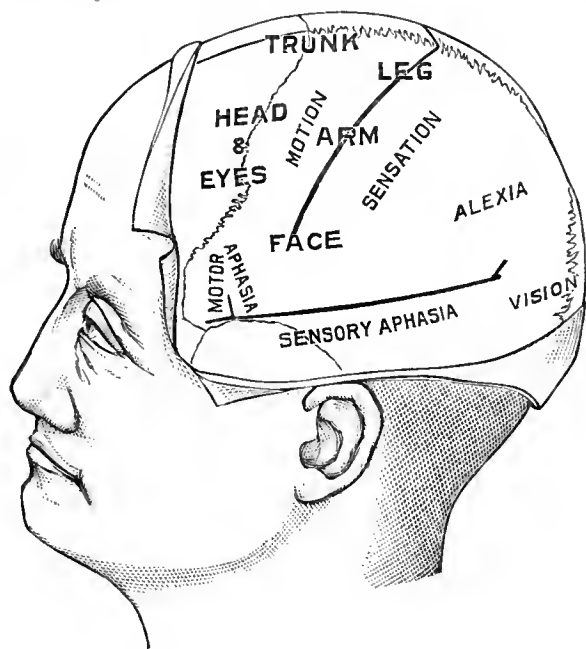


FIGURE 7.

are to be preferred to any other procedure except in recent fractures; no extension of the incision should be made in the direction of the line of the fracture, nor is it necessary to do any chiseling or cutting of any kind of the bone along the line to be broken. The connection between the soft parts and bone should be disturbed as little as possible.

For operation upon flat bones there is no other instrument equal to the forceps that I have described to you, whether it be by skilled or unskilled hands. In unskilled hands it is certainly safer than the chisel and mallet, for the reason that when the instrument is placed in position to bite, it shoves the dura out of the operative field, and by its use the injurious effects are prevented that may occur from the blows when the chisel and mallet are used.

When using it I prefer to take the lower handle in one hand, the upper one in the other, so that I can carry the bit up or down at will, and place firmly its stem against the bone, in this way a full bite can be taken out each time. A large trap door can be made

steps equal to a whole cell (equal to about a volt and a half).

Recently apparatus has been described in the *International Dental Journal* for using the 110 volt current choked down in quantity, without modifying the voltage, and also apparatus for using a storage battery fitted to produce a twenty volt current, and choking the current from that. Methods and apparatus giving the same currents were used by your essayist in his early work in cataphoresis.

In order to extend the range of application for the method, an apparatus, since named a volt selector, was devised. The completed instrument has been called by the manufacturers the Geo. M. Wheeler Fractional Volt Selector, and it is the most suitable apparatus obtainable for making applications of electricity to sensitive dentine. When connected to the 110 volt circuit, it allows the operator to command at will any voltage of current, from less than one up to forty, in quarter volt steps, or by turning a switch, the voltage at command may run up to eighty in half volt steps. An instrument of the same type may be connected to sets of batteries, and any voltage from one extreme to the other of the set is at the command of the operator. There is a marked advantage in having this capacity to graduate the current to any desired voltage, since it enables the operator to begin with a current that any and all patients can bear without discomfort, and to increase the current very gradually up to such point as the individual patient may be found able to take without objection.

For a résumé of the prominent points in the history of the development of the use of cataphoresis, I would refer to a paper which was published in the February, 1896, number of the *International Dental Journal*, in which I drew largely from Bigelow's International System of Electro-therapeutics.

My first work was commenced with the belief that cataphoresis was possible in dentine. A few trials on my own teeth with the 110 volt current, choked with the ordinary rheostat, demonstrated the correctness of this belief. This first apparatus was tried in practice, and found usable for a few patients. It was modified so as to furnish a sixty volt current, which extended its applicability, but it was still not useful for general practice, and the voltage was further modified till it was demonstrated that the apparatus which would eliminate the difficulties which were met with, namely, pain and irritation, was one with the qualities mentioned above. An apparatus was accordingly made by which the voltage in the working circuit could be modified at will. This somewhat crude apparatus proved to be a practical office instrument. It was used for some months in my practice and proved equal to all cases for which it was needed, although there were some cases where the steps by which the current was added proved to be too large for the comfort of the patient.

Having brought the principle to a workable condition, it was handed over to a manufacturing company for development, and a successful instrument with many conveniences and improvements is the result.

Nearly all my work with cataphoresis has been in obtunding sensitive dentine. For this purpose I have generally used a strong cocain solution, 20 to 30 per cent., applied on cotton in the cavity of decay; the positive electrode, platinum tipped, being placed on the cotton, and the negative (ordinary wet sponge)

electrode applied anywhere on the surface of the body.

It is not absolutely essential that the rubber dam be used, but it is very desirable; also that any metallic fillings which are so placed that they may make good electric connection with the current, be insulated by covering them with some non-conducting material like varnish, wax or gutta percha. If this is not done, considerable pain from the current may be expected.

I quote some experiments from the article mentioned above:

No. 1. A 15 per cent. aqueous solution of cocain on cotton wound on positive electrode, applied to back of right hand, at a point where the sensibility to the prick of a fine instrument had been tested; the negative electrode wet with a salt solution, applied to the palm of same hand. One milli of a seventeen volt current passed for ten minutes. Result: Absence of superficial sensation, and I was able to pass an instrument through the skin without pain over the area covered by the positive electrode.

No. 2. A 15 per cent. aqueous solution of cocain applied on cotton to corresponding point and under the same conditions on back of left hand; no current used. At the end of ten minutes there had been no appreciable modification of the sensitiveness.

No. 3. A 10 per cent. salt solution, on cotton, on positive electrode, applied to another tested point on back of left hand, and negative sponge electrode wet with same solution applied to palm of hand. Current applied for ten minutes, reaching a maximum of thirteen volts and about four millis. There was so much pain and burning as to make this a disagreeable experiment to try. Result: Redness and irritation, but no effect upon the sensitiveness.

No. 4. A 15 per cent. aqueous solution of cocain on cotton was placed in a moderately sensitive cavity of decay in a tooth for fifteen minutes. No modification in sensitiveness took place.

No. 5. Same case; same day. A 15 per cent. aqueous solution of cocain on cotton, placed in another moderately sensitive cavity for ten minutes, with no resulting modification of sensitiveness.

No. 6. Rubber dam applied, and 25 per cent. aqueous solution of cocain applied on cotton to a very sensitive bicuspid cavity of medium size for twenty minutes, without the slightest effect upon the sensitiveness.

No. 7. Same cavity as No. 6. Rubber dam in place. A 25 per cent. aqueous solution of cocain on cotton in cavity; positive platinum electrode applied to cotton, and negative sponge electrode to the cheek. Electric current passed for thirteen minutes, beginning with a voltage of three, and attaining a maximum quantity of about two-thirds of a milli. Result: Absolute freedom from all sensation to the vigorous use of an excavator for removal of decay, and to the use of bur for forming ample retaining grooves in cervical and side walls.

No. 8. Sensitive buccal cavity in inferior third molar. Rubber dam in place. Positive electrode applied in cavity to cotton saturated with 20 per cent. sodium chlorid solution. Current applied for twelve minutes, reaching a maximum of eight volts and one milli. Much diffused pain resulting while current was applied, but no anesthetizing effect.

No. 10. Same cavity. A 15 per cent. aqueous solution of cocain instead of the salt solution. Current applied during eleven minutes, reaching a maximum of ten volts and about two-thirds of a milli. No diffuse pain, a very little in tooth. Result: A marked lessening of sensitiveness of whole cavity, and entire removal of it in a large part of cavity.

As a rule, this class of cavity requires longer applications than approximal cavities, and it is sometimes difficult to affect that part of the cavity which is out of the path of the current.

No. 11. Coronal cavity in left superior second molar. Quite sensitive. Placed in a .5 per cent. solution of sodium chlorid on cotton in the cavity and applied current for ten minutes, beginning with a voltage of less than one, increasing it to eight and a half at the end of the ten minutes. The milliamperemeter then recorded about a half milli. I was unable to work the current up faster because of the pain it caused. The sudden turning off of the current at the end of the ten minutes gave a very decided sensation (kick or kink, patients often call it) in the tooth. The sensitiveness of the dentine to the excavator had not been in the least diminished.

No. 12. Same cavity as No. 11. A 25 per cent. aqueous solution of cocain applied in this way, beginning with same voltage. After the first two or three minutes it was possible to increase the voltage much more rapidly, without undue

pain, than was possible with the salt solution, this fact being seemingly due to the beginning anesthetic effect of the cocain. At the end of eight minutes seventeen volts (or twice the quantity given in No. 11) was being administered, and with less pain. At the end of ten minutes there was no pain. The milliamperemeter recorded about three-fourths of a milli. When the current was suddenly cut off, there was much less of the "kink" noted by the patient—another indication of deep cocain effect. Upon vigorous use of the excavator, the dentine was found *absolutely* free from all sensation. It should be said that this patient and the one for experiments Nos. 6 and 7 had never had the process used before, and that no explanations were made beyond the statement that I was going to try to relieve the sensitiveness, and that they should not be hurt.

"The results of these experiments may be summed up as follows: Ten per cent. aqueous solution of cocain applied on the positive electrode with a weak electric current for a few minutes will anesthetize the skin. A similar cocain solution applied for the same time without the current has no anesthetic effect. The same electric current without the cocain has no anesthetic effect. Cocain solutions of from 15 to 25 per cent. applied in sensitive cavities, for ten or twenty minutes, do not modify their sensitiveness. The electric current alone applied to sensitive dentine, sodium chlorid solutions of varying strengths being added to insure good electric connections, does not perceptibly modify the sensitiveness.

"Cocain solutions and the electric current applied to sensitive dentine, together, *do* completely anesthetize it; consequently the cocain is the active agent.

"It seems probable that the exhibition of other drugs may produce the same results, and I have other experiments preparing to demonstrate the facts. I hesitate less about reporting results with cocain without lengthy trial than with most other drugs, since, theoretically, it can do no possible harm to the tooth.

"The effect of the cocain in these applications does not seem to reach deeply into the dentine in most cases. By prolonging the application, however, the pulp may, in favorable cases, be anesthetized, even through a layer of dentine.

"It is quite often the case that a ten- or twelve minute application will anesthetize the dentine deeply enough to allow the greater portion or all of the cutting to be done painlessly, but for deep grooves it may be necessary to repeat the application. In cases where there is much sensitiveness, and consequently much time will be required to prepare the cavity, I find the time required for applying the cocain is fully made up by the increased speed possible after the sensitiveness is under control."

I would also quote from the same some directions for making the application:

"I always apply the rubber dam, as it is difficult, and often impossible to prevent leakage of current through other tissues if this is not done. Any metal fillings which will be in contact with the wet cotton in the cavity or with the electrode must be covered. The current from a metallic surface into dentine is irritating and painful. I find Gilbert's temporary stopping a very useful material for this purpose. Wax or varnish will also do. In cases where I am working on an approximal cavity in one tooth, and a filling in the next tooth is too close to allow of its satisfactory insulation, I apply the rubber at first over the tooth to be worked upon, thus insulating it completely; or, if the rubber is already in place a second rubber may be applied over the tooth to be worked upon. The positive electrode should be of platinum as most other metals are affected by the current, and are liable to stain the tooth. These conditions being provided, be sure that your current is turned on. I always test this by touching the metal parts of the electrodes together, and watch the milliamperemeter to observe the result.

"This selector is so arranged that when the needle is at zero, and contact of electrodes is made as described, about one milli will be recorded. Getting this result assures the operator that all connections have been made, and that the apparatus is ready. If, however, a larger quantity of current is indicated by the milliamperemeter, it shows that the rheostat contact is not at the right place. This same proceeding would also serve to detect any break-down in the rheostat if it had occurred. Twenty seconds serve to assure the operator on these points, if his apparatus is conveniently placed. I then wet the negative sponge electrode with water or dilute salt solution. I place in the cavity a pellet of absorbent cotton saturated with a 20 to 30 per cent. cocain solution. I prefer not to have this cotton extend outside of the cavity, and to keep the solution confined to the cavity as much as possible. This concentrates the current in the part I desire to affect.

"The negative wet sponge electrode I usually allow the patient to hold. It is preferably to be applied about the face or neck, as near the tooth as is convenient. Having placed this and allowed the patient to take it, I apply the positive electrode to the cotton in the cavity, and begin slowly to increase the current by turning the large fiber knob of the rheostat head in the direction indicated by the needle which records voltage. The first consciousness of the current sometimes comes to the patient as the typical little "kick" or "kink" of the galvanic current, but it is a very small one with this selector. More often the patient is only conscious of an indefinite, gradually increasing pressure, and if the current is pushed too rapidly this may increase to pain. It is therefore necessary to watch the patient carefully, and to pause in the turning-on process as soon as the change in the eye of the patient indicates that he is beginning to feel the current to an uncomfortable degree. After the first experience, if cautiously managed, a patient will usually give the operator all necessary indications for his guidance, and allow him to keep the current up to a point just short of pain. After one experience with it, the sensation is readily borne, even by sensitive children of twelve or fourteen.

"As the operator pauses at the point where the patient indicates that the current is strong enough, or even turns back a little if there is too much current, it is well to assure the patient that any disagreeable sensation will subside promptly. It usually does this in from one-half minute to two minutes, and then the voltage may be increased slowly and gradually, with pauses long enough for any disagreeable sensation to disappear.

"Subjects differ very much in the amount of current they will bear without discomfort. It is usually found, however, that by very gradual increase, and by taking more time to reach the maximum in these sensitive cases, a sufficient amount may be applied, to any case, to attain the result of anesthetizing the dentine.

"It is my habit, as soon as I have opened into a sensitive cavity, to make an application lasting from eight to twelve minutes. If I have reason to expect difficulty with the case, I make the application longer. If the first application is not sufficient for all I wish to do, I repeat it later.

"I have some ten or twelve cases on record where twenty to thirty minutes have been needed to produce sufficient effect. These were all cases where both patient and operator felt compensated for the time spent. Most of them were either extremely sensitive teeth or subjects who could bear but little current, and several of these cases would have been all but impossible without the aid of this method. On the other hand, I had numerous cases where ten or even eight minutes had been ample time for successful results. Having reached a voltage likely to be sufficient, I allow it to stand at that point till the end of the application. Fifteen to twenty volts will usually be attained in seven or eight minutes. In many cases, with small cavities and little sensitiveness to the current, twenty-five or thirty volts may be marked in the same time. The higher voltage works more rapidly. At the end of the application, I usually break connection at the negative electrode, as there is less often shock in so doing. If the subject is very sensitive to the current, I turn the voltage down low before breaking connection. Having concluded the application, I turn off the current in the selector by means of the switch. This lever may also be used for concluding the application of current if you find no objectionable shock resulting. Then I test the cavity, and finding it all right proceed as usual, bearing in mind that the effect may not have gone as deeply as I wish to go with my instruments, so it is still necessary to watch for signs of returning sensitiveness."

No ill effects are to be expected from the application. In no case have I seen any symptom which would contraindicate the use of cocain and the current for sensitive dentine.

It has been proposed to utilize the anesthetic properties of guaiacol in this way, and combinations of guaiacol and cocain have been used with success. It is claimed that the use of guaiacol will reduce the time needed for the application to prove effective. Unfortunately, it has an unpleasant odor, and escharotic properties which lead to its being used with caution. It is to be hoped that the firm now at work upon this combination of drugs will succeed in eliminating its escharotic properties and in overcoming its odor. If this can be done, it will aid us, since the

time required for producing anesthesia of dentine is the chief objection to the practical use of the method, and this drug may probably reduce the time. It is quite possible that the drug is not sufficiently escharotic to work harm in the dentine, but it would seem desirable to use it with caution till more is known of its effects. With guaiacol and cocain it would be less necessary to use the rubber dam, and it would also be easier, with the escharotic properties eliminated, to produce effects on the gum if it were desired to use the method there. The combination has been used successfully for anesthesia in extraction, implantation, and skin surgery. On mucous membranes the subsequent sloughing is objectionable. On the skin it is said not to produce ill effects.

For bleaching teeth a 25 per cent. aqueous solution of H_2O_2 will prove successful if used as directed for cocain. The cotton in the cavity needs to be kept wet with fresh solution and stronger currents may be used than in living teeth.

When a commercial system is used as the source of power, it should be one that furnishes a steady current. A system subject to large intermittent demands upon it is not satisfactory in this respect. It needs also a well-appointed and well managed central station in order to be successfully used for this purpose; otherwise the irregularities due to imperfect machinery will be disastrous. Any primary or storage battery of sufficient capacity will do well. The manufacturers of the selector have made one to be used with a set of dry batteries that impresses me very favorably. It is certainly a most convenient form of battery, free from the objection of requiring constant care, and much less liable to injury than storage batteries. It is essential that the selector be fitted to go with the particular battery provided.

The most formidable objection to this process for the treatment of sensitive dentine is the time required. On this account, its best field is in the cases of extreme sensitiveness that require so much time and care for their preparation. I anticipate that the result of the general use the process is fast attaining will be the development of improvements which will reduce the time required.

EXPERIMENTS ON THE RUSTING OF INSTRUMENTS IN STERILIZATION BY BOILING.

BY EDMUND ANDREWS, M.D.
CHICAGO.

Every one knows that if steel instruments are sterilized by boiling in pure water, they become covered with spots of rust. It is usual to guard against this by adding to the water 1 per cent. of sodium carbonate. Some surgeons complain that this process gives no uniformity of result, their instruments sometimes coming out bright, and sometimes badly spotted.

As the rusting is a simple chemie process, the results ought always to be the same if the conditions are uniform. The following experiments were made to ascertain the effect of boiling under different conditions. A quantity of thin polished steel plates, each one inch wide and two inches long, were made for me by a cutler. These were washed well in ether, and then soaked in a bath of ether for some hours to remove all oily matter from the surface.

Also two plates of aluminium, each two inches square, were subjected to the tests, and two bright

scalpels, one with an aluminium handle and one with a German silver handle. These scalpels were selected to see if the presence of different metals in the same bath caused any galvanic action at the expense of the steel blades. For the same reason two plates of steel were laid on a plate of zinc and boiled.

Experiment 1. Two plates of steel were boiled twenty minutes in distilled water. They began to rust in two minutes, and in twenty minutes large elongated spots of black rust covered 30 per cent. of the surface.

Experiment 2. Several steel instruments were exposed to a steam bath over boiling water for twenty minutes. They came out much spotted with black rust.

Experiment 3. Two steel plates were boiled in Lake Michigan water, which is purer than ordinary Western well water, but contains small traces of chlorids and sulphates, being slightly "hard." The plates began to rust in two and one-half minutes. In twenty minutes about one-quarter of the surface was covered with small black spots.

Experiment 4. Two steel plates were boiled in water from a country well dug in the boulder drift. It was very "hard" water, owing to the presence of soluble chlorids and sulphates. In twenty minutes they were taken out and only one-twentieth of the surface was rusted, showing that hard water is better than soft for this purpose.

Experiment 5. Two plates were boiled twenty minutes in Lake Michigan water with 1 per cent. of sodium carbonate added. No rust at all.

Experiment 6. Two plates boiled twenty minutes in Lake Michigan water containing 1 per cent. of sodium bicarbonate. Not a particle of rust.

Experiment 7. Two plates boiled twenty minutes in very hard country well water containing 2 per cent. of green soap. Not a particle of rust.

Experiment 8. Two plates boiled twenty minutes in Lake Michigan water with 2 per cent. of green soap. No rust.

Experiment 9. Two plates boiled twenty minutes in Lake Michigan water with 2 per cent. of ordinary toilet soap. No rust.

Experiment 10. Two plates boiled twenty minutes in Lake Michigan water containing 2 per cent. of boric acid. Began to rust in two and one-half minutes. In twenty minutes there were many minute specks of rust.

Experiment 11. Two plates boiled twenty minutes in Lake Michigan water containing 1 per cent. of sodium chlorid. Twelve per cent. of the surface was rusted.

Experiment 12. Two plates boiled twenty minutes in pure Lake Michigan water, lying on a plate of zinc to test the galvanic effect. Twelve per cent. of surface rusted in large spots.

Experiment 13. Two scalpels, one with German silver handle and one with nickel plated handle, were boiled twenty minutes in Lake Michigan water with 2 per cent. of green soap. No rust.

Experiment 14. Plate of aluminium boiled twenty minutes in pure Lake Michigan water. A thin, delicate tarnish appeared on the surface.

Experiment 15. Plate of aluminium boiled twenty minutes in Lake Michigan water containing 1 per cent. of sodium carbonate. Copiously covered with blackish rust.

Experiment 16. Several aluminium articles soaked

in solution of bichlorid of mercury, strength 1 to 2,000. Surfaces marred and injured by the bichlorid.

Experiment 17. Two steel plates were placed in a small covered dish of melted vaselin and set for twenty minutes in a bath of boiling water. Not a particle of rust resulted.

These experiments yield the following conclusions:

1. Hot distilled water and steam rapidly rust steel instruments.

2. One per cent. solutions of soap and sodium carbonate almost perfectly protect steel instruments, provided they are completely immersed in the fluid.

3. If instruments lie in a shallow boiling pan and are not fully covered with the protective fluid, and a cover or towel is laid over them, the portions projecting above the fluid will only get a steam bath and will rapidly rust. This is the accident which perplexes some surgeons, and leads them to think there is no uniformity about the action of protective fluids in preventing rust. The fluids themselves will not cause oxidation, but the steam rising from them will easily corrode steel.

There is one theoretical objection to the use of all these boiling fluids. Educated mechanical engineers say that the heat of boiling water somewhat impairs the temper of cutlery steel. This is no doubt true, yet they are not so badly softened as to prevent us from using them with good effect, and as the boiling seems to be a necessity, we have to put up with the slight injury done to their cutting efficiency.

2520 Prairie Avenue.

SOCIETY PROCEEDINGS.

Physicians' Club of Chicago.

A regular meeting of the Club was held Monday evening, Nov. 30, 1896, at the Victoria Hotel.

Dr. ARTHUR R. REYNOLDS in the Chair.

The subject for discussion was

THE WATER SUPPLY OF CHICAGO.

The Chairman in calling the meeting to order, said: Our subject tonight is "The Water Supply of Chicago." There is no subject in which the members of the medical profession of Chicago are so deeply interested, and there is perhaps no subject in which the taxpayers are so deeply interested, for it is true, or will be true at the close of this century, that the taxpayers of this community will have paid directly or indirectly to maintain the purity of its water supply \$100,000,000 since the foundation of the city.

It has been said that each human being is worth to the State \$5,000. Impure water has been credited with destroying a great many lives, and it has often occurred to me that in this public-health matter, looking toward the preservation and building up of the race, that in order to get the people to understand the importance of the subject, it is necessary for us to reduce the matter to dollars and cents. I can not tell you at this time how many lives have been sacrificed because of bad water and so can not compute the total cost. Our own water supply is sometimes good and sometimes bad. It is a matter of very great interest to Chicago to have the outside world think well of us, because this city is a commercial center and is well known all over the world. Indeed, when we were inviting the world to partake of our hospitality and to attend the Fair, it was one of the bugbears even beyond the Atlantic Ocean, that our water supply was bad and on this account a great many people that would otherwise have come to the Fair remained away. Medical journals across the Atlantic took the matter up and discussed our water supply with a great deal of interest, and pointed out the evils of our water system, while we ourselves had said nothing and have suffered in consequence. If our water is impure we should admit it at once, in order that proper measures may be taken to purify it. To start the ball rolling it gives me very great pleasure to introduce Prof. Carl S. Hallberg of the Chicago College of Pharmacy.

Prof. C. S. HALLBERG spoke to the text: "Water, air and

cleanliness are the chief articles in my pharmacopeia." (Napoléon.) He said: As long as we have at the head of our municipal government men who know nothing about the importance of those matters for which they are engaged, taking care of the public health, we never can expect a better condition than we have at the present time. As for the subject of water; the newspapers have ridiculed the proposition of the Health Department to boil the water regularly every twenty-four or forty-eight hours, and one journal has even suggested that we get an automatic health department that would simply announce to the public every twenty-four hours, "boil the water," and that would be all that is necessary. However much we may ridicule the condition of the water in Chicago, anyone that has any knowledge of the service water in the large cities in this country, particularly in the East and South-east, must agree with the statement that the water of Chicago, however bad, is better than it is in any other large city east of us. It is only in the cities west of us that the water supply is perhaps purer. To consider the best methods of purifying water is a large subject, and I shall only briefly touch upon it, for the reason that there are other gentlemen here who have made water supply a specialty. There are three methods of purifying water:

1. *Filtration.*—Filtration resolves itself into any process which will remove the finely suspended insoluble particles. We may carry that process to such an extent as to also remove whatever microorganisms or organic matter the water may contain. As to whether or not filtration will purify ordinary water, such as our Lake Michigan water, is doubtful. In the first place we must remember that the filtration from the service pipes, that is for domestic or culinary purposes in small quantities is one thing, while the attempt to filter all the water which goes through the service pipes is another thing. It is quite possible to purify water if we attempt to do so in small quantities for domestic purposes, provided we take extreme care, giving it constant and unremitting attention. Filtration, as you doubtless know, is dependent upon the attraction that solid matter has for other solid matter. When we pass a liquid charged with more or less solid matter through a porous solid, such as animal charcoal, which is a mass of minute pores, by capillary attraction the solids, and particularly in this case, organic matter, are attracted and retained in the pores, while the clear water is allowed to pass through. For small operations we might choose various media through which to pass water which will not only rid it of the grosser impurities that it may contain, but will also carry off the microorganisms themselves. But we must remember that just as soon as this particular medium becomes charged to saturation with the insoluble matter, or with microorganisms, from that time on the process can be no more effective, and that is an objection to all forms of filtration of whatever kind; in filters made from sand, charcoal or silicious matter in any form, or burnt loolin, made into cylinders and the water passed through by pressure as in the Chamberlin-Pasteur period, and then their usefulness is at an end. Then, in many instances, the filters may require to be regenerated, burnt out, when they will again be free from organic matter and effective and be used again. In a larger way it is doubtful whether or not, for a city like Chicago, water can be purified by filtration. I might refer here to the conclusions based upon filtering apparatus used in three or four of the largest German rivers, because we have no details from any others, such as the Elbe, Oder, Neckar and Spree. The various cities situated on these rivers, such as Breslau, Berlin, Altona and Stüttgart, have filtering apparatus attached for purifying the water. But it is found by referring to the standard work of Koenig, that there are more impurities in the water served to those cities on the German rivers that have filtering apparatus attached than any other cities which do not have any filtering apparatus. This may not be conclusive testimony, but The Waterworks Technical Society of Germany a couple of years ago, after investigating the matter, reported that it must be remembered that the microorganisms in a filter settle to the bottom of a filter. The manner in which these filters are constructed is to have a depth of from five to six feet of various fineness of sand, gravel and stones. For example, beginning with a layer of fine sand, then coarser sand, then gravel and coarser gravel on top of that and finally pebbles. A bed like that, 300 meters square, representing 90,000 square meters area, would filter about one hundred million gallons of water every twenty-four hours. The bacteria are found to accumulate and to grow under the bed of the filter. In the beginning the water runs through in an impure condition, but after a while a sediment forms and a rather thick impervious coating over the porous bed, which retards mechanical impurities and lessens largely the number of bacteria. However, the question has yet to be solved whether or not a

filtering apparatus, constructed in this manner, is sufficient to purify the water on so enormous a scale as would be required for a large city like Chicago.

It is possible by the use of upward filtration that the growth of bacteria might be prevented. This is a phase of the subject which has as yet not been fully investigated.

2. *Distillation.*—Another method of purifying water consists in distillation. In distillation, if proper care be taken to reject portions which are loaded with ammonia and the various gases which the water contains, and in not carrying distillation beyond a certain limit, we can obtain under proper condensation absolutely pure and sterile water. Distilled water does not keep unless exposed to air, when it may be protected against infection from bacteria by stopping the container with absorbent cotton. Distilled water is not suitable for potable purposes, not only from the lack of the gases but of the salts which it is necessary to have in the water in order to make it palatable, an aid for digestion, and to allay thirst. If distilled water is aerated and the gases are supplied we can secure palatability to a very great extent, but such will not keep as well as water which has not been sterilized or distilled, which has certain salts in it, particularly nitrates which prevent the accumulation and growth of bacteria. For that reason we believe the only practical method is that of precipitation.

3. *Precipitation.*—The method of precipitation for the purification of water seems to be upon the whole, wherever the quantity required is not too great, the most satisfactory. The ordinary impurities in water are alkalin salts, calcium, sodium, magnesium, and those derivable from the organic matter directly or indirectly, such as ammonia and its compounds. There are several substances which upon the addition to water are split up and form new compounds. Of these are the sulphate of aluminum, and the double sulphate of aluminum and potassium. When alum in solution is added to water, according to the proportion of impurity in the water to be gotten rid of, the aluminum sulphate is split up and forms aluminum hydrate. The sulphuric acid radical which is eliminated combines with the calcium and forms the sulphate of calcium or gypsum. Both of these substances are as insoluble as any substances we have. They are heavy. They go down. The aluminum hydrate spreads as a flocculent precipitate over the surface of the water and as it goes down it carries both the finely suspended and organic impurities with it. After the water has settled for twenty-four hours we may obtain the purified water by decantation or by syphoning it. Filtration perhaps would be most reliable in many instances. It is a fairly practicable, inexpensive and convenient process. The alum must be the potassia-alum; ammonia-alum will not answer the purpose. The quantity of alum required is from 5 to 10 grains to one gallon of water: ordinarily Chicago water requires 8 grains to the gallon. By this process you purify the water and leave it otherwise as it is. You do not change the water from its natural condition, except that you eliminate those impurities which are undesirable, and I believe for operations in small cities it is the most feasible, practical method.

There are a great many substances used for precipitants, and there are regenerative processes. Calcium permanganate can be used as a precipitant, and with it gases can be removed. We have also the dried basic phosphate of sodium for this purpose, the precipitate forming the phosphate of calcium, which can be collected and used for fertilizing purposes. I believe there is a scheme on foot abroad where the phosphate of sodium is used and the residue sold for the purpose of fertilization.

There is a system of filtration through pumice stone which has been saturated with ferric hydrate. The water is allowed to pass through and the ferric hydrate combines with the impurities and renders them insoluble. Neither the medicinal solution nor the tincture will answer. The solution of ferric chlorid, on account of containing free acid, added to water forms ferric hydrate which causes a flocculent precipitate to spread over the water and carries the impurities with it.

We are inclined to think that precipitation in conjunction with filtration is the most feasible method for purifying water that is used for domestic purposes and in public institutions. We admit, however, that we have never given these waters any biologic examination because we do not think it is necessary; I believe that when we can determine by chemie methods that water is absolutely pure, it is unnecessary to subject it to a biologic test. A biologic test does not always indicate the purity of water. Water should be examined chemically first, and then as a corroborative test it should be examined biologically.

In conclusion, Mr. Chairman, I wish to say that not until some method is devised whereby that putrid mass of filth which floats into the river from the abattoirs is stopped or modified, will Chicago ever have good water.

F. W. REILLY, M.D., Assistant Commissioner of Health, read a paper on

RELATION OF THE MEDICAL PROFESSION TO THE WATER SUPPLY OF CHICAGO.

The history of the efforts to secure a pure water supply for Chicago is inseparably connected with that of the medical profession of the city. Forty-seven years ago Dr. N. S. Davis arrived in Chicago in the height of the cholera epidemic of 1849. Before the epidemic was over he had traced the relationship between the greater incidence of the disease in certain localities and the use of water from surface wells, and at once began an agitation for pure water from the lake. During the summer of 1850 he delivered a course of lectures on the sanitary conditions of the city and pointed out the means for their improvement. The plans he then suggested for a pure water supply and for its necessary complement—the proper disposal of the sewage of the city—are the basis of all that was done toward these ends during the subsequent forty years. One immediate result was the passage of an act, Feb. 15, 1851, incorporating the Chicago Hydraulic Company, the foundation of our present system of water supply.

Only the merest mention may be made of those who followed the initiative of Dr. Davis and persistently pointed out the evil effects of impure water and urged measures for preventing the pollution of our source of supply. The roll would include the names of almost every man prominent in the profession in the early days, Brainard, Egan, McViekar, Boone, Paoli, Ross, Lyman, Holmes, Byford, Hollister and their colleagues, among whom may be especially noted Dr. James Van Zandt Blaney, who, while the writer was an assistant in his laboratory in "Old Rush" in 1855-56, made the first chemie analysis of Lake Michigan water; Dr. Hosmer Allen Johnson, subsequently a sanitarian of national reputation, and Dr. Edmund Andrews, whose report on the erysipelas epidemic of 1863 was a scathing indictment of the municipal indifference which had allowed the river to become an open cesspool, with here and there an independent pollution, which he describes with grim humor, as answering "every purpose for the increase of medical practice in general and of erysipelas in particular."

To no other member of the medical profession, however, if to any other citizen, does Chicago owe so much in this connection as to the late Dr. John H. Rauch. Indefatigable as were his labors in the cause of medical education and far-reaching as were their results during his lifetime, his efforts toward the solution of the sanitary problems of Chicago were of even greater and more direct importance to the prosperity and the health of this community. The work that he did lives after him in the parks and boulevards of the city: a direct result of his monograph on "Public Parks; Their Effects upon the Moral, Physical and Sanitary Conditions of the Inhabitants of Large Cities, with Especial Reference to Chicago." It lives after him in the suburban cemeteries which now receive the city's dead, without offense or menace to the living; the result of a paper read before the Chicago Historical Society in 1858, entitled "Intramural Interments in Populous Cities and Their Influence upon Health and Epidemics." His work lives after him in the present drainage and sewerage system, which he so persistently urged, and concerning which, in his report, as sanitary superintendent, to the Chicago Board of Health in 1869, when the average death rate for twenty-five years had been over thirty in the thousand—he wrote as follows:

From the results of drainage and other sanitary measures carried on in this city, it may be inferred that the judicious expenditure of money for sanitary purposes is a sound maxim of municipal economy, and from past experience I am satisfied that the mean annual death rate can be reduced to 17 per 1,000 by continuing in force the present sanitary and drainage regulations, thereby making Chicago one of the healthiest cities in the world.

In his presidential address before the American Public Health Association he cited this prediction, together with other passages from his reports and papers, with the following comment:

I introduce these quotations simply to show that sanitary science has made sufficient progress at the present time to admit of the supreme test which science falsely so-called can never endure—that of verification by subsequent experience.

Dr. Rauch fortunately lived to see the verification of his prophecy "by subsequent experience." The year before his death, in March, 1894, the mortality rate of the city was only 16.9 per thousand of its population, a fraction less than that which he had asserted, twenty-four years before, was attainable if the plans originally formulated by Dr. Davis in 1850 should continue to be carried out.

And Rauch, too, was a prophet not without honor—save among his own people!

Basis of the sanitary waterway and drainage channel.—He lived, however, to see also the fruition of his efforts for the protection of the water supply of the city in the advanced

stage of work on the great sanitary waterway and drainage channel. In his annual report for 1869, he foreshadowed, in a general way, the plan now in progress for the ultimate disposal of Chicago sewage and consequent protection of the water supply, and from that time until work on the sanitary waterway was actually begun he continued to accumulate facts and present arguments, which were finally successful.

Probably no other one demonstration had more weight in determining the adoption of the present plan than that developed in the study and collation of the results of Prof. J. H. Long's analyses of the sewage contents of the Illinois and Michigan Canal and of the waters of the Illinois River as far south as Peoria, made in the summer of 1886. These analyses were part of a plan projected by Dr. Rauch, and carried out under the direct supervision of the writer, for an investigation of the water supplies of the State, with especial reference to the progressive decomposition of sewage in running streams, first between Chicago and St. Louis and subsequently in other Illinois water-courses.

The collation of Professor Long's analyses between Bridgeport and Peoria enabled me to show that more than one half the sewage pollution of the canal disappeared before reaching Lockport; nearly one-third of the remainder was lost in the next four miles, or 33 miles from Bridgeport; while at Channahon, 48 miles from the city, no trace of sewage was detected. These results were so unlooked for that Dr. Rauch hesitated to accept them. Water analysts had asserted that the self-purification of a polluted stream was impossible—as one phrased it, “no river in the world is long enough to purify itself after it has once been contaminated with organic matter.” In his article on “Water,” in the Reference Hand Book of the Medical Sciences (Vol. vii, p. 714), that distinguished authority, Surgeon Charles Smart, U. S. A.—with whom the writer was associated, together with Deputy Surgeon-General John S. Billings, U. S. A. and Col. George E. Waring, Jr., in the sanitary regeneration of the city of Memphis after the terrible yellow-fever summer of 1878—makes the following comment touching this matter:

“These statements would be of immense importance were they sustained by collateral evidence; but, unfortunately, those analysts who have had much practical experience in following the track of sewage in its passage down stream, will recognize in these results: 1. The analysis of a fresh and turbid sewage at the starting point, the solid particles of organic matter giving a high rate of impurity; 2, the analysis of a partly sedimented sewage as those particles disappear from the water; and, 3, the dilution effected by the Desplaines river.”

To this I felt constrained to make the following reply in the “Preliminary Report to the Illinois State Board of Health on the Water Supplies of Illinois and the Pollution of its Streams,” April, 1889:

“For the benefit of those ‘analysts who have had much practical experience in following the track of sewage in its passage down stream’ it should be stated that: 1. The analysis itself, showing 12.6 parts of free ammonia per million, is that of anything but a fresh and turbid sewage, at the starting point; on the contrary, it is a sewage in an advanced stage of decomposition. 2. ‘Sedimentation’ in a current with the velocity of that in the Illinois and Michigan Canal is a physical impossibility, and this entirely apart from the influence of the passage of boats. 3. It is expressly stated in the text quoted by Dr. Smart that there was ‘no dilution of the contents of the canal,’ which contents were the sole subject of the various analyses at Bridgeport, Lockport and Joliet; as a matter of fact, the Desplaines river above the point of junction with the canal had ceased to exist as a watercourse during the period of observation—which was one of unprecedented drought—and the contents of the canal were undiluted from any source after leaving Bridgeport.”

The demonstration and its deductions were of such obvious—such “immense importance,” to borrow Dr. Smart's phrase, that the analyses were repeated in the winter of 1886-7, again in the summer of 1888 and still again in the spring of 1889, with substantially similar results in every case.

In 1892 Professor Pettenkofer caused a similar investigation to be made of the River Isar, which receives the sewage of Munich. Within a mile below the point at which the Isar receives the Munich sewage the *beggiotoa*, or sewage fungus, was found growing in abundance; it was still found at Ismaning, between seven and eight miles below; but the last traces were found at Garching, ten miles below Munich. After a ten or twelve miles' flow the Isar so far purifies itself from sewage that its waters no longer support the *beggiotoa*. The chemist analyses gave similar results, while Pettenkofer himself reports that he found 198,000 bacteria to the cubic centimeter at the

mouth of the sewer and only 3,600 at Freising, twenty miles below. He distinctly asserts that sewage is decomposed in running streams and is rendered harmless in a few miles' flow.

It may be added that bacteriologic investigation fully supports Professor Long's chemist analyses and the combined chemist and bacteriologic examinations of Professor Pettenkofer. Dr. Adolph Gehrmann, Director of the City Laboratory, who has probably done as much practical work in water bacteriology as any other man in the United States, made a special study of these waters from the south branch of the Chicago River to a point just below Peoria, during September, 1894. One of the chief objects of his study was the typho-coli group of bacilli. The difficulty thus far unsurmounted of identifying the Eberth bacillus in the water supply of any large city lends especial interest to this group. During 1892 Dr. Gehrmann isolated seven organisms resembling the *B. typhosus*, but each gave some variation from the typical, either in growth or on potato or as to gas production. As a result of this study and of the work in 1894, under the direction of your Chairman, Dr. Reynolds, then Commissioner of Health, Dr. Gehrmann found that, while the bacilli of this group will live in sewage contaminated water a variable time, the evidence is that they do not tend to multiply in such water but disappear after a longer or shorter period. He found them in the sewage-contents of the Illinois and Michigan canal and in the Illinois river at every point between Chicago and Peru. At Hennepin they had entirely disappeared and were not again detected anywhere below that place until after Peoria was reached. They were not present just above the city, but were found in abundance just below, after the river had received the Peoria drainage and sewage. At Lockport the specimens showed 930,000 bacteria, including the *B. coli communis*, in each cubic centimeter; at Henry the number had diminished to 5,500 per cubic centimeter, with none of the coli-typhoid group present.

In short, it may be accepted as an axiom that running streams tend to purify themselves; they always have done so and will continue to do so when not too highly charged with organic matter; that is, charged beyond the powers of the bio-chemic process continually operating in nature—the action of sunlight and oxygen and of the inconceivable myriads of microorganisms that live on organic matter, break it down and finally leave it inert and innocuous. This might have been argued *a priori*, but for the dogmas of the earlier water analysts who for years based all their conclusions on the results of chemist determinations to the exclusion of the bacteriologic.

A prolonged study of the composition of Chicago sewage finally led to the conclusion that a dilution of 20 to 1, in a stream with a velocity of one and a half miles an hour, would be sufficient to cause a disappearance of pollution in a flow of less than twenty miles. It is upon this theory that the dimensions of the drainage channel are based.

Unfounded fears of St. Louis and the Valley.—It has been recently announced from St. Louis that the Eberth bacillus has been found in water taken from the mouth of the Illinois River at Grafton, and that it was positively identified—probably by a tag or label—as a genuine Chicago product. Our professional brethren in that city who are moving heaven and earth, including the Federal Government, to stop our drainage canal lest the Chicago bacteria affect those which they themselves propagate, and our colleagues in the Illinois Valley, who are concerned lest the Illinois River be affected as a source of water supply, should pluck up heart of grace from the above cited demonstrations.

The contribution of the Illinois River to the drinking supply of St. Louis via the Mississippi River will, after the drainage canal is in operation, be incomparably better than it is now. As for the Illinois itself, its waters are naturally not potable and have long since been abandoned by many of the valley towns as a source of water supply. Its sources are largely in marshy areas, whence it becomes highly charged with organic matter; it is malarious, readily stagnates, and has scarce enough free oxygen to support fish life. With the contribution, through the drainage canal, of from 300,000 to 600,000 cubic feet of water per minute, chiefly from Lake Michigan, with its excess of oxygen, not only the navigable and economic, but the sanitary conditions of the river will be immensely improved. Mr. L. E. Cooley, who has already addressed the Club on this subject, recently suggested to the writer that the profitable disposal of sewage may, after all, lie in this direction. Fish will not live in the Illinois above Morris, sixty miles from Chicago, nor for twenty to thirty miles below Peoria—beyond which distance the stream purifies itself so that fish are again found. U. S. Commissioner Bartlett reports that in 1893 11,000,000 pounds of fish were taken from the other stretches of the river—a more profit-

able crop, as Mr. Cooley puts it, than any garnered from the prairies of the State, acre for acre.

Section 20 of the Sanitary District Act reads as follows:

"Any channel or outlet constructed under the provisions of this act, which shall cause the discharge of sewage into or through any river or stream of water beyond or without the limits of the district constructing the same, shall be of sufficient size and capacity to produce a continuous flow of water of at least two hundred (200) cubic feet per minute for each one thousand (1,000) of the population of the district drained thereby, and the same shall be kept and maintained of such and in such condition that the water thereof shall be neither offensive or injurious to the health of any of the people of this State, and before any sewage shall be discharged into such channel or outlet, all garbage, dead animals, and parts thereof, and other solids shall be taken therefrom."

It will be noted that the degree of dilution shall not be less than 200 cubic feet per minute for every 1,000 inhabitants, and it *must* be as much more as is found necessary to keep the channel in a condition "neither offensive nor injurious to the health of the people of the State." Furthermore all solid animal or vegetable matter shall be taken out of the sewage before it is discharged into the channel. With these conditions maintained it is believed that fish will live in its waters throughout, except at sewer mouths or in the vicinity of special pollution. It is certain that they will be restored to the full length of the Illinois River, to convert the wastes and refuse of every town upon its banks into a palatable and profitable food crop, thus furnishing an ideal solution of one of Chicago's sanitary problems—the prompt and inoffensive disposal of its sewage and the consequent protection of its water supply.

Certain squeamish individuals, with highly imaginative stomachs, have objected to this proposition as nauseating. But wherein does the conversion of waste organic matter into finny food differ from its conversion into vegetable food? These very persons are among those who strenuously and obstructively labored for the disposal of our sewage by broad irrigation and sewage farming. Yet plant life fed upon sewage is not less a scavenger of earth than is fish life of water.

Alternate plans for the disposal of Chicago sewage.—I was asked to say something tonight about the alternate plans for the protection of the water supply from sewage contamination and about underground water supplies.

Only two other plans have received serious consideration—one for the construction of a huge tunnel out into Lake Michigan off Hyde Park, into which all the sewage of the city should be gathered and discharged on the bottom of the lake. This monstrous proposition, it is hardly necessary to say, was *not* conceived by a Chicago physician. It was seriously advocated, however, by a prominent Eastern engineer who was imported to tell us what to do to be saved. Thousands of dollars were spent in attempts to show its feasibility and it was finally abandoned only when its minimum cost was seen to be at least \$37,000,000, with an annual expense of \$2,500,000 more for maintenance. Its monstrous character will be better appreciated when it is known that the relatively few lake-emptying sewers now discharge an equivalent of 1,500 tons of solid organic matter into the lake every year, and this has already covered the lake bottom with a bed of filth to an undetermined distance from the shore—analyses made last month, October, show traces of its pollution twelve miles east of the Chicago Avenue pumping station.

The other project was for land disposal of the sewage by filtration and irrigation. This was also abandoned after prolonged study and expensive investigation. Its minimum cost was estimated at \$58,000,000, with fixed charges of \$3,000,000 per annum, and it would further have required the consent of the State of Indiana, since the nearest suitable body of land extends into that State. The Commission, appointed in 1886, spent a year's time and between \$70,000 and \$80,000, chiefly in efforts to find arguments for the recommendation of one or the other of these projects, but was finally and reluctantly compelled to take up the plan already well digested and generally approved by Chicago physicians.

Such adverse criticism of this plan as is still met with is generally found, on examination, to be due to misconception of its character and purpose. Its essential purpose is to keep Chicago's sewage from polluting Chicago's twenty-odd miles of lake frontage, and the lake itself, from which its water supply is drawn. This is a sanitary necessity, even though every drop of Chicago's drinking water should be filtered or otherwise purified as it will have to be unless relief is speedily afforded through this channel and its essential complement, the intercepting sewers. In character, it is a new tributary to the Illinois River, with a less degree of organic impurity than

any other of its tributaries, and destined to materially improve the sanitary conditions of the entire Illinois Valley—the "great malaria preserve" of the State, as it has been called.

Chicago's underground water supplies.—There is not so much to be said tonight concerning the underground water supplies as there seemed to be when the subject was first talked over with your Chairman, who was, as he expressed it, "fascinated with the idea."

In the winter of 1885-86 I thought I had made a very valuable discovery. Mr. Cooley, Mr. Ossian Githrie and myself, as a sub-committee of the Main Drainage and Water Supply Committee of the Citizens' Association, appointed to investigate and report upon measures of relief for conditions which were even worse than the present, had submitted in September, 1885, our joint report embodying the three essential features of the project now being prosecuted. We were, however, still independently pursuing our investigations in search of pure water.

Late in the fall of the year 1885, my attention was attracted to the wells sunk into the fissured Niagara limestone which underlies the city, covered by a blanket of impermeable blue clay, and the study resulted in the publication of a series of articles, the first of which appeared in the *Morning News* of Jan. 27, 1886.

A recently published communication from Gen. Sooy Smith, one of the newly appointed Water Commission, in which he now advocates the same views, led me to look into the matter again, and I have materially modified the enthusiasm with which I once urged the substitution of vertical tunnels, a few hundred feet deep into the unpollutable underground supplies, for the horizontal tunnels of two to four miles long out into the lake.

Briefly stated, there are three water-bearing strata under Chicago: first, the fissured Niagara limestone, reached at a little over 100 feet from the surface and having a depth of about 700 feet; second, the St. Peter's sandstone, immediately beneath, with a thickness of about 200 feet; and third, the Potsdam formation, separated from the St. Peter's by a non-water-bearing stratum some 300 feet thick. Wells sunk into the Niagara now furnish about 20,000,000 gallons a day, and as much more is obtained from the Potsdam at a depth of more than 1,200 feet. The maximum capacity is, however, probably already reached. The first Potsdam or artesian wells flowed above the surface, but every additional well now affects the level of the existing wells, and all now require pumping; this is also true of the shallow or Niagara wells. There still remains the St. Peter's sandstone, which is water-bearing throughout its whole mass, but not, in the opinion of Mr. Thos. T. Johnstone, Engineer of the Sanitary District, in a sufficient degree to render it useful as a source of supply for a large city. Mr. Johnstone, to whom I am indebted for this recent information, suggests, however, that perhaps the St. Peter's might be fed artificially from Lake Michigan by driving shafts into it from the bottom of the lake. It is also possible that the Potsdam would yield more abundantly from a greater depth, though Mr. Johnston tells me that below 2,000 feet the water is too rich in salt to be used for drinking purposes, whilst as to the fissured Niagara he says that "sufficiently extensive explorations only can determine finally whether natural tunnels are available; but the general facts known are not sufficiently encouraging to lead to a belief that useful results would follow."

Unappreciated public services of the medical profession.—I will detain the club only a moment more. The Relation of the Medical Profession to the Water Supply of Chicago is typical of its relations to every effort for the betterment of the conditions of life in this community. And these relations are at last becoming recognized—though slowly—by the community, as shown by the following tribute to the profession from a local historian, himself a non-professional. Prefacing a chapter on the medical history of Chicago, he says:

"When negligence permitted the condition of the city to become unhealthy in the extreme, an invitation to epidemics, the physicians persistently sounded the alarm that ultimately caused the citizens to demand of the authorities purification and the establishment of sanitary laws and officials. The system of sewerage adopted by the city was substantially a mode suggested by a physician. The method of drainage was that promulgated by a physician. And when the tardy measures taken to cleanse the city had proven utterly ineffectual and the cholera appeared, those who had so persistently advocated precautionary measures demonstrated that they knew not only how to warn against a foe, but also how to fight it; and with unrelenting zeal, with unswerving fidelity to the afflicted and with the most complete self-abnegation, the physicians of Chicago cared for the sufferers. Of all the bright pages of Chicago's history there is none that glow with brighter

luster than that whereon are emblazoned the names of those physicians whose assiduity in attendance upon cholera-stricken patients caused them to forfeit their own lives."

To this it may be added that the medical profession is the only one of a secular nature whose members persistently labor to reduce the demand for their own services. All sanitary progress, every advance in the field of preventive medicine by which the causes of disease are removed or disarmed, by which, in the language of Edmund Parkes, "growth is rendered more perfect, decay less rapid, life more vigorous, death more remote," and therefore and perforce, the field of curative medicine is abridged and the remunerative practice of the physician grows less and less—is the result of the physician himself.

Speaking of the development of the science and art of preventive medicine, Sir Benjamin Ward Richardson, just deceased, says: "It is not a science, it is not an art separated necessarily or properly from so-called curative medicine. On the contrary, the study of prevention and of cure proceed well together, and he is the most perfect sanitarian and he is the most accomplished and useful physician who knows most both of the prevention of disease and of the nature and treatment of disease." This lofty sentiment we openly and sincerely applaud, while a still small voice in the privacy of home or office confronted with the monthly bills, asks who pays and who gets paid for preventing disease, from the treatment of which alone are fees now derived?

This is, of course, a very sordid and ignoble query, but sooner or later it must be answered. You, gentlemen of the Physicians' Club, assembled tonight to show your interest in the subject of a pure water supply for Chicago—whereby you won't be bothered with treating typhoid fever and other remunerative lingering intestinal diseases—may take this proposition home for further consideration: Preventive medicine and curative medicine are logically antagonistic so long as the public pays only for curing disease. When the long-eared animal comprehends that it is more economical to pay for its prevention than its cure the physician will be properly appreciated and properly compensated for services which he now not merely renders gratis, but to the detriment of his only recognized sources of income.

Dr. ADOLPH GEHRMANN followed with remarks upon

THE LOCAL AND DOMESTIC PURIFICATION OF WATER.

He said: I beg leave to make one or two remarks concerning the reasons why the quality of the water supply of the city of Chicago changes so often as it does, before saying anything as to the different methods of local purification. We have twenty seven sewers and two rivers emptying directly onto the lake front. The Calumet River always flows into the lake; the Chicago River usually flows in the direction of Bridgeport, but oftentimes its flow is toward the lake. When such conditions are present as will carry sewage into the lake, or in an unusual quantity, the water supply becomes bad. If we have a dry season the sewage which is poured into the lake is mostly cared for near shore by the natural agencies of purification and the absorbed oxygen which is in the lake water. At such times the current of the Chicago River is in the direction of Bridgeport.

A condition which will sometimes aid in bringing about local conditions of impurity is the direction of the wind. A strong westerly wind will lower the level of the lake to a considerable degree and the rivers will flow strongly toward it. Surface water will be blown out from shore, as any one may see at 35th or 22nd street, where sewers discharge. Here a grayish streak extending out from the mouth of the sewer will be seen. Sometimes it can be seen for a distance of two miles. It is distinct and separated from the rest of the water and is produced by the wind not ruffling the greasy sewer water. The grayish streak passes in the direction in which the wind is blowing. If we have a strong southwest wind, contamination of the north cribs is more marked. If we have, on the other hand, north winds, and especially northeast winds, which blow the water south along the lake shore, we have contamination of the south cribs. When we have a period of heavy rain combined with westerly winds, sewage will flow into the lake to an unlimited extent and the most serious contamination results. It varies with the conditions. At such times we have taken samples out as far as twelve miles and found no marked improvement, except in the last two samples in one series and in the last sample in another series.

As far as the local purification of water is concerned, it is simply an expedient wherever it is undertaken. To me it seems about like this: Some local method is used when the citizen himself believes he must have some method of purifying his water supply. But if all the people in a locality believe that the water is bad they immediately set about to

remove or avoid the general contamination. If the water supply of a town is admittedly bad it behooves the people, in their households and other places, to resort to whatever means of purification they can have until a general pure supply of water is brought to them. We can place the various methods of purifying water under headings according to their value and their ease of application.

The first is boiling the water. This is by all means the simplest, and as far as disease-producing germs are concerned, especially those of typhoid fever, it is the best. The only great obstacle to it is the length of time which the water requires to be boiled. The period for boiling should be thirty minutes, but the chances are people often desire water when the supply is exhausted and will not wait the time of boiling a new quantity. Then the matter of cooling water after it is boiled is another consideration. Distillation does give us perfectly pure water. But owing to the absence of salts the water is not as good for use. A pinch of salt may be added to it and to some extent this fault can be overcome.

In regard to the question of purification by filtering and by boiling. When one comes to figure the expense for a year, and the amount of gas required daily in a household, or the quantity of coal used, to boil or distill a certain quantity of water, he will find that it is quite an item of expense, equal to the cost of a filter. A friend said to me some time ago, "How is it you are in collusion with the gas and coal companies?" I was astounded. I could not see what he meant at first. He said, "Why you are instructing the public to boil their water, using gas or coal."

The matter of local filtration is one of considerable interest and one that has a great many sides to it because of the great number and variety of appliances which have been suggested for the purpose. We may view the question from two aspects: 1, the purification of water from a sanitary standpoint; 2, the purification of water simply by removing the bacteria which are contained in it.

With reference to purification by filtration from a sanitary standpoint, when we take into consideration the storage of the water, most of the water delivered by filters will be ruled out, because the water becomes contaminated if it is in storage tanks, the number of bacteria will increase, and on account of the number of bacteria the water would be classed as not being potable or sanitary.

As regards filtration for bacteria, they will be removed by any material which is dense enough or has pores smaller than the diameter or size of the bacteria. However there are two facts in regard to the removal of bacteria by a filtering medium. One is the direct removal which may take place by a good many substances, and the other is the "growing through" of the bacteria through the filter. If a filter has been used a length of time and bacteria are crowded into the pores, they gradually grow along these spaces; that is to say, the bacteria adjust themselves to the spaces and after a time appear on the filtered water side of the medium. The growing through depends upon the degree of organic matter that is present and the temperature at which the filter is kept. If there is less food, and the temperature is lower, the filter can be used with less danger of this than if the reverse is the case. Every filter should have a ready means of cleansing the medium for filtration. A filter which is new will work satisfactorily; but after it has been used a short time it will be found that the condition is gradually one of increasing impurity in the water delivered from it. The organic constituents increase in the water and if the filter has been used a considerable time it will be found that bacteria will grow through and appear in the filtered water. Self-cleaning filters are of no value. The medium is to be one which can be renewed entirely, or which can be taken out and regenerated by some method of dry heat or steam, or by some chemical process.

Methods of precipitation, as Professor Hallberg has said, are of value in some instances. I can simply mention two other procedures that have been advocated to a considerable extent, not, however, for the purpose of precipitation, and dragging down the bacteria, but for their direct action upon the bacteria. Fluorid salts are known to have considerable germicidal action and are recommended for use in water in one in ten thousand strength, but I have found they are not efficient except when given in the proportion of one in one thousand, so that the fluorids are of no value at all unless given in proper strength. One part per thousand is not poisonous to animal tissue.

The use of the coal tar preparations, such as saccharin, have been recommended for the same purpose. The saccharin gives an unusual taste to the water which is not agreeable and it does not act as efficiently as has been claimed for it. However, I have not experimented to any extent with this substance

Precipitation by the use of alum or other substances which brings about a flocculent precipitate and causes settling is a very good means of purification, but it is difficult to carry out the method. The purification is always left to some person about the household to manage and the amount of precipitant which is added, or the method of application of the chemical, or the means of drawing off, is not completely and accurately followed out, so that the results are not surely as good as they should be. The same is true of any method of filtration. The filter is usually left to be managed by the cook or some one about the kitchen. The tube may be clean to start with, and the apparatus filtering properly, but some part of the apparatus may become loose; some unfiltered water may escape through the filter. The filter may be properly constructed, but when the filtering medium is replaced in the filter some water may overflow into the chamber for the filtered water, or a crack may be produced that is unnoticed at the time, consequently there will be an increased amount of filtration brought about by such an accident. This would indeed be looked upon by the cook as being a great advantage on account of the filter acting a little more quickly. She would consider that the filter had been very effectually cleaned. It is as necessary to have expert care for household filters as it is for large filtering plants.

I will simply say again that the methods that are used for local purification of water are excipients which are to be used simply for emergencies. What we all need is a pure water supply, and we should attain it by whatever means and whatever cost we can. We should, however, take our neighbors into consideration and to some extent, at least, do what we can toward avoiding any danger to them.

Mr. CHARLES E. KREMER also discussed the subject.

The Chairman then introduced Mr. JEWELL, who said: The filtration of water in all of its forms is a subject to which I have given special study, and inasmuch as the water supply of Chicago is giving so much trouble now, if some comparison with the work which is being done in other cities will be acceptable, I will be pleased to tell you briefly what is going on in other cities in this country. The City of Cincinnati has appropriated \$6,000,000 by authority of the legislature to improve its water supply.

The City of Philadelphia has been discussing the question of filtering its water supply for the last three years, and it is only about three weeks ago that an appropriation was made by the Council of \$3,000,000 to be spent in filtering the water supply of that city. They have discussed the subject of going out of neighboring water sheds to get water, and of sinking wells and of resorting to various other methods, but after investigating the subject very carefully during the last three years, they have decided to filter the water as the most practical and best means.

The City of Scranton, Pa., has just passed an ordinance to construct a filtering plant. The City of St. Louis, Mo., had a bill up for second reading before the Council at its last meeting having for its object the appropriation of \$3,500,000 to filter its water supply. About five million of dollars a number of years ago was appropriated to improve the quality of the water. The settling tanks in the new pumping station have been in use for almost two years, but are unsatisfactory.

The City of Louisville is also going to filter its water next year. A filter has been located at the pumping station of the Louisville water works, to be operated for one year, and at a cost within the limits of acceptability. It has a capacity of 250,000 gallons a day. The filter is run day and night.

There are practically two methods of filtration on a large scale. One is known as the bed system, the other as the mechanical system of filtration. The bed system is the one to which Professor Hallberg referred as being in operation in Europe, and is unsatisfactory. The American system is the mechanical system of filtration, and American filters are even being sent abroad. They are in operation in France and Germany.

There is a filter in operation at Wilkesbarre, Pa., with a capacity of 15,000,000 gallons of water a day, and also one at Elmira, N. Y., with a capacity of 6,000,000 gallons per day.

Dr. NICHOLAS SENN The subject under discussion tonight is so foreign to my line of thought, that I shall occupy your time but for a moment. There seems to be a wrong idea among the public, and to a certain extent among the profession, in reference to the disease-producing qualities of germs which contaminate pure water. Some of the remarks made here this evening seem to point in the same direction. I was very much astonished when Dr. Reilly referred to an epidemic of erysipelas that prevailed here, and which was attributed by no less an authority than Professor Andrews to impure water. We all know, from bacteriologic research, that it is absolutely safe

to drink pure cultures of the microbe of erysipelas without any danger of contracting the disease, because the microbe of erysipelas can only exercise its pathogenic properties when introduced into the vascular tissue of the body. It is not the pathogenic microbes which infest the intestinal canal that are always dangerous, but the microbes that are produced by such diseases as cholera and typhoid. The only disease that can be traced in this city to impurity of the Lake Michigan water would be, if any, typhoid fever, because we know all other microbes with which we have to contend here do not produce intestinal infection. I have been very much interested indeed by the speeches that have been made this evening. I have learned a great deal about water. I am somewhat disappointed in not having heard, however, so far as Chicago is concerned, more said about the prevention of the contamination of our water than the purification of it. Our citizens are paying water taxes and are supposed to receive pure water, and I believe if disease could be traced to impure water furnished by the city, the city could be held responsible. The completion of the drainage canal will, I trust, do away with further contamination of our water supply.

Dr. CLARK W. HAWLEY—I have had an instance of pure water contamination come to my notice within a week in the city of Aurora. They had an epidemic of typhoid fever there this year. They have been tapping the same vein as is found here for artesian water, and when the season is favorable they have plenty of such water. Every case of typhoid fever they have had within the last six months has occurred among people who drink nothing but well water, and not a single case of the disease has occurred among families who use the artesian water. There can hardly be a better demonstration of the necessity of pure water. One of the physicians of Aurora told me this within a week, that "Every case so far has been fully investigated, and all of the cases of typhoid that have occurred have been using water from wells." The cities of Joliet, Ottawa and Aurora, and those along the Illinois river are afraid of being contaminated by the sewage system that is going to take place and they must begin to supply themselves with water from other sources than those they at present have.

I was quite surprised to hear that as the water went down the Michigan Canal it improved, or it was pure at eight or twelve miles out. If any of those who made the report had lived as near to the canal at a hundred miles out as I have, I do not know what they would think. I know the water at Ottawa is an abomination, and I do not see how the water can be made better when a canal emits such a stench as they get there. Of course, I am not disputing the facts of chemico-analysis. I am speaking from nose experience only, because I have lived in that neighborhood and know the canal there is foul indeed. The reason I do not know.

Dr. S. C. STANTON—In the summer of 1878 I selected for my graduating thesis in college, "The Distribution of the Sewage of Great Cities, with Especial Reference to Chicago." To procure data I was allowed, through the courtesy of the Commissioners of the Illinois and Michigan Canal, passage on one of their boats from the Illinois River at Peru to Chicago, and secured samples of the water of the canal at twenty-five points between the Illinois River and Lake Michigan, taking three samples at each point, one from the surface, one from three feet below the surface and one from the bottom of the canal, or, at least, six feet below the surface. These specimens were taken above and below towns on the line of the canal, above and below feeders, and at various points in the Chicago River and the lake at the mouth of the river. The results of the analyses of these specimens of water were practically identical with those Dr. Reilly has detailed, namely: That at Summit, eight miles from Bridgeport, the water of the canal contained very little organic impurity. Below every large town there was a marked increase in the amount of organic impurity, and so much so that below Joliet the water contained almost as much organic impurity as at Bridgeport. Below feeders there was again a marked diminution of the amount of impurity, and, as a rule, within four miles below towns the water showed only a slight amount of pollution. These results in graphic form are in the possession of the Sanitary District.

WM. H. WILDER, M.D., Secretary.

Chicago Pathological Society.

Regular Meeting, October 12, 1896.

(Concluded from page 1346, Vol. XXVII.)

PRESENTATION OF SPECIMEN.

Anencephalus et Acrania, by Dr. JOSEPH B. DE LEE—This specimen is a fresh one, and as I thought it would be of interest to the members of the Society I brought it with me. It

represents an anomaly which is not so uncommon. It comes from a woman, 30 years of age, who, twelve years ago, after three days' labor, bore a small child. She has a contracted pelvis of the justo minor type, and is to a certain extent rachitic. Labor commenced Saturday night at 8 o'clock and by Sunday night at the same time no progress had been made. At 11 o'clock Sunday night the pains were strong and expulsive, but still no progress in labor. In making an examination I could determine the back, and heart tones to the left side, and introducing my hand into the vagina I came upon something which I thought to be the vulva of a female child. I found two lips between which was a depression and on each side of which were two hard lumps which I judged to be the tuberosities of the ischii. Further examination revealed an ear alongside of this, and my previous diagnosis had to be retracted. Continuing the examination my finger ran around the head of this monster, the head of which I succeeded in delivering. The shoulders, however, refused to come in spite of traction which was kept up for twenty minutes, aided by Kristeller expression. Examination also showed the cervix tightly contracted around the neck of the fetus. The larger part of the resistance came from the narrow pelvis. I performed the operation of section of the clavicles, known as cleidotomy, and introduced by Phenomenoff last year. Under the guidance of four fingers, with a strong pair of scissors the clavicles were divided, the chest fell together, and came through without any difficulty.

The nature of the anomaly is apparent. It is a monster in which both the cranial vault and the brain are missing. This little pad which you see consists of hemorrhages, some brain tissue and vessels. The technical term for this monster is anencephalus and acrania.

As to the cause, there are three theories. One is that the medullary canal does not close properly and therefore the cerebral vesicles are not well developed. Another is that acute hydrocephalus in the first two months of pregnancy causes dilatation of the cerebral vesicles and subsequent atrophy. A third theory is that the head fold of the amnion becomes united to the thin membranous covering of the brain, the primordial cranial vault at some period in the early weeks of pregnancy, and the inflammatory adhesions produce this deformity by inhibiting the growth of the brain.

PRESENTATION OF CASE.

Tricuspid Regurgitation, by Dr. JOHN A. ROBISON—The case I wish to show you illustrates the difficulties which we sometimes encounter in making a diagnosis of valvular disease of the heart. I thought the case would come in nicely with the discussion on Dr. Herrick's paper.

The patient has been examined by a great many doctors from time to time, but I will not say as many different diagnoses have been made, but quite a number of them have been made. The stumbling block seems to be whether this patient has disease of the right side of the heart or not; in other words, whether he presents a lesion connected with the tricuspid valve, and there have been more physicians who have said that there is no disease of the tricuspid valve than there have been those who have taken the opposite view. We find present in this case undoubted evidence of disease of both the aortic and mitral valves. In the first place, you will notice the character of the pulsations in the neck—the carotid pulsation. Secondly, if you feel the pulse you will get the Corrigan water-hammer pulse, which is greatly accentuated when you put the patient's hands up in this manner. Furthermore, a sphygmographic tracing gives evidence of aortic regurgitation. Listening at the base of the heart over the region of the aortic valves we hear a very soft, almost indefinable murmur with the first heart sound, which is carried slightly upward. We also hear a murmur during the first part of diastole carried slightly downward. Passing to the apex of the heart we hear a murmur at the apex, if my ear does not deceive me. This murmur does not increase in intensity as we go toward the axilla or to the left of the chest, nor do we hear it with the same intensity to the left of the spine as we do in front. Again, you hear a systolic murmur over the whole precordia, but as we travel from the apex of the heart toward the right, we reach a point here near the ensiform cartilage where the intensity of the murmur is greatest. I think if you had time to examine this man I could prove that to you very easily by using the stethoscope I have in my pocket. I have taken a piece of thin glass and glued it in the stethoscope, by means of which I eliminate the muscular sounds of the heart, and I hear simply the murmur. Placing this stethoscope over the apex we hear the murmur during the systole with distinctness, it not being carried upward toward the axilla or around the chest wall. In carrying it to the right toward the ensiform cartilage it

becomes more intense until we reach a point below the left border of the sternum, where we hear a loud murmur with each systolic contraction of the heart.

Another point I wish to call attention to is the fact that we have what I would call the venous pulsation in the neck, the pulsation being presystolic; and not only that, by placing the fingers at the junction of the jugular with the subclavian veins we get a pronounced thrill. My diagnosis in this case would be, judging simply from the primary signs of valvular disease, that this man has undoubtedly a tricuspid regurgitant murmur.

The patient, as I have previously said, has been examined by quite a number of physicians; some of them I see here tonight. They dispute that diagnosis. Of course, a case like this presents many difficulties. In the first place, we have an aortic regurgitation which has caused great increase in the size of the heart, so that the apex beat is below the sixth rib and to the left of the nipple to the extent of two fingers in breadth, and there is no doubt but what he has mitral regurgitation; but if this murmur were simply due to mitral regurgitation, why would not the sign of the propagation of the murmur which generally corroborates the diagnosis of mitral regurgitation be present? Furthermore, it is perfectly consistent with our present knowledge of pathology, as illustrated here tonight, that we can have coexisting disease of the tricuspid as well as of the mitral valves, and there is no reason why we may not have tricuspid insufficiency as well, and account for the fact that we hear this murmur in the region where tricuspid insufficiency murmurs are heard.

SELECTIONS.

Some Medical Emergencies; a Clinical Discourse.—Dr. Seymour Taylor, of the West London Hospital, in the *Clinical Journal* gives a practical talk about hyperpyrexia and the like that requires a therapeutic alertness.

1. **Hyperpyrexia.**—Of late years it has become fashionable to ignore the use of drugs in this condition. The argument has been urged that few medicines have any marked power in reducing temperatures unless the remedies are pushed to such extreme in dosage as to render them a source of danger. But is this really the case? I admit at the onset that I prefer the use of ice packs or the graduated baths. They are quicker in their action, they are easily controlled, and very few houses are without the means of applying either one or the other. But have we no drugs upon which we can depend when we wish to bring a highly feverish and therefore perilous temperature down to a region of safety? I will leave on one side quinin and the phenol compounds, since possibly they may come within the objectionable category which is marked as dangerous. But I will draw your attention for a few minutes to a common food, or drug if you will, which is somewhat neglected as a cooling agent. I refer to alcohol. Probably most of us prescribe it somewhat casually and carelessly, with no instructions as to exact quantity and the periods at which it is to be taken. But I am as certainly convinced as a man can be that when prescribed with intelligence, it is one of the most powerful remedial and restorative agents which we possess. My thoughts were first drawn to the subject of alcohol as a heat-reducing agent, by the refusal of a northern gamekeeper to take some whisky when we were exposed on a cold night; he simply said when I proffered him a flask, "No. It is too cold." These words sank deeply into my mind and caused me much anxious thought. A patient, a heavy and unweildy woman was suffering from typhoid fever in the third week. Her temperature was 105.6 degrees, a point above the danger line. She was quite insensible and was to all appearances about to perish from hyperpyrexia. It was impossible from the surroundings of the patient to administer a graduated bath, or even an iced pack. So we decided on giving alcohol in large doses. Between nine o'clock at night and nine the next morning our patient was made to take twelve ounces of good brandy, an ounce every hour. On the morrow I found her temperature down to 100.5 degrees; she was sensible and appeared astonished when she saw and recognized me as a strange doc-

tor, but was of course quite oblivious to the fact that I had visited her only about twelve hours previously. From this date she made an uninterrupted and good recovery.

2. Relapses in Typhoid Fever.—In a given number of cases of enteric fever a certain percentage of relapses will occur even if our diet sheet be unimpeachable. But there are accidents of the disease, and errors of diet, especially toward convalescence, which may lead up to and actually produce a relapse, or a recrudescence. In the St. Thomas' epidemics we found a large percentage, indeed the majority, of relapses dated from either an action of the bowels after a period of constipation, or from the allowance of bread in the dietary. No matter what the remedy employed to relieve the constipation, whether it was castor oil or a simple enema, the risk was just the same—a rise of temperature dated from the evening of the day on which the bowels acted. The return of febrility might last two or three days, amounting to a recrudescence only, or it might constitute a fresh attack or true relapse. Only last autumn I saw two in which I was called to consult as to the cause of such cases, a sudden return of fever. In both cases enemata had been given and I was enabled to point out that the condition might be temporary only (of two or three days' duration), or it might develop into a genuine relapse. But bread is a far more fatal error. We learned this from the nursing sisters. I can not satisfactorily explain why it should be, but the most alarming and fatal relapses which I have observed were those which commenced on the day following an allowance of bread, whether it was given boiled with milk, or even as toast in the beef tea. I will only quote one case. An old friend of mine was attacked with typhoid and I saw him in consultation with his family doctor. Then I went away for a three weeks' holiday, being kept informed of his progress every other day. Toward the end of the disease I wrote to his doctor to ask him to exclude bread from his diet for at least another ten days. Three days after my return home I was summoned to his bedside and found all the symptoms of a well-marked relapse. The second fever was more severe than the first and he unhappily perished. Unfortunately, by some mistake a basin of bread and milk had been given to him on the day prior to the fresh rise in temperature.

3. Medication in Fever.—As regards drugs, I have no rule of thumb to lay down. But my practice has followed on Dr. John Harley's plan, to give small doses of gray powder three times a day. Whether the mercurial preparation acts as a partial antiseptic on the bowel, or whether by keeping up a gentle peristalsis and flow through the intestine, it obviates constipation on one hand and diarrhea on the other, I can not quite satisfy my mind. I can only tell you of results. Dr. Harley's death rate in hospital practice was extremely low, and I have had similar happy results by following in his footsteps. We have a remedy, which as a stimulant, is an exceedingly valuable, if neglected, one. I refer to musk. I formerly regarded musk as a disgusting remnant of a barbaric pharmacopeia. But I was induced to try it in a case where profound exhaustion with subsultus were present and when alcoholic stimulant was refused. The result was a happy recovery, and I have had reason to think highly of the preparation in some three or four subsequent cases. Then there is another experience which my note books have afforded me. A high temperature is always in itself a dangerous symptom. Wunderlich fixed the line of danger in typhoid at 105.5 degrees, I think. I would place it even lower, at 105. Those of you who meet with much typhoid take note of it and see how many cases recover which at any time present a temperature of 105 or upward. I do not say that recovery does not take place. I have known many cases get well after this high reading, but the general rule may be stated from a large number of statistics, that a patient who has at any time had a fever of 105, either during the primary attack, or it may be during a relapse, eventually dies.

4. Hemoptysis.—In my experience astringents are for the most part useless, and may even do harm. Suppose, for

example, we give tannin, by which the albuminous matter surrounding the intestinal vessels is coagulated, or suppose we prescribe sulphuric acid, by which watery exudation from the vessels is retarded, or by whatever method these astringents act, their final effect is the same; not only do we produce a lessened action on the bowels, but we at the same time, and thereby, bring about an increased tension on the vascular system in general, and so favor a continuance of hemorrhage rather than stop it. I protest I would rather prescribe a saline purgative. And even if these intestinal constrictants do exert an effect on so remote a region as a lung's apex, it can only be partial and evanescent. As a brother practitioner once put it to me: "It certainly does seem a long way round for the action of such drugs." To me a much more rational and scientific treatment is to give opium, the drug *par excellence*, which calms the nervous system, combined with digitalis. By these measures we speedily notice amelioration of symptoms. The patient is quieted, his pulse becomes better in tone, and cough, one of the conditions we wish to avoid, is lessened. Then, as a last resource, we can fall back on ergot. All these drugs can be easily given by the mouth, but in these days of pharmaceutical advance and refinement, it is at times advisable, owing to the rapid way they can be administered, to inject the remedies subcutaneously. We all of us carry hypodermic syringes about with us, and tabloids of compressed drugs take up no room in our pockets. I would ask those of you whom I may convince to try and note the effects of the above line of treatment. At any rate you have used remedies which act directly on the circulatory system, which you desire to have somewhat under your control. As a last criticism on the subject of pulmonary bleeding, I would discountenance the use of an ice bag. For me, at any rate, it is difficult to recognize any beneficial action from such treatment. I fail to grasp the notion that any good can accrue from the action of ice through the chest parietes (with its skin, its muscles and its bones), upon a summit of a lung which is not necessarily adherent to these parietes, and in which therefore the circulation is derived from an entirely different set of vessels. Further, it is hardly necessary for me to point to the discomfort to the patient which results from the application of a cold, heavy pad on a part in which tenderness is already a pronounced sign.

5. Whooping Cough with Convulsions.—I have in the last three years been called in consultation to four cases of whooping cough complicated by convulsions. The first case luckily enlightened me. Eclampsia was the serious condition for which extra help was sought. Immediately after my arrival the child had a severe attack of cough, but without any inspiratory "crowing." This, however, was followed by convulsion. The diagnosis we arrived at was "whooping cough in its first stage," and that the convulsions were due to and consequent on cerebral engorgement from the cough. This view was confirmed three days afterward, when the typical "crowing" was heard and the child developed symmetric black eyes from coughing. The patient's younger sister subsequently developed whooping cough, and being therefore allowed to occupy the same room, she, at my request, spent some time in cultivating a budding artistic ability and made a sketch of her sister's face. Now, the bearing of all this on our treatment will at first appear obscure. But to me the first indication was to allay the cough. We are taught that children, especially infants, bear opium and its derivatives badly. I must demur to this. One has only to give the proper dose and children tolerate it as well as adults. In this case, to the astonishment of my friend in attendance, I suggested morphia, and it acted like magic. I gave 1-50 grain every four hours, with instructions to watch its effect, and to discontinue it if the pupil signs became very pronounced. The paroxysms were less frequent, they were less prolonged, there were no more convulsions and the child made a rapid recovery.

"Vacation Colonies" in Switzerland.—It is now twenty years since this beneficent movement, known as the "Ferien-colonien," or vacation colonies, was set on foot in Zurich. It has been very considerably imitated in other cities of Europe to the manifest advantage of thousands of poor school children needing release from overcrowding and other slum influences. Consul Germain, in the *United States Consular Reports* gives a sketch of the rise of the work and the extent to which the colonies are utilized. He says: "These places are selected carefully and usually situated in the mountains, where the air is pure and good lodging and good strong food are provided for, free of all charges. The founder of these colonies is the well known philanthropist, Rev. W. Bion, a Zurich clergyman.

This gentleman was formerly a minister in the small, mountain canton of Appenzell, from whence in 1873 he removed to Zurich. He soon learned that the city air did not suit his five children, accustomed, as they were, to inhale the pure air of their native mountains. For several successive summers he made them spend vacation time in their former home, whence, after a month's stay, they regularly returned with greatly improved health and spirits.

This experience set him to thinking that, if his own children, who were better situated than many others in regard to care and food, derived so much benefit from a stay in the high rural regions, how much good would it do to his poorer neighbors. He first advertised in the daily papers that if he received suitable volunteer support he would begin his proposed work. An amount, a little less than \$500, was given him in the first year, 1876, and he sent forth sixty-eight children, divided into three different points in the canton of Appenzell. Each colony was allowed a vacation of two weeks. The physicians and some of the school directors of Zurich were among his earliest supporters. In 1886, he was able to send out forty-nine colonies, comprising 1,128 children; in 1895, the number of colonies was seventy-three and of children 2,198. In twenty years 21,728 children have received the benefits of these recuperation colonies.

The means of the managing committee not being enough, as a rule, to send all of the needy children to the colonies, such as show the greatest need therefor, on account of poor health, are selected, while those compelled to remain at home are provided with fresh milk and bread twice a day, morning and evenings, in order to compensate them somewhat for the loss of the vacation trip. They can thus enjoy a milk cure during vacation, lasting from three to four weeks, which proves very beneficial.

Close attention from year to year has been paid to the progress and results obtained from the Swiss colonies, so as to ascertain the direct benefits derived from these periodic summer vacations by the participants. Among the particular points closely studied are: Increase of weight of attending children, as compared with those remaining at home; general improvement in health, strength and purity of blood, especially of those suffering from anemia; visible improvement in intellect, as well as increased capacity and willingness to study, etc. The table below shows, after a close study made by the Zurich health officer and observed on thirty-four children, the condition of their blood before and after the vacation period, as well as at several later intervals:

| Description. | Blood coloring. Per mille. | Blood corpuscles. Per mille. |
|--------------------------------------|-------------------------------|---------------------------------|
| 1. Before departure to the colonies: | | |
| Boys | 748 | 725 |
| Girls | 756 | 722 |
| 2. Immediately after return: | | |
| Boys | 886 | 911 |
| Girls | 959 | 955 |
| 3. Two months after return: | | |
| Boys | 820 | 884 |
| Girls | 863 | 924 |
| 4. Four months after return: | | |
| Boys | 869 | 935 |
| Girls | 903 | 982 |

The children are always accompanied to the colonies by teachers or other interested adults and remain while there under constant supervision. Their lodgings, specially prepared for that purpose, are composed of large well ventilated bedrooms, dining rooms, and play rooms: in some of them, bath rooms, etc. The food is very nourishing and healthful, and consists of an abundance of milk and milksops, meat, vegetables, etc., and the location is such as to allow of daily walks and exercise in the open air in forests and meadows, offering at the same time, a beautiful view of Swiss scenery of mountains and lakes. In 1895, the city of Zurich sent 448 children

to nine colonies in the high regions of the cantons of Appenzell, St. Gall and Zurich, accompanied and marshaled by forty adults, most of them teachers, and it is said that this year's number will be greater.

One of the Zurich colonies, the "Schwäbrig," which is situated in the canton of Appenzell, has been bought and transformed into a regular sanitarium, where, in 1895, 208 children were cared for outside of the vacation time, between May and November. These children, on account of poor health, needed a longer recuperation and remained there from four to twelve weeks, or until they had recovered their health.

PRACTICAL NOTES.

Sterisol for Cracks in the Nipples.—The *Union Méd. du Canada* states that if cracks in the nipples are closed and covered with sterisol and a second coat applied in ten minutes, the child can nurse fifteen minutes later without inconvenience. No bandage is necessary.

Nutritive Value of Meat Broths.—Some dogs fed exclusively on meat broths, 500 grams, in Vulpian's laboratory, died at the nineteenth day, while others to whom water alone had been given, survived within one day as long, dying the eighteenth day—showing the negative nutritive value of meat broths.—*Gaz. d. O. e d. C.*, November 22, from *Bulletin de Therap* October 23.

Fractures of the Clavicle. In case of irreducible fracture with much displacement, suturing is the only means of avoiding subsequent deformity and also troubles in the nerves and circulation. F  vrier has collected forty-four observations of this treatment, all followed by recovery. In thirteen there had been nervous troubles which were cured by the suture. It must be made at once, before the neuritis has had time to develop, as otherwise it may be difficult to cure. The only inconvenience is the cutaneous anesthesia of the pectoral region, consecutive to section of the supraclavicular filaments of the superficial cervical plexus.—*Presse M  d.*, November 21.

New Stain for Differentiating the Bacterium Coli and Eberth's Bacillus.—Ramond has produced a stain with "rubine acid" which stains the bacterium coli red very rapidly, while it does not color typhoid colonies. It is prepared by coloring a tube of lactosed gelatin or gelose at 4 per cent. with a few grains of "rubine acid." It is then decolorized by adding, while warm, two drops of saturated solution of carbonate of soda. It is then filtered and sterilized. It replaces Elsner's gelatin advantageously, and owing to its extreme alkalization, is not favorable to the growth of other kinds of microbes.—*Bulletin M  d.*, November 11.

Formalin an Approximate Specific for Ringworm.—An interesting editorial note has appeared in *Guy's Hospital Gazette* calling attention to a recent paper by Mr. Alfred Salter, on the treatment of ringworm by formic aldehyde, or formalin. This treatment is now so well known in Guy's, and has had such a conspicuous success, that it should be part of the ordinary practice of every old Guy's man. There seems no doubt that it is the almost specific treatment for the disease, especially in obstinate and hitherto incurable cases. And yet this discovery arose from the annoying fact that the inventor's cultivations of the ringworm microbe were all killed one night through his having left the stopper out of the formalin bottle. So do fates at times turn good out of evil. *The Therapist* (London), November 15.

Treatment of Tuberculosis with the Salts Ordinarily Contained in the Blood.—Impressed by the fact that the animals whose blood contains the largest amount of salts are the least liable to tuberculosis, Stadelmann suggests that comparative immunity might be conferred upon human beings by increasing the

amount of salts in the organism. Analysis of the milk of the goat, which we know is comparatively immune to tuberculosis, shows .622 per cent. inorganic salts, while human milk contains .138 per cent., and the milk we know is a product of the blood. Reasoning from this premise that animals whose blood is rich in salts are not disposed to contract the disease, he administers salts to patients hoping to thus annihilate the predisposition. He has tried this treatment in many cases, principally in local manifestations, and announces that the bacilli disappeared from the sputa, and the other objective symptoms showed marked improvement. The salts he administered were sodium carbonate or bicarbonate, ten to forty grams a day. In a few cases he ordered also sodium phosphate, two grams, three times a day, with subcutaneous injections of sodium chlorid, .5 gram daily. While he does not consider his limited number of observations sufficient to determine finally the value of the treatments, yet his success to date induces him to recommend others to experiment with it as it is so simple and harmless and easy of application.—*Nouv. Remèdes*, October 24.

Statistics of Surgical Intervention in Perforation of Typhoid Fever.—There are thirty-three cases on record, with five positive cures. The deaths were usually found to have been caused by additional perforations. The sutures held, and Monod states that laparotomy in these cases must not be rejected, as it affords a last chance of recovery.—*Bulletin Méd.*, November 22.

Maternalization of Milk.—Eminent scientists have been experimenting to adapt the milk of the cow more closely to the needs of the human infant, and they have succeeded in maternalizing it, as it is called, to a most surprising degree. The milk of the cow is richer in salts and proteids than human milk with less sugar. The amounts of fatty substances are substantially the same. It is made to approximate human milk by the following process: The quantity of milk needed for the child during the twenty-four hours is poured into a graduated glass jar with a hole near the bottom, corked tight. The jar is then closed with a rubber cover over the top and set away in a cool place in summer and in a warm place in winter. In about four hours the milk separates into the cream and skim milk. A third of the skim milk is then withdrawn through the hole below, and with it a third of the salts and proteids. The milk is retored to its former volume by adding an equal quantity of water to which have been added lactose at the rate of 35 grams and chlorid of sodium one, for each liter. The jar is then well shaken and the contents poured into the sterilizers. If the child does not increase in weight with this according to the normal standards of growth, it is well to add one or two teaspoons of fresh cream each day. This process can be applied on a large scale simply by diluting the fresh milk with one-third of its volume of water, to each liter of which have been added 15 to 20 grams of fresh cream, 35 grams of lactose and one gram of chlorid of sodium.—Dufour in the *Rev. Mens. des Mal. de l'Enfance* for September, *Presse Méd.*, November 25.

Section of the Vas Deferens.—The discussion of this subject at the Congress of Urology held at Paris during October, resulted in nothing new, but a recent article in the *Lyon Méd.*, by Nové-Jossierand, presents this operation in a little more favorable light. He states the results of his own experience in three cases, with a careful study of forty-three others. He ascribes the retention of urine and other troubles of the kind, to a vesico-prostatic congestion, which is relieved by section of the vas deferens, although this rarely affects the size of the prostate. This, however, is no longer considered essential to the success of the operation. The most positive, gratifying, and the most frequent result obtained is the improvement in the emission of the urine, which may become entirely normal if the retention has not been of too long standing. The pains and the tormenting desire to urinate also pass away, usually at once. Although the operation produces sterility,

the patient may retain otherwise the virile function. The unfavorable results, complete retention of urine and noticeable alteration in the general condition and mental faculties, are fortunately transient and not severe (*peu graves*). The operation is so slight that it requires no stay in bed, and even elderly and cachectic patients bear it easily. It has no effect on cases requiring cystotomy, nor where there are complicating tumors, calculi, peritonitis, pyelonephritis, etc., but it is especially indicated at the middle period of prostatism, when congestion dominates the scene, and leads to cystitis, hematuria and more or less complete retention of urine. Later also, in the presence of old prostatic deformations, it may render great service in diminishing the pains.—*Bulletin Méd.*, November 22.

Transient Amblyopia During Lactation.—In a recent number of the *Neurologische Centralblatt* appears a short abstract of a paper in the *Beiträge zur Augenheilkunde* by Dr. Karl Heinzel. He describes four cases of transient blindness occurring during lactation and traceable to interference with the functions of the nervous system. Such a condition, according to Dr. Heinzel, is apt to occur in otherwise healthy women. The first symptoms may manifest themselves before the birth of a child or during the early period of suckling, and consist of interference with the function of the eyes which may proceed to complete blindness. With the ophthalmoscope may be found evidences of more or less inflammation of the nerve. The duration of the symptoms extends over months and usually leads to a partial degree of optic atrophy with perhaps only a just perceptible interference with visual acuteness, and never to permanent blindness. The inference that lactation is in some way connected with the symptoms in these cases was arrived at by a process of exclusion.

New Method of Arthrotomy.—The results of resection in coxalgia are so far from satisfactory that Delagenière has been attempting to secure better, by a new method which has proved extremely successful in the two cases in which he has tried it. It consists in gouging the epiphysis, with drainage through the neck and great trochanter. He makes an incision similar to Langenbeck's, only descending lower on the thigh, about two centimeters below the base of the great trochanter, 15 centimeters in length. He detaches the fibers of the gluteus maximus to open up the pelvi-trochanterian muscles; pushes the pyriformis and gluteus medius to one side, and then incises the periosteum from the cotyle to the base of the great trochanter, around its internal and external surfaces. The capsule is opened freely with a T-shaped incision, and the condition of the articulation investigated. The periosteum on each side is loosened in order to work under it. He then cuts out a notch in the superior border of the great trochanter, extending it up to the neck, and proceeds to gouge the neck up to the head; the *évidement* of the head follows, and he is careful to remove the corresponding portion of the cartilage. The operation is completed by the *évidement* of the great trochanter, which he carries down a centimeter below its base in order to form a tunnel, with a regular downward slope, following the direction of the spur of the femur. A metal tube is then inserted in this tunnel, the inner end in the joint and the outer end fastened to the skin. This metal drain is left until recovery is complete. The two patients upon whom he has performed the operation had very grave suppurated coxalgia. All the symptoms rapidly passed away and prompt recovery followed. The advantages of this operation are its extreme simplicity, that the drainage of the diseased articulation and of the epiphysis is definitely secured, while the hip retains its shape and some of its movements. It also seems to be exempt from serious consequences.—*Presse Méd.*, November 21.

NOTE. It is doubtful if this method affords any material advantage over the method of temporary resection of the trochanter and gauze drainage.—*Ed.*

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SATURDAY, JANUARY 2, 1897.

THE PSEUDO-DIPHTHERITIC BACILLUS.

The fact that the Klebs-Löffler bacillus is closely simulated by a non-virulent organism is well known, and it has been rather largely held that the latter is a variety or modified form of the former that for some reason has lost its special pathogenic qualities. Some observers have maintained that there are several kinds of diphtheria bacillus, while others have considered them all as practically the same, but differing in form and pathogenic power under different conditions. So far there has been no practical test of the virulent and the non-pathogenic forms but that by inoculation, a tedious and impracticable method under most circumstances in actual practice. Guinea pigs are not always available, and the test is most often made by the effects on the patient himself, with the result that for safety the physician concludes all cases, mild or otherwise, to be virulent, and if he is a conscientious practitioner, with modern views as to infection, etc., all the elaborate and troublesome details of isolation and disinfection must be carried out to their fullest extent.

The fact that has also been fairly well established, that many healthy individuals carry in their oral and pharyngeal tracts one or the other of these microbes, further complicates the question and leaves a rather uncomfortable uncertainty as to whether we are ever really safe from diphtheritic infections. The modern precautionary fads of individual cups in religious rites and elsewhere seem almost if not quite fully

justified to many minds by the discoveries in bacteriology and pathology of the present day.

To find some better means of reaching a certainty in the distinction of these two forms of organism that so closely resemble each other, and to thus add a little to the possibilities of human happiness that are being now daily encroached upon by bacteriology, is a result that every well-wisher of mankind ought to pray for, but as yet it seems a little too far in the distant future for our comfort. That attempts are being made to solve the problem may be a relief, and as evidence of this we have two recent papers in Dr. WOODHEAD'S *Journal of Pathology and Bacteriology* for December, 1896. In the first of these, Dr. E. A. PETERS, as the result of a large number of experiments and cultures, comes to recognize two types of pathogenic diphtheria bacilli, the long and the short, and two non-pathogenic; also a long form and the short or Hoffman bacillus. The long pathogenic form is the ordinary type, the short is less common and less virulent. The long non-pathogenic form is indistinguishable from the long virulent type, excepting in its effects, and they may therefore be classed together for practical purposes, where inoculation tests are not practicable. The Hoffman bacillus is common in ordinary sore throat and tonsillitis, scarlet fever, röteln, and in diphtheria in association with the true bacillus of that disease. It resembles the short form of the latter in its mode of growth, and to some extent microscopically, but Dr. PETERS holds that there is "no proof forthcoming that this bacillus is an attenuated form of the diphtheria bacillus, though the short diphtheria bacillus, when it becomes non-pathogenic, tends to resemble Hoffman's bacillus."

In the second paper Drs. COBBETT and PHILLIPS recognize two varieties of non-virulent organisms or pseudo-diphtheritic bacillus, which vary to some extent in microscopic characters and in their reaction with glucose. The typical Klebs-Löffler bacillus is long and shows several segments divided by narrow unstained (with methyl blue) or faintly stained intervals. Its reaction with glucose is acid. Of the two non-pathogenic forms, one that also has an acid reaction closely resembles the true virulent bacillus, while the other, *without this reaction*, differs in many respects, it is usually shorter, has in its early growth at least only one septum, its colonies on serum are whiter and more conspicuous, and the authors, finding no intermediate forms varying in virulence, are inclined to consider it a distinct species. It would seem to correspond with the Hoffman bacillus as described by PETERS as nearly as anything.

The practical deduction from the results of these two independent investigations would seem to be: With a long bacillus in sore throat, use every precaution; with a short one, test the glucose reaction. If further studies confirm these results and develop no

embarrassing complications, we have a valuable practical aid in our diagnosis of diphtheria.

Inasmuch also as all these separate forms appear to be occasionally found in the mouths of healthy persons, these observations do not throw special light on some of the questions of immunity, etc., involved. They are, however, very suggestive and valuable in many respects, and it is to be hoped mark a real advance in our knowledge of the subject.

THE AMBULANCE IN AMERICAN CITIES.

The *Nineteenth Century*, October, contains an article by Hon. DUDLEY LEIGH on the American system of ambulance service at the hospitals of our larger cities. He just points out the fact that in England the hand-stretcher is yet, as a rule, the only ambulance, although occasionally the old worn-out cab is brought into acquisition.

The idea of instituting horse ambulances, that should be summoned and sent out in cases of illness or accident with the same speed and regularity with which fire engines are called and despatched in the case of fire, originated in the year 1868 with Dr. E. B. DALTON, at that time the superintendent of the New York Hospital. Owing to a change in the disposition of that institution's property the suggestion was not acted upon at the time, but in the following year the Department of Public Charities and Correction approved of Dr. DALTON's proposals and the code of rules he had drawn up, and in consequence an ambulance service was adopted at Bellevue, the Municipal or Free Hospital of New York. From that time forward the system has proved so useful and beneficial that it has gradually extended to all or nearly all the other hospitals in New York, as well as to many other cities in the United States, and has become an integral part of the hospital work, and numberless lives are saved by its agency, and by the speed with which help is brought to the sick and injured.

As has been mentioned before, the municipal or free hospital of New York is Bellevue, where the first ambulance service was adopted in December 1869. In that month there were seventy-four calls; in the next year the number was 1,466.

The following table will show the increase in calls from this time forward, not only in Bellevue, but in other hospitals which have adopted the system, and the year of their so doing:

| NAME OF HOSPITAL. | YEAR WHEN SYSTEM ADOPTED. | | | | | |
|-------------------|---------------------------|-------|-------|-------|-------|-------|
| | 1870 | 1877 | 1878 | 1879 | 1881 | 1892 |
| Bellevue | 1,166 | 1,217 | 1,606 | 1,888 | 2,282 | 4,878 |
| House of Relief | | 1,155 | 1,253 | 1,321 | 2,293 | 3,216 |
| New York | | | 651 | 585 | 1,151 | 1,520 |
| Roosevelt | | | 273 | 291 | 352 | 1,675 |
| St. Vincent | | | | 823 | 1,387 | 2,066 |
| Presbyterian | | | | | 387 | 1,730 |

In 1893 the total number of cases was above 20,000.

The ambulance service of New York City requires vehicles. With the exception of those of the muni-

cipal hospitals, these vehicles are under the management of, and maintained by, the respective hospitals, without any assistance from the municipal authorities. The service is controlled by three separate departments: the police, the health, and the commissioners of public charities and corrections. The police commissioners only exercise control in so far as the allotment of an area is concerned, from which individual hospitals receive casualty cases. The commissioners of public charities and corrections maintain and have special charge of and control over the municipal and public hospitals, but the private institutions are independent of their orders. But by arrangement between the hospitals, both public and private, and the commissioners and the police, all sick and injured persons may be taken to whichever hospital may be the nearest, the object being to insure the quickest possible medical or surgical treatment. The private hospitals enter into such an agreement because of the experience and practice it affords to the physicians and surgeons connected with them; indeed, so much has the ambulance service become a part of the New York hospital system that there is a great desire to secure an allotment of an area, so as to ensure a share of the accident and emergency cases that occur. No hospital, in fact, in New York could now be carried on without ambulances; a hospital without an ambulance would be without patients. The ambulance surgeons are not students merely but are sub-juniors of the hospital house-staff, holding the degree of M. D., and they give their services gratuitously on account of the experience they gain.

The ambulance used in New York is of the ABBOT-DOWNING type, and has a covered arched roof, room for the bed before mentioned, on which the patient can lie at full length, and for the surgeon and the various instruments and appliances he carries with him. The cost in New York is \$550, or allowing for the difference in the purchasing power of money in England and in America, about £85 to £90 in English money. The cost of maintaining an ambulance in New York is about \$920 to \$1,000 (£190 to £208), which may be considered equal to about £150 in England, this estimate including the wages and board of the driver, forage for the horse, and keeping the ambulance in repair.

The excellent example set by New York in regard to its ambulance service has been copied in its general principles by most of the big towns in the United States, though the systems pursued differ in various details. For instance, in Philadelphia, Norwich (Connecticut) and Chicago, the police have the chief charge of the service, though in Philadelphia other ambulances are maintained by private hospitals and institutions.

In St. Louis one ambulance is kept by the police and one at the Railway Hospital, while others are

maintained by their Department of Health. At Pittsburgh twelve patrol wagons are used by the police for ambulance purposes, while at the same time all the hospitals in that city have ambulances ready. In Boston five of the general hospitals have six ambulances in use altogether, the municipal hospitals have three, while the police department has seven. In New Orleans the service is under the direction of the administrators of their Charity Hospital, which is supported in a manner that in one of its details would scarcely be recognized in this country.

Numberless lives have been saved, not only in New York, but in many other cities that have followed the admirable example it first set, by the speed with which the ambulances reach the sick and injured, bringing help that literally wrests back the sufferer from the jaws of death, as the last flickering spark of life is leaving the body. As, in the case of fire, the first few seconds or minutes are proverbially the most critical, so it is often in the case of accident or illness, and many lives are lost by injuries received in the streets of London and the other great cities of England, owing to the delay in reaching the scene of accident with a hand-stretcher, that might be saved were the New York system in universal use. And, if a conveyance is employed in any English town in the case of accident, what is it? Generally a four-wheeled cab or such-like unsuitable vehicle perhaps to convey the patient for a distance of several miles to the nearest hospital, when suffering from broken limbs, the cramped position necessary in such a conveyance causing the sufferer excruciating agony.

The police department, if it were so decided, might introduce and take charge of the ambulances, as the police do in Chicago and other cities of the United States. But probably the most satisfactory way of all would be for the London County Council to take up the matter, either by subsidizing the hospitals according to the number of ambulances employed by each, as in Brooklyn, or by working them by means of their own employes, in conjunction with the hospitals. The first plan of the two would probably prove the most satisfactory; but as to the details, it would be for the future to decide them. It has only been attempted in this slight sketch to draw some attention to what is being done by other countries in the alleviation of human suffering, and it seems impossible not to believe but that in the greater London of the future the same kind of system will ultimately prevail, by whatever means it is set in motion. And certainly, when ambulance wagons take the place of the present old-world stretcher, or the worn-out cab so often made use of in this great city, it will be a matter of wonder that, with all our many philanthropic schemes, and all our efforts to minimize the terrible suffering that flesh is heir to, we have so long neglected an example set us by far younger cities than our own.

THE EMERGENCY RATION OF THE ARMY.

Under the authority vested in him by Section 1146 Revised Statutes, the President has established an emergency ration for troops operating for short periods under circumstances which require them to depend upon supplies carried on their persons. This ration has been adopted after full consideration of the subject by boards of officers convened for the purpose. Forty-five officers, all men of rank, years and experience, served on these boards, the membership of which included 9 medical and 9 subsistence officers, 18 infantry, 6 cavalry, and 2 artillery officers, and 1 inspector general. The ration adopted may therefore be accepted as the best that can be provided by the knowledge and experience of the military men of this country.

The want of a special and distinctive emergency ration in our service has been a subject of discussion, particularly by line officers, since the time of the Franco-Prussian war, when so much was heard of the value of the iron ration of the German troops. In April, 1895, the Commissary General of Subsistence addressed a letter to the Adjutant General of the army, in which he invited attention to this want, and suggested the appointment of a board of officers in each of the eight military departments to consider and recommend a suitable ration. This suggestion was approved by the Secretary of War, and a board consisting of one medical, one subsistence, and three line officers was appointed in each of the departments. These emergency ration boards were in session during the summer and autumn of 1895. They communicated with the food manufacturing firms of the country and investigated samples of all kinds of concentrated food that could be procured. In some of the departments detachments of troops were sent out on field service to put the ration recommended to a practical test. When the reports reached the War Department a board of officers was convened in Washington, D. C., to examine the reports of the departmental boards and to consider such views and suggestions as the Major General Commanding the Army and the Commissary General might lay before it; also to make recommendations on the subject and to report upon the minimum amount of articles of food necessary to sustain a soldier in health and activity while in active service in the field for a limited period. The report of this board was approved and on December 5, 1896, the order establishing the emergency ration was published.

The consideration of an emergency ration by the military authorities led to popular anticipations of the discovery and adoption of some form of concentrated food which would sustain the vital energies under a heavy strain while having but little bulk and weight to incommode the soldier on his march. These anticipations found expression in the daily

papers and even in some of the medical journals. Kola advertisements fostered this idea. The practical men of the army found, however, that the advance of science has not yet enabled the human system to be independent of physiologic laws. They concluded that when work is to be accomplished by the human machine a certain quantity of the organic elements must be supplied; and as in emergencies hard service is generally to be expected, the principle was adopted that the emergency ration should contain as much of the food elements as is necessary to sustain the soldier under the maximum of physical strain. The conservatism and good sense of these military boards are shown by the manner in which they disposed of all suggestions of concentrated meats, pemmican, pastes, etc. It would be unwise to select as the staples of an emergency ration any article of food with which the soldier is not familiar, or which would make a material change in his dietary during the continuance of the emergency. The emergency ration, therefore, consists of a hard labor allowance of the ordinary articles of the soldier's ration. Saccharin is substituted for sugar, and tobacco is added on account of the difficulty sometimes experienced by troops in procuring the latter during the emergencies of a campaign. In another part of this issue we print a Summary of the Proceedings, Conclusions and Recommendations of the Emergency Ration Board, as a valuable contribution to the literature of food and dietaries.

THE JOURNAL ITSELF.

It is with great pleasure that we announce to our readers that the last year of the JOURNAL has been one of unwonted prosperity notwithstanding the continued stringency of the times, and that its growth has been steady and continuous. In the last three months the circulation has grown faster than ever before in its history. One reason for this has been the sincere desire of the members themselves to increase the strength of the organization, by inducing acquaintances to become colleagues, and another reason has undoubtedly been that the JOURNAL has furnished satisfactory material to the ASSOCIATION. Certainly its volume has never been so great. Exclusive of advertising pages, the JOURNAL furnished 1,364 pages quarto, the most part in closely printed type. No count is taken of advertising pages, title page nor index, and the index itself for these six months is of immense value. Three hundred and six members contributed original articles to the JOURNAL during the six months.

It is to be remembered, however, that many of the advertisers who were formerly giving formulæ, have ceased to advertise because unwilling any longer to publish them, and the losses of the JOURNAL on that account will be greater next year than in former years; but, notwithstanding, with the steady increase of mem-

bership, a movement which seems impossible that it can now be prevented by any change of sentiment, will probably counteract this. The character of the advertising carried in the JOURNAL has been made during the last volume to conform to the rule of the ASSOCIATION, which requires the formulæ of all proprietary medicines to be printed. With the encouragement that the past few months have furnished, let us all take hold of the work of organization in earnest. Let us have 10,000 members in this anniversary year!

CORRESPONDENCE.

Ether and Chloroform.

CHICAGO, Dec. 24, 1896.

To the Editor:—An article in the JOURNAL of December 19, by Dr. W. S. Caldwell, has been of great interest to me for several reasons. One reason is I do not agree with the conclusions drawn; but I am not prepared to combat them with statistics and cases and I will not take up the gauntlet on that score. In one place, however, Dr. Caldwell says "anesthetics are most skillfully given in large hospitals." I do not believe this statement is true. Anesthetics are usually (in hospitals) given by the junior interne during his first three months' service; though he may become quite skillful before his service in that department is over, yet for the greater part of that time he must be considered unskilled. Unfortunately, as a rule, he is given no instruction whatever and must get his skill by the hardest kind of experience and wholly at the expense of his patients. Even Dr. Caldwell credits one hospital surgeon with the statement that the interne "must kill a patient or two before he can get his hand in." Why not then employ an experienced man and require the anesthetist to get his experience as the surgeon does.

I wish to call particular attention to the Doctor's italics when referring to chloroform. They are as follows: "*Great care,*" "*trained and skilled,*" "*proper hands,*" "*proper precautions,*" "*more care,*" "*safer in skilled hands,*" "*properly administered,*" "*skilled.*" Here then we have his most emphatic arraignment of chloroform and his argument for ether. Any student, laborer, messenger boy, or member of the patient's family may safely (?) give ether, but chloroform requires a careful, experienced man; therefore he concludes chloroform should not be given. As well say that because it requires an expert to do a laparotomy, such operations should not be done at all.

But it is not my purpose to try to convince the ether givers of their error, but rather to use his paper as a text to plead the cause of the anesthetist. I do this, not with a desire to be regarded as a specialist in this underrated but very necessary branch of medical art, but rather because I happen to be familiar with the difficulties under which the anesthetist labors.

In fully 50 per cent. of the cases requiring an anesthetic, there is more danger to the patient in the anesthetic than there is in the operation which makes it necessary. If training and skill are exacted of the surgeon, why should they not be exacted of the man also who gives the anesthetic? The life of the patient is in many cases jeopardized as much by the one as by the other. In a large percentage of cases the skill required of the anesthetist in giving the anesthetic is fully as great as that required of the surgeon in doing the operation. This being the case, why is it that so many patients, and not a few surgeons, seem to think that the anesthetist is entitled to little or no compensation? The remedy lies with the sur-

geon. He too often tells the patient that the operation will cost \$100 or \$200 and that he will bring a doctor to assist and one to give the anesthetic. When the operation is done, he will say to the anesthetist, "You will get \$5 out of this when I get my pay." In that case the surgeon gets the first \$195 and the anesthetist gets the last \$5; or if five or six months have gone by, the surgeon has probably forgotten all about it and the anesthetist gets nothing. If there is any trouble about the bill and the whole of it is not paid the anesthetist's share is usually included in the unpaid portion.

To a young doctor in Chicago who wishes to learn surgery, it is a positive disadvantage to acquire a reputation for expertness in administering anesthetics. He is called upon to take this part in all cases where the work is wholly charity, and in many cases where all the work, except his, is paid for. Under such circumstances is it any wonder that the knowing ones decline this task and that the most unskilled are the ones on whom this great responsibility most often devolves? He considers the work he is doing as altogether unimportant and uninteresting and mechanically pours on the ether or chloroform, while his whole attention is concentrated on the operation. Is it any wonder that deaths occur under such circumstances? The vigilant anesthetist will not let his attention be attracted from his patient's condition for the fraction of a minute during the whole operation.

In the past two years and two weeks I have administered chloroform 161 times and ether once. Three times have I had respiration stop; twice in the case of smokers and once where too much chloroform was given. In all cases, by promptly removing the mask and using proper means, the patients were quickly restored. I will relate my experience in the matter of compensation: For these 162 anesthetics I have received just \$327, an average of \$2.63 each. Many of these required that I leave home at 8 o'clock and kept me away till afternoon, usually carfare and sometimes railroad fare to pay. As a partial remedy to these evils, I would suggest that the surgeon state plainly to the patient that he can not do the operation alone, that he must have an assistant and some one to give the anesthetic, and that they must be paid. Then let these assistants send their bills in separately and take their chances with the surgeon on getting their pay. Then as the anesthetist will, in all probability, not see the patient again, a suggestion that he be paid in cash, would usually be complied with. I have such an arrangement with two surgeons for whom I frequently give anesthetics and I see no possible objection to it. Under no circumstances will I send in a bill for less than \$10.

On one occasion, about a year ago, I was invited to attend an operation. On my arrival I found the assembled doctors holding a consultation; the patient's condition was such that it was feared she would not survive the anesthetic and the man who was there to administer it refused to go on. The surgeon considered the operation imperative and he and the husband urged me to try giving her chloroform. I anesthetized her and during the operation she lay so quiet that she appeared to be dead; even the operator stopped two or three times to inquire whether all was well. The husband spent the time alternately weeping by my side and in the next room on his knees praying. When the patient was returned to her bed and we prepared to go the husband objected to our leaving until she regained consciousness, although the family physician had indicated his intention to stay. Eight times at monthly intervals I sent in my bill, and as regularly it was ignored. Then I sent a collector to see him; he told the collector that he did not invite me to his house. I came there of my own accord and he guessed that I would have to look to myself for my pay. He also said that I had "nerve" to send in a bill for a little thing like that; he supposed doctors were glad to do that for the experience they got out of it.

I gave chloroform to a woman, the wife of a business man

down town, and sent in a bill of \$10. After the lapse of considerable time she sent me \$5 with the statement that she had "consulted no less than a dozen of the most prominent doctors in the city and they all said that \$5 was the very highest fee ever charged for giving an anesthetic." I wondered whether these "prominent" doctors charged \$10 each for these consultations. On another occasion I received a message requesting me to come to a suburban town to give an anesthetic. On my arrival there I found the patient to be a doctor whom I had never seen or heard of before. The operator told me that the patient was a wealthy man and owned a good deal of business property in a prosperous city in Minnesota. I sent him a bill and got a reply in which he said he was "astonished beyond measure" at my sending him a bill; he said that he had never yet paid a doctor for professional services and intimated that he never expected to. I left home at 8 A.M. to go to this case, got back at 3 P.M. and paid railroad fare both ways. Of these 162 patients whom I have anesthetized, 61 paid something. But the patience of the editor and the space of the JOURNAL would both be exhausted before I could exhaust the reasons given by the other 101 for not paying anything. Yours very truly,

D. H. GALLOWAY, M.D.

200 Oakwood Boulevard.

Harvey Medical College.

CHICAGO, ILL., Dec. 18, 1896.

To the Editor:—At a recent meeting of the faculty of the Harvey Medical College the following resolutions were passed unanimously:

"That the licensing power to the practice of medicine in the State of Illinois be taken from the State Board of Health and given to a separate board of medical examiners.

"That a diploma from a medical school of good standing shall be a necessary qualification for examination.

"That the examination shall be in the English language."

A committee was appointed to confer with a joint committee of the State medical societies to assist in furthering the passage of the bill.

Does this look as if the faculty of the Harvey Medical College desire or intend to run a diploma mill?

BYRON ROBINSON, M.D.

PUBLIC HEALTH.

Insusceptibility to Vaccination, a Very Rare or non-existent Condition.—In the last report of the medical officer of the Local Government Board it was stated that among 88,875 successive vaccinations by the officers of the board, whether with humanized lymph or with calf lymph, no case of insusceptibility had been met with; that is to say, in no case of primary vaccination had the individual been vaccinated three times unsuccessfully. The statement has caused some expressions of astonishment, especially as it was accompanied by another to the effect that no less than 1,983 certificates of insusceptibility had been granted by medical practitioners in England and Wales during the last year reported on. There is, therefore, some interest in noting what has been the result at other than Government public stations, where, presumably, the operation has been performed with perfectly fresh—that is, unstored—lymph. We now note that Mr. O. Lowsley, public vaccinator for Reading, recently announced to the Reading Board of Guardians that out of 14,000 children whom he had vaccinated he had "never found a case of insusceptibility." Although "insusceptibility" to vaccination is admitted by law it really becomes doubtful whether it has more than a legalized existence.—*London Lancet*, November 14.

Practical and Inexpensive Methods of Disinfecting with Formic Aldehyde.—1. Spray: Wet wall, furniture, etc., all over and on

every side with a 2 per cent. solution of formic aldehyde and close the rooms for twenty-four hours. Sixty to seventy c.c. of this solution will disinfect one square meter. 2. Evaporation of cloths wet with formic aldehyde: Dip the cloths in a solution of a 35 per cent. solution of formic aldehyde, one liter to 500 grams of chlorid of lime, and suspend in the rooms to be disinfected for twenty-four hours. One cloth two meters square will disinfect eight cubic meters. Sixty to seventy square centimeters of this solution are necessary for each cubic meter. Formic aldehyde is especially adapted to the disinfection of books and furs. The price is moderate, but the eyes must be protected by special glasses, the nose and mouth by a double mask of cotton, and the hands by gloves into which vaselin has been well rubbed. These processes are recommended by Nils Englund in the *Hyg. Rundsch.*, page 306, as the most efficacious.—*Nouv. Remèdes*, October 24.

The Water Supply at the West Point Military Academy.—The Board of Visitors at the Academy has reported adversely upon the condition of the water-supply at the Academy, and strongly advise an attempt at purification by filtration.

At the present time work is in progress on a reservoir for the collection of the running waters of the Cascade and Crow's Nest stream during the season of their free flow, with additions, when necessary, from the round pond. The reservoir is intended to hold 75,000,000 gallons, and when finished will give the post a water supply assured as to quantity. It should be filtered before distribution, not so much for the improvement of its chemical character as for the removal of the particular cause of the periodic fever.

"In the United States we are not so careful to the purity of our water supplies as are the people of Europe," says the reporter, "and in consequence we have an access of typhoid, malarial and so-called typho-malarial fevers. The laws of Germany direct specifically the filtering of all surface waters before they are delivered for public consumption. In England and continental Europe, the filter bed is an integral part of the water system, when the water is not from a naturally filtered spring or deep well sources."

Dr. Joseph D. Bryant, physician to the President, and a member of the board, signed his name to the report.

Bacillus of Hospital Gangrene.—The *British Medical Journal*, December 6, has a very interesting article on the above subject based upon a paper by Dr. Vincent, in *Annales de l'Institut Pasteur*, September 25, in which he claims to have discovered the bacillus in question in forty-seven wounded cases returned to Algiers from Madagascar. The pseudo-membranous pulp covering the ulcer contained, in every case, a bacillus varying in length from four to eight micromillimeters and about one micromillimeter broad. It was straight or slightly curved, with rounded ends and irregular vacuolation; many were segmented. It was decolorized by Gram's method and best stained by thionin. The number in a preparation varied directly with the virulence of the case; the pulp from the worst forms resembled a pure culture of the organism. The bacillus was found to have great power of resistance to antiseptics; it was present in large amount in wounds which had been treated for ten days with iodoform and sublimate compresses. The number of cellular elements present varied inversely as that of bacilli, and in favorable cases numerous leucocytes and large uninuclear cells could be seen engulfing the microbes. In forty out of the forty-seven cases a spirillum was also present, usually in small amount, but in two instances outnumbering the bacillus. Vincent considers the latter the pathogenic organism of hospital gangrene; its most abundant seat is immediately beneath the layer of pseudo-membranous exudation, in which respect it resembles the Klebs-Löffler bacillus of diphtheria. The process evoked by it is necrotic and hemorrhagic, but its action, even in severe cases, is

mainly local, the internal organs suffering but little, though the connective and muscular tissues may be much disorganized. Inoculation of the pus from hospital gangrene into wounds artificially produced in animals, or its subcutaneous injection in man, led to no lesions, so that it had to be supposed that special conditions were necessary as adjuvant factors in the etiology of the disease. Inoculation into a rabbit suffering from general tuberculosis, however, caused the formation of an unhealthy wound containing large numbers of the gangrene bacillus and similar results were obtained by injecting this organism, mixed cultures of streptococci, colon bacilli, etc. These associated bacilli, if they developed in the wound, occupied a position more superficial than that of the specific germ. There are, therefore, two special factors necessary to the development of hospital gangrene in the human subject, a condition of inanition in the patient, and an association of the specific virus with other microbes. The bacillus also has but little action when alone, requiring the preëxistence of a gangrenous ulcer evoked by other organisms. It is the prevention of the growth of these other forms by means of antiseptics that has rendered hospital gangrene so rare at the present day.

The Duration of Life in the Medical Profession.—Dr. Haegler, chief medical officer to the General Insurance Company of Basle, has recently published an interesting essay on the duration of life in the medical profession. It has long been known that among medical men the duration of life is shorter than among the general population of a like age, and that clergyman, for instance, on an average live twenty years longer than medical practitioners. According to some old statistics of the kingdom of Bavaria only school-masters in rural districts have a less expectation of life than members of the medical profession, 75 per cent. of the latter dying before the fiftieth year and 90 per cent. before the sixtieth year of age. These numbers, however, seem to be exaggerated, for a new statistical work on the Kingdom of Saxony, by Dr. Geissler, states that 80 per cent. of the practitioners of that country, reached their sixtieth and 25 per cent. even their seventieth year. It is worth mention that medical mortality is very high, especially in the early years after entering on practice, and the life insurance premium to be paid by medical practitioners is on this account 10 per cent. higher than the general insurance rate. The excessive mortality in our profession is not only caused by infectious diseases, which medical practitioners are liable to contract, but also to over-exertion and the impossibility of securing regular seasons for rest and meals. Typhoid fever and diseases of the lungs (phthisis excepted) are very frequent as causes of death, while suicide is rarer than among the general population. It is generally recognized that the conditions of life prevailing among any particular class or section of the population have an important bearing on the occurrence of longevity in that class. In former times the services of medical men were but little esteemed; their incomes were as a rule very small, and consequently their average lifetime was short. Then came a period when the condition of the practitioner improved, and accordingly the average duration of life increased, but during the last ten or twenty years various circumstances, including the overcrowding of the profession, have combined to lower the standard of living, and there is thus reason to suppose that the duration of life will be correspondingly shortened.—*London Lancet*, September 12.

Increasing Demands upon Laboratories for Official Bacterioscopy.—In the *Boston Medical and Surgical Journal*, December 3, Dr. Francis H. Williams relates the bacterial history of an instructive case of diphtheria, with remarks showing the importance of having two or more negative cultures, before the patient shall have been released from quarantine. His case, A. B., a child, was taken ill with diphtheria, and his younger brother

and nurse were sent, for fear of contagion, to the house of a relative in another town. Soon after its removal the younger child complained of its throat. I was called in consultation, and although there was no membrane to be seen, and this did not appear until the following day; I found the bacilli directly in a cover-glass preparation made at the bedside, and the cultures showed them likewise on the following day. I also had cultures made from the throat of the child's nurse, although it showed no indication of diphtheria, and found bacilli there also. If the bacterial test had been applied before they left home, the bacilli would probably have been found then in the throats of both the younger child and nurse. They could have been treated immediately, which is of great importance, and the risk of carrying the disease in another household would have been prevented. The following case demonstrates the importance of the bacterial test during convalescence. The throat of this patient, D. C., was perfectly clear within a week after the injection of the antitoxin, but the bacilli lingered, as this record of cultures made in the Harvard Medical School shows:

| | | |
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| April 25, positive. | June 13, positive. | July 21, positive. |
| 28, positive. | 16, negative. | 25, positive. |
| 30, positive. | 18, positive. | 28, positive. |
| May 5, positive. | 19, negative. | Aug. 4, positive. |
| 10, positive. | 20, positive. | 11, positive. |
| 12, positive. | 21, positive. | 19, positive. |
| 17, positive. | 23, positive. | 25, positive. |
| 23, positive. | 25, positive. | Sept. 1, positive. |
| 26, positive. | 26, positive. | 9, positive. |
| 30, positive. | 28, positive. | 15, positive. |
| June 2, positive. | 30, positive. | 22, positive. |
| 5, negative. | July 2, positive. | 29, positive. |
| 7, positive. | 7, positive. | Oct. 5, negative. |
| 9, negative. | 9, positive. | 6, negative. |
| 11, positive. | 14, positive. | |

The patient was able to be about within a short time, and yet was dangerous to others; in October cultures made from her throat were sufficiently virulent to kill a guinea pig in thirty-six hours. Dr. Williams, in commenting upon this and like cases, remarks that the laity do not realize that diphtheria is not usually transferred from one person to another except by actual contact through the hands or mouth, or by infected clothing, utensils, etc. The bacillus is not a motile one, and this disease is essentially one the germs of which are put into the mouth or nose by the hands. The slight annoyance which taking a swab causes an individual will be acquiesced in when it is understood that the disease is not, as a rule, a dangerous one when treated early. The cardinal point is to ascertain who are infected; and this can be done by means of the bacterial test, which should, of course, be followed by intelligent isolation and treatment. The application of this test to every member of the given "group" as soon as a case of diphtheria occurs, is made practicable by the excellent laboratories already established, and from the fact that the laity are becoming more and more appreciative of its usefulness. It should be applied to both nose and throat, and a second test should be made after a few days to those in whom the first was negative. A thorough use of the test would make unnecessary much of the quarantine that is so obnoxious and burdensome to many, and although it entails some expense, yet if looked at merely from a money point of view, it is cheaper in the long run. Unless the bacterial test is carried out systematically and intelligently, it will be necessary to continue to spend large sums of money for the care of patients who should not have been ill, and some lives will be lost that might have been saved.

NECROLOGY.

H. NEWELL MARTIN, M.D., formerly of Baltimore and recently of Burley in Yorkshire, England, died October 27, aged 48 years. Dr. Martin was a distinguished biologist, whose name was well known to English readers from his association with the late Professor Huxley in the authorship of the "Manual of Practical Instruction in Elementary Biology," published in

1875. He studied at Cambridge University and was for some time a fellow of Christ's College; he was also a Doctor of Science of London University. The greater part of his working life was, however, passed in America, where he for more than twenty years held the appointment of professor of biology at the Johns Hopkins University, Baltimore. While in America he wrote a work called "The Human Body," as well as several physiologic treatises, which obtained a wide circulation. He did some valuable work, and especially he discovered a method of maintaining the circulation artificially through the mammalian heart after its separation from the body, so that the effect of various conditions and the action of various drugs upon it could be ascertained without the complication which usually arises from its connection with the central nervous system. Dr. Martin was much beloved by all who knew him, and all physiologists will lament the early death of such a gifted and promising investigator.

GEORGE H. TAYLOR, M.D., of New York City, died December 9, in the 76th year of his age. He was born at Williston, Vt., and in his early life was a teacher in the common schools. Becoming interested in chemistry, he devoted his spare time to its study and later made a specialty of physiology. He was graduated from the New York Medical College in 1852 and at once began the practice of medicine in this city, where he had since resided. He became interested in the curative effects of massage and the Swedish movement cure and in 1858 visited Sweden. In 1864 he invented mechanical massage and subsequently established the Improved Movement Cure Institute, of which he was consulting physician at the time of his death. He was the author of a number of books and treatises on medical subjects. He leaves a wife, one daughter and a son.

JOHN DAVIS CASTNER, M.D., of Brooklyn, died November 13, aged 27 years. He was a graduate of the New York University, class of 1893, and for a time made his home at Newark, N. J., but about six months ago removed to Brooklyn, chiefly for the purpose of serving as ambulance surgeon at the Eastern District Hospital. A few weeks later he manifested pulmonary symptoms, tuberculous in character, in regard to which he was aware of a strong hereditary predisposition. It is not probable that his hospital work had any part in his infection by tuberculosis. He was a well informed young man, studious and industrious, with promise of a useful future.

PROFESSOR BUKA, of Berlin, has recently died in his 45th year. An eminent physicist, who has contributed materially to the utilization and improvement of the Roentgen ray.

PROFESSOR STRAUS, professor of experimental and comparative pathology, at Paris, in his 52nd year. He came from Strasbourg to Paris without friends or influence and succeeded in making a name and position for himself, by his enthusiastic devotion to science and talent for teaching. His work published last year on "Tuberculosis and its Bacillus," is his best monument.

MISCELLANY.

Emergency Rations for the Army.

Summary of Proceedings, Conclusions, and Recommendations of the Emergency Ration Board.

WAR DEPARTMENT, WASHINGTON, D. C., May 4, 1896.

The board met, pursuant to the foregoing order [Special Order No. 74, Headquarters Army, Adjutant-General's Office, March 28, 1896], on March 31, 1896, and after some discussion it was decided that all reports and correspondence submitted to the board should be carefully read by its members individually, in order that each should have a full understanding of the subject submitted to it before further proceedings were held. The board has held frequent sessions during the past month, as is shown by the accompanying daily record of proceedings.

The questions as to what should constitute such an emergency as to require the use of the emergency ration was first

discussed, and it was decided that in the opinion of the board "emergencies" are occasions on which, from any cause, the troops are mainly dependent on food carried on the person.

The emergency rations recommended by the department boards were then considered, in connection with various articles of food supply submitted to this board, as suggested components of an emergency ration, and with the various communications on these articles and on the general subject. It appears that of the eight boards, six recommended a hard bread, pure and simple, one a bread from whole wheat, and another a hard bread composed of one fifth oatmeal and four fifths wheat.

In the matter of meat, five of the boards recommended bacon, one dried(chipped smoked)beef, another a cooked beef, one-third of which should be fat, and a third board a meat compound composed of one part pork and three parts corned beef.

The reports of the department boards indicate a general belief that it would be unwise to select, as the staples of an emergency ration, any article of food with which the soldier is not familiar, or which would make a material change in his dietary during the continuance of the emergency; for articles of known value will give greater satisfaction, other things being equal, than those of unknown or unusual character, and change of diet is to be deprecated at a time when the energies of the soldier have to be sustained under conditions of strain.

This board concurs in these views, and therefore rejects the suggestion of a bread containing oatmeal, which although nutritious, palatable, and in other respects good, is open to the objection that, while it may be satisfying to individuals, the more familiar wheaten biscuit or hard bread is probably more acceptable to the majority of soldiers. It rejects, also, the bread made from whole wheat as known to be causative of diarrhea, and when tried, as was to be expected, it failed.

On similar grounds, this board rejects all suggestions of pemmican or meat pastes prepared from dried and powdered beef, although some of these make nutritious and palatable dishes when well spiced and highly flavored with extractives. It rejects the suggestion of corned beef and dried and smoked beef, because much of the extractives are lost and the albuminoids hardened in their manufacture, and the suggestion of canned cooked beef, because such meats are acknowledged by the canners to be flavorless unless there is present at least 35 to 75 per cent. of water, thus involving the transportation of that amount of innutritious matter in the ration. Many of the canned samples submitted to this board of stews, roast and boiled meats, etc., although otherwise good, are objectionable on this ground. The suggestion of peptonized or partially predigested meat is wholly at variance with the object in view in carrying an emergency ration which is to furnish to sound digestions the materials to keep them in function.

As all the department boards reported favorably on some variety of compressed soup to furnish a highly nitrogenous staple of the ration, and as the documentary evidence is strongly in favor of such an article, and as, moreover, this board has satisfied itself by personal experiment with regard to the preparation, palatability, and keeping qualities of certain of the compressed soups submitted, it concurs in the unanimous opinion of the department boards.

It was therefore decided that the three food staples of the emergency ration to be recommended for adoption should, in general terms, consist of hard bread, bacon, and some variety of compressed soup.

The board then proceeded to consider the character of the hard wheaten bread to be recommended as a portion of the emergency ration. It rejected the suggestion that any substance of a fatty nature be incorporated in the bread, as the evidence showed that such additions detracted from the keeping qualities of the finished article, and as, moreover, the bacon already recommended as a staple of the ration would furnish the soldier with the needful fat to be used at his pleasure. It examined certain samples of hard bread submitted to it, and concluded that the best sample was that which became soonest permeated when soaked in hot water. The sample which gave the best response to this test was one which was slightly aerated, its substance being evenly pervaded with minute or pin-point vacuolations. Its density was somewhat lessened by this porosity, so that, pound for pound, it would occupy somewhat more space than ordinary hard bread; but the board considered that this could be offset in great part by exposing the aerated hard bread to a higher degree of heat than is used in the baking of the ordinary bread: by this treatment weight would be lessened by getting rid of a small percentage of water, the percentage of the nutritive elements being thereby increased, while some of the starch would be converted into dextrine. The ready permeability of this biscuit would reduce to a minimum the number of cases of diarrhea that in field service so frequently originate in imperfectly softened and masticated

hard bread. It was the unanimous opinion of the board that bread thus permeable, and browned on the surface, would be improved in its keeping and nutritious qualities, and be more acceptable to the men than the present issue.

In conclusion, on this subject the board decided to recommend, as the hard bread of the emergency ration, that quality of bread which should form at the time the regulation issue of the Subsistence Department. The board, however, in this connection, desires to invite the attention of superior authority to the possibility of improving the quality of the ordinary hard bread ration on the lines indicated above.

The character of the bacon of the emergency ration was then discussed to determine whether it should be cooked or raw, or partially cooked, *i. e.*, sterilized, and whether it was advisable to have a selected bacon containing, for instance, a larger percentage of lean than is found in ordinary issues. As a result of a full discussion of these points, the board decided on recommending as the bacon of the emergency ration an uncooked bacon of the quality which at the time should form the regular issue of the Subsistence Department, preference being given to those cuts having the largest proportion of lean meat.

The board then proceeded to discuss the character of the soup-making material which it desired to recommend as a component of the emergency ration. On account of a deficiency of proteids in the hard bread and bacon already recommended, it was evident that this component should contain a large per cent. of this proximate element. This could be done either by incorporating powdered beef, or by the use of pea or bean meal. As a matter of fact, one or the other of these meals appeared to enter into the composition of most of the samples submitted to the board. Most of them purported to contain meat, and some showed the presence of fragments suggestive of dried beef as a constituent; but the proteids in the analysis before the board were not materially in excess of that which would be present were peas or beans the only component. All the samples before the board made excellent soups, but some required to be boiled twenty-five minutes, which is longer than is desirable in an article intended for an emergency ration.

The board has been unable to obtain from those who have manufactured compressed soups in this country as full information as is desirable. The details of the manufacture of these soups being trade secrets, it is impossible on a mere request to secure them. So far as known there have been but three firms in this country who have manufactured these soups, but the demand for them has been so slight that two of the concerns have suspended operations, while the third apparently carries but a small stock.

The board suggests that the attention of the Subsistence Department be directed to the elaboration of a soup-making material of the kind mentioned, and in the meantime recommends that pea meal be adopted for this part of the ration, as a palatable soup can be made from this meal when seasoned with finely chopped bacon, pepper and salt.

Cheese, suggested as a desirable article on account of its high proteids and calorific value, was rejected after a full presentation of the arguments pro and con, and chiefly because it appeared from the evidence before the board that the Subsistence Department had already made an unsuccessful effort to introduce it as an article of food for our troops.

In taking up the consideration of coffee as a part of the emergency ration, the claims of chocolate as a palatable, highly nutritious and easily prepared accessory, were discussed, but on motion it was voted down as failing to give that general satisfaction which is known to be obtained from the coffee ration. From the records it appears that seven of the department boards recommended coffee as a part of the emergency ration. This board concurs in the recommendation, as it believes coffee to be preferred generally in the United States to any other dietetic stimulant. But, inasmuch as tea is recommended by one board and as an alternative by another, as the leaves can be put up in a suitable form, have good keeping qualities, and are more grateful to some tastes than coffee, while the active principle and physiologic action are the same in both, the board recommends that tea may, when called for, be substituted for coffee in the emergency ration.

The board considered the efforts at concentration in the case of coffee to be practically failures, the solid extract having no taste of coffee, while the fluid extracts had more of the taste of chicory than of the aroma of coffee. It therefore decided on recommending that the coffee of the emergency ration consist of roasted and ground coffee berries.

Several preparations of the kola nut, with much manuscript and printed literature on the subject, including recent analyses made in the laboratory of the Surgeon-General's Office, were reviewed by the board; but it regards the whole of this sub-

ject as in the experimental stage and, as such, unfit for serious consideration in discussing the constituents of an army ration.

The question of sweetening the coffee or tea, as between saccharin or sugar, was then brought up for settlement. The department boards were divided on this subject. On behalf of sugar the evidence showed that beside its sweetening power it has a high calorific value. Against saccharin was its novelty; but on its behalf it was found that the practically immaterial weight of 4 grains possessed the sweetening power of 2 ounces of sugar; that it has been used for long periods in much larger quantities than would be needful in an emergency ration with no detrimental influence on health, and that its antiseptic property would tend to lessen the prevalence of diarrhea due to intestinal fermentations. After obtaining full information on these and other points connected with the subject, the board decided on recommending saccharin as the sweetening agent of the emergency ration. The main consideration which led to this decision was the desirability of having a nitrogenous proximate principle in each of the articles which contributed materially to the weight of the ration, and as sugar contains no nitrogen, it was believed that greater efficiency would be obtained if some article containing proteids were substituted for it in the emergency ration.

The advisability of including tobacco among the components of the emergency ration was then considered. It is true that tobacco is not a food; but it is used so generally by soldiers during campaigns for the restful feeling which it induces, that many men would rather go short on food than be deprived of their tobacco. Moreover, those habituated to its use suffer acutely from its deprivation, and as it is the object of an emergency ration to keep up the powers of the individual at their maximum for the time being on the smallest weight of food to be carried, it is argued that half an ounce of tobacco would conduce more to comfort while on short rations than would the addition to the ration of an extra half ounce of bread or bacon. While men who use tobacco always endeavor to provide themselves with it, experience shows that it can not always be purchased during campaigns, and particularly in emergencies; and to the argument that many do not use tobacco, the reply is brought forward that no man will find difficulty in disposing of his portion to others for an equivalent in some other article of the ration.

The board then proceeded to discuss the amount or quantity of the ration as a whole, and of its various components. For the convenience of its members in appreciating the value of propositions in this connection, it prepared the following table as the basis of its calculations:

| One ounce of 437.5 grains. | Nitrogen. | Carbon. | Calories. | Protein. | Fat. | Starches. |
|-------------------------------|-----------|---------|-----------|----------|--------|-----------|
| | Grains. | Grains. | | Ounce. | Ounce. | Ounce. |
| Biscuit. . . . | 10.71 | 183.5 | 107 | 0.156 | 0.013 | 0.734 |
| Beans. | 15.96 | 173.1 | 98 | 0.232 | 0.021 | 0.574 |
| Peas. | 15.13 | 161.6 | 92 | 0.22 | 0.0198 | 0.529 |
| Bacon. | 6.05 | 273.6 | 203 | 0.088 | 0.733 | ... |

The question whether the emergency ration should be a minimum or bare subsistence dietary or one possessing a high potential energy, was then discussed at length. In this discussion it became apparent that the board was unanimous in the opinion that when emergency rations are issued to troops, it is to be expected that serious work is ahead of them, and that a ration of high calorific value is needful to sustain them under these conditions.

The board recognized that the difference in weight between that which is generally accepted as a standard diet for any ordinary man under ordinary conditions of labor, and the ration which will sustain the soldier under emergency calls to unusual strain is only a few ounces, and the experience of its members authorized the belief that the high condition of the men, resulting from full diet on such occasions, would be bought cheaply by the carriage of the extra ounces on the person. Moreover, the board appreciated that if the emergency did not call for any unusual strain on the physical powers, or if from any cause it became needful to economize during the emergency, the extra ounces of a ration based on a maximum requirement could be withheld from consumption to constitute the ration of a period in excess of the face value of the emergency issue.

Guided chiefly by these considerations, the board decided that the emergency ration should contain as much as the proximate principles of food as is necessary to sustain the soldier under the maximum of physical strain.

It was then decided that the amounts of the various components should be as follows:

| | Ounces. |
|--|---------|
| Hard bread. | 16 |
| Bacon. | 10 |
| Pea meal. | 4 |
| Coffee, roasted and ground, with 4 grains saccharin. | 2 |
| (Or tea, one-half ounce, with 4 grains saccharin.) | |
| Salt. | .64 |
| Pepper. | .04 |
| Tobacco. | .5 |
| Net weight, with coffee. | 33.18 |
| Net weight, with tea. | 31.68 |

It is recommended that the Subsistence Department supply suitable bags in such numbers as may be necessary, for carrying the roasted and ground coffee, and the salt and pepper; also a tough paraffin paper for use in wrapping about bacon when carried on the person; also that the pea meal be issued in compressed cylindrical package.

The nutritive value of this ration is as follows:

| | Protein. | Fats. | Carbohydrates. | Nitrogen. | Carbon. | Calories. |
|-------------------------------|----------|--------|----------------|-----------|---------|-----------|
| | | | | Grains. | Crains. | |
| 16 ounces hard bread. | 2.496 | 0.208 | 11.744 | 171.36 | 2,936 | 1,712 |
| 10 ounce bacon. | 0.88 | 7.33 | ... | 60.5 | 2,736 | 2,030 |
| 4 ounces pea meal. | 0.88 | 0.0792 | 2.111 | 60.52 | 646.4 | 368 |
| Total. | 4.256 | 7.6172 | 13.855 | 292.38 | 6,318.4 | 4,110 |

In determining the quantity of the components of this ration, the board gave due consideration to the various dietaries for hard work, as stated by those who are generally cited as authorities on the subject. In general terms, such dietaries consist of 30 ounces of water-free food having an available energy equivalent to about 4,000 calories. The emergency ration recommended provided 4,110 calories from 25³/₄ ounces of water-free food. This greater food value from a less weight of material is obtained by an increase in the fat of the ration as compared with that of the standard dietaries. It must be remembered, however, that these dietaries are not intended for temporary, but continuous use. They express the views of the physiologists and scientists concerning the waste of the system under conditions of hard labor, and concerning the quantity and character of the food elements needful to completely repair their waste. The emergency ration is not intended for continuous use. It is intended to be used only occasionally and for short periods. The necessity of having it in the exact proportion of the proximate principles required by the system is not imperative. The objective in its construction should be the largest food value in the smallest weight. Fat has an available energy of more than twice that of an equal weight of the proteids or carbohydrates. The amount of fat assimilated by the system varies not only with the conditions as to heat and cold and rest or labor, but also with the quantity of carbohydrates in the diet. If the carbohydrates are not to be had, fat in excess of that ordinarily assimilated will be utilized by the system. Any deficiency in the proteids and starches of the emergency ration recommended above is offset by the higher calorific value of the fatty element. The fat, however, can not take the place of the proteid principles in the repair of the muscular system. This has to be considered from another point of view. A standard dietary for hard work should have at least 4.4 ounces of the proteids, equivalent to about 300 grains of nitrogen, for the average nitrogenous waste of the system amounts to about this quantity. The standard diet calls for a larger proportion, but it is questionable whether this is not a concession to meat-eating habits rather than a necessity of the system. The emergency ration above recommended gives close upon the quantity needful to repair muscular wastes. Should there be a deficiency it could be made up by meat issues when the emergency is at an end.

The board is called upon to report upon the minimum amount of articles of food necessary to sustain a soldier in health and activity while in active service in the field for a limited period. In considering this subject the board recognized that the wear and tear of the human machine involved in the mere act of living, i.e., in keeping up the vital processes and in sustaining the heat of the system at its normal degree, required the expenditure of a certain amount of energy. To supply this energy a corresponding amount of food must be introduced into the system, and this amount is usually spoken of by physiologists as subsistence diet. The quantities are stated somewhat differently by different authors. The lowest figures are those of Playfair, who calls for 14.5 ounces, of which 2 are protein, 12 starches, and 0.5 fat, containing 138 grains of nitrogen, 2,975 of carbon, and having the available energy of 1,758 calories. The board believes from the evidence before it, and as the outcome of its discussions on this subject, that men in well-fed

and healthy condition at starting can undergo the ordinary fatigues and hardships of an active campaign for at least ten days on the equivalent of a subsistence diet, such as that given by Playfair, and without any impairment of health resulting from the temporarily restricted diet. Hence, if the emergency should require economy in the use of the emergency ration, the men could be put upon a limited dietary, so that in the direst emergency, rations for five days might be made to last ten. The troops would individually suffer loss of weight by having to supplement their deficient dietary from their own tissues, but repair in sound men would be effected by a few days of rest and full diet.

The board considered from its experiments that emergency rations for five days should be the maximum number of rations to be carried on the person of the soldier. In emergencies of less than five days the troops should be required to carry the full ration for the number of days stated. In emergencies of longer duration the commanding officers may direct economy in the use of the ration, so that the five days' rations may be made to last for any number of days not exceeding ten. From their character as issued the articles of the ration are susceptible of accurate subdivision, by which means they may be used with any degree of liberality between a minimum of subsistence diet and a maximum emergency of hard labor diet.

Respectfully submitted,

CHAS. SMART, Major and Surgeon, President; C. A. WOODRUFF, Major and Commissary of Subsistence; E. A. GARLINGTON, Major and Inspector General; L. A. CRAIG, Captain, Sixth Cavalry; W. C. BROWN, First Cavalry, Recorder.

WAR DEPARTMENT,

SURGEON-GENERAL'S OFFICE, Washington, May 5, 1896.

Sir:—I have the honor to forward herewith the summary of proceedings of a board of officers convened by paragraph 3, Special Orders No. 74, Headquarters of the Army, Adjutant-General's Office, March 28, 1896, "to consider and recommend a proper ration for troops operating in emergencies."

Accompanying this will be found the daily record of proceedings and its appended papers.

Respectfully,

CH. SMART, Major and Surgeon, U. S. A., President.

The ADJUTANT-GENERAL, U. S. ARMY, Washington, D. C.

[First indorsement.]

WAR DEPARTMENT, October 6, 1896.

Respectfully referred to the Major-General Commanding the Army for remark. DANIEL S. LAMONT, Secretary of War.

[Second indorsement.]

HEADQUARTERS OF THE ARMY, Washington, Nov. 11, 1896.

Respectfully returned to the honorable the Secretary of War.

The report of the board as contained in the summary of its proceedings is approved, and the adoption of the recommendations contained therein is advised.

NELSON A. MILES, Major-General, Commanding.

[Third indorsement.]

NOVEMBER 21, 1896.

Approved. DANIEL S. LAMONT, Secretary of War.

[Fourth indorsement.]

HEADQUARTERS OF THE ARMY, Washington, Nov. 24, 1896.

From the Major-General Commanding to the Adjutant-General for publication, with the orders and instructions to carry it into effect.

SAM'L BRECK, Ass't Adj.-Gen.

General Orders, { HEADQUARTERS OF THE ARMY,
No. 49. } ADJUTANT-GENERAL'S OFFICE,
Washington, Dec. 5, 1896.

1. The following order has been received from the War Department:

WAR DEPARTMENT, Washington, Dec. 5, 1896.

Under the authority vested in him by section 1146, Revised Statutes, the President hereby establishes an emergency ration for troops operating for short periods under circumstances which require them to depend upon supplies carried upon their persons. Its component parts are as follows: Bacon, 10 ounces; hard bread, 16 ounces; pea-meal, 4 ounces, or an equivalent in approved material for making soup; coffee, roasted and ground, 2 ounces, or tea $\frac{1}{2}$ ounce; saccharin, 4 grains; salt, .64 ounce; pepper, .04 ounce; tobacco, $\frac{1}{2}$ ounce.

DANIEL S. LAMONT, Secretary of War.

2. The Secretary of War directs that this emergency ration be resorted to only on occasions arising in active operations when the use of the regularly established ration may be impracticable; that, although its nutritive qualities permit its use on half allowance, it will not be so used except in cases of overruling necessity, and never for a longer period than ten days; and that not more than five days' emergency rations be carried on the person at one time.

3. By direction of the Secretary of War, the Subsistence

Department will provide tough paraffin paper for wrapping the bacon; will furnish hard bread in grease-proof packages, the pea meal in cylindrical packages, and the coffee, tea, saccharin, salt, pepper and tobacco in suitable packages.

By command of Major-General Miles:

GEORGE D. RUGGLES, Adjutant-General.

A Liberal Mayor.—The Earl of Derby, who is the Mayor of Liverpool, does not draw his \$10,000 worth of honorarium, but causes it to be passed over to the support of charitable objects, chiefly to hospitals and dispensaries.

New Process of Wood Engraving.—The wood is coated with varnish and the design drawn on this. The acid bath is made of four parts sulphuric acid, one part bichromate of soda and six parts of water. The impression is said to resemble closely aquafortis engraving.—*Nouv. Remèdes*, October 24.

Cessation of the "Union Médicale."—After fifty-one years of dignified existence, the *Union Médicale* ceases its publication with this year. The three principal editors, Richelot, Richardièrre and Eugene Rochard, join the editorial staff of the *Bulletin Médical*.

Rodent Ulcer; a Genuine Case.—At a surgical clinic a few days ago, before a class in the Harvard Medical School, a patient was shown who had a wound on the thigh caused by the bite of a rat. The instructor having asked the class for a diagnosis of the case, one of the students replied promptly, "rodent ulcer."

Mirror Speech.—Grasset reports a similar case to that of the child mentioned in the *JOURNAL* December 19, page 1307, who reversed the syllables in speaking. In his case it was a woman affected with hysteria major and since insane, who reversed the letters of the entire words, pronouncing them as if spelled backward with absolutely amazing rapidity and correctness.—*Progrès Médical*, December 5.

The New Element "Lucium."—The discovery of a new element to which is given the name "lucium," has been announced by M. P. Barrière. It has been found by him while investigating monazite sand. It is related to the other rare elements found in monazite and is distinguished from cerium, lanthanum, didymium, thorium, zirconium, yttrium, ytterbium and erbium by its chemic reactions. Mr. Barrière's announcement is confirmed by several other competent chemists. Its atomic weight is given as 104.

Aerial Convection of Typhoid Fever.—An epidemic of fever at Rheims among the dragoons was first traced unmistakably to the dust stirred up by their evolutions and Uffelmann's experiments demonstrate that the dried typhoid bacillus, as also the cholera microbe, can be disseminated in the air, and thus alight in dust on articles of food. Similar experiences are reported from Belgium as the cause of the present slight epidemic at Tirlémont. These facts tend to show that the water supply is not always to blame in epidemics of typhoid fever.—*Journal d'Hygiène*, October 29.

Double Monsters.—The *Journal des Sciences Méd. de Lille*, the organ of the Roman Catholic University, has been devoting considerable space lately to a study of this subject, in order to determine whether baptism should be administered once or twice to a double monster. It concludes that there are always two embryos, hence two souls, but that sometimes one dies in the uterus and its body becomes therefore merely an appendage of the other, a parasite, which of course does not require baptism.

International Congress at Moscow; Program of Surgical Section.—

1. Treatment of septic wounds. Address by Braatz of Königsberg.
2. Non-operative treatment of neoplasms, especially with sero-therapy.
3. Cerebral surgery in tumors of the brain and Jacksonian epilepsy; Bergmann of Berlin.
4. Surgery of the lungs, especially in pulmonary cavities; Tuffier of Paris.
5. Treatment of strictures of the esophagus and rectum, results

obtained by the different methods of intervention; Czerny of Heidelberg. 6. Syphilitic and gonorrheal arthritis; Ollier of Lyons. 7. Prothesis of the lower member (consecutive to arthritis, paralysis, congenital luxation of the hip and amputations): Dollinger of Buda Pesth.—*Bulletin Médical*, December 2.

Photographing Concave Objects in Relief and Vice Versa.—A paper or plaster cast is taken of the object and this is photographed upside down, with the sensitive plate also reversed. In this way a negative of the cast, which is a negative of the object, is obtained and this when printed, by some optical illusion, produces exactly the effect of the original object, probably owing to our habit of seeing things lighted from above.—Moussard in *Nouveaux Remèdes*, October 24.

Model Crèches.—The importance and necessity of crèches (infant nurseries) for the children of working women are so generally recognized now that the municipality in some towns establishes crèches as it does public schools, under the supervision of the mayor. There are seven suburbs of Paris thus supplied with municipal crèches and the town of Roubaix has two fine ones that are considered models in every respect. The model crèches, however, are few and far between. A recent communication to the Acad. de Méd. states that there are only six in France that comply with all the requirements of the model crèche in regard to the location, building, sterilization of the milk and not too long delay in using the milk after it has been sterilized, with a suitable isolating room. Three of these six are municipal establishments (Roubaix and Tourcoing). Many have no garden, playground, piazzas nor yard. Every person connected with a crèche should pass a preliminary examination before a competent committee. At Gentilly the personnel is selected by competitive examination.—*Bulletin de l'Acad. de M.*, November 24.

Tick, or Texas Fever, in Australia.—Texas fever has assumed alarming proportions in northern Queensland, is reported to exist in western Australia, and its further spread is greatly feared by all the Australian colonies. It first appeared in Queensland in 1891, brought by cattle from the northern territory of South Australia. From them and other infected cattle introduced in 1894, the disease spread slowly at first, but latterly in a comparatively rapid manner. The bullock teams and drift stock from the northern territory and the western portion of northern Queensland to the boiling and extract works on the Albert and Norman rivers carried the disease in a southerly and easterly direction to a number of herds in that part of Queensland, inflicting very serious loss; but, as a rule, the losses were not so heavy in the country some distance back as on the coast. The whole of the gulf country from east to west, following generally the twenty-first parallel, has been strictly quarantined since November, 1895, and although this has to a certain extent stayed the spread of the disease, it has not proved thoroughly effective. When Queensland was found to be so badly infected, the legislatures of all the other colonies passed acts providing for their safety. The introduction of cattle, horses, sheep and dogs, also unsalted hides from Queensland, is prohibited absolutely by some colonies, and in others is permitted only after thorough inspection.—*U. S. Consular Reports*, November.

"Society for the Reconstitution of the Family."—The Acad. de Médecine of Paris proposes to bestow a medal upon the founder of this society, Mad. Hervieu, a midwife of Sedan, in view of the marvelous results accomplished by it already, with such small financial outlay. Its aims are similar to Governor Pingree's potato patch scheme. It supplies poor families with a plot of ground and seeds to cultivate it and during 1893, its first year, it assisted thus twenty-one families, representing 145 persons, at an expense of less than a dollar each (3 francs, 67 centimes). The results surpassed all expectations, as the

families not only supported themselves from the products of the land, but they sold enough to afford them an income. The next year fifty-four families were assisted and a coöperative society was formed of fifteen of the younger members of the families, about 16 years old, who each contributed one franc a month. With this amount land was rented, seeds donated, and at the close of the year the members of the little society had by their labor earned enough money to have each a savings-bank book with 50 francs to his credit. Branches of the society are also established at Brussels, Besangon and Montreuil-sur-Mer, which report similar results. The amount of land allotted to each family is 8 verges or roods for a family of two, about 104 square meters, as a verge equals 13 square metres; 10 verges for three; 12 for four to six in the family, and above this up to 20 verges. Land is selected that the family could purchase later if desired. The society also takes under its moral protection and guidance any child inscribed at birth on its records and keeps it in view throughout its after life. Any one can join the society by paying 50 centimes a month.—*Bulletin de l'Acad. de Méd.*, November 24.

The Pasteur Institut Under Fire.—The *New York Medical Journal* quotes with gusto an accusation against the Parisian Institut, fathered by the *Paris Medical Journal*. The complainant, a veterinarian named Eloire of Amiens, made use of the virus of Dr. Danysz, an attaché of the Institut, who he said had "with the usual flourish of trumpets" put on the market said virus for the extermination of rats and mice. Eloire's trials were made "conscientiously," but were failures. He thereupon launches an attack upon the other products of the Institut designed to be used as preventives of diseases of animals which have proved equally inefficacious. This is not the first time, he says, that there has been reason to complain of the products of the establishment founded by the lamented Pasteur. The chicken-cholera "vaccine" was only the starting-point of gross errors, and they have returned to it. The rabbit cholera made a complete failure in Australia in the hands of Loir, a pupil and relation of the master, and last year the anthrax "vaccine" caused Eloire very serious disappointments, so that the mortality in the herd kept on after the inoculation quite the same as before it. Eloire promises to recur to this interesting matter at some future time. In the meantime he remarks that the preventive inoculation of rabies leaves so much to be desired that it is not worth while to insist on it. As for the Danysz viruses, he says, they are a continuance of the unfortunate series of uncontrolled preparations sold for their weight in gold and not worth a nail. He protests that he is far from denying the discoveries of the illustrious master of French science; on the contrary, he says he is one of the constant patrons of the "vaccine-mill," and it is precisely in this capacity that he finds the products of the institute too often lacking in the quality that one has the right to expect in articles obtained from such a source. The above is the gist of the attack upon the successors of Pasteur, and if we were to stretch a point in the use of critical language, we would say that it looks like "small business." However, even the best of us are not harmed by being stirred up occasionally; and perhaps Drs. Roux and Duclaux will find this counter-irritant of the Amiens veterinarian an incentive to even greater care, better etiquette. This appears to have been open to review to an avoidance of commercialism, in a word, to the purely scientific attitude of their illustrious teacher. Upon his memory none of these complainants have returned to throw any of their adverse or pessimistic observations; the work of Pasteur has thus far passed unchallenged by these writers to whom we have above referred.

Communications and Evidence as to Abortions.—The statutory law of Iowa is that: "No practicing attorney, counselor, physician, surgeon, minister of the gospel, or priest of any denom-

ination, shall be allowed in giving testimony to disclose any confidential communication properly entrusted to him in his professional capacity and necessary and proper to enable him to discharge the functions of his office according to the usual course of practice or discipline. Such prohibition shall not apply to cases where the party in whose favor the same are made waives the rights conferred." Under this provision, two or three important questions were raised in the case of State v. Smith, decided by the supreme court of Iowa, Oct. 9, 1896. The defendant, a lady physician, was being tried on a charge of having produced a miscarriage on a pregnant woman. After she had treated the case for nine or ten days, according to her testimony, to prevent a miscarriage, and finding the head of the fetus in the vagina, and believing that a miscarriage could not then be prevented and that the obstruction must be removed, and having no instruments, she sent for another physician, who refused to have anything to do with the case, advising that nature be allowed to take her course. This second physician was called as a witness and asked to state what he saw and did there in the presence of the defendant. The patient waived any question of privilege and consented that the testimony of the witness might be fully given. This the defendant objected to on the ground "that the things he saw and the conversation he had with this defendant, upon the occasion of the visit mentioned by him, were confidential and that the knowledge he obtained upon that occasion was obtained in his capacity of a physician." The communication in question was not from the patient, nor did the relation of physician and patient exist between the witness and her, says the supreme court, as he declined to have anything to do with the case. The prohibition of the statute, it therefore holds, was not in favor of the patient and she could not waive the same. The prohibition of the statute, the court goes on to state, is not limited to communications with the patient, but applies to all communications of the character indicated in the statute, from whatever source, and is surely applicable, in all its force, to communications between physicians attending or consulting in the same case. At the same time, the court holds that as it was evident from the undisputed facts and testimony of the physician called in that the communication of the defendant physician to him was for an unlawful purpose, and had for its object the commission of a crime, it was therefore not privileged under the statute. The court further holds, in this case, that as there is no provision in section 3864 of the Code for punishing a pregnant woman upon whom criminal miscarriage has been produced, as it has never been held in that State that she is subject to punishment, and as the courts of many of the States have held that she is not an accomplice, and that corroboration of her evidence is not required to sustain a conviction, it will not require such corroboration, and affirms a conviction of the defendant here.

The Case of Marin Le Marcis.—In the year 1601, before the high court of Normandy, at Rouen, one Marie le Marcis was charged with creating a scandal, in that having for twenty years been dressed as a woman, she had called herself Marie and wished to assume man's dress and to marry another woman, the widow Jeanne le Febvre. After hearing the depositions of the principals, the court ordered that le Marcis be examined by two surgeons; a second visit was made by a physician, an apothecary and two more surgeons. Both these committees reported that the individual in question was undoubtedly a woman, whereupon the court condemned Marie le Marcis to do penance barefoot before the Church of St. Saviour and afterward to be burned alive. Le Marcis appealed from this sentence, so a third commission was formed, consisting of the "oldest doctors, surgeons and midwives exercising in that city." One of the six doctors, two surgeons and two midwives making up this committee was Maistre Jaques Duval, to

whom we owe an account of this *cause célèbre*. Jean Riolan, the celebrated anatomist and physician to Maris de Medicis, claimed that all dwarfs, giants and people with six fingers and others of nature's freaks should be put to death to improve the race. The majority of the committee seemed to be of his opinion, for Duval complains that they stood aloof with their hands in their pockets, while he carefully examined the case manually and visually. As a result of his examination he concluded he had to deal with a "gunanthrope" or as we call it, a hypospadiac. Although the rest of the commission dissented from Duval's views, the court of appeal sided with him and the prisoner was released. Maistre Duval having his attention attracted by this *lusus nature*, set to work to justify his opinion in this case and if possible to collect similar cases. After a decade of investigation he gave his researches to the world.¹ As might be expected from the times, the work is a queer mixture of credulity and erudition. A picture of the author, aged 56, is found in front, dressed in the quaint garb of his day. He has a benevolent face and a high forehead furrowed by thought, and although the artist has represented one eye as much lower than the other, we feel certain this is a mistake. After passing in review the anatomy of the male and female genitalia, with some very creditable cuts, the author treats of normal labor, the Casarean operation and care of the newborn child. The last third is taken up with an account of hermaphrodites, the man who had horns growing from his head, the man who was born with the golden tooth, etc., together with a detailed account of the le Marcis case, with his examination. The work is liberally garnished with quotations from Juvenal, Ovid, Martial, Horace and from contemporary writers, as Bauhin and Paré, which prove the author to have been a man of much learning. Maistre Duval finishes the work by casting the horoscope of Marin le Marcis, who was born Oct. 15, 1579, and proves to his own satisfaction that the conjunction of the planets at his birth was under the influence of the malign Mercury and the sad Saturn, but that joyous Venus finally rescued him. This was not M. Duval's first incursion into the field of letters, for he had previously published two works.² His account of the Marcis case led to a controversy with Riolan and to a fourth work.³ One wonders what was the after-history of Marin and Jeanne, whether they were married and lived happily ever afterward, or not. All honor to Maistre Jaques Duval, Escuyer, Seigneur d'Ectomare and Houel, who rescued a fellow-man from premature cremation and has transmitted an account of his deed to posterity.

Changes in Maryland Law as to Practice of Medicine.—Sections 54 and 56 of Article 43 of the Maryland Code of Public General Laws, entitled "Health," sub-title "Practitioners of Medicine," are amended by chapter 194 of the Laws of 1896, which also adds four new sections, numbered 61, 62, 63 and 64, to said Article. Section 54, as amended, provides that every person who was practicing medicine in the State on or before June 1, 1892, shall be entitled to be registered as a physician or surgeon, or both, upon making application to the president of either board of State medical examiners, the application to be in writing, sworn to, and state that the applicant was a duly qualified, lawful practitioner of medicine, in good standing, actually engaged in the practice of such profession in the State, on or before such date. Any president of such board, to whom an application is addressed, may in his discretion make inquiry and examine witnesses under oath as to the truth of the statements contained in such application, for a permit to be registered; and if the president of either of such boards of

¹ Des Hermaphrodites, Accouchemens des Femmes, et Traitement par Maistre Jaques Duval, Escuyer, Seigneur d'Ectomare & dn Houel, Docteur & Professeur en Medecine, natif d'Eureux, demurent a Ronen, MDCXII.

² Hydrotérapie des Fontaines Médicinales aux Environs de Ronen, 1603, et Méthode Nouvelle de Guérir les Catarrhes, 1611.

³ Réponse du Discours fait par le Sieur Riolan contre l'histoire de l'Hermaphrodite de Ronen, 1615.

medical examiners shall act upon such application, and shall refuse the same, then no president of the other of such boards shall entertain or act upon any application of such applicant for such permit. A permit is to be signed by the president and countersigned by the secretary of the board, and then registered by the clerk of the county where the applicant resides, or with the clerk of the circuit court of Baltimore, if he resides in that city, a certified copy of registration under the seal of the court being made legal evidence of such registration. But the provisions of this act are not to apply to those practicing medicine in the State prior to June, 1892, and who registered prior to July, 1894. Section 56 is amended by making it apply only to physicians who "shall hereafter come" into the State; by omitting the condition that they shall "have been practitioners of medicine or surgery for more than ten years prior to the date of the application;" and by extending the application of the section to any physicians or surgeons from other States "having a certificate or license from a board of medical examiners of any State where the requirements for practice are equal to those required by the board named in this article." Section 61 provides that any citizen of Maryland having information which causes him to believe that any person has been heretofore wrongfully and improperly registered as physician or surgeon, or both, may petition to the court wherein such registration was made, that the name of such person be stricken from the registry of physicians. Upon the filing of such petition, the court or one of the judges thereof shall pass an order requiring the person therein mentioned to answer the same under oath, on or before a date to be named within thirty days from the date of such order, and to show cause, if any there be, why the prayer of the petition shall not be granted. If no answer is made within the time, or one adjudged insufficient is made, the court shall order the name stricken from the registry. But if the allegations of the petition are properly denied, the issue thus raised shall be heard and determined by the court, subject to the right of either party to demand a jury trial. Moreover, the decision upon such petition shall have no force and effect in any criminal prosecution under this article. Section 62 enacts that the term, "Practicing Medicine or a Practitioner of Medicine," when used with respect to the qualifications of a practitioner or applicant to be registered under this article, shall be construed to mean the "practice of medicine" as a profession or means of livelihood, and by one duly licensed or registered. To this is added the very confusing sentence: "If a license or register by law at the time when such practice is alleged or claimed, or by one otherwise duly qualified to practice medicine, if other qualifications were required by law at such date." Perhaps it was intended to follow after a comma, "(if a license or registration was required) by law at the time when, etc." Section 63 makes it the duty of the secretary of either or both of the State boards of medical examiners to inquire into all violations of law under this article, and to institute all proceedings, or prosecutions thereof, and all expenses incurred by any secretary of either of such boards hereunder, shall be paid out of the funds acquired by or belonging to such boards respectively. Section 64 provides that the said board of medical examiners shall have full control over the expenditures and disposition of the funds collected from the fees and charges authorized to be made under the terms of this article; and shall fix and allow such compensation as they may deem proper for service rendered in the performance of the duties required by this article of members of said board or others, with the full power also to allow and discharge all proper expenses of said board, and any surplus to dispose of as said board may deem for the advantage of the practice of medicine in the State.

Washington.

MEDICAL SOCIETY.—At the meeting of the Medical Society held on the 16th instant the President, Dr. Samuel C. Busey, read his annual address entitled "1896 an Epoch in the History of the Medical Society of the District of Columbia." Dr. Busey made mention of the important medical legislation which had been secured through Congress, mentioning specially the medical practice act, the act regulating the incorporation of

medical colleges in the District, and the act relating to the testimony of physicians in courts of law in the District. He also touched on the important legislation in matters now pending before Congress affecting the District of Columbia, viz.: The omnibus sewer bill, the reclamation of the extensive flats about the water course, which at present causes so much preventable disease, and the creation and location of a contagious disease hospital. He further recommended the publication at Washington of a medical journal which would show the immense amount of valuable medical literary work done here in the different societies and medical and scientific departments of the local and general governments. Dr. Busey's untiring efforts in the interest of the Society and its members has made the Society the grand Society which it is today. The annual election of officers takes place on Jan. 4, 1897, and the indications are that Dr. Busey will be reelected President by acclamation. He has already served the Society as its President four terms.

DENTAL SOCIETY BANQUET.—The Washington City Dental Society had its thirteenth annual meeting and banquet on the 22d instant.

WASHINGTON OBSTETRICAL AND GYNECOLOGICAL SOCIETY.—The 255th meeting of the Society was held on the 18th instant at the residence of Dr. Wm. P. Corr. Dr. H. B. Deale read the paper of the evening, entitled "Intercurrent Infectious Diseases of Pregnancy."

Detroit.

DETROIT MEDICAL AND LIBRARY ASSOCIATION.—At the regular meeting of this association, Monday, December 14, Dr. E. Christian, Superintendent of the Pontiac Asylum, read a paper on "Bases for the Study of the Insanities," in which he said that there were four avenues open to us at the present day through which we may approach the study of the insanities: 1, the doctrine of localization of functions in the cerebral cortex; 2, the doctrine of three evolutionary levels of the C. N. S. and the application of the doctrine of evolution and dissolution of functions according to certain definite laws; 3, the doctrine of the "neuron," the unit of nervous and psychic function; and 4, the method of comparative and sociologic investigations, by which light is chiefly thrown upon the various types of degeneration. The first and last methods are well known to most students. A brief study of the second and third will be of interest. In lower animal life, the spinal system includes the gray matter of the spinal cord as far forward as the oculomotor nucleus. Next in order of evolution lie the middle centers, more definite in function than in anatomic limits. They are also sensori motor. On the motor side, they include the two central convolutions, extending along the longitudinal fissure above as well, and include the marginal convolution and also the striate bodies. On their sensory side, the greater part of the temporo-sphenoidal lobe, the gyrus fornicatus and the inferior parietal lobule are offered as fairly well representing the area receiving sensory impressions. Activities are here more complex, less organized and less automatic. The highest centers are situated in the pre-frontal and occipital regions. The activities here are the least automatic. The elements are still sensori-motor, but here we find the seat of consciousness. We have thus divided the nervous system of the animal kingdom into a lowest and highest middle center. Hughlings-Jackson says insanities are dissolutions of these different levels. Using the effect of alcohol as a means, we have first a loss of certain faculties. Later, when dissolution proceeds, the pronounced characteristics of the individual are altered, even so far as to become contradictory. Such results are attributed not to stimulation, but to the suppression of highest levels and the uncovering of levels more and more automatic, now free from inhibition of higher levels. In the case of a mental action accompanying epileptic paroxysms, the same phenomena of "letting go" of lower levels on account of more or less dissolution of higher levels are recognized as

in existence. Delusions in regard to self, which arise in mania or melancholia, are explained on the theory that this dissolution of a higher level does not go on uniformly, but that islets are left here and there of uncontrolled activity, comparable to those which cause dreams in sleep. Neuron is a unit of psychic and nervous force. With the first rudiments of the nervous system we find these sensory and motor neurons. With the acme in the scale of the nervous system, we have an intermediary system of the neurons develop. Thus we have three elementary neurons, the sensory, the motor and the connective. Eight types of nerve cells are recognized in the cortex. The cells of the gray matter which were formerly divided into six layers, are now divided into but four, the molecular layer, the ambiguous layer, the long pyramidal and the polymorphic. The pyramidal and ambiguous cells are the oldest in the process of the evolution of the cerebral cortex. In the newborn and young, and while the individual cells of the various cortical layers have already reached the completion of their numerical growth the individual neuron has by no means reached the acme of its evolution. The cell increases in size and processes and also in amount and complexity of its anatomico-physiologic connections. The material pathologic bases of the insanities furnished us by the neuron theory arrange themselves into two groups; the first arising out of alterations or defect in the early evolutions in brain and mind, such as has just been referred to; second, lesions in the protective or nutritive mechanisms. In concluding his researches, our author says: The whole of the above body of neurologic and pathologic evidence together with recent experimental work, show that in the early stages of the insanities there is a profound nutritive and dynamic failure of the nerve elements of the brain, which finds expression in the insanias, the melancholias and the commencing loss of memory, easily induced mental fatigue; and that the pathologic facts ascertained, in so far as they afford us any light, force on us the conviction that we are dealing with serious nutritive and dynamic changes in a central nervous organ; a conviction which must profoundly influence the clinical and practical treatment of insanity in the future more than it has in the past.



THE MT. CLEMENS HOME FOR INVALIDS.

THE MT. CLEMENS HOME FOR MEDICAL AND SURGICAL INVALIDS.—The property for the erection of a hospital for the treatment of such cases as go to Mt. Clemens and who need medical or surgical treatment, for which the hotels do not supply the necessary facilities, was bought about four years ago by Dr. C. C. Yemans of Detroit. The site is a very desirable one, being healthy, well shaded, well watered and with pure drinking water of a uniform temperature the year round. Work was commenced late in the summer for a building 50x200 feet, two stories in height and so constructed as to give the best possible service with the least running expense. The foundation has now been completed and the executive building is ready for occupancy. The building includes exercise rooms for gymnasium and other amusements for the separate

sexes. Not long ago it became apparent that there was not sufficient capacity in the State for the care of nervous diseases, and it was therefore determined to finish the building with a view to caring for such cases. The site consists of eight acres of land. It is healthful, well drained and well calculated for a launch for all kind of exercise and sport, such as football, tennis, etc., within the bounds of its own property. The location is a height on North Avenue, just far enough from the center of business to be quiet and secluded. The building is on the old colonial style of architecture, presenting a home-like and beautiful outline, the whole outfit costing from \$30,000 to \$32,000. It is expected that the building will be completed and ready for occupancy not later than June 1, 1897. Up to the present time the enterprise has been carried on by Drs. Donald McLean and Yemans. It will now become a stock concern at \$40,000 capitalization. It is thought no better location could be selected than Mt. Clemens, especially since it is connected with Detroit by rapid railway, bringing the hospital and the city of Detroit within an hour and a half's time of each other. Mt. Clemens is known to be one of the prominent watering places in America, having a full and elegant service of bath houses and hotels. This enterprise is entered into for the purpose of establishing a pure and simple hospital, with no effort on the part of those interested to supply mineral baths, trusting to those already there for any such needed auxiliary, as they are equal to any bath houses in the world. The hotels are adequate for the comfort and convenience of all who need only hotel service. The hospital is soliciting the patronage of those who are unable to get the required service at the hotels.

THE WEEKLY REPORT OF THE HEALTH OFFICE show 97 deaths last week, of which 48 were children under 5 years of age. There were 53 new cases of diphtheria, with 47 now sick. There are at present 39 cases of scarlet fever and 60 cases of measles. There were 14 deaths from diphtheria. Births during the week 92, of which 45 were males.

THE WAYNE COUNTY MEDICAL SOCIETY, at its regular meeting, Thursday, December 17, listened to an interesting paper by Dr. Charles D. Aaron, entitled "Chronic Dyspepsia and Chronic Catarrh of the Stomach," it being one of the series that the Doctor had read before the different medical societies of the city.

THE PUBLIC SERVICE.

Army Changes. Official List of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from Dec. 12 to 26, 1896.

Major Clarence Ewen, Surgeon, extension of leave of absence granted on account of disability is still further extended until Jan. 24, 1897, on account of disability.

First Lieut. Benjamin Brooke, Asst. Surgeon (Ft. Thomas, Ky.), leave of absence granted for seven days is extended twenty-three days.

Change of Address.

Bonner, Horace, from 11 S. Ludlow St. to 119 S. Ludlow St., Dayton, O.
Kellogg, G. M., from Chicago to Keokuk, Iowa.
Norton, J. J., from Monroe City, Mo., to Biloxi, Miss.

LETTERS RECEIVED

Abbey, C. D., Chicago, Ill.; Andrews, E. H., Denver, Ind.; Alta Pharmaceutical Co., St. Louis, Mo.; Anheuser-Busch Brewing Association, St. Louis, Mo.

Broadstreet, S. C., Mt. Pleasant, Texas; Brown, E. J., Minneapolis, Minn.; Boyce, J. Wesley, Washington, D. C.; Bovinine Co., The, New York, N. Y.; Brown, Bedford, Alexandria, Va.

Collins, T. Shields, Globe, Ariz.; Coe, Henry W., Portland, Ore.; Dennis, Frederic S., New York, N. Y.; Dudley, L. W., Alma, Mich.; Elliott, A. R., New York, N. Y.; Erwin, A. J., Mansfield, Ohio.

Fletcher, M. H., Cincinnati, Ohio.
Galloway, D. H., Chicago, Ill.; Garnett, J. W., Greenville, Texas; Grady, L. B., Atlanta, Ga.; Green, R. W., Geneseo, N. Y.

Hummel, A. L., Advertising Agency, New York, N. Y.; Harrington, C. E., New York, N. Y.; Heppner, A. H., Brooklyn, N. Y.; Haldenstein, I., New York, N. Y.; Hulett, C. M. T., Kirksville, Mo.

Jones, J., S. Evanston, Ill.; Jenkins, J. F., Tecumseh, Mich.; Jelks, J. T., Hot Springs, Ark.; Jones, H. Isaac, San Francisco, Cal.; Jacobson & Co., Cincinnati, Ohio.

Kress & Owen Co., New York, N. Y.; Kindred, J. J., New York, N. Y. Lord & Thomas, Chicago, Ill.

Manley, W. C., Jacksonville, Ill.; Moore, N. W., Milford, Ky.; Mellier Drug Co., St. Louis, Mo.; Monosh, D. F., Des Moines, Iowa; Mackle, J. M., Portage La Prairie, Canada; McEnaney, J. B., Ashton, Iowa; McIntosh Battery and Optical Co. (2), Chicago, Ill.; McAssy, J. H., Dayton, Ohio; McBride, M. A., New Orleans, La.; McKesson & Robbins, New York, N. Y.

New York Post-Graduate Medical School and Hospital, New York. Pugh, Thos. B., Napoleonville, La.

Roe, John O., Rochester, N. Y.; Roush, L. F., New Haven, W. Va. Simpson, Frank P., Pittsburg, Pa.; Sheldon, Chas. S., Madison, Wis.

Thompson, F. D., Fort Worth, Texas.
Union Advertising Agency, Louisville, Ky.

Van Note, W. B., Lima, Ohio.
Winslow, R., Baltimore, Md.; Williams, Chas., Syracuse, N. Y.; Wagoner, L. T., Otterville, Ill.

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No. 2.

ORIGINAL ARTICLES.

COMPULSORY VACCINATION; SHOULD IT BE ENFORCED BY LAW?

Read before the New York Medico-Legal Society, November, 1896.

BY CLARK BELL, Esq., LL.D.

PRESIDENT MEDICO-LEGAL CONGRESS,

NEW YORK.

[From advance sheets Medico-Legal Journal.]

This subject came recently before the Medico-Legal Society in the city of New York, introduced by a paper presented by Dr. Montague R. Levenson, in which his position was mainly an assault upon vaccination itself.

Most laymen and the majority of the medical profession have been educated to accept vaccination as a reliable, safe, and the only preventive remedy, to insure against smallpox, and without especial examination the world has accepted the remedy discovered by Jenner, whose centennial has just been celebrated by all the world, even in Japan.

It was not considered quite the proper way to meet the issue in a controversy pro and con, as to the merits of vaccination for this reason, and the issue was broadened and widened so as to embrace this issue:

"Conceding the utility and efficacy of vaccination as a preventive against smallpox should it be made compulsory?"

Owing to the recent agitation in England as to compulsory vaccination and the recent adverse report of the Royal Commission and to the fact that it was alleged to be in contemplation to engraft the idea of compulsory vaccination into the new charter now being formed for "Greater New York," I decided to take the views of some of those best calculated to know the facts germane to such a discussion; and being quite ignorant myself of how the lymph now in general use was obtained, and what supervision or precautions were observed as to its genuineness and purity, I addressed the following letter to boards of health in all the neighboring States and cities and to men eminent in the profession, as to the issues, and especially as to the subject of compulsory vaccination *per se*:

MEDICO-LEGAL SOCIETY,
SECRETARY'S OFFICE, NO. 39 BROADWAY,
NEW YORK, Nov. 14, 1896.

My Dear Sir:—I have the honor to enclose a notice of our next meeting and dinner to be held on the 18th of November, instant, and would be glad to see you present and to take part in the discussion of the fourth question on the programme.

4. Conceding the utility and efficacy of vaccination as a preventive against smallpox should it be made compulsory?

May I also ask you to advise me in time for use on that occasion if possible, if not as soon as you can, upon the following additional subjects:

1. What lymph do you use in vaccination and how obtained?
2. Is that lymph obtained by inoculating the calf with the virus of smallpox or from any lymph thus originally obtained?
3. With precisely what lymph is the calf vaccinated and how was that lymph originally obtained for use upon the calf?

4. What supervision is exercised by the board of health, or any public official, over the character, quality and manufacture of the lymph employed in vaccinating the calf, as to its efficiency and genuineness?

5. What security have you that the lymph you use, or that they employ on the calf, is pure?

An early reply will be esteemed a favor,

CLARK BELL.

I submit some of the replies I have received and which were most of them submitted to the Medico-Legal Society in that discussion.

George B. Fowler, M. D., Health Commissioner of New York City, replied to the question as follows in a letter to the Secretary:

My Dear Sir:—Your communication of the 30th, relative to my replying to a prospective paper before the Medico-Legal Society, by Dr. M. R. Levenson, in which he assails "compulsory vaccination," is at hand. This board is not in favor of "compulsory vaccination" and never has been. It is acting under the State laws when it assists the board of education in securing the vaccination of pupils and teachers. So thoroughly has this coöperation been carried out that in the last ten years, during which three epidemics of smallpox have occurred in this city, not a single pupil or teacher connected with the public schools has been reported to this department as suffering with smallpox. The reason the board of health does not believe in compulsory vaccination is because it is believed that such a statute would result in antagonism to the work, which would defeat the object it has always secured in the way of gratuitous and voluntary vaccination and the comparative immunity from smallpox for which this city is noted.

I therefore do not see any reason why I should defend the position that Dr. Levenson proposes to take in this paper.

Yours very truly,

GEORGE B. FOWLER, Commissioner.

Dr. Moreau Morris, M.D., Health Department New York City, replied as follows:

Dear Sir:—To the question, "Compulsory vaccination, should it be enforced by law?" I would respectfully answer, that for a general State law, negatively, but for local purposes in cities or villages having a population of 1,000 or over, where large congregations of school children especially congregate, there should be compulsory vaccination as a precedent to school admission.

The experience of other countries and in this city in suppressing the spread of smallpox, by carefully selected vaccine virus introduced into the human system by proper antiseptic means, seems to set the seal of its legitimacy for public policy and universal protection beyond all question. The public protection is paramount to any and all private interests.

Respectfully yours, MOREAU MORRIS, M.D.,

Prof. Eugene Foster, Dean of the Faculty of the College of Georgia, replied as follows:

My Dear Sir:—Pray pardon my failure to earlier make reply to your letters of September 28 and October 1. Great press of business, together with several absences from the city, has prevented earlier attention to the matter. I very sincerely appreciate the compliment extended in asking me to submit a paper on vaccination to be read on the third Wednesday of November in reply to one to be presented by Dr. Montague R. Levenson. I could not do justice to the subject of vaccination in "a short paper." I have written exhaustively upon this subject in my article on "The Statistic Evidences of the Value of Vaccination," which was presented at the Jenner Centennial at the recent meeting of the AMERICAN MEDICAL ASSOCIATION in Atlanta. This paper you will find in a series of articles which were published in the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. If this paper does not produce sufficient evidence to satisfy a reasoning man as to the safety and

efficiency of vaccination I could not consent to waste time in arguing the question with him. In my positions on the question of vaccination, I am sustained by almost every reputable medical man in the civilized world. I do not attempt to argue the good policy of compulsory vaccination; this is a question entirely separate and distinct from its efficiency and safety and many of the best members of the medical profession seriously doubt, if indeed they are not actually opposed to, compulsory vaccination. I have had the article above referred to reprinted and will in a short time send you a copy of it if you desire me to do so.

I very greatly regret that I did not know that the copy of the Berlin Report of the Consul General, referred to by you, was not preserved by me, that is, the original received from Surgeon General Sternberg; it was included among the manuscript turned over to the printer with the balance of my article read at the Jenner Centennial.

I will be very glad to have you send me Dr. Levenson's article, as promised in yours of October 1, for the reason that I do not now receive the transactions of the Medico-Legal Society as I formerly did. I am

Very truly yours,
EUGENE FOSTER.

Col. W. P. Prentice, counsel for the health authority, replied as follows:

Dear Sir:—I have the honor to acknowledge your letter of the 2nd inst., with its invitation "to prepare" for the meeting of the Medico-Legal Society, on November 18, my views upon the following theme, "Conceding the utility and value of vaccination as a preventive, should it be made compulsory by law."

There can not now be said to be any open question subject to concession in the first clause of your theme, in my opinion; but as the Register of Scotland reported in 1874, "there is but little of that unreasonable opposition to the practice of vaccination" remaining, and the recent report of the Parliamentary Commission of England, of which Lord Herschell was the chairman, following similar reports in Germany and other States, closes the discussion for the present, exhibiting the impracticability of opposition. This result adds strength to the argument for the indirect methods of securing vaccination. I have elsewhere in my book on "Police Powers," discussed this question more at large, and have given reference to many cases, including those which have maintained personal liberty where the public health was not directly endangered. At page 132 this statement was made: "Compulsory vaccination has been instituted in several countries and by the laws in several States in respect to minors. City ordinances regulate it, but the indirect method of excluding children not vaccinated from schools and factories, or in case of immigrants, insisting upon quarantine, and the offer of free vaccination, with the constant supervision of the health officers, are more effective."

This opinion I still maintain, and in common with many others, have not ceased to regret the unwise proceedings which have been occasionally undertaken, in defense of health and sanitary laws, weakening their proper force. The court of appeals' decision in 1895, matter of Smith, (146 N. Y., 68) brings up the sound rule to govern such cases, viz.: That "where a right to restrain the citizen in his personal liberty, or to interfere with his pursuit of a lawful avocation is claimed, to sustain the claim it must appear very clearly, not only that the right has been conferred by law, but that the facts exist justifying its exercise. The validity of the law is not so much called into question as the right to enforce its provisions," the opinion says, and again uses words which I would adopt. "I think no one will dispute the right of the legislature to enact such measures as will protect all persons from the impending calamity of a pestilence, and to vest in local authorities such comprehensive powers as will enable them to act competently and effectively." Little can be added to the lesson of this judgment, and I believe we have at present sufficient laws, if they are duly administered and properly enforced.

I remain with great respect,
Yours truly,
W. P. PRENTICE.

Sir Frederick Bateman, of Norwich, England, writes:

UPPER AND GILES STREET, NORWICH, NOV. 4, 1896.

My Dear Sir:—You ask my views on compulsory vaccination. It so happens that this question has much engaged my attention and I send you a pamphlet in which, at page 5, you will see my mature views on this subject. With kind regards,

Yours faithfully,
FREDERICK BATEMAN.

The pamphlet referred to is the annual report of the Asylum Union for 1895, by Sir Frederick Bate-

man, which can not, for want of space, be given, but the summary will be of great interest, which is as follows:

I hold that any individual who from his obstinacy declines to avail himself of the protective influence of vaccination, and thus risks not only his own life, but that of his innocent neighbor, is just as much liable, or ought to be, to punishment by law, as he who knocks his neighbor down, or picks his pocket; and I maintain it is a wicked crime for persons in the broad daylight of the nineteenth century, from obstinacy or ignorance, to refrain from being vaccinated and from having their families similarly protected.

As hypotheses and mere opinions have but little influence, I wish to support these remarks by some documentary evidence in reference to the results of vaccination. During a period of sixteen years, 5,797 cases of smallpox were admitted into the smallpox hospital at Highgate. Of this number 2,654, or nearly one-half, were unprotected by vaccination; of these, 996 died, being 35.5 per cent. Now just mark the reverse; of those properly vaccinated—and I lay great stress on the word "properly," because otherwise these statistics might be pulled to pieces—just under 1 per cent. died; so here you have 35.5 per cent. dying of the unvaccinated, and less than 1 per cent. of the vaccinated.

The latest scientific views as to the value of vaccination may thus be summarized:

1. Vaccination properly performed in infancy, affords an almost complete protection against smallpox up to the period of puberty; but it is important to bear in mind that vaccination is a surgical operation, and should be performed in a satisfactory and careful manner; for many of the supposed failures are in reality due to the careless way in which the operation has been undertaken.

2. That in the few instances in which vaccination may fail to impart absolute protection against the smallpox, it nevertheless, in the majority of instances, modifies the course of the disease, and renders it less fatal, as was strikingly exemplified in the outbreak at Hackford.

3. That at puberty, re-vaccination is strongly to be recommended, and that, as a rule, such re-vaccinated persons may be regarded as permanently protected, although in an epidemic of smallpox, it may be a wise precautionary measure to submit them again to the process of vaccination.

The importance of the subject, and the fact of the recent outbreak of smallpox in this Union, must be my excuse for dwelling at such length on the efficacy of vaccination. The arguments for the necessity of it have been much strengthened by the remarkable discoveries recently made in connection with bacteriology and the antitoxin treatment of disease, discoveries which have been hailed with acclamation in all parts of the civilized world; and I unhesitatingly and emphatically assert that the sanitary authorities will be neglecting their duty, in the face of all this, if they do not resolutely and unflinchingly put into operation the compulsory clauses of the Vaccination Acts.

C. S. Lindsley, M.D., secretary of the State Board of Health of Connecticut, replied as follows.

Dear Sir:—In your courteous invitation to me, on September 1, to prepare a paper "in support of vaccination," there is not a word about "compulsory." In your favor of September 10, you speak of my proposed paper, "defending compulsory vaccination." Defending vaccination and defending compulsory vaccination are two quite different things. I am not an advocate of compulsory vaccination. I am positively opposed to it, but wholly on the ground of expediency. The people of this country are too thoroughly imbued with a sense of personal independence to submit patiently to personal compulsion. The attempt would excite hostility to vaccination that does not exist at present, and would hinder rather than promote the cause of vaccination.

I have received this morning another notice, with an invitation which I regret to say I shall not be able to accept, by reason of other engagements.

Lack of time obliges me to reply briefly to your numerous questions, although they cover enough for a small volume. I will answer them as you have numbered them.

Q. 1. Ans. Sometimes humanized and sometimes bovine virus.

Q. 2. Ans. No.

Q. 3. Ans. From a previously vaccinated calf, and originally from a cow or heifer with vaccine disease.

Q. 4. Ans. In most States there is no legalized supervision.

Q. 5. Ans. My only security is the known care and precaution which are observed by the best producers, except when I

use humanized lymph, and then my own personal knowledge of the health of the subject from which it is taken.

Very respectfully, C. A. LINDSLEY.

Dr. Samuel W. Abbott, secretary Massachusetts State Board of Health, replies:

Dear Sir:—In reply to your kind invitation to be present next Wednesday, I should like very much to be there, but it is impossible.

In reply to your questions:

1. I invariably use vaccine lymph from the calf. There is no objection, however, to the use of human lymph, provided you know that it comes from a healthy source.

2. The original source of the disease in the cow is undoubtedly some exposure to smallpox infection. Experiment has definitely settled this point. The term "spontaneous cowpox" has often been used in this country and abroad in connection with this subject. No progressive physician, however, at the present day, would for a moment admit the use of such a term. Infectious diseases have an origin, and that origin is an infectious disease of the same kind. As a matter of fact, the term is simply used as a catch-penny dodge for lining the pockets of some particular producer of vaccine lymph. I have seen and examined very many cases of cowpox in the cow occurring in large dairies, but these invariably occurred during the progress of epidemics of smallpox, such as those of 1880, 1872 and previous years.

3. Calves are vaccinated either with lymph from other calves or with lymph from healthy children. The latter method is quite as efficient as the former, and is recommended by the very highest authorities in Germany, where this whole subject has been treated in the most scientific manner.

4. Very little supervision is exercised in this country over the production of vaccine lymph. The State Board of Health of Minnesota maintains a small plant and produces lymph of a reliable quality. In my opinion, all vaccine production should be under the supervision either of State or National authorities.

5. The only security now given is the guarantee of the producer.

Finally, the principal fault in vaccine production in this country is due to the fact that the whole question has been treated commercially instead of scientifically. It is, however, pleasing to know that the movement is tending in the right direction.

Recent inspection of vaccine establishments has undoubtedly effected considerable reform, but there is abundant room for more. Too much reliance should not be placed upon bacteriologic inspection of vaccine products made upon a few specimens. No good sanitarian is willing to pronounce upon the quality of a sample of water from the chemic analysis alone, but finds it necessary to have a thorough knowledge of all the surrounding circumstances. The same is true in regard to vaccine production. A well managed establishment under careful supervision, and conducted upon the best principles, may be depended upon to furnish a good product.

The best argument for compulsory vaccination is the present condition of Germany, which has been practically free from smallpox for the past twenty years, in consequence of thorough enforcement of the law. Most of the deaths in Germany from smallpox, in three years, have been those of recent unvaccinated immigrants from Russia, France or Italy.

The Imperial Board of Health of Germany has just issued a publication, entitled "Smallpox and Vaccination," which presents very fully the history of the subject, together with much that is valuable with reference to present conditions in that country. Many conditions are presented which do not reflect creditably upon the condition of the neighboring countries, and show that the prevalence of smallpox in these communities is inversely as the thorough manner in which vaccination and re-vaccination are conducted.

It appears from this document that, in the five years (1889-1893), the death rate from smallpox in the German Empire was only 2.3 in each million inhabitants, while in the neighboring countries it was as follows:

| | | |
|----------------------|-------|--------------|
| In France | 147.6 | per million. |
| In Belgium | 252.9 | " |
| In Austria | 313.3 | " |
| In Russia | 836.4 | " |

Or, in other words, had the same rates of mortality from smallpox prevailed in Germany as existed in each of these four countries, there would have been a loss by death from smallpox, respectively, of 7,321, 12,584, 15,558 or 41,584, according to the country with which the comparison is made. These figures speak for themselves. It is no wonder that the compiler, in

closing the volume, pays a glowing tribute to the memory of Jenner and expresses the hope that "the number of those who look back upon this day (May 14, 1796), with thankful hearts, may continually increase." Yours respectfully,

SAMUEL W. ABBOTT.

Benj. F. Lee, M.D., secretary State Board of Health of Pennsylvania, replies:

Dear Sir:—The matter of which you request information from me to be used in the discussion at the meeting November 18, is of so much interest and importance that I take the liberty of replying to your communication. As a portion of my answer, I send you a copy of *Public Health* for July last, and refer you especially to page 145, on which, and the six pages following, you will find a very full statement of the methods pursued at the Lancaster vaccine farm, the product of which I use exclusively and do not hesitate to recommend.

With regard to questions 4 and 5, I would say, that the State Board of Health makes frequent inspections of this establishment at unexpected times, and that both the precautions taken and the result of the bacteriologic tests, as well as the clinical evidence, convinced me that pure lymph is used in propagation and is dispensed from this establishment. I have the honor to be, Yours very truly, BENJ. LEE.

The extract to which Dr. Lee refers, is from the report made June 15, 1895, by Robert L. Pittfield, M.D., Assistant Bacteriologist Pa. State Board of Health to the committee on preventable diseases of that Board, published in the new journal called *Public Health*, vol. 1, No. 3, p. 145, and relates to the Lancaster County Vaccine Farms, of Marietta, Pa. A description of the method employed in the vaccination of the calf is given in detail as follows:

11. Vaccination of animal.

a. Description of method.—The animal is strapped to the V. piece with girths, and then is swung over on back, the spinal column does not rest on the table, a space in the cushion accommodating it.

b. Point of selection for vaccination.—The point selected is the scutcheon over the biceps muscle and sometimes anterior to the udder and on the back, but it is considered best by Dr. Alexander to use the scutcheon.

c. Area of scarification.—The area of scarification is about the size of a half dollar, and six to eight are made on each leg.

d. How scarified.—The animal is carefully washed with bichlorid solution, twice shaved and washed, dried with a clean towel, and then scarified with knife previously sterilized. The lymph from the spades is carefully rubbed in.

e. What preparation given the hands. Clothing of operator.—Operator washes his hands in bichlorid, and is dressed in a clean suit of white duck, and every precaution is taken by the operator to keep his person clean.

f. Character of seed used.—The seed used is preserved on spade points in a refrigerator, where all other vaccine matter is preserved.

12. Maturity of vesicle and time of removal.

a. Temperature at highest.—102½ degrees to 104 degrees F., taken twice daily.

b. Removal of lymph.—The operator is guided by the areola about the vesicle, as to the proper time to remove the lymph, also by the temperature. The proper time for removing the lymph is from 5-7 days, depending upon circumstances. The crust is hard to keep in place and is convex rather than concave as in the human subject.

13. Food and water.

a. Regarded by operator.—These play a very important part in the development of the disease. If the least musty food or unpalatable water be given, the animal may refuse to eat or drink for from twelve to twenty-four hours. This will frequently result in an abortive condition of the vesicle. Plenty of good and fresh water is absolutely necessary if you desire a lymph that will give the greatest perfection of development and the least inflammatory action.

b. Character of food used.—Corn chop and bran (half of each by weight), mixed with cut hay in a concrete mixing box, which can be kept clean and will not sour readily, have given them the best results, next to forage crops, of which they use cow-peas and oats, green wheat and rye, clovers, Hungarian millet, and fodder corn. Food from a silo they are unable to use, as it requires from two to three weeks to get the animal accustomed to it, and changing them every thirty days renders it to them an impossible food.

c. Water supply.—Water works, having three large reser-

voirs arched over in the hill side and supplied with water from two sources; one from the roof water and the other forced by a wind pump from a well 77 feet deep; this water is river water filtered through a sandy loam. All the water from these reservoirs, used for watering stock, operating uses and cleaning purposes, is first filtered through brick, then through Pasteur plates arranged in reservoirs. These reservoirs are located sufficiently high to enable the tapping of water throughout the establishment. They are also connected with the town supply. The cattle are watered by turning water into their troughs, which are lined with galvanized iron. This insures them a much more ample supply than the use of buckets in the hands of employes.

14. Preparation of vesicle.—This is done on the 7th day generally, care by means of a knife.

a. Cleansed.—The parts around the vesicle are cleansed with a solution of bichlorid and are then washed with water.

b. Removal of crust.—This is accomplished with great care by means of a knife, and the parts under this are sponged with sterile water and sponge until all the pus has been washed away.

c. Care taken with vesicle.—The vesicle is carefully cleansed and the lymph, as it exudes, is gathered from the base of the vesicle by means of sterile brushes and applied to the points. The points are not touched by the operator with his hands or person at any time.

d. Application of lymph to points or tubes.—The lymph, by means of brushes, is painted on the points held in wooden clamps holding 50 each.

e. Collection and preservation of seed.—This is collected upon spade points and preserved in refrigerator.

f. Fluid lymph.—Is collected from the cleansed vesicle and mixed in 30 per cent. to 50 per cent. glycerin. It is collected by a scalpel from the vesicle and flows from it into a receptacle previously sterilized. It is then run into capillary tubes.

15. Care of points and tubes.

a. Preparation of naked points.—These are soaked in alcohol and placed on a screen and then a lighted match ignites all the alcohol. They are then placed in a hot air sterilizer for an hour at 150 degrees C. This double procedure is unnecessary.

b. Sterilization of points and tubes.—This is accomplished in a hot air sterilizer.

c. Packing of points.—After the points are inoculated they are dropped from the frames into clean jars, and from these they are packed into glass bottles. There is a minimum amount of handling with the fingers in this operation.

d. Crusts are sold but not advertised.

e. Lymph tubes sufficient for one vaccination are filled by capillary attraction. Other tubes, containing enough for 10, 20 or 50 vaccinations, are filled and corked at one end, the other end is drawn to a point, the lymph is caused to exude by pressing in the cork.

16. Bacteriologic control.—No bacteriologic control is given, but bacteriologic principles bearing upon aseptic sterilization are carefully followed out. Great care is evinced in this direction and much effort has been spent to render the product as clean and aseptic as possible.

Bacteriologic examination of vaccine products.—In common with these of other places, those of Lancaster County Farms were purchased in open market and submitted to the same method of analysis previously described.

Number of bacteria on vaccine points and in fluid lymph:

| Product | Gelatin | Agar at 75 degrees |
|----------------------|---------|--------------------|
| One point | 175 | |
| One point | | 175 |
| One drop fluid lymph | 0 | |

Summary.—This is an admirable establishment in every particular. No objections could be found in so far as hygienic arrangements go; the farm is thoroughly drained and the interior of the buildings scrupulously clean. The animals seemed well fed and of excellent breeds. The habitual and thorough testing with tuberculin in every animal, in conjunction with the physical examination, is a step in the right direction. It seems a needless precaution to filter water, and to burn off the points before sterilizing them. The excellent bacteriologic showing of the product, purchased with the others in a large drug store, is an index to the hygienic condition of the cattle and the pains taken in removing the lymph to keep it aseptic.

The report of Dr. Robert L. Pittfield from which I make some extracts of matters germane to this discussion in addition to that part of it cited by Dr. Lee, is of great interest. I quote from Dr. Pittfield's report to the Pennsylvania State Board:

"There are a number of problems to be discussed in dwelling on the propagation of vaccine lymph. These concern the elim-

ination of the diseased cattle from the healthy; the sterilization of the points, hands, instruments, etc.; the care of the vesicle; the preparation of the skin; and the aseptic removal of the lymph.

At but two of the stations visited was tuberculin used; in two, the animal was killed and examined before the lymph was sold. The possibility of infecting points with anthrax bacilli exists, since in many localities cattle are often affected with this disease. At no establishment could we learn of any precautions against such a possibility. In many establishments malignant edema and tetanus bacilli might find their way to the vesicle and thence to the points and tubes, because dust in large quantities abounds in the incubating stables. This is especially true in those farms where the hayloft is directly above the stables, as dust from hay and manure is well known to contain these germs, and such dust could easily filter down directly upon the vesicles. Cases of gangrene and tetanus following vaccination have been reported.

In many places simple cleanliness is sadly neglected; but in others, however, the principles of asepsis and antiseptics are rigidly observed, and lymph from such establishments should be used in preference. Sterilization of the hands, instruments and apparel is a great advance in the right direction, as is a similar treatment of the points and tubes.

The sale of crusts, because of the pus and dust contained in them, should be forbidden by law. Some operators not only render the fresh skin aseptic by scrubbing and antiseptics, but also carefully, clean the base of the vesicle, after the removal of the crust, with antiseptics. If this does not interfere with the taking qualities of the lymph, it is an excellent procedure. In some places we found that the pus layer, for such it is, was not regarded by the operators as pus. In fact, some regard it as a particularly strong lymph and charge their points with it. Such points should not be used. Microscopic examination of this substance reveals pus organisms in large quantities, also typical pus cells.

Points should be placed in frames and carefully sterilized, and after this they should not be handled at all. The application of the lymph to the points by means of a sterile brush is an excellent procedure. It is not only economical, in so far as time and saving of lymph go, but it is also scientific. The individual application of the point to the vesicle irritates it. The point is likely to be contaminated by the fingers, and the drying of these points on dusty, unsterile plates is antiquated and unscientific."

The following is my view of the subject as expressed at the meeting alluded to:

The lateness of the hour, and the presence of other duties which are imperative upon us in completing nominations for the annual election, compel me to abridge my remarks to a consideration of the propriety of compulsory legislation, conceding the utility and efficacy of vaccination, and that the virus is properly prepared and the vaccination carefully conducted.

Upon the law of the matter I am disposed to concur with the views of Col. Prentice.

In case of a threatened epidemic where the safety of the lives of others and general immunity from the spread of the disease was the question, the State it may be claimed would have a right to interfere against the private and individual right as in the case of a conflagration, in tearing down a building in its path to save others beyond it.

It seems to me that enough has already been disclosed in this discussion to make the State hesitate in assuming the extraordinary power of compulsion over an individual protest.

There are well authenticated cases of terrible results, of health permanently ruined and life rendered not alone valueless but horrible by vaccination.

If it should be claimed by the sufferer, that the physician who operated (or the State if compulsory), was liable in damages for the injury it would be impossible to meet or deny the justice of such a claim.

It seems to be true that there is no State or official supervision over the manufacture or sale of the vaccine matter now in universal use, and this, where vaccination is compulsory, is inexcusable neglect. The manufacture is at present a purely commercial and business matter, and it is very doubtful whether the courts would sustain the enforced vaccination of a citizen against his will, without the State itself assumed the responsibility, not alone of the purity of the virus, but of the outcome of the administration.

Those American officials who are in a situation to be best informed upon upon this subject, like Dr. Fowler, C. S. Lindsley, Moreau Morris and others are unwilling to favor making vaccination compulsory. Even while conceding and asserting, the power of the State they doubt the wisdom and propriety of

such a law, and on a view of the whole ground, I incline to that view.

The state of the public mind is such, and so great is the doubt and distrust of so large a portion of the educated classes (not the ignorant or prejudiced alone) that it would be very unwise to attempt to legislate compulsory vaccination, without the State at the same time charged itself with responsibility in all cases as well with the purity of the virus used, as against any unfavorable result to the vaccinated.

It is worth our while to consider whether in the face of the Report of the Royal Commission adverse to compulsory vaccination we should hesitate, before we decide—in the absence of any epidemic especially—to enforce by statute such an encroachment upon the personal rights of a citizen as compulsory vaccination with its attendant risks would or might entail, against and over his protest, which might come from the enforcement of a compulsory statute. Again when we consider the views of such men as Dr. Samuel Abbott, Dr. Benj. Lee and especially criticize the careful report of Dr. Robert J. Pittfield to the Board of Health of Pennsylvania in which he reports a careful and critical examination of a large number of the establishments engaged in the manufacture of vaccine virus, that in the major part great carelessness and negligence exists as to the purity of the product; and that no official supervision exists anywhere over this manufacture, should we not consider, in view of the imminent risk to the citizen from the use of improper and injurious virus, that some legislation should protect the citizen, if the enforcement of compulsory vaccination shall be legalized, from the serious consequences following the use of impure virus by the State officials?

GUNSHOT WOUNDS OF THE KIDNEY. REPORT OF TWO CASES.

Read before the Central Wisconsin Medical Society at Beloit, Wis.,
Sept. 29, 1896.

BY CHAS. H. LEMON, M.D.
SURGEON TO ST. MARY'S HOSPITAL,
MILWAUKEE.

Gunshot wounds of the kidney, the history of more than thirty years demonstrates, are among the rarer lesions that come under the surgeon's care. These organs by reason of their deep location escape the accidents that so frequently happen to the other abdominal viscera. Their importance to the human economy, their anatomic peculiarities and relation to the other viscera, the difficulty of making an exact diagnosis at the time of injury before an operation is undertaken or thought advisable, give to the history of individual cases a distinct interest, and will in time make the duty and responsibility of the surgeon clear, as additional light is shed upon this class of lesions in the operating room as well as at the postmortem table.

Long before the era of antiseptics the necessity of providing free drainage in wounds of the kidneys was emphasized by Larrey and Dupuytren. The wisdom of this procedure was unrecognized or unheeded by the surgeons during the war of the rebellion. Of the seventy-eight cases of gunshot wounds of the kidney reported in the surgical history of the war, but twenty-six cases recovered. All were treated upon the expectant plan; no incisions for the purpose of exploration were made.

Perhaps we can not form a correct estimate of the dangers which, though present in a small degree today, confronted the men who tried to solve the problem of life and death for the victims of kidney lesions

which come under their care, often with complicated injuries, in the preaseptic era represented by the surgery of our civil war. The accumulated experience had taught in addition to the fact that adjacent viscera were often wounded, that these penetrating gunshot wounds, unlike incised wounds of the kidney, were not likely to be followed by urinary infiltration of the retro-peritoneal tissues. This experience which has been corroborated since, demonstrated that in gunshot wounds "the eschars lining the tract, protect the parts until a limiting wall of inflammatory exudate has taken place." Therefore in cases which in the beginning presented no urgent symptoms, it is not to be wondered at that the surgeons feared less the infiltration of urine and the formation of abscess than the more urgent and dangerous sepsis which too often followed the making of large incisions.

In this connection I would call attention to the fact that some of the complications of these wounds of the kidney were wounds of the stomach, spleen, liver, diaphragm, intestines lungs and spine. Such cases were usually rapidly fatal as can be well imagined, from shock and hemorrhage. I think that in the history of the cases that I shall relate I will convince you that the diagnosis must often be extremely doubtful and the symptoms misleading in many of these cases which shall be treated in the future, and that more often will the surgeon resort to exploratory incision to settle the question rather than rely upon being able to accomplish at the end of twenty-four or forty-eight hours what could be done with much less risk and a better prognosis within, say, a few hours at most subsequent to the reception of the injury.

We are so accustomed to the graver operations upon the kidney that are being made today that we are apt to forget that the first nephrectomy as a deliberately planned operation was made as recently as 1869, by Gustav Simon of Heidelberg, and that the operation of nephro-lithotomy was first performed by Morris in 1880. These two men have immortalized themselves by their work upon the kidney alone. The monograph published by Morris in 1844 is a classic that commands the attention of the student and has been quoted by every text-book and author who has written a line since upon the surgery of the kidney.

To those who are interested in the treatment of gunshot wounds of the kidney I would commend in addition to this book the admirable and exhaustive paper read by Professor Keen before the American Surgical Association this year, and published in the August number of the *Annals of Surgery*. He has tabulated all the cases of traumatism of the kidney that have been reported since 1878. In this list are nineteen cases of gunshot wound of the kidney, and there are given in a table the name of the operator, the nature of the injury, the treatment, operative or non-operative, the result and a short comment. Of these nineteen cases ten recovered and nine died.

With these few remarks as an introduction, I take pleasure in relating the following two cases, employees of the Milwaukee Electric Railway & Light Company, which came under my care.

Case 1.—On the night of June 4, 1896, during the recent strike of the employees of the Milwaukee Electric Railway and Light Company, as an electric car was making its way from a suburb of the city of Milwaukee, the car was fired upon from ambush, by unknown persons supposed to be sympathizers with the striking employees. Both the motorman and the conductor were struck by flying bullets, the latter being wounded in the thigh by a bullet which lodged under the skin on the

outer aspect of the right knee. This bullet, which I removed an hour or so later, was of 32 caliber. The motorman, Jno. B. aged 27, white, a Canadian by birth, was struck in the back, about 2 inches to the left of the spinal column and opposite the second lumbar vertebra, by a ball which passed upward, inward and forward and lodged somewhere in the anterior aspect of the chest, under the costal arch. The shock of the wound brought the man to his knees, but he still maintained his hold upon the controller of the motor and turning on the full current, the car struck a tree which had been thrown across the track and swept it out of the way, and amid a fusillade of bullets the motorman brought his car out of danger, with the conductor lying wounded on the floor. He ran the car fully a mile before anyone could relieve him, and was conveyed as quickly as possible to the Johnston Emergency Hospital, reaching there about 10 p.m.

At the time of admission the temperature was normal, the pulse 72, respiration about 30. The man showed little evidence of shock. The only thing in his condition that was particularly noticeable was a look of anxiety. No blood escaped from the wound in the back and I was inclined at first to the belief that no serious damage had been done by the bullet. A slight probing of the wound showed its direction to be upward and inward, and thinking that possibly the kidney might have been injured, I asked him to pass his water, and he replied that he could not. I then catheterized him and drew off about a quart of bloody urine. Some ten minutes later the catheter was again passed, and the urine which was drawn was heavily mixed with blood and clots. A priest having been sent for at the man's request, I asked Drs. Sperry and Purtell to see the case in consultation.

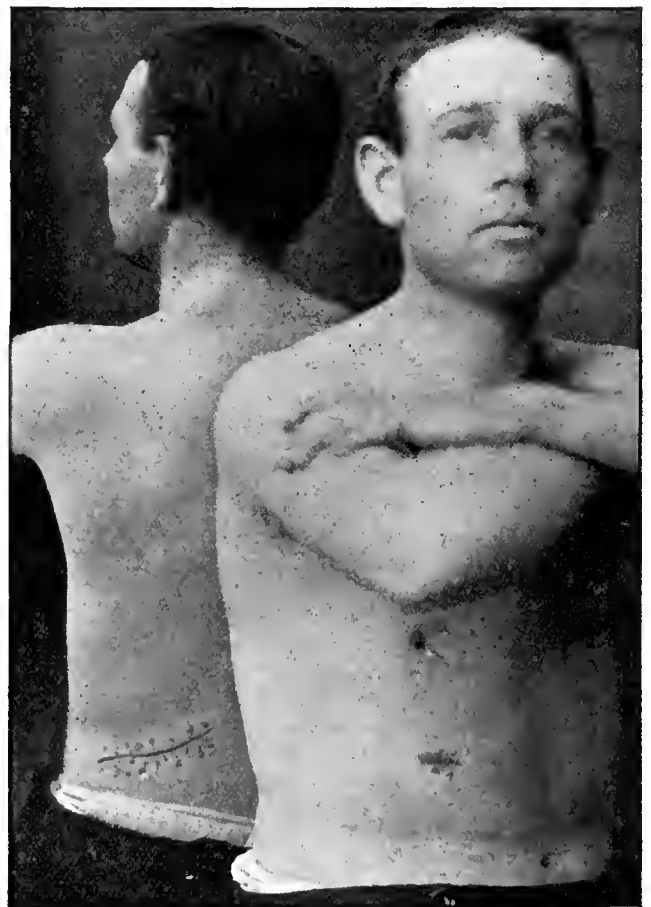
Knowing that the kidney was wounded, from the presence of hematuria, and being in doubt as to the character of the injury the kidney had sustained, an exploratory operation was deemed advisable and a lumbar incision decided upon. With some difficulty, owing to an accident to our bullet probe, the left kidney was exposed by an incision along the track of the bullet. Upon reaching the perinephritic tissue a considerable amount of clotted blood and urine was found, which upon being removed disclosed a wound in the inferior convex border of the kidney sufficiently large to admit the finger. A long probe being introduced into the wound could be passed sufficiently far to demonstrate that the ball had not lodged in the kidney, and as the direction of the wound was such that I felt certain the pelvis of the kidney had not been perforated on its anterior border, no further exploration was made. The ball had traversed the inferior portion of the kidney and approached closely its pelvis.

The hemorrhage into the wound, though not rapid, was constant, and I plugged the ragged tear which the eye could see, with a strip of iodoform gauze, bringing it out at the upper anterior aspect of the wound. I sutured the deep structures of the back with catgut in layers, providing a gauze drain in addition to the kidney drain, along the track of the bullet at the inferior and posterior angle of wound, the suturing of the skin and underlying structures being made between these drains.

During the twenty-four hours subsequent to the reception of the injury a considerable quantity of urine and blood was discharged through the wound which decreased in quantity during the second day and ceased altogether on the third day. The dressings were changed several times during the first forty-eight hours and some idea may be obtained of the amount of urine which escaped through the wound during the first two days, by noting the fact that the amount of urine drawn from the bladder the first day was but 26 ounces, the second day 31 ounces and the third day 47 ounces, this being the day the urine ceased passing through the wound. No suppuration occurred in the wound. A few days later the gauze was removed from the bullet track, allowing the track to heal and the second piece of gauze leading down to the kidney was gradually withdrawn, the wound being completely healed at the end of four weeks. The temperature curve was of no special moment, reaching its highest point, 100.8 degrees, thirty-six hours after the injury from which it gradually declined until the tenth day, when it reached the normal point. The highest pulse rate was 110 on the third day. The respiration deserves special notice, remaining for forty-eight hours subsequent to the injury between 36 and 42 to the minute. The catheter was used for three days, and ergotol in 15 minim doses was given for three days every four hours. In addition to this, owing to the fact that the man was suffering from a declining gonorrhea, acetate of potash in 15 grain doses was given three times a day, and the bladder washed with a saturated solution of boracic acid. The day following the injury, the symptoms, which were of no moment at the time of injury, assumed an alarming character. The man complained of pain in the right iliac region, the

abdominal muscles were rigid, his expression was anxious in the extreme and I feared that in making the lumbar operation I had overlooked a possible perforation of the intestines. By the third day the symptoms had improved, the bowels had moved successfully and the blood which had continued mixed with the urine in considerable quantity with the presence of clots began to decrease in amount, and at the end of ten days had ceased altogether.

Little else than milk was given for diet for three weeks and the man when discharged from the Hospital at the end of four weeks was considerably emaciated and left the city to recuperate at his home in Michigan. I regret to say that owing to an excessive amount of work incident to the strike, I neglected to make a microscopic examination of the urine, the only notes being those of the record sheet, which show that while pus persisted in the urine for two weeks, at the time of his discharge the urine was clear. The patient spent the greater part of the summer on a farm in Michigan and I saw him the other day, looking well and strong, completely restored to health, his only complaint being of an irritation from the probable presence of the bullet in the left chest wall.



Richard R., Case 2.—Wound healed in ten days.

Case 2.—Richard R., aged 25, German, single, white, of splendid physique, was shot by accident with a 32 caliber revolver at three feet distance, Aug. 17, 1896, 9 A.M. The person handling the revolver stood somewhat to the right of Mr. R., and the ball struck him in the anterior chest wall about two inches to the left of the nipple line. Mr. R. complained of no pain at first, walked to the rear of the building and sat down on the outside steps. As I was not at home, the case was first seen by Dr. Hamilton, who had the man removed to St. Mary's Hospital, where I saw him in consultation about an hour later. At this time the patient's face wore an anxious expression, he complained of severe pain in the right iliac region, his abdominal muscles were rigid, the respiration was rapid, pulse accelerated and he was sweating profusely. The man complained of no pain in the chest, there was no cough, no hemoptysis, and no abnormal dullness over the right side of the chest that could be made out by percussion. The area of liver dullness was normal. Being in doubt as to whether the bullet had penetrated the chest wall, it being impossible to insert a probe after

a careful disinfection of the wound, I made a small incision with the bullet hole as a center, and found that the bullet had struck the upper border of the ninth rib, tearing off a small portion of the periosteum and had penetrated the parietal surface of the pleura. A further exploration being deemed inadvisable, the wound was packed with iodoform gauze and the patient put to bed to await developments.

At 2 p.m. the man was restless with a temperature of 99.6 degrees, pulse 72, respiration 84. He had passed no water and could pass none. Although he was suffering from an acute gonorrhea, I catheterized him, as I for the first time suspected that the kidney had been wounded. Twenty-four ounces of bloody urine was passed at this time. Twenty minutes later, I again passed the catheter and drew off two ounces of urine heavily loaded with blood. With the consent of Dr. Hamilton, I asked Drs. Purtell and Sperry, who had assisted me in the first case, to see this case also. The man was anxious to have the bullet removed if possible and consented to an exploratory operation of the kidney. From the fact that the pain complained of was upon the right side, I inferred that the right kidney had been wounded, notwithstanding that the person who did the shooting stood to the right of Mr. R. and that the wound of entrance was to the left of the nipple line. What direction the bullet took after entering the chest and what deflected it, whether it was a vertebral body, or a rib posteriorly, we had no means of ascertaining. The wound of the rib anteriorly was but slight, being upon the upper border, and we inferred at the first examination that the bullet had either gone upward into the chest or passed directly backward. The man being chloroformed, I made the usual incision in the right groin, parallel with the last rib, to expose the kidney. Upon reaching the fatty tissue surrounding the kidney, I found a wound showing that the ball had passed through it, and I could trace the track of the bullet with the finger for a short distance in the iliac fossa. The kidney was thoroughly exposed and freed from its fatty capsule over the inferior portion and a careful exploration of the kidney between the thumb and finger showed the wound of exit through the kidney to be a ragged hole, easily admitting the index finger on the posterior surface of the kidney, about its center, one inch external to the renal pelvis. Unlike the first case, no clotted blood was found around the kidney and there seemed to be little or no extravasation of urine. Dr. Hamilton and Dr. Purtell each palpated the kidney. The hemorrhage being slight, I was satisfied that no serious damage had been done to the kidney substance, and I did not feel justified in further separating the kidney from its bed to examine the wound of entrance into the kidney, and I at once proceeded to close the wound without irrigation, having first packed a strip of gauze into the wound on the posterior surface of the kidney, bringing it out at the anterior portion of the lumbar incision. The deep structures were sutured with catgut in layers and the skin with silkworm gut.

The after-treatment in this case was similar to that in the case already described. Ergotol for the first few days, with the citrate of potash.

During the forty-eight hours subsequent to the reception of the injury, the urine was bloody and contained clots of blood. On the fourth day in the forenoon there was considerable blood in the urine without clots, and after this neither blood nor clots. The urethral discharge due to the gonorrhea was profuse for a few days. As the pus had been carried into the bladder at the time of the first catheterization, the bladder was washed daily with warm water and boracic acid. No pus appeared in the urine until the thirteenth day. The amount of pus decreased steadily until the twenty-first day. Afterward it could be detected only by the microscope. I made a uranalysis on the fourteenth day, with the following result: Reaction, acid; specific gravity, 1020; pus; blood (traces); hyaline casts, a few epithelial casts; albumin, marked.

A uranalysis at the end of the fourth week showed: Reaction, acid; specific gravity, 1020; albumin, none; blood, none; pus, traces; casts, none. The diet was restricted to milk and water for eighteen days.

On the seventeenth day the temperature, which had not exceeded 100.8 degrees, suddenly rose to 102.6, owing to the onset of an attack of epididymitis on the

right side. On the following morning the temperature dropped to 98.8. Three days later a second rise in temperature to 101.6 occurred, with an increase of the epididymitis, and from this time on it decreased until the twenty-first day, when it reached the normal point and remained there. In this case, as in the former case, the respiration was accelerated; for more than two weeks it remained between 34 and 36 to the minute. The pulse was normal with one or two slight exceptions, during the entire convalescence.

Mr. R. left the hospital at the end of four weeks, and at the present writing he is rapidly regaining his lost strength.

A fact worthy of notice in both of these cases was the rapid emaciation which took place during the first three weeks. Case 1 lost forty pounds in weight in three weeks, and Case 2 lost fifty-eight pounds.

The regaining of weight after being placed on general diet and allowed to exercise was almost as rapid, Mr. R., Case 2, having gained nineteen pounds in two weeks.

Another fact deserving of mention is that both men were suffering from gonorrhea at the time of injury, and notwithstanding the introduction of the catheter, neither of them developed a cystitis. The pus in the urine in Case 2, of which I have a more exact record, did not appear until the thirteenth day. It was evenly mixed with the urine when voided and resembled that so frequently seen in cases of pyelitis.

The absence of pus in the urine for more than ten days subsequent to the injury and its appearance subsequent to that time, may, I think, be attributed to the sloughing incident to the process of repair in the kidney itself. This supposition is strengthened by the observation that at times the urine was free from pus, at others quite heavily loaded with it.

The wound in the anterior chest wall, which was packed at the time of the accident, was sutured by Dr. Hamilton on the fifth day, and healed by primary intention.

On the third day I dressed the lumbar wound, and noticing that but little exudation had taken place and that the presence of urine could not be detected, I withdrew the gauze with which I had tamponed the kidney, and allowed the wound to close. Primary union took place and I removed the stitches the tenth day, the wound being completely closed.

The record of these two cases, similar in many of their details, examined from the post-operative standpoint, seem to present conflicting conclusions as to the indications for operation.

The symptoms presented a few hours subsequent to the reception of the injury in each case were misleading as an indication of the character of the lesion sustained. In Case 1, in which the kidney sustained the greatest damage and in which at least one-third of the urine secreted in the forty-eight hours after the operation was passed through the lumbar wound, the patient at the time of operation showed little evidence of shock, complained of no pain, and apparently had suffered but slight injury. These symptoms, however, during the next twenty-four hours were replaced by those of grave character, so much so that I feared the intestines had been wounded, and that the man was developing a general peritonitis.

From conclusions drawn from a study of the cases reported during the war and subsequently, I am convinced that without operation providing for free drainage in the lumbar region, that this case would have been either fatal from extravasation of urine and

the formation of abscess in the retro-peritoneal tissues, or at best have recovered after an illness of long duration.

In Case 2, the symptoms at the time of the first examination were of an alarming character. Twenty-four hours subsequent to the operation the patient was resting quietly, complained of no pain and was in every respect in splendid condition, having passed no urine through the lumbar incision. This case I believe might have recovered without operation, as at the time of operation we found no extravasated blood or urine in the peri-renal tissues. Yet without operation we would have remained in the dark as to the character of the lesion and would be without evidence that the ball, failing to make its exit from the body, had not lodged in the kidney itself.

I have been impressed by a study of these two cases with the fact that beyond a knowledge that the kidney has been wounded made evident by the hematuria, in a gunshot wound of the kidney, we can form but little idea from the character of the early symptoms as to the extent of the damage that has been done. I, of course, will except an injury which severs the large vessels leading to or from the kidney in which the evidences of internal hemorrhage would manifest themselves very early. In both of these cases, after a careful deliberation, I made a lumbar incision to the kidney for the purpose of exploration, believing that from the direction of the bullet in the one case, and from the known position of the person who did the shooting in the second case, that the other abdominal viscera had not been wounded.

The comparatively uneventful recovery made in each of these cases, demonstrates that the operation, if it were conducive of no good, at least did no harm.

In this connection I can but quote the words of Professor Keen in the article above alluded to, in which he says: "If the surgeon has reasonable evidence that the kidney has been probably traversed by a ball (and all the more so if it is certain that it has been so wounded) and the patient is evidently in grave danger, as shown by the general symptoms of internal hemorrhage and by the physical signs of a large lumbar hematoma, or of intraperitoneal bleeding, I take it for granted that all of us would recommend an exploratory operation with a view of determining the extent of the injury to the kidney and the proper treatment."

The question whether a case of gunshot wound of the kidney shall be treated by the operative or the expectant plan is one that in most instances will be difficult to decide. The indications for early exploratory incision, with or without nephrectomy, have been most admirably stated by Professor Keen in his recent article cited, and I would refer you to it for counsel.

Notwithstanding the rarity of this lesion, it is one that may confront any of us without a moment's warning and I have reported these cases at length in the hope that something may be added to the meager knowledge we already possess upon this interesting subject; or at least that the report of these cases may stimulate further research into the literature of the subject. Notwithstanding the fact that I failed to find the bullet in either case, I believe that a better prognosis can be given to each of these young men from the knowledge that we possess, that the kidney was not a receptacle for the bullet.

I trust further that I have demonstrated in both cases that when in doubt as to the advisability of

operating, we can be comforted by the knowledge that an aseptic exploration of the kidney under chloroform anesthesia adds little or no risk to the patient.

THORACOPLASTY IN AMERICA AND VISCERAL PLEURECTOMY, WITH REPORT OF A CASE.

Read in the Section on Surgery and Anatomy, at the Forty-seventh Annual Meeting of the American Medical Association, held at Atlanta, Ga., May 5-8, 1896.

BY ALEX. HUGH FERGUSON, M.D.

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When I forwarded the title of my paper to the Chairman of this Section, I had no idea but that I should now have several interesting cases of Schede's operation performed in America to lay before you. Being disappointed by a personal research of the periodicals published in this country, I applied to the American Bureau of Medical Literature, at Washington, D. C., and in due time I received the following reply: "We have been unable to find any case of Schede's operation performed in America." There is no doubt in my mind but that this major operation has been done many times in this country, though not reported. Thoracoplasty, as first done by Schede, is an heroic measure for the otherwise hopeless cases of chronic empyema. It consists in the removal of the chest wall, that is the ribs; intercostal muscles and parietal pleura are extirpated, then curettage of the visceral pleura is done, and the raw surface of the large flap raised external to the ribs is allowed to come in direct contact with the bound down lung and its pleura. The external incision is very extensive and horseshoe in shape, extending in a sweeping curve from the vertebral border of the scapula downward to the lower ribs, and then upward to the nipple or beyond it in front. Whatever may be the cause or causes of the empyema, some cases there are which survive the aspirations, the pleurotomies and permanent drainage, or the resection of a portion of one or of several ribs, as advised by Estlander. In spite of all these procedures a few cases are not cured, and these urgently plead for relief from the foul, purulent material constantly pouring out of their side, and day by day vitiating and weakening the already overburdened constitution. Upon being confronted with one of these cases, too much stress can not be placed upon a thorough examination of the various organs of the body, particularly the lungs, for if these be markedly tubercular, no operative procedure should be undertaken. When the opposite lung is in a good healthy condition, even though the compressed one manifests signs of consolidation and breaking down, an operation may be advised, provided the patient be otherwise in a condition to stand it. If the sputum be free from tubercle bacilli, even though amyloid degeneration be quite obvious, and the person able to be about, thoracoplasty should be done. The assertion made by Schede, that amyloid degeneration and tuberculosis does not contraindicate this operation, is true within certain limits, and this the author verified by his results. A practical clinical observation, that is, the disappearance of the signs of amyloid degeneration of the internal organs, when the cause was

removed by operation, was a well known one to surgeons in pre-antiseptic days, occurring in those cases making a speedy recovery from the operation without much or any suppuration. It was observed by Rahlmann and Kubly that after partial extirpation of amyloid conjunctival tumors, the portions left became completely absorbed. (Thoma, Vol. I, p. 397.) We may conclude that an improvement of a diffuse amyloid degeneration caused by an empyema will begin to occur just as soon as the formation and discharge of pus is prevented. The condition of the kidneys is important. There may be albumin in the urine, signs of organic disease of these organs; but under what conditions are we to say that a case is operative or not

lander's operation, a suppurating cavity persists, complications are imminent, and there is not the slightest hope of recovery without further interference. Such a case has invariably been ineffectually treated by 1, aspiration; 2, pleurotomy, drainage and irrigation; 3, resection of one rib for more efficient drainage; 4, Estlander's thoracoplasty, curettage, packing with gauze and frequent irrigations. Just as soon as it is recognized that the cavity has no tendency to become obliterated by these procedures, the earlier Schede's operation is performed the better, and should a cure be not effected by it within a reasonable time, then visceral pleurectomy is the climax of operative procedures to which we shall resort. The following is

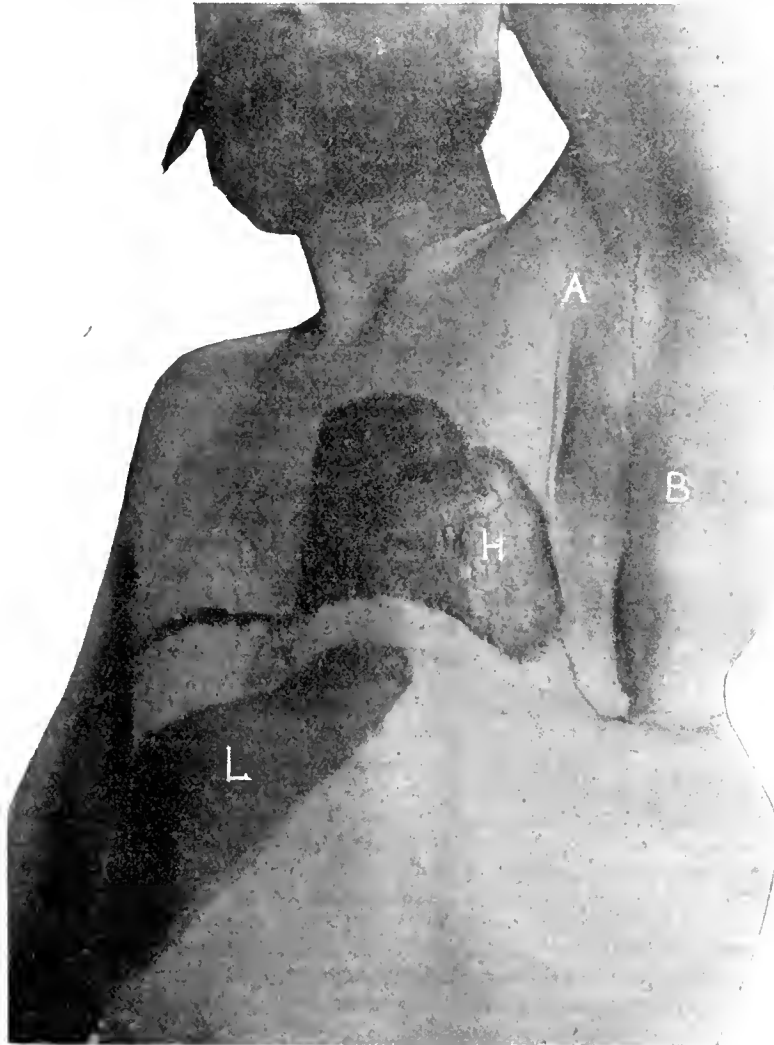


FIG. 1.—H, heart; L, liver; A and B, the two incisions.

on this account? We so often break through all rules, and yet our cases recover, when the apparently diseased kidneys would seem to contraindicate an operation, that a hard and fast rule does not obtain. More risks can be taken in amyloid or waxy kidney, provided we are able to remove the cause of such a degeneration. The amount of urea in the urine is the more valuable from a prognostic standpoint. The dangers ahead of a person suffering with a profuse suppurative discharge and fever are 1, septicemia and pyemia; 2, amyloid disease, and 3, tuberculosis, all of which may be obviated by a timely operation.

The indications for Schede's thoracoplasty are very clear. The chest wall has not collapsed after Est-

lander's operation, a suppurating cavity persists, complications are imminent, and there is not the slightest hope of recovery without further interference. Such a case has invariably been ineffectually treated by 1, aspiration; 2, pleurotomy, drainage and irrigation; 3, resection of one rib for more efficient drainage; 4, Estlander's thoracoplasty, curettage, packing with gauze and frequent irrigations. Just as soon as it is recognized that the cavity has no tendency to become obliterated by these procedures, the earlier Schede's operation is performed the better, and should a cure be not effected by it within a reasonable time, then visceral pleurectomy is the climax of operative procedures to which we shall resort. The following is

the report of my case of Schede's thoracoplasty for chronic empyema, which was greatly improved by it, but not cured, and then I performed an extensive visceral pleurectomy with an excellent recovery.

Case.—Wm. C. A. Clements, age 40, farmer, entered the Post-Graduate Hospital July 3, 1895, suffering from a large chronic empyema of the left side, discharging pus profusely.

History: The family history was good, with the exception of the death of a sister from consumption. Personal history excellent; never had any illness before May, 1894, when he was taken down with pleurisy, which resulted in his present condition.

Present illness: On May 22, 1894, pleurisy of the

left side set in with considerable severity, effusion followed, which was aspirated June 23. At this time there was no fever, nor chills, and he was able to be out of bed. There was marked dyspnea and considerable discomfort, both of which were increasing. A watery fluid was removed (according to his statement) and great relief was experienced, which however was only temporary, for on the fourth day a new train of symptoms were ushered in. A distinct rigor followed by a high fever, with much thirst, etc., was then experienced, which was several times repeated. From this time till August 10 following he was very ill, and his friends had little hope of his recovery. An anesthetic was administered, the chest wall opened and a portion of a rib was resected to establish permanent drainage. This afforded marked improvement in his physical condition. His appetite returned, he gained in flesh and was able to walk around once more. The suppuration continued, the lung did not expand and the chest wall was quite a distance from it, between which a large cavity existed. The drainage became inefficient. Three subsequent operations (Sept. 9, Dec. 10, 1894,

through a rubber tube in the fistula. A probe could be passed into an enormous cavity to the first rib above, the diaphragm below and straight inward a distance of 10 cm. Moist râles and bronchial breathing could be heard over the apex and borders of the compressed lung. The right lung was apparently in a normal condition. A microscopic examination of sputum failed to find the bacilli of tuberculosis. The liver and spleen were not enlarged.

SCHUDE'S THORACOPLASTY.

Operation.—On July 6, 1895, Schude's operation was performed by me before the post-graduate class. A U-shaped incision.

Upon raising the flap, a stout, sharp retractor fastened under the border of the scapula did good service in exposing the ribs. The periosteum of each rib was cut through longitudinally. One after the other was then stripped with a periosteal elevator and cut through at each end with bone forceps, through the neck at the vertebral end of the fourth, fifth and sixth ribs, the rest not so far back; and near the costal cartilages at the other ends except the eighth, whose costal cartilage was removed *in toto*. A perpendicular incision was then made through the intercostal muscles, and parietal pleura into the empyemic cavity, from the diaphragm to the second rib and then each half of this musculo-fibrous structure scissored away at the angle of its reflection with the visceral pleura in front and behind as closely as possible. It was then found necessary to excise 5 cm. of the second rib in order to clean out the apex of the cavity (Fig. 2). Throughout the whole operation the hemorrhage was insignificant. The thickened pleura was curetted and freely scissored, the whole cavity packed with iodoform gauze, the skin flap allowed to fall upon it, and two rows of cutaneous sutures put in, one anteriorly and the other posteriorly, leaving the lower aspect unsutured for drainage and access. An abundance of antiseptic dressings applied, the patient put to bed and surrounded with hot-water bottles. He stood the operation well; the shock, though marked, was not profound; his pulse being 100, temperature 98 and respirations 26. The next day he was cheerful and in a good condition. The packing was removed on the third day and a smaller one substituted, which was repeated at the end of three more days, after which it was necessary to dress him every day. The skin wound healed by first intention, but pus formed in the cavity during the middle of the second week. Granulation tissue formed and gradually lessened the cavity. Once a week or so it was lightly curetted, with the hope of hastening the process.

During August he took pneumonia and nearly died. Prof. John A. Robson saw him then and gave an unfavorable prognosis. He, however, recovered slowly, and once more became master of the situation. He then gained rapidly in flesh and was soon sufficiently well to visit the parks. In spite of all our dressings, injections, curettings, etc., a long central sinus would not or could not close. Five months of this faithful treatment was surely enough, consequently I advised another operation.

Visceral pleurectomy.—On Dec. 12, 1895, I removed the thickened pleura over the lung and the whole pus secreting surface. The incision was made vertically the whole length of the sinus (Fig. 1, b). The pleura removed measured 17 cm., 5 cm. broad at the upper end, 7 cm. at the other, and from .5 cm. to

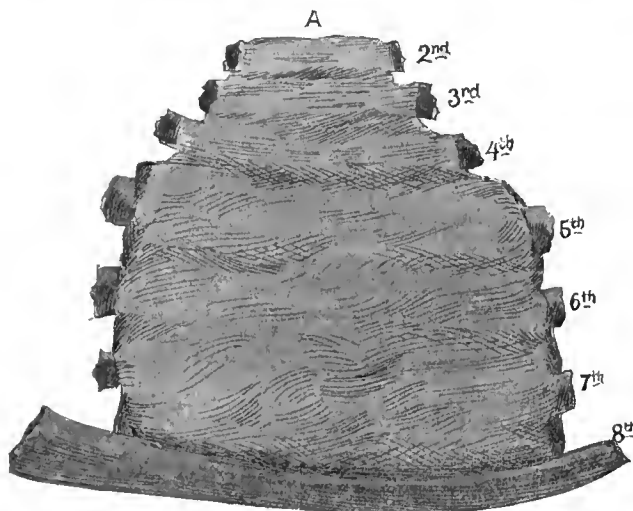


FIG. 2, A.—Ribs, intercostal muscles, and parietal pleura.



FIG. 2, B.—Cartilage of eighth rib.

and March 13, 1895) were performed by the local physicians, at which portions of the ribs were removed, but the suppuration with more or less pyrexia still persisted, and the chest wall had not sufficiently collapsed.

Condition on admission: He was a man of large, bony frame, slightly stooped and leaning to the left side. Height 5 ft. 11 in., weight 173 pounds, had lost about twenty pounds, but was not greatly emaciated. There was a hectic blush on his cheek, skin sallow and constantly perspiring. He had a loud, harsh cough, with a purulent expectoration, and the rushing of air in and out of chest wall could be heard before it was exposed. His temperature ranged from 99 F. to 101 F. Respirations 24; pulse 90; bowels regular; appetite fair; slight albumin in the urine, and he slept fairly well. A physical examination of the chest revealed a flattening of the left side, a fistulous opening between the sixth and seventh ribs in the mid-axillary line, thick creamy pus freely exuding

2 cm. thick, being thickest posteriorly. This was removed in two large and several small pieces. Fig. 3 represents what was removed as if in one piece.

In dissecting it off I tried to cut at the junction of lung and fibrous tissue. It was impossible to do this satisfactorily, and I had to cut through the peripheral layer of lung tissue. No sooner the upper portion of the lung was liberated than it so protruded through the external wound that I had to compress it with large gauze sponges before I could complete my pleurectomy, but at the termination of the operation the lung was collapsed, revealing an unsightly cavern in his side. The pleura removed was adherent

tysis for forty-eight hours. The amount of blood serum that exuded during the next four days was enormous, and beyond anything I had ever seen from any wound. The large dressings had to be changed daily, and even then the clothing around him was soaked. The granulation tissue that formed was very exuberant and vascular. It would bleed on the slightest touch. The cavity closed rapidly and February 19 he left for his home a healthier and happier man, though considerably deformed. His cough subsided, his pyrexia was gone, the skin assumed its normal color, the albumin in his urine cleared away, his appetite was excellent, and, in brief, his health was restored. The day before he left the city he was examined by Drs. J. H. Hollister, G. Fütterer, Byford, Bacon, Martin and others.

This leads up to the subject of

VISCERAL PLEURECTOMY.

The first visceral pleurectomy was performed in America with brilliant result. The honor is due to Dr. G. R. Fowler, performed on Oct. 7, 1893, and published in the *New York Medical Record*, Dec. 30, 1893. The second was done by Delorme, the third by Reclus, the fourth by Gallet and the fifth by myself. There were four cases reported up till April 1, 1896. The ages of the patients were 35, 26, 26 and 12. Two of them were males and two females. Estlander's operation had been performed in two of them and a pleurotomy in two. A fistula existed in all the cases,

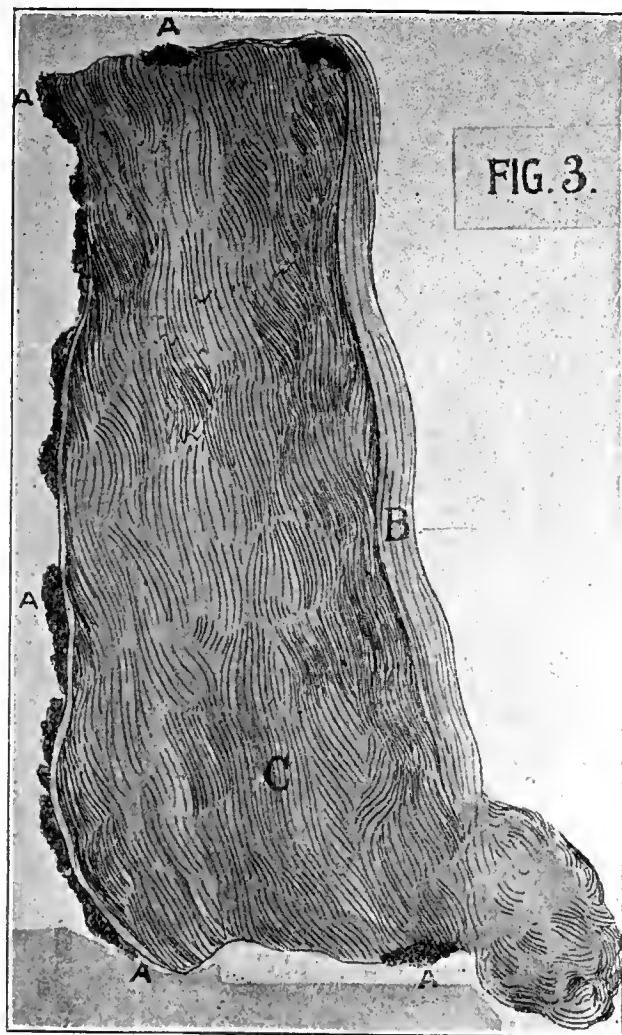


FIG. 3.—The visceral pleura. A, lung tissue; B, posterior thick border; C, suppurating external surface.

to the pericardium and diaphragm as well as to the lung. Upon removing it the heart was so beautifully exposed that I yielded to the temptation of playing with it for a short time. In seizing hold of it gradually with my hand it appeared to avoid being grasped and fought, not unlike a little pig would do with its nose, being evidently excited. When left alone it went on with its wonderful, systolic, diastolic and rotary movements as if it never had been touched. The venous and capillary hemorrhage was considerable. The cavity was packed with iodoform gauze and the skin sewed over it, leaving a couple of inches open at the most dependent part. There was slight hemop-

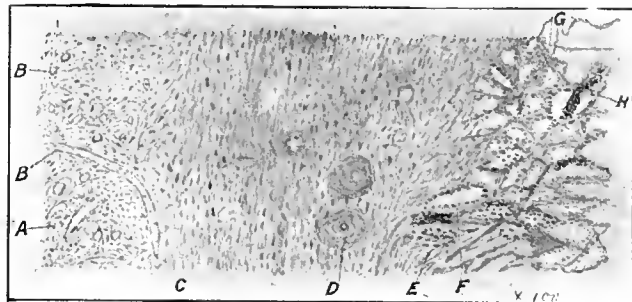


FIG. 4.—Old pleuritic with secondary interstitial pneumonitis. A, younger granulation tissue; C, older tissue infiltrated; D, endarteritis obliterans; E, obliterated air vesicle; F, obliterated air vesicles; G, bronchus.

and a large cavity was present in three. Two recovered and two died. A brief outline of all the cases, including my own, is herewith appended. The pathologic anatomy of these cases has not been very fully given. I shall therefore only crave your attention while reporting that of my own case.

Pathology.—The manner in which the visceral pleura thickens, layer by layer, externally and by alteration of lung tissue internally, is very interesting and instructive. A study of the pathologic changes in this case proves how impossible it was for nature to supply sufficient nutrition to form enough granulation tissue to close the cavity.

Figure 3 represents the thickened fibrous visceral pleura that was removed. A strip of lung tissue is shown along the thin border and attached to it.

Figure 4 represents diagrammatically a transverse section of the thickened pleura and adherent lung tissue, showing the chief pathologic changes that have occurred. The microscopic sections demonstrating these points are as follows:

The outer surface of the specimen consists of rough, shaggy granulation tissue. Attached to the inner

surface there are remnants of lung. Cut section shows fibrous tissue with some waxy, glistening appearance.

Low power: Superficial surface. There is no epithelial covering in any of the sections that have

of blood vessels decrease, and an infiltrate of homogeneous material becomes more prominent. Deeper still a large number of blood vessels are seen in various stages of obliterating endarteritis. In some of them the lumen is scarcely apparent, while in the



FIG. 5.—Section showing A, Fig. 4. Thin walled blood vessels, embryonal cells, some infiltration with homogeneous material.

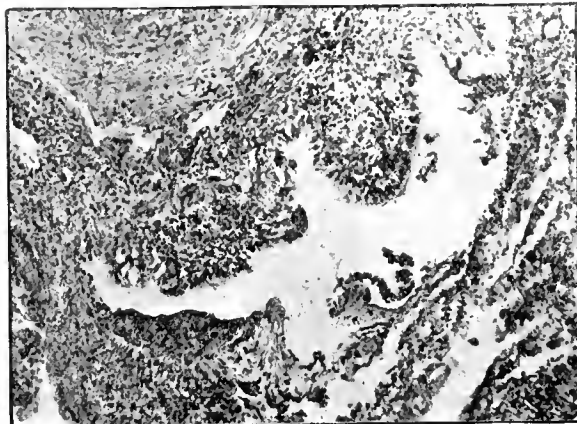


FIG. 8.—Section through G, Fig. 4. Cross section of bronchus lined by a single layer of ciliated columnar epithelium.

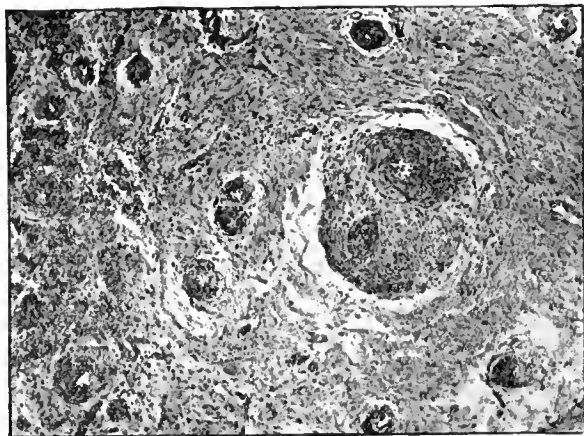


FIG. 6.—Section through D, Fig. 4. Some vessels obliterated, all with very thin walls; connective tissue of vicinity is old, laminated, wavy and abundantly infiltrated with homogeneous material.

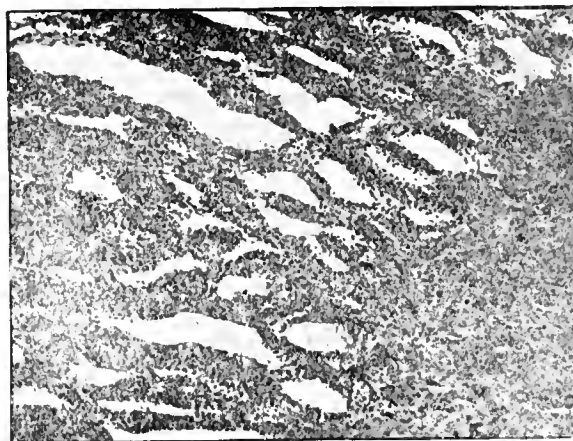


FIG. 9.—Low power section through lung substance showing greatly thickened alveolar walls.

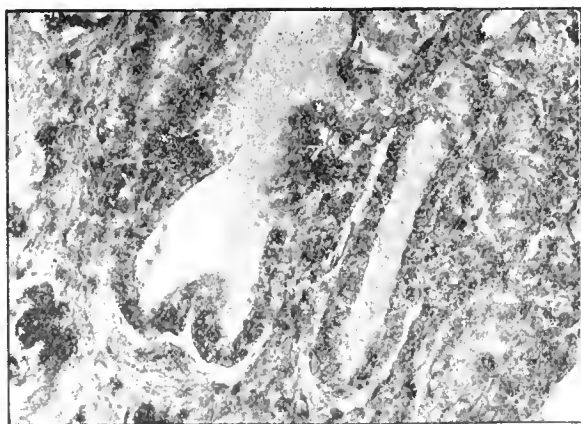


FIG. 7.—Section through F, Fig. 4. Alveolus nearly obliterated, lined as were nearly all the alveoli by cubical epithelium. In this vicinity are masses of epithelium lying in irregular masses in the middle of the connective tissue.

been made. Superficially there is an array of granulation tissue consisting of cells, fibers and a large proportion of thin blood vessels. As you go deeper the proportion of fibers to cells increases, the number

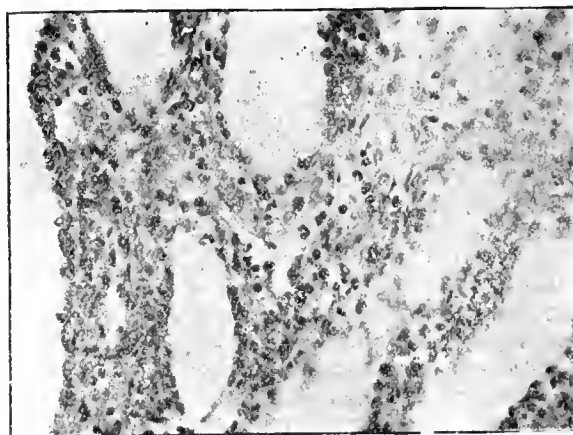


FIG. 10.—High power, same as Fig. 9, showing a typical chronic interstitial pneumonitis.

vicinity there are masses of concentrically arranged fibrous tissue, exactly similar to the vessels except that there is no longer a lumen. These whorls of tissue I interpret as blood vessels that have been entirely obliterated. In this zone can be seen col-

umns of tubical epithelium with no lumen; the remnants of obliterated air vesicles. As we go deeper into what is plainly apparent as lung structure we find gradations from the appearance just noted to be the air vesicle easily recognizable as such. These air vesical walls are thickened by an overgrowth of fibrous tissue that in places is even and in places is knob-like. There is considerable pigment within these alveolar walls. Occupying a portion of the air vesicle is an exudate. The blood vessels in these alveolar walls are thickened. A bronchiole of small size can be recognized.

High power: Superficial; typical granulation tissue, with a moderate infiltration of a hyaline material, is seen. As we go deeper matured fibrous tissue is found and the homogeneous infiltrate becomes more prominent. Some of the blood vessels show active proliferation of the endothelial cells; in others with very much thickened walls this proliferation is not so prominently seen. Here and there in these areas are irregular masses of degenerated epithelium, easily recognized, which are clearly representatives of former alveoli. Here also appear double columns of cubical epithelial cells, in which the epithelium is regularly arranged along its basement membrane; these are also remnants of obliterated vesicles. These vessel walls previously referred to are seen to be made up of concentrically arranged mature fibers. The thickening in the air vesical wall is due to increase in the connective tissue. The epithelium which covers it is everywhere cubical. The apparent exudate which filled many of the vesicles is now seen to be in part due to fibrin filaments, but in the greater part due to masses of epithelial cells lying loose in the vesicle. Many of these cells contain pigment. Cross section of the bronchus shows a typical bronchus of small size, lined by a single layer of ciliated columnar epithelium.

Microchemic means of differentiating the infiltrate were not employed. Sections stained for tubercular bacilli and other organisms were negative.

I am indebted to Dr. Evans for an examination and an accurate report of the pathologic specimen, and to Dr. Knapp for the micro-photographs.

REPORT OF CASES.

Case of G. R. Fowler, published in the *New York Medical Record* Dec. 30, 1893, p. 838. Female, aged 35 years; operation Oct. 7, 1893. History: May, 1886, fibroid phthisis was diagnosed. March, 1887, pneumonia of the right lung. Jan. 31, 1891, empyema diagnosed in right pleura. March, 1892, aspiration of about sixty ounces of purulent material. Four other aspirations were performed later. By June, 1891, permanent drainage was established. A rounded body could be seen through the fistula, which body moved with every act of respiration. Curetting and antiseptic irrigation having failed, the following operation was performed, for the wound had discharged almost continuously for the past five years. Operation: Elliptical vertical incision four inches long was made in the axillary line downward from the fourth rib, and in the flap was the orifice of the sinus. Three and one-half inches of the fifth and sixth ribs removed. A mass of cicatricial tissue was then exposed, through which the fistula passed. This was separated from the chest wall by blunt scissors. It was removed from the diaphragm as far as the median line, and was then by strong traction removed from the displaced pericardium. This part of the operation was assisted by working with the tips of the fingers, as paper cutters, and occasionally with blunt scissors. The mass was then lifted from the chest and last of all separated from the lung. Progress: Patient suffered considerably from shock, but soon rallied. Breathing was not much embarrassed, but the pulse was very frequent, because of the pressure made on the heart by the pledgets with which the wound was tamponed. After these were removed it became more regular and nearer normal.

Temperature never rose above 102 degrees, and was at that point only a short time during the first twenty-four hours. Cavity was irrigated daily with 1-1000 bichlorid solution, mixed with 5-1000 tartaric acid solution. Upon each irrigation the cavity was thoroughly dried out and tamponed with zinc oxid gauze. Recovered. Pathology: At last the cavity had so far diminished that instead of holding 32 ounces of fluid it held less than an ounce. When the cavity held only a drachm the irrigation was omitted and the wound allowed to close. Patient apparently well; gaining rapidly in health and strength. Can now do household work well. Chest wall is sunken to about an inch or an inch and a half below its normal level at the site of the costal resection. Normal respiratory murmur is present posteriorly down to the seventh rib, and anteriorly down to fifth rib. Complete flatness in area where the vascular murmur is absent. Apex beat is now to the left of the sternum. Remarks: Hemorrhage during the operation had been slight from the parietes, but during the separation from the lung bleeding was quite profuse, but ceased when the removal was complete. Hemorrhage throughout was controlled by sponges and pressure; only one ligature was applied and this was in an adhesion on the pericardial side of the mass. The removal of this cicatricial mass left a cavity in the lower three-fifths of the right side of the chest. The mass removed consisted of extremely dense fibrous tissue, with here and there bits of cartilage and osteoid tissue. The fistulous track is lined with dense areas of epithelial cells, beneath which are rudimentary sebaceous glands. No lung tissue in any part of the specimen.

Case of Delorme. Published in *Presse Med.*, Paris, 1894, p. 97. Male, aged 26 years. Operation Jan. 26, 1894. (?) History: Pleurisy, probably tuberculous, of the left pleura. Pleurotomy was practiced in September, and a discharging fistula resulted. The cavity was 15 cm. in its greatest diameter. Operation: A cutaneous flap was dissected up and a "trap-door" of the costal wall was made and turned back. A pocket was exposed which extended from the diaphragm to the pleural cul-de-sac in the apex. A thick resistant membrane covered the pericardium and the visceral pleura. This was incised over the lung and was found to be 1 cm. thick. The lung was freed from its attachment to this membrane, the cavity cleansed, trap-door replaced, the ribs sutured together and the wound closed. There is no mention made that the visceral pleura was extirpated, though such was probably the case, for Delorme mentions the advisability of extirpation of false membrane in empyema. Patient alive five days after operation. Remarks: Delorme is referred to by Gallet (*Soc. cit.*) as the original operator for visceral pleurectomy, and though no explicit statement is made that the visceral pleural membrane was excised in this case, the general trend of the article indicates that it was. Delorme, however, was not the first one to practice this visceral pleurectomy.

Case of Reclus. Published in *Presse Med.*, 1894, page 97. Male, aged 26 years. Operation Feb. 5, 1894. History: Puncture had been resorted to frequently. In November of preceding year pleurotomy had been performed and though benefited temporarily a fistula resulted. Operation: Rectangular skin flap, adherent by its postero-superior side over the sixth, seventh, eighth and ninth ribs. It is oblique from above downward and extends almost from the vertebral column to the sternum. These ribs were then resected for about two inches at the superior aspect of the wound and (the heavy dorsal muscles acting as a hinge) the anterior parts of these ribs with the corresponding muscles were reflected, after they had been cut loose anteriorly, superiorly and inferiorly from other parts of the thorax. The suppurating cavity exposed, extended from the costo-diaphragmatic sinus to the mediastinum and upward to the superior lobe. Its wall was a thick neo-membrane which was dissected with great difficulty from the pericardium and diaphragm and with less difficulty from the lung. During the removal the lung suddenly protruded from the thorax. Later, however, the lung contracted and when the operation was finished there was a larger cavity than before the operation, because of the removal of the membrane. Hence the trap-door was excised and the wound covered by a skin flap only. Patient never recovered from shock; died the same evening. Remarks: The operation lasted one hour and five minutes. Hemorrhage was very slight. Examination showed the intercostal arteries were filiform and atrophied. Postmortem, it was found much more serious lesions than had been imagined had occurred in the lung. The right lung was contracted in its inferior lobe, tuberculous in the superior one; the left lung was softened at its summit, and showed confluent tubercles throughout the rest of its extent.

Case of Gallet. Published in *Le Clinique* June 6, 1895, page 354. Female, aged 12 years. Operation March 19, 1894. His-

tory: Right pleura involved. Estlander's operation had been performed without effect, although both the parietal and visceral pleura had been curetted. Lung was much contracted and did not expand after the operation. Schede's operation; the visceral pleura was curetted, and a spiculum of bone, two inches long, removed from the pleural cavity. The wound tamponed for two days and then irrigated with boracic acid. The fistula closed gradually. Recovered from the effects of the operation. General condition of the patient much improved and fistula dry. Remarks: We can not state that the patient is radically cured. 1. In spite of all treatment, however ingenious, some cases of empyema are incurable. 2. This pulmonary decortication, advocated by Delorme, and first performed by him, is in the presence of some lesions futile and unavailing. 3. Schede's operation is an excellent resort when Estlander's has not caused sufficient mobilization of the thoracic walls. P. S.—No doubt a very small portion of the pleura on the lining was removed with the spicule of bone two inches long, but we could justly exclude this case from the list of visceral pleurectomies.

Case of Alex. Hugh Ferguson. Published in JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, Jan. 9, 1897. Male, aged 40. Operation Dec. 12, 1895. History: Had pleurisy May 22, 1894. Aspiration June 23, 1894. Pleurotomy Aug. 10, 1894. Resection of ribs Sept. 10 and Oct. 12, 1894. Estlander's operation March 13, 1895. Fistula thoracoplasty (Schede's) July 12, 1895. Operation: Vertical incision exposed a fistula seven inches long, two and three inches broad. The visceral pleura dissected off the lung, cutting through lung tissue. It was adherent to pericardium and diaphragm. Lung protruded and heart freely exposed. Progress: Shock not severe. Out of bed on eighth day. Discharge very profuse. Granulation tissue very vascular. Rapidly closed, and he went home on Feb. 19, 1896, feeling very well. Cure complete. For the pathology see general description. Remarks: Hemorrhage considerable. It was venous in character. There was blood in the sputum for a couple of days after the operation. The cough ceased and he felt certain that he could assume work on the farm. The wearing of a shield was not advised.

P. S.—In a communication from Dr. Carl Beck, of New York, since the reading of this paper at Atlanta, Ga., he lays claim to having performed a pleurectomy prior to Fowler's case, regarding which he says: "I am not able to send you a report, as I have not published the case, but presented it to the German Medical Society; so that the only notice about it is contained in the secretary's minutes." I regret not being able to give due place to Dr. Beck's case, but I am not aware that it was one of visceral pleurectomy.

AUTO-INFECTION AS A FACTOR IN NERVOUS DISEASES.

Read before the Southwestern Iowa Medical Association, at Corning, Iowa, Aug. 20, 1896.

BY FREDERIC S. THOMAS, M.D.

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Clinical observers have described the characteristic phenomena of various neuroses; also of organic nerve lesions whose etiology can only be ascribed to auto-infection or intoxication resulting from non-elimination of the products of metabolism, or the absorption of ptomains arising from the action of the ever-present bacteria on the accumulations of retained excreta in the alimentary canal.

Alienists have frequently called attention to the relation existing between a constipated or sluggish condition of the bowels and melancholia, dementia and depressed intellectual powers. It is the opinion of the writer, that the ptomains or toxins and toxalbumins arising from bad digestion and faulty elimination are greater factors in disease than has yet been stated by writers on this subject.

For the purpose of bringing this subject before this society in such a manner as to elicit an intelligent

discussion, let us first inquire into some of the physiologic acts of the digestive tract. We learn that during digestion the albuminoids are acted upon by the gastric and pancreatic juices with the production of acid or alkanin albuminates, propeptones or hemi-albumins, and ultimately peptones.

Normal gastric juice will digest albuminoids irrespective of the presence of bacteria. According to Flint, meat far advanced in putrefaction may be digested in a normally secreting stomach without serious deleterious effects upon the being; the bacteria being destroyed or rendered innocuous by the acid gastric juice. Interference with the function of the hepatic cells gives rise to an auto-infection which specifically reacts upon the nervous system, through non-elimination.

The liver produces more or less urea which is excreted by the kidneys. The bile which is essentially a secretion, is also decidedly an excretion. In so far as the biliary salts are concerned, they are manufactured by the hepatic cells and do not preëxist in the blood. The bile is thus a secretion, but the constant and invariable presence in the bile of cholesterolin classes it among the excretions. With the exception of the venous blood, crystalin lens, spleen and liver, cholesterolin is found only in the nervous system, which is the probable seat of its production. The blood loses cholesterolin in passing through the liver, yielding it up to the bile. Cholesterolin is converted into stercorin in the intestines, being thus entirely eliminated normally. It may accumulate in the blood when the liver cells are deprived of their eliminating function, giving rise to cholesteremia, a condition characterized by grave nervous symptoms allied to those in uremia.

When we consider ptomains, leucomains and the various chemic derivatives from fermentations, we see how important cell selection becomes in normal functional activities. While it is important that we should consider the process of digestion, as it represents the disposition of the food taken into the body, we must also take interest in normal excretion, as this represents the end-products of metabolic activity which are of no further use to the system.

Four channels, viz., the kidneys, intestines, lungs and skin, are made use of in this important process. As a rule, the gaseous waste products are excreted through the lungs and skin, the soluble solid bodies through the kidneys, the insoluble through the intestines. The gaseous products are mainly carbonic acid and water. Occasionally other gases, as hydrogen and marsh gas are present, formed in the intestinal canal by fermentation.

The more important bodies excreted through the kidneys are urea, uric acid, creatin, creatinin (all nitrogenous), phosphates, sulphates and chlorids; while by the intestines is excreted the excess of food undigested, together with the indigestible matter and the insoluble products resulting from the combined action of the bile and intestinal secretions. These products together constitute the outcome under normal conditions. If we consider these waste products of the body chemically, we find nearly all the nitrogen excreted from the kidneys and intestines.

The carbon and hydrogen, on the other hand (and a certain amount of organic matter), are excreted mainly through the lungs and skin, a small amount being found in the feces and urine. The remaining elements to be accounted for, viz., sulphur, phosphorus

chlorin, potassium, sodium, iron, lime and magnesium are found likewise in the urine and feces.

The most important nitrogenous bodies excreted are urea and uric acid, the former being the product of regressive metamorphosis by which proteid matter is changed by the action of the liver cells; the latter the product of a metabolism slightly different from that which leads to the formation of urea, undoubtedly one in which the spleen plays a part.

We have thus briefly recalled these physiologic processes only to refresh our memory along these lines, in order that we may better present pathologic conditions resulting therefrom. In such a consideration we must bear in mind that the function of an organ depends upon its structure. We are taught that "the structure of every cell and fiber of the body depends upon the quality and quantity of the material absorbed from the alimentary canal." An excess of food overwhelming the tissues and a deficient amount lessening the energy of every organ.

Toxic substances in the alimentary tract, whether introduced as such or developed from fermentation or putrefaction, deteriorates the structures and perverts its function.

Pasteur and others have shown that vast numbers of microbes capable of generating poisonous ptomaines and toxins, varying in their properties, are capable of producing most powerful poisonous effects. These poisons are produced in greater or less quantities subject only to the normal poison-destroying power of the liver, and the eliminating function of the kidneys. It has been asserted that "the great number of functional nerve disorders which are included under the general term neurasthenia, are all of gastric origin." Dr. Kellogg, in an article read before the Mississippi Valley Medical Association, says: "We see that special investigators in the etiology of disease are pointing toward the stomach as the starting point of the train of morbid processes which give rise, in each particular case, to a special group of morbid manifestations."

Dana asserts "that organic changes in the central nervous system are doubtless due to absorption of toxic substances produced by microbic processes in the alimentary canal." Since Murchison's series of clinical lectures in 1877, on the functional diseases of the liver, the accumulations of uric acid in the system, as pointed out by him, has become a recognized etiologic factor in lithemic conditions.

To present cases of auto-infection that should follow the foregoing introductory chapter, we can but present those of every-day occurrence, leaving a very large part of our subject without discussion. I present a few cases treated by the author during the last year, which will in a measure be illustrative of the subject under discussion:

E. T., aged 15; a well-nourished girl, inclined to inactivity and fond of reading many hours daily. When at school was at the head of her class and was far advanced for one of her age. At times was gloomy and irritable, crying upon the least provocation. Soon after would have an attack of migraine. The case was one that had exhausted the list of coal tar derivatives and other headache remedies without relief. An examination of the urine was made; specific gravity 1030 and uric acid crystals found. Salicylate of sodium as recommended by Haig, was prescribed with outdoor exercise, either walking or cycling, and with but little reading permitted. Patient occasionally takes a teaspoonful of alkalithia. Bowels kept open by a seidlitz powder when needed. She has had no return of her trouble for four months. This case was of easy diagnosis, viz., an accumulation of uric acid in the system, hence migraine as a symptom.

B. W., a man 46 years old, a very successful business man; has been treated for dyspepsia for years; is irritable at times, thin in flesh, suffers with flatulency and constipation. Is a medicine toper. Extremely jealous of his wife and is fond of slipping into the house at an unexpected hour, accusing her of intimacy with other men, yet her conduct is most circumspect. Complains much of headache and insomnia. An analysis of his urine was made and uric acid crystals were found; the urine clear when first voided, but becomes cloudy upon cooling with brick dust sediment; specific gravity 1028. Prescribed alkalithia and the salicylates and a trip to the mountains; bowels kept open with lapactic pills; he has improved much in health.

Mrs. B. P., married, aged 41, very fleshy and quite indolent in her habits; suffered with gastric and intestinal dyspepsia and cardiac palpitation and at times with a slight cystitis; had eczema once a year on portions of her body; complained occasionally of tenderness and stiffness in the metatarso-phalangeal joint of great toe of left foot; at times felt a soreness along the sciatic and pain in the intercostal nerves. Had been treated by one physician for dyspepsia, by another was told she had "chronic rheumatism." Her trouble was labeled "change of life" by her female friends. Had been given a course of "reduction of dislocated vertebrae" by an osteopathist. Her case was carefully studied and a chemic analysis of the urine made; uric acid crystals were found and a diagnosis of lithemia given. The patient was put upon a restricted diet composed largely of non-nitrogenous food, and exercise insisted upon; she was given large quantities of lithia water and an occasional teaspoonful of rochelle salts with bitartrate of potassa; a tonic of iron, quinin and strychnin was prescribed; at first a few doses of calomel were administered. She has improved much in health, her "rheumatic pains" have disappeared with her flatulence.

L. A., a married man, aged 36, a railroad employe. Began two years ago to suffer with attacks of indigestion and flatulence; at times had numbness of the extremities with some pain in back and loins; sexual function impaired; became depressed and would worry about trivial things; irritable at times and unsociable; performed his work with less interest and began telling his woes to comparative strangers. His sleep was disturbed and he suffered from headache; was constipated and flow of urine irregular, either scant and high colored or profuse and pale; lost weight and muscular strength; imagined he had heart disease on account of pain in the chest; was told he had diabetes; was also told he was becoming consumptive; was afraid he was losing his mind, and was not sure but he had locomotor ataxia; was constantly studying his own symptoms by the aid of a domestic work on practice. An analysis of urine was made and an excessive amount of urates found; specific gravity 1026. A diagnosis of neurasthenia given. He was required to visit my office but once a week and each time I made a thorough examination, both for the mental effect on the patient and to note any changes in his condition. His bowels were moved by a mercurial and salines, with plenty of water to keep them open ordered; tonics were given for a while; a shower bath with towel rubbing every morning required; a carefully regulated diet adopted and a cheerful mind enjoined. Faulty digestion, functional inactivity of the liver and the eliminating function of the kidneys were but improperly performed. As a result toxic substances were absorbed and the train of symptoms above enumerated ensued.

Considering the human body but an aggregation of cells, and cell groups normally functioning for the maintenance of the health of the individual, we realize the necessity of a normal equilibrium of nutritive factors, that they may resist the action of deleterious agencies. Men are not alike, nor are they at all times equally vulnerable to the action of bacteria. Heredity comes in for its share of theorizing, which in the light of modern research is defined as "a special vulnerability of certain cells or group of cells to morbid action."

Metschnikoff's theory of phagocytosis, and the theory that "certain albuminous constituents of the body possess a bactericidal power or a neutralizing effect upon the bacteria and their ptomaines," all point to the importance of normal functional activities within the body. From a study of the various systems of cells of which the body is composed, we

can with assurance point to those of the nervous system as the most vulnerable to the attack of morbid agents.

With the multitudinous array of symptoms seen in many forms of nervous disorders, how natural it seems for us to turn to the avenues of elimination in search for a source of infection. Then, surely, auto-infection is a factor in nervous diseases.

THE USE OF FORMALIN IN INFECTED WOUNDS.

BY A. L. CORY, M.D.

CHICAGO, ILL.

My attention was called some time since to the use of a mixture of formalin and gelatin in infected wounds. A German firm placed the mixture on the market under the name of "glutol." Formalin is mixed with gelatin, which forms a solid mass; this is grated, forming a fine gray powder, in which state it is sold, to be dusted on the wound as we have been doing heretofore with iodoform or boric acid. An American firm have recently put the same thing on the market under its proper name, "formal-gelatin." It was claimed for it that when pus was present the gelatin would gradually dissolve in the secretions and liberate the formalin, which is a strong disinfectant, and thus keep up a continual action while any of the powder remained. On trial I failed to realize the good results except in superficial injuries, for instance in two cases of scalp wounds. At the second dressing, 48 hours after the injury, the skin around several of the stitches looked quite inflamed and seemed about to suppurate, but on the application of the powder and fresh gauze at the next dressing, four days after, the wounds were found entirely healed. In cases where the infection was deep and pus already formed I could see no benefit from the powder. At this time I had under my care one of the nurses of Englewood Hospital who had been operated upon for appendicitis. The external wound had by some means become infected and I had opened it widely down to the peritoneum. In spite of all the measures I could apply, including the glutol, the wound surface continued to suppurate, and a pocket formed under the skin, beyond the wound but communicating with it, from which pocket I could press out at each daily dressing about two drams of pus. It then occurred to me to try the formalin in solution. Knowing it to be very strong, I without any special reason chose to make it of the strength of 1 to 200, formalin 3i, water 3xxv. After the wound had been washed with sterile water until clean, I packed both it and the pus pocket with plain sterile gauze dipped in the above solution, and what was my surprise on the next morning to find no pus whatever. I again dressed it with the formalin, and at the end of another twenty-four hours removed it and dressed with iodoform, and the wound healed promptly without further formation of pus. At the same time I had under care a woman who had an Alexander operation for shortening the round ligaments, and in whom one of the wounds had become infected so that I had opened it widely for drainage. Two dressings of the formalin, 1 to 200, stopped pus formation, and the wound healed under iodoform without further suppuration. Since that time I have dressed all infected wounds, and we get many of them in railway surgery because of dirt ground into the wound at the time of the injury, with plain gauze

thoroughly wet with a solution of formalin 1 to 200, and have not had pus occur where the formalin could get to all parts of the wound.

I have had some wounds irrigated with the same solution, but do not get as good effects as where applied on gauze packed into the wound. In an amputation of the arm for railway injury suppuration occurred in the track of the drainage tube; here it was not possible to pack the entire tract with gauze, and irrigation seemed to reduce but not entirely stop pus formation. It would seem from my experience that the formalin must be held in place so that it may act on every part of the wound for several hours. In an acute case of gonorrhea in a woman, as proven by finding the gonococcus in great abundance, I had the vagina thoroughly douched, then packed it through a speculum with gauze wet with formalin 1 to 400. This was renewed for four days in succession, and the gonorrhea was cured.

My experience with the formalin has been so satisfactory that I desire others to try it and see if they can get the same good results.

I believe that with gauze dipped in the solution and the powder applied we have an ideal non-toxic dressing. With gauze wet with the solution packed in "pus pockets," and in gonorrhea in the female applied on gauze, we can get better results than with any other dressing used at present by the profession. I would not expect as good results in gonorrhea in the male, for there the formalin could not be retained long enough in contact with the diseased surfaces. In making my solutions I have used the formalin 1, as it is really a 40 per cent. solution of the gas called formaldehyde. I have continued the formalin as a packing material in my pus cases only long enough to stop the pus secretion. I do not know that it would be injurious, but knowing that it is being used as a fixative of fresh specimens for microscopic specimens, I have feared that its continued use would harden the granulations and delay the cure, so as soon as the suppuration has stopped I have used iodoform in powder and plain gauze as a packing to stimulate the growth of granulations.

4101 State Street.

TOBACCO AMBLYOPIA.

Read at the meeting of the Third District Branch of the New York State Medical Association at Auburn, N. Y.

BY F. W. HIGGINS, M.D.

CORTLAND, N. Y.

I shall make no attempt to present anything novel on the subject of tobacco amblyopia. It is a subject that has been much discussed during the thirty-three years since Jonathan Hutchinson first clearly connected failing vision with the inordinate use of tobacco. Still the pathology of the disease was not made clear until a dozen years ago and there is still much difference of opinion among writers upon the question of its real cause. But it is not even an attempt to clear up any one of these disputed points that I have had in mind in selecting this topic, but because I think that the ascertained facts in the case have been too much neglected by us as general practitioners. Until the ability to detect the condition is in the possession of the profession generally, it seems to me that many cases are bound to go unrecognized. Even if it is first diagnosed by the eye specialist, it can be best treated and its course followed by the family physician.

The diagnosis in this, as in any of the bedside cases we are called upon to treat, is of the first importance. Here, fortunately, it is not difficult if we keep its distinctive features in mind. If a person whom we know to use tobacco, therefore generally a man, who had used it moreover for several years, should complain of failing vision, for which he could find no help in spectacles, and affecting both eyes, we should have good grounds to suspect tobacco amblyopia. If then a rough test of the color fields of vision should show central scotomata for red and green, there could hardly be one chance in a hundred that we were mistaken in deciding that we had a case of this affection on hand. Of course the ophthalmoscope should be used, if for no other reason, to exclude other lesions. But I am one of those that believe that the ophthalmoscope should be used by every physician that is capable of using any instrument of precision, since it so often affords a clue to the general disease for which our patient is to be treated. *Tabes dorsalis*, *Bright's disease* and *diabetes* are only a few of the general diseases in which we may expect to derive some assistance from the ophthalmoscope.

The almost pathognomonic symptom is the central scotoma for red and green. A very simple and ready way to test this, when it is suspected, is to have the patient stand directly in front of you at a short distance, two feet for instance. One of his eyes is to be closed and with the other he is to look directly at your nose. A little piece of red paper is then to be fastened to the end of a penholder, or anything convenient, and from arm's length at the side to be brought slowly toward your nose. When the patient can first recognize it as red, you find that the object is at an angle of from 30 to 45 degrees from his eye. As the test object continues to approach your nose, suddenly there is a failure to recognize the color again. The object can be seen but looks simply dark, with no distinctive color. This small spot in which a person is color blind includes the fixation point and extends a short distance beyond it especially toward his temporal side. The same test with a bit of green paper will reveal the same scotoma, while other colors and white will probably be recognized. If the patient stand near a blackboard this field can be mapped out, and still more precisely by the perimeter, of which every part is equi-distant from the eye.

Such a typical case would be a man about 50 years old, who had smoked for many years. Chewing, working in a tobacco factory, or rubbing the gums with snuff may bring on the condition, but as a matter of fact, rarely do. The associated use of alcohol seems to act as a predisposing cause. Indeed, it seems to be proven that the chronic consumption of alcoholic beverages alone may cause an amblyopia indistinguishable from the one we are considering. Much of the literature on the subject has been of the nature of a discussion between those who believe that tobacco is the principal etiologic factor in the ordinary toxic amblyopia and those who would ascribe most or all cases to alcohol. The determination of the question is rendered the more difficult by the fact that most of those affected have used both narcotics to a greater or less extent. The English, following the investigations of Hutchinson, Nettleship and other English investigators, would claim that alcohol amblyopia seldom or never occurs. The French, in their intense loyalty to the published investigations of their fellow countrymen, almost

unanimously declare that alcohol is the sole cause of the retro-bulbar neuritis; that it causes sclerosis of the optic nerve as it does sclerosis of the liver. The Germans seem willing to allow both causes, as a result of their studies. The Americans have done too little original study to have a decided opinion on the subject. I think, however, that they admit both.

Often the observation is made that the patient can see better in the evening, or when the light is dim, than in broad daylight. A case is given of a coachman who could see the numbers on a house in the evening, but could not in the daytime. The pupil, however, is generally small and spasm of the ciliary has been noticed, which might require a strong light for the best vision.

If one makes an ophthalmoscopic examination he will discover, if sufficient care is used, that there is an atrophic appearance of the temporal quadrant of the nerve head. This bluish white color is hard to describe and drawings fail to give the delicate color change.

Within the last few years there seems to be a pretty general agreement as to the pathology of the disease. This to me forms a very interesting chapter. So long as it is found clinically that only the region of the macula and its immediate neighborhood are affected it would be expected that only a part of the fibers of the optic nerve would be found diseased. As a fact, this proved to be the case when sufficiently careful microscopic study of the nerve was made. A photograph of the section of a nerve near its peripheral extremity shows that the bundle of fibers lying at the outer and lower side and destined to supply the territory about the yellow spot is sclerosed. This change consists of a chronic inflammation with increase of the fibrous tissue lying between the nerve fibers, which by its subsequent contraction produces their atrophy.

A little farther back this bundle of fibers runs in the central part of the optic nerve instead of peripherally as before. The inflammation is often found to be most extensive near the optic foramen, where the situation of the bundle is entirely central. This fact disposes of the theory that the affection is primarily of the optic sheath and affects the elements of the nerve by pressure or extension. It is a primary nerve lesion.

Exceptional cases have occurred in which the central scotoma has enlarged until it has occupied almost the whole of the color field. In such a case we would have a condition of acquired color-blindness. It is easy to see how in such circumstances a railroad engineer or a pilot, who had successfully passed an examination for color blindness might become unsafe.

The kind of tobacco used may be a factor in the causation of the disease. It is found most among the poorer classes, because they use the cheaper, ranker tobaccos. It is found that the Virginia tobaccos contain two or three times as much nicotine as the Cuban or Maryland product. While it is probable that the other complex alkaloids and chemicals produced in the combustion of the weed are in part responsible for the effect upon the nervous system, still the percentage of nicotine in a sample in a general way measures its strength. The frequency of the affection seems to be greatest in England. In some clinics it reaches as high as 1 per cent. of all cases treated. Possibly this is due to the fact that more general attention has been called to the disease there, or it may be due to

the ranker sort of tobacco in common use. The very high import duty on tobacco and cigars in England does lead to the usage of a cheaper, stronger grade.

A very interesting case is given by Fuchs in which the same amblyopic condition was brought on by the long continued smoking of stramonium for asthma.

The treatment of tobacco amblyopia is very satisfactory because it is almost always successful. That is to say, it is successful where the conditions are carried out. The *sine qua non* is that the patient shall quit the use of tobacco absolutely. If one has a patient who would rather smoke than see, the prognosis is bad. Something might be done by smoking in the Turkish style, or greatly lessening the use of it and giving large doses of strychnin; but in the majority of cases no improvement is noticed until the last trace of its use is given up. Small doses of nuxvomica are recommended. Bromid of potassium may be indicated to quiet the nerves while undergoing the tantrums of breaking off the old habit. We are told, too, to give cathartics to take the place of the accustomed effect of the tobacco.

The progress of the case toward recovery may be measured by examining the size of the scotoma from time to time. It will be noticed, too, that as the conductivity of the tract from the retina to the brain centers is increased that the disability to distinguish the two colors, instead of being absolute, is only partial. At times in a favorable light, the colors will be correctly named in a hesitating manner. Entire recovery may be expected if the abstinence is continued. An ophthalmic examination may still show a paleness of that portion of the optic nerve, but vision will increase from $\frac{6}{60}$ to normal.

NOTE.—Several charts to illustrate the condition were presented.

DISINFECTION OF THE MOUTH A POTENT FACTOR IN THE TREATMENT OF LA GRIPPE.

Read in the Section on Dental and Oral Surgery, at the Forty-seventh Annual Meeting of the American Medical Association, held at Atlanta, Ga., May 5-8, 1896.

BY G. V. I. BROWN, D.D.S., M.D., C.M.
DULUTH, MINN.

In my capacity as a dentist, through dispensary and hospital practice incident to the study of general medicine, and by consultation with physicians in regular practice, who were particularly alive to the importance of the oral cavity in its relation to other disturbances, several conclusions have been borne upon my mind, which it is my desire to make the basis of this discussion.

1. That the disinfection of the oral cavity ought to be, and would be, if the necessity of it were sufficiently understood, as much a part of preliminary treatment of many diseases as the administration of a cathartic.

2. What is wanted to bring the dentist and the medical practitioner more frequently into consultation, as they ought to be, is not so much reports of remarkable cases, which, while they call attention to the possibilities of trouble, do not give an adequate idea of the frequency of mouth excitants of disease; not so much a theoretical digest of pathologic and bacteriologic processes; for given the state of things as they exist, the physician can supply all this for himself; but a plain statement of the facts of individual observation and experience as applied in relation

to particular diseases. Following this line, I desire to call attention to influenza, or la grippe as commonly called, in its relation to pathologic conditions of the mouth.

For fifty years this affliction has been recognized in periodical outbreaks, yet much of the real nature is still shrouded in mystery. We find, with some variation among authors, its description briefly to be as follows:

Definition: An acute, specific, infectious disease, characterized by great prostration and often catarrh of the mucous membranes, particularly the respiratory and gastro-intestinal tracts, with marked liability to complications.

Etiology: Comparatively unknown, notwithstanding exhaustive literature on the subject; believed to be due to the infection of the body by a specific organism, though bacterial examinations have usually shown pus organisms and diplococcus pneumoniae to be present. Symptoms are those of a marked infectious, or toxic, general constitutional disturbance of the body, with local lesions and symptoms; fever, languor, pain in the back, head, eye balls, bronchial disturbances, or catarrhal affections of the digestive tract, with perhaps nausea, diarrhea, etc., usually great depression of nerve force and spirits and a tendency to painful neuralgias of the trigeminus.

Complications and sequelae are the really formidable part and due for the most part to secondary infection, manifesting themselves in a variety of ways.

Diagnosis: Not usually supposed to be difficult, unless in a form resembling typhoid in its early stages, but differentiated later by pain in the muscles and catarrhal symptoms.

Prognosis: Favorable in healthy patients, dangerous in heart troubles and pulmonary diseases, or chronic nervous patients.

Treatment: Symptomatic, almost entirely phenacetin, antipyrin, quinin, strychnin and stimulants with morphia, when required, and good general care are the remedies most usually employed, with the usual variation of special advocates of other drugs. Thus we see from the clinical picture before us a disease, the characteristics of which are exactly those one ought to expect from quite common conditions of the teeth and gums, which by reason of the constant discharge of pus, must, and undoubtedly do, aggravate the symptoms.

In abscessed teeth, caries and necrosis of the jaws, as well as in pyorrhea alveolaris, we have the danger of direct infection, of reabsorption of waste products of toxic poisoning, and the constant passage of the pus germs through the alimentary canal along the mucous membrane surfaces, ready to ignite inflammatory or catarrhal processes wherever the lowered vitality of the part offers the least resistance. I do not think it an over-estimate to say that 90 per cent., if indeed not all patients, would have some pathologic oral condition, and a research of medical literature gives us almost nothing in regard to direct medication applied for the purpose of disinfecting the entrance portal of the infection.

We note the two most common forms to be bronchitis, with its serious complication, pneumonia, and catarrhal disturbances of the digestive tract.

Miller, in his "Microorganisms of the human mouth," referring to the experiments of Fränkel and Weichselbaum, who hold that the coccus of sputum septicemia is to be regarded as the most

frequent, if not the sole excitant of the lobar pneumonia, says: "If their view be correct, we may answer that in at least many cases the infection came from the mouth. The oral cavity serves as a gathering point for this microbe, which from time to time is carried into the lungs with the air, until at last, at some weak point, or the result of some slight inflammatory action in the lungs, through which the power of resistance is impaired, it obtains a foothold in the lungs themselves. For this reason, therefore, among many others, the neglected oral cavity offers a dangerous source of infection, which has by no means received the attention it deserves."

Mouth bacteria as excitants of nasal and pharyngeal troubles are too well understood to need more than passing notice and the same will, I think, apply to diseased conditions of the stomach, both catarrhal and digestive, which, over and over again, have been found to be the direct result of mouth conditions.

The other symptoms and sequelæ of this disease are simply such as might be expected from any toxemic poisoning affecting the system from infection, varying according to the virulence and power of resistance of the individual case.

It is by no means intended to convey the idea that la grippe is purely and simply a result of oral infection, though, as we not unreasonably suppose, the secretions of the mouth are often a culture media for its specific organism; but there can be no doubt that many complaints arising solely from mouth disturbances are incorrectly diagnosed as la grippe, and that in such cases, as well as in the disease itself, much comfort, relief and benefit might be given to the patient during its progress, beside which many of the most serious complications might also be averted by the prompt, thorough and continued disinfection of the mouth, meaning thereby not only sterilization of the buccal secretions, but treatment or removal of any diseased condition that may exist.

It has happened repeatedly in my practice that patients have come complaining of all the marked symptoms of la grippe, perhaps while under the care of a physician for its treatment, with a foul odor from the breath, the mucous membrane of the tongue coated, more or less pharyngitis, and upon examination I have found a copious discharge of pus from the necks of the teeth, discharges from the fistulæ of apical abscesses or necrosis of the jaws, and by a removal as far as possible of the exciting cause, thorough cleansing of the teeth and medication in the form of sterilizing agents, aided by an antiseptic prescription to use as a mouth wash every hour the first day or two, and three times daily thereafter, have been given marked relief and shown improvement within twenty-four hours, with apparently complete recovery in a very short time.

One such had suffered from recurrent attacks, accompanied by chronic sore throat, a severe bronchitis, hacking cough and asthmatic attacks of considerable severity. All symptoms were marked, particularly the nervous depression and hopelessness.

Examination showed a chronic catarrhal state of nasal and pharyngeal cavities, with nasal polypus of considerable size. The oral cavity showed all the teeth more or less elongated, some having been lost, and on the right side, the outer wall of the superior maxillary was bulged out sufficiently to give a dis-

torted appearance to the face. As a preliminary step the care of the mouth was begun, it being understood that the polypus was to be removed and the treatment for the nose, throat and bronchials was to be taken up later.

Incision was made through the thin, bony covering of what appeared to be a sinus filled with thin light-colored fluid (though not connected with the antrum), but in washing out the cavity with hydrogen dioxide, bubbles were seen to ooze out around the neck of the right superior first bicuspid, and proved in fact that, though the pulp of the tooth was alive, a pyorrhea pocket communicated with, and had actually caused this apparently serious condition. Thorough local disinfection, drainage and cleansing of the necks of the teeth, care of the pyorrhea, by correcting malocclusion, an active exciting cause in this instance, and general disinfection of the mouth, repeated in the office daily for a number of days, augmented by a prescription for use at home, made such a general improvement in the patient that there was a general abatement of all the unpleasant symptoms, the despondency disappeared as she was able to go about and do her own housework, and the other treatment was considered unnecessary.

Another, a young man, having all the symptoms of disordered digestion, foul mouth, coated tongue, and troublesome but not severe pharyngitis, loss of appetite, intestinal disturbances, pains in his head and all over body very marked, pulse irregular, one or two degrees of fever, for which, curiously enough, his physician had been content with administering phenacetin, a depressant, to still further increase the already weakened and depressed condition, a treatment, according to good authority, that has probably killed, during the epidemic of 1889 and 1890, more patients than ever the disease alone would have done, was given the same treatment as in the preceding case, viz.: Thorough disinfection of the mouth, in which not only pyorrhea of long standing was encountered, but some abscessed teeth and necrosis, for which it was necessary to remove a sequestrum of bone. Immediate relief was given. Three days without the administration of drugs, were sufficient to put him quite on his feet again.

These two cases are typical of the principal forms of this disease, and illustrate as fully as could be done by a rehearsal of many similar cases that have come within my notice.

In using the term, disinfection, I have included the operative means necessary to accomplish the desired end, as well as the use of antiseptics. The former usually requires the assistance of a dentist, but the latter is quite within the reach of every practitioner of medicine, who, if as he looks at the tongue in the truly orthodox manner of physical diagnosis, will glance at its surroundings, and give along with the prescription for internal use, one for a simple mouth wash with good germicidal properties, he will certainly find the usual remedies unusually efficacious.

Dr. Kirk, in the *Cosmos* of November, 1895, speaks quite strongly upon this subject, and recommends the use of phenolsodique, adding the somewhat unusual procedure of holding the tongue and scrubbing its surface with a brush, to cleanse off the closely adherent furred coating. This I have not tried, though for a thorough cleansing, it speaks for itself. I begin, as is my custom with every case presenting in which the suppuration processes are apparent, by making the

patient rinse the mouth with a solution of mercuric bichlorid 1 to 1,000, with an equal amount of hydrogen dioxid, or in place of this, a strong carbolyzed solution, and continue the process two or three minutes by the watch. This serves the purpose of safety both to the patient and the operator. The local applications are governed by the nature of the case, and upon dismissing the patient, give the following prescription, which I have used a long time, and once before given before this Section:

| | | | |
|--------------------------|----|-------|----|
| R. Listerin. | āā | ʒiij. | 96 |
| Glycerin. | | ʒiij. | 12 |
| Acidi carbolici. | | | |

Misce. Sig. Dilute one teaspoonful in one-third glass of water. Use as mouth wash.

This seems to be quite effective, and is satisfactory because, by reason of its simplicity, patients being familiar with the drugs, are able to use judgment in varying the strength, as necessity may require.

There are mouth washes galore, and I have no especial desire to go into the matter of their discussion. They must be strong enough to at least inhibit, if not destroy, the pathogenic organism, must be used constantly, and held in the mouth for several minutes consecutively, to be at all certain of effecting the desired purpose. As for other desirable qualities, these may undoubtedly be left to individual preference.

What is true of influenza is undoubtedly also true of many diseases, and if alone the practice of disinfecting the mouths of their patients could be freely established among those whose duties call them to the bedside, far-reaching benefit must undoubtedly result.

DISEASE OF THE ORAL CAVITY A POT- ENT FACTOR OF GENERAL DISEASE.

Read in the Section on Dental and Oral Surgery, at the Forty-seventh Annual Meeting of the American Medical Association, at Atlanta, Ga., May 5-8, 1896.

BY SHEPPARD W. FOSTER, M.D.

ATLANTA, GA.

The oral cavity in its broad range of function, in its necessity to the life and advancement of the human family, fills one of the most important offices of any organ of the body.

Serving, as it does, among other important functions, in the articulation of human speech, in vocalization, prehension, mastication, insalivation, deglutition, etc., it has constant employment from the induction of life to the last breath of old age. It plays equally an important part in both the sorrows and pleasures of life. And since its functions are so imperative, we can readily appreciate the fact that any pathologic condition existing here might with ease become manifest upon other organs.

We will call attention to some of the deleterious effects of first dentition. We know that this period covers the most critical span of human life, but it has been stated by eminent authority that the vast mortality of infantile life depends more on the conditions of the oral cavity than from all other causes combined.

When the development of the root of a tooth progresses more rapidly than the overlying tissues are absorbed, we have local inflammation. The gums become red, swollen, and highly inflamed and are very tender to touch. The secretions are much increased and the reflex pressure on the nervous and vascular supply augments the trouble, until we have the entire system involved. The child has grown

wakeful, restless and fretful; its cheeks are flushed; it refuses nourishment; the alimentary canal becomes more active, diarrhea being manifest, and if relief is not given, relaxation of the vital forces follows and we have nausea, vomiting, convulsions, paralysis and not infrequently death. Statistics show that a greater number of deaths occur from cholera infantum, entero-colitis, convulsions, infantile paralysis and laryngismus stridulus during the period of first dentition than at any other time of life.

Considering the anatomy of one of the largest and most complicated nerves of the human organism, that which supplies the teeth, the trigemini: A compound nerve varied in its functions, a nerve of special sense, common sensation and motion; the great sensitive nerve of the head and face; the motor nerve of mastication; its lingual branch the nerve of the special sense of taste, sending important branches to the ear and eye, anastomosing with many other nerves. It is not strange that we have remote lesions having their origin from this nerve.

A large percentage of neuralgia can be readily traced to some dental disease. The most numerous cases of reflex irritation are associated with these disorders. One of the most frequent is the continued attacks of auritis during the eruption of the sixth year molars. In almost all cases of reflex irritation, as the result of erupting teeth, the free use of the lancet gives immediate relief.

I have with me an unerupted, impacted central incisor tooth, which Dr. R. B. Chapman, of Troy, Ala., extracted from the mouth of a lady aged 25 years. She had suffered with neuralgia for several years. It had taxed her patience and the skill of the best physicians of her city and she had spent several seasons at different resorts, endeavoring to obtain relief, but to no avail. Finally, she came under the care of Dr. Chapman, who noticing the absence of the tooth, made a careful examination and located it with cutting edges pointing upward and almost protruding into the nasal cavity. He removed the tooth by making an incision at the union of lip and gum and with burrs and chisels removed the overlying osseous tissue and lifted it out of its bed. With the healing of the wound the neuralgia entirely disappeared and the general health was greatly improved.

I have also in my possession a left superior second molar which has interlocked with an impacted wisdom tooth, with coronal surface deflected backward toward the tuberosity of jaw. The patient had dull, heavy, gnawing pain for some years about the region of molar bone and auris, finally terminating in slight paralysis of the face from which she could not be relieved. The second molar having developed quite a large cavity which became painful, then she applied to have the tooth extracted. The operator was much surprised at bringing with it the unerupted wisdom tooth. Within a few weeks after this operation the paralyzed condition disappeared. We believe many conditions of like character are the result of nervous reflex irritation produced by dental disorders.

We frequently have recorded cases of amaurosis as the result of inflamed or dead pulps, or chronic catarrhal trouble induced by a diseased tooth, first producing an inflammatory condition of the antrum and spreading from thence through the nares and various sinuses.

In examining the mouths of many patients suffering with dyspepsia it has proven the exception when

the masticating powers have not been destroyed from one-third to five-sixths of their capacity. We know that bolting of food day after day will produce dyspepsia, gastritis, etc., therefore we must admit that if the inability to properly masticate is not the direct cause of this dreadful disease, it certainly accompanies it. Lower your vitality and you invite disease. The oral cavity is the commencement of our digestive tract. It is the antechamber to man's vegetative life and in this respect it is introductory to the stomach. Therefore it is reasonable to suppose that any lack of hygiene, or any pathologic condition that causes a deficiency of quantity or quality of the fluids which the food first meets when entering the mouth, is a hindrance to nutrition and undoubtedly makes its impression on the stomach.

Often when a patient presents herself for treatment she is anemic, debilitated, despondent and melancholy. The physician examines her and asks various questions, but can not locate the trouble in any special organ, so he says "nervous debility," or "breaking down of the vital forces," and the usual prescription of tonics, change of residence, etc., is advised. A careful examination of the oral cavity would reveal decayed and broken down teeth and suppurating sinuses, contaminating the air of respiration, vitiating the oral fluids, poisoning nutrition and consequently lowering the vital forces and breaking down the general health. This is not imaginary, but the real condition of the mouths of many of our patients.

It is rare that we find a consumptive without a typical case of pyorrhea, or at least pus exuding from around the necks of the teeth, and I have thought that inhaling the effluvia from these suppurating sinuses of the mouth might produce this fatal disease. This leads me to ask, What should be the relations of the physician and dentist? Should the dentist know more of medicine or the physician know more of dentistry? As to these propositions I think no medical college should be without a chair on the principles and practice of dentistry and our dental schools should teach more of general medicine and surgery.

62 Inman Bldg.

THE TECHNIC AND PATHOLOGY OF THE PERIDENTAL MEMBRANE.

Read in the Section on Dental and Oral Surgery, at the Forty-seventh Annual Meeting of the American Medical Association, held at Atlanta, Ga., May 5-8, 1896.

BY VIDA A. LATHAM, M.D., D.D.S., F.R.M.S.
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Dental histology and pathology are yet in the embryonal stage, less advanced, perhaps, than any other kindred subject. With the exception of a few, we can not claim special micro-workers. Little encouragement is given to prosecute the subject. The technic is difficult and unsatisfactory at the best, and our schools are content to teach the subject in such a brief elementary way that a student graduates in dental surgery with but a slight knowledge of the barest facts concerning the structures that compose the teeth. It is needless to urge that this is wrong, such a fact is self-evident. An exact knowledge of structure always aids in understanding the function of a part, and is absolutely essential to a clear idea of its diseases and to rational treatment. If we do not know the arrangement of enamel, we are in danger of splitting the tooth in chiseling. We can not tell

what agents are absorbed if we do not know the composition of the dentinal tubules, or the action of bacteria and their septic products on the surrounding structures of the root. Precise information on the histology and chemistry of the teeth would solve many of the curious problems we meet in the practice of our profession.

So far as I can find by consulting text-books on micro-technic, little or nothing is said of technic in dentistry. A few ideas are scattered here and there through our journals. Works on dentistry dismiss in few lines the peridental membrane and its structure, position and the modes of obtaining sections for study. When looking over some mounts of teeth I was surprised at the different appearances presented, some showing extensive pathologic features and some interesting conditions. To obtain normal peridental membrane is not easy. Some authorities state that it is found on all extracted teeth, while others say it is not present unless some pathologic process exists. Certainly in the majority of healthy teeth after extraction the roots are always free from any tissue, or what might be considered periosteal tissue. In carious teeth, especially those which have had some periosteal inflammation or irritation, we can easily find thickened membrane. A recent study of several thousands of sections of carefully selected teeth has convinced me that in the case of normal teeth, after extraction, it is difficult, if not impossible, to demonstrate the presence of peridental membrane; whereas in carious teeth, particularly those with periosteal inflammation, a thick layer of peridental membrane is always present. Therefore, I am in favor of considering sections from such teeth pathologic material.

In studying the development and relations of the peridental membrane, sections were made of teeth of animals, fetal and matured, including serial sections of one and of both jaws, to show the relations of teeth and membrane *in situ*. So far as I have pursued this work it has been anything but satisfactory, for the following reasons:

1. It is difficult to secure good specimens of membrane.
2. When obtained, it is hard to preserve the membrane in a normal condition and to cut sections from it.
3. Sections show poor results from staining, as the effect of some acid reagents prevents the securing of sharp definition and contrast.
4. Even with good teeth, it is difficult to secure the membrane *in toto*, as the paraffin sections are very liable to become brittle or curl up.
5. Much important material is lost by decalcifying agents and the irregularity of their action.
6. It is difficult to obtain maxillæ with teeth *in situ* which are fresh enough for examination.

Dr. Black¹ says: "The time the tissue remains in the embedding material must only be counted by minutes, never by hours; and if, after its removal and placing the tissue in water, it does not swell out to its normal proportions in every part, which failure may be detected after sufficient experience by its appearance, it should be cast aside and a new effort made." This statement is open to question, if we may trust our workers of technic. Poor results are too often occasioned by hurried embedding and infiltrating with the penetrating and clearing agents. If once the material has been properly and thoroughly hardened when fresh, the paraffin ought not to cause

¹ Periosteum and Peridental Membrane, pp. 18 and 19.

shrinkage. Tissues may be cut fresh in gum, ether and aniseed oil, but with these methods we expect more shrinkage. Personally, I prefer to use weak decalcifying agents for a number of days, instead of strong solutions for a short time, as advised by Dr. Black; for I believe if the material has been carefully fixed no bad shrinkage will result.

The absence of any concise discussion of this department of odontologic science in current literature is much to be deplored. So far, there is only one small compilation on the subject, and this deals chiefly with the methods for general histologic work, rather than with the methods suitable for dental microscopy. Further original investigation is much to be desired. The best way is to secure some tissue and harden portions of it in various ways, recording every particular; and then, by measuring, estimate the amount of shrinkage, the action of the hardening agents on the cells as regards the distinctness with which they show and their behavior in relation to staining agents. The previous generation of investigators have left us enormous labor in correcting their errors, for they dogmatized upon observations of tissues profoundly altered or modified in course of preparation. All the science of modern histology with its many warnings and precautions, is one great safeguard for avoiding these errors in the future. To save the tissue elements which so readily distort after death, we must secure an immediate preventive, viz., fixation. This may be done by chromic acid, Flemming's solution, Carnoy's modified by Van Hook and Ohlmacher, osmic acid, bichlorid of mercury, gold trichlorid or absolute alcohol. Fixing is especially necessary in preparing the embryonal material. When it contains cartilage, bone or dentine we may use the same fixative, but must follow it by a decalcifier. It must stay long enough in the fixing agent to harden properly and then be thoroughly washed till testing shows it acid-free. (This is not the case with certain special formulæ, which require acidity to stain well.)

The question of imbedding then follows. I obtained the best results with the freezing microtome if each section was carefully worked out. In some cases, however, it is probably necessary to use the paraffin or the celloidin method, and this particularly concerns the embryonal material. In using paraffin, even though decalcified till soft, the teeth invariably became so hard that only a few sections could be obtained from each sample. It was especially hard to avoid "crinkling" so that thin and perfectly flat sections could be made. To obtain sections of the hard and soft tissues together, the method of Drs. Lavis and Vosmaer, now better known since elaborated by Weil, is one of the best, although requiring much time and patience. Chromo-nitric or chromo-hydrochloric acids are good. Picric acid is good, but very slow in its progress. The following are a few of the most successful formulæ: Fresh teeth were dropped at once into

1. *Müller's fluid*.

2. *Chromic acid, 1-6 per cent., 2 parts; alcohol 1 part.*—These were changed constantly, kept in the dark, then thoroughly washed and decalcified in different solutions. It was here that such contrasting results were observed.

3. *Decalcification by nitric acid, C. P.*—Two per cent. aqueous solution, changed daily; time required, eighteen days, to allow a needle to penetrate, then

thoroughly washed and in some cases passed through an alkalin solution; then hardened in alcohol of graded strengths. Notes: "Membrane intact; pulp remained in the central canal. The membrane does not shrink and the cells stain fairly well, but not sharp and clear. Carmin gave better results than logwood. If strong solutions are used material must be closely watched, as the acid seems to act suddenly when decalcification is nearly complete, *i. e.*, the tissues though still hard when examined may in an hour or two be all broken into useless detritus."

4. *Chromic acid, 15 grs., distilled water 7 ozs., nitric acid 30 minims, changed on fourth day to one-half the strength, using fresh fluid daily. Time, eighteen days.* Notes: "The membrane appears to be attacked, partially eaten off; it does not shrink; the cells stain well and the pulp is in excellent condition, showing nerves and ganglia cells in a marked manner."

5. *Palladium chlorid, 0.001 per cent. in water 10 parts; hydrochloric acid 1 part. Changed once. Time, four or five days.* Notes: "Does not affect the membrane; the results of cutting and mounting gave most perfect specimens. Staining was not sharp and clear, though somewhat improved after prolonged soaking in solutions of sodium bicarbonate or lithium carbonate and then staining for thirty-six to forty-eight hours. Care must be exercised with logwood to prevent precipitation and the stains should be renewed during the process. The pulp canal showed merely the framework, but no tissue elements. It demonstrates the longitudinal fibers nicely and stains them brown." Sections can be stained somewhat if placed in 1-300 or 1-600 solution of palladium chlorid for one to three minutes, rinsed in water and then put in a cold saturated solution of picro-carminate of soda for eight to sixty minutes. Mount in dammar. Glycerin gives good results here as a mounting medium for immediate use; but for hard or non-decalcified specimens, it affects the structure later. Equal parts of palladium and platinum chlorid is useful where a thickened membrane is found, as it shows connective tissue well.

6. *Phloroglucin* is a good decalcifier and preserves all elements but red blood cells. The agent itself covers the organic part of the tissue against the action of the mineral acids, which can therefore act on the inorganic structure in a more concentrated solution. It is the most rapid decalcifier I have used for bony structures. I recommend great caution in its use for teeth, which it affects somewhat more slowly. To increase its rapidity of action 35 to 45 per cent. nitric acid C. P. can be added and then wash for two days in running water. Staining is easily accomplished after using phloroglucin. If hydrochloric acid is preferred to nitric it may be added in the proportion of 30 per cent. acid with 0.5 per cent. sodium chlorid.

7. *Arsenic acid, 2 per cent. aqueous solution, changed daily. Time, fifteen days.* "Results were uniformly good; membrane normal, cells stain sharply, pulp shows well, filling the canal completely. Arsenic evidently has some special staining powers, as seen in the nuclei of the leucocytes."

8. *Hydrochloric acid and nitric acid.*—[Hopewell Smith's method.²] Harden three to four weeks in Müller's fluid; alcohol ten to twenty days; wash in water. Seal the apical foramen with collodion. Immerse in a 15 per cent. solution of the following to decalcify: Hydrochloric acid 12 parts, nitric acid 30 parts, aquæ dest. 108 parts. Immerse in 12 c.c. of

a 10 per cent. solution of hydrochloric acid, then after fifteen hours add 1.5 c.c. of nitric acid, and after forty-eight hours add again 1.5 c.c. of nitric acid. After seventy-five to eighty hours wash half an hour in a solution of lithium carbonate, 5 grains to the ounce of water; wash in water, cut in pieces, place in gum mucilage and cut.

9. *Hydrochloric acid and glycerin*, in the proportion of hydrochloric acid 5 parts, glycerin 95 parts; is very slow in action, but softens the teeth and preserves the tissues nicely.

10. *Perey's fluid* is a most useful agent and gives good specimens, though the subsequent staining is not sharp.

11. *Trichlorid of gold*, 0.5 per cent. aqueous solution, is very useful to demonstrate the transverse fibers, provided the teeth are fresh. Underwood's method may be used when the teeth are not so perfectly fresh.

Staining agents.—The stains used were logwood, borax carmin, picro-carmin, orange and rubin [S.], Weigert's method; dehydration in clove oil or cedar oil. Alum-carmin and glycerin are both liable to dissolve carbonate of lime, and should not be used to preserve pulp stones, etc.

Preservative and mounting media.—Cut sections are apt to curl up when preserved in alcohol. This may be prevented by adding a small proportion of glycerin or carbolic acid to the alcohol. If preferred, 1 or 2 per cent. of the standard 40 per cent. solution of formalin keeps indefinitely. For mounting, balsam in xylol, chloroform, glycerin and glycerin-jelly, monobromid of naphtha and dammar.

Conclusions.—1. No perfect decalcifier has been found; but arsenic acid, phloroglucin, palladium chlorid, nitric acid and chromic acid give fair results, preferred in the order named.

2. It is difficult to stain perfectly after decalcification, except in case of phloroglucin and chromic acid. If a satisfactory stain could be found to use after palladium, I would prefer the latter as a decalcifier, even though expensive, for a small quantity of the solution accomplishes much.³

808 Morse Avenue.

CHRONIC RINGWORM OF THE SCALP.

Read on Opening Discussion on "Chronic Ringworm of the Scalp" in the Section on Dermatology and Syphilography, at the Forty-seventh Annual Meeting of the American Medical Association, at Atlanta, Ga., May 5-8, 1896.

BY L. DUNCAN BULKLEY, A.M., M.D.

NEW YORK.

Ringworm of the scalp has come to be regarded by those who know most about it as one of the most troublesome diseases of the skin; it is also much more frequent than is commonly supposed.

While the other forms of trichophytic disease occur more or less frequently in adults, its appearance on the scalp belongs especially to childhood. In the writer's private practice there were only 2.5 per cent. of patients thus affected who were over 13 years of age, and about the same proportion in public practice; it may affect those but a few months old.

The damage that the parasite may do in some patients is so slight that the disease is often overlooked and undoubtedly there are many cases which

go for years untreated, endangering those around them, as the writer has repeatedly observed both in public and private practice. Alder Smith, of London,¹ has known an outbreak of ringworm to occur in a school from a child with a single spot no larger than a split pea, and where only a few "stumps" could be found on close examination with a lens. Among 1,349 healthy boys, aged from 8 to 10 years, whom he examined for admission to a charity school in London, and who were supposed to be quite free from ringworm of the head, he found this present in 112 cases, or 8.3 per cent. of the whole.

Many cases which came to him with certificates from reputable physicians that their ringworm was cured, were found on careful study to have abundance of the disease in a chronic disseminated form.

In one public institution in New York City, sheltering between seven and eight hundred children, 367 cases of ringworm of the scalp were found, that is, over half of the inmates were infected before the damage was fully realized and active measures for its arrest were inaugurated.

Tinea tonsurans of the scalp is not always as easy of recognition as might be supposed, and in cases which have lasted for any length of time the diagnosis may be very difficult. The typical case of scalp ringworm, exhibiting one or more partially bald patches, of a more or less leaden color, and with stubbed hairs, may be recognized by everyone. But in cases which have lasted any length of time the affected surfaces may and generally do not present this typical tonsure appearance. After a certain duration, and especially after more or less satisfactory treatment, many of the hairs assert their vigor (although by the microscope they may present some evidence of the parasite) and will grow to a considerable length. The real nature of the disease is thus masked and it is only by the most careful search that the "stump" or broken-off hairs can be detected.

To this persistent and rebellious form of the disease the name of chronic or disseminated ringworm has been given, and it is one of the most troublesome affections which can be presented for treatment.

Few realize how exceedingly persistent ringworm of the scalp may become in certain cases. The disease is commonly looked upon as a trivial matter, and undoubtedly in healthy children many cases may yield quite promptly to relatively simple treatment; even tincture of iodine will cure, or seem to cure, a good number of cases. But on the other hand, quite a number of these patients who are supposed to be cured are afterward found still to present evidence of the parasite, which crops out afresh later and, as already mentioned, may start the disease in a school or family.

The physician should therefore be extremely careful whenever scaly conditions of the scalp are presented in children, to determine with positiveness if the trichophyton is present. When the parasite exists on the scalp or hairs, the greatest care should be exercised to prevent the disease spreading to others. And when the patient has been under treatment for this eruption, still greater care should be exercised, if possible, in deciding as to when the patient is cured and no longer capable of infecting others. Few cases of ringworm of the scalp can be thoroughly cured in a short time, such as a month; more frequently from

³ See Histology of the Teeth, Notes on Preparation, etc.; Histology of the Teeth, International J. of Microscopy and Natural Science, 1888, July and October 1892; 1893, January and October; Histology of the Teeth, Scientific Inquirer, vol. 2, p. 196; Hopewell Smith on Micro Methods in Dental Histology; Underwood: Dental Histology.

¹ Alder Smith: Ringworm Diagnosis and Treatment. 2d edition. London.

three to six months is an average time, while some cases, even in skillful hands, may take years, if the disease has obtained a strong foothold. Alder Smith knew of one patient where the disease had resisted all treatment for nine years, the patient still having disseminated ringworm at 18 years of age. Crocker speaks of a woman of 20 who had had the disease since she was 10 years of age, disseminated all over the head.

Before discharging a case of ringworm as cured, every portion of the scalp should be thoroughly looked over with a hand lens of moderate power and with abundance of sunlight. It is well to have the little patient seated on a stool and, beginning with the back of the head, the whole surface is to be carefully searched. To make any satisfactory examination, the hair should be cut to about an inch in length. Commencing at the occiput the hair is turned upward gently with the blades of the forceps or the finger and allowed slowly to fall into place; this should be systematically done in such a manner that every portion of the head can be minutely inspected. As the pale surface of the scalp comes into view, the short, dark stumps will be readily seen. The same method should be employed in examining new cases, where doubtful, and also with children in schools where it is desired to surely detect the disease.

The subject of the treatment of chronic ringworm is a very large one and can hardly be touched upon in this opening of the discussion. It may be premised, however, that the writer quite agrees with the opinion of others that it will often tax the ingenuity and patience of the physician very greatly; and that time is a very essential element in the cure of the disease. The occasional reports of very rapid and certain cures of ringworm of the scalp are to be taken with a great deal of caution; the experience of all who know much about the disease will, I think, confirm that they relate either, 1, to very early cases in very healthy subjects, which yield readily to any well directed treatment; or 2, to cases where previous treatment had largely removed the disease, and, as is often the case, victory comes to the last attendant; or 3, to cases where there was a faulty observation, either in regard to the diagnosis or as to the completeness of the cure. It is not at all uncommon to meet with patients exhibiting chronic ringworm of the scalp who have been regarded as cured by other practitioners.

It would be out of place to dwell here upon the important studies which have been recently made in regard to the fungus of ringworm of the scalp, excited largely by the bold and original work of Sabouraud, at the Hôpital St. Louis, in Paris; while they are of interest and importance from a scientific point of view, as yet they have yielded little, if anything, in regard to the practical management of the disease. They may, however, often have a practical bearing in the direction of prognosis, if careful microscopic studies are made as should be done in every case; for it is pretty well accepted that those exhibiting *microsporon* fungus are more apt to prove rebellious than those presenting only the *megalosporon*.

In regard to the treatment of chronic ringworm of the scalp the remedies which have been advocated at one time and another are so many and varied that the mere enumeration of them would occupy much more time than should be given in the opening of the discussion; they will no doubt be fully considered in the papers and remarks which will follow.

EXPERIENCE IN THE TREATMENT OF RINGWORM OF THE SCALP IN THE NEW YORK SKIN AND CANCER HOSPITAL.

Read in the Section on Dermatology and Syphilography, at the
Forty-seventh Annual Meeting of the American Medical
Association, held at Atlanta, Ga., May 5-8, 1896.

BY HENRY A. PULSFORD, M.D.

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The materials from which this paper has been constructed were drawn from the clinical records of seventy-five cases of ringworm of the scalp treated in the wards of the New York Skin and Cancer Hospital during the ten years ending in the spring of 1892. The purpose of the paper being neither to present a brilliant array of suspiciously favorable statistics, nor to puff any one method of treatment, this series of cases has not been subjected to any process of selection or elimination. And if the facts, when allowed to speak for themselves, tell of failure more often than of success, the lesson they teach us is no less valuable on that account.

Of the seventy-five patients who have furnished the facts for this report all were inmates of the hospital during the whole course of their treatment. They were therefore constantly under the care of the resident physicians, under whose supervision all the details of treatment were carried out. The scalps were subjected to frequent examinations, scales and hairs from the diseased areas being examined microscopically, and all changes in the conditions of these areas noted from week to week. In fact all the circumstances were favorable not only to the cure of the patients, but to the accumulation of important data as to the comparative value of the various methods of treatment employed.

Favorable as these circumstances were, it is nevertheless an exceedingly difficult task both to make accurate notes in the records of the cases and to interpret those notes correctly. For after the first cleansing and epilation, the changes in the diseased areas are so slow and trifling that it is often impossible for several weeks to say whether the disease is increasing or diminishing; and, as always happens under such circumstances, the records of the observations and examinations will invariably be modified and colored by the prejudices of the reporter. If, therefore, the inferences drawn from this mass of evidence are to be of any value or significance, due allowance must be made both for all possible errors of observation and for the personal bias of the observers.

The comparative value of different methods of treatment could probably have been more satisfactorily determined if, in addition to the microscopic examinations, systematic cultures had been made of the hairs and scales taken from the diseased spots. Such cultures if properly made, would give us valuable indications, not only of the parasitical properties of a remedy, but also of its ability to penetrate to the depths of the hair follicle.

It is to be regretted that at the time these hospital records were taken, Sabouraud had not yet published the results of his investigations of the mycology of the ringworm, nor emphasized the striking clinical differences between the two varieties of ringworm of the scalp. Although some of the house physicians possibly noticed the differences between the small-spored fungus external to the hair shaft, and the large

spored "trichophyton," infiltrating the hair-shaft, none of them having made any notes of such observations, it is impossible to arrive at any conclusions either as to the relative frequency of the two types of disease, or as to their relative resistance to the various methods of treatment employed.

The results of treatment in these seventy-five cases can scarcely be called brilliant. Of this number only twenty were discharged cured. This is certainly a very small percentage. But in judging the results of treatment in these diseases, it must be borne in mind that long continued treatment is almost invariably required to accomplish a permanent cure. Unna, it is true, has reported cases of ringworm cured by chrysophanic acid in two or three weeks, but few, if any other, physicians have had as happy results with this or with any other remedies. Wickham,¹ using another method of treatment, cured only from 40 to 60 per cent. of his patients in the course of fifteen months. Pottevin,² after using applications of formic aldehyde for more than three months, reports his cases as still very far from being cured. It is not surprising, therefore, that of these cases, in which the duration of treatment averaged twenty-two weeks, only about 25 per cent. were cured. Indeed, the chief obstacle to the cure of these cases lay in the impatience of the parents or guardians, who in many instances could not be induced to leave their children in the hospital long enough to permit the complete eradication of the disease.

Of the many physicians who report their cures of ringworm of the scalp very few tell us upon what grounds they base their assumptions of cure. The fact that a patient whom you have discharged as cured from a hospital or from your office, does not return to you, is by no means proof positive that his "cure" is permanent. If, in spite of your dictum, the disease returns at the end of a few weeks, the patient naturally discredits your knowledge and skill, and applies elsewhere for advice and treatment. In these cases we should be very skeptical of results, especially of brilliant results—when the reporter neglects to tell us how he determines that the disease is finally eradicated. Wickham¹ advises that no case be reported cured until the following examination has failed to reveal the parasite: The hair having been cut short and the scalp thoroughly washed, the head is left absolutely undisturbed for a week; then the scalp is carefully examined for evidences of disease. If none are found the hair is cut again, the scalp washed, and the head left undisturbed for another week, when the second examination is made. If that also proves negative the head, after hair-cutting and washing, is left untouched for two weeks, at end of which period the final examination should be made. Although all the details of this excellent method of examination were not carried out in the New York Skin and Cancer Hospital, our patients were not discharged as cured until they had passed through a similar ordeal. The essentials of this method—repeated examinations of the scalp at short intervals during which all treatment was stopped—were strictly carried out in all cases.

As has often been stated, the best cure for ringworm of the scalp is puberty. It is therefore important in considering the effects of treatment upon a series of cases of this disease, to bear in mind that it is really a self-limited malady, and not to give to remedies credit for improvement which is really due to the increasing age of the patient. There is no doubt

that in many of the cases here reported the advent of puberty has had more to do with the cures than has the application of drugs. Yet our ringworm patients have as a rule been so young, their average age at the time of treatment being only 7½ years, that the element of puberty can certainly be disregarded in the case of most of their number.

In all of our cases the preparatory treatment has been practically uniform. The hair has been cut close, usually with the clipping machine, and the scalp has been freed from crusts and scales by scrubbing with green soap, preceded when necessary by a preliminary soaking in oil or petrolatum. In some cases, especially when such preparations as collodion or plasters were to be used, the whole scalp was shaved. In all cases the hair was kept conveniently short throughout the course of treatment.

The hair-cutting and cleansing was in most cases followed by the careful epilation of the diseased areas. This was done, in the first place to remove from the scalp as thoroughly as possible all the brittle diseased hairs, and in the second place with the view of isolating infected areas by epilating a fringe of healthy hairs about their margins. The epilation of the diseased hairs themselves I consider an eminently proper procedure and an important detail in the management of these cases. The extraction of the diseased hairs, if properly done, is not at all painful; but if it is done hastily and carelessly, is painful and ineffectual. It needs no argument to convince one who is acquainted with the pathology of the disease, that the removal of as much as possible of the infected hair-shaft is a great desideratum. By careful and patient work with epilating forceps and magnifying glass it is usually possible in a comparatively short time to remove the greater part of every diseased hair.

On the other hand I have always had doubts as to the wisdom of epilating the healthy hairs on the verge of diseased areas. The object of this procedure presumably is the isolation of each center from which the disease may spread; but what assurance is there that such epilation prevents the spreading of the disease? It is well known that both varieties of the fungus are capable of growing in the superficial layers of the epidermis, while only the trichophyton megalosporon actually infiltrates the shafts of the hairs. It is therefore only reasonable to suppose that in either form of ringworm the extraction of the healthy hairs about the diseased areas will not only fail to check the spread of the disease, but, by making the mouths of the follicles more patent to the entrance of the spores, will actually encourage the extension of the growth into the lacerated epidermis of the unprotected hair follicles. If there be any force in such reasoning as this, we should be very careful in epilating to spare all the healthy hairs, trusting to cleanliness and antiseptic applications to hold the disease in check.

However this may be, the greater part of the epilation to which the patients at the Skin and Cancer Hospital have been subjected, was of the indiscriminating sort. It was carried out in such a way as to remove all hairs, both healthy and diseased, from the infected spots and from a liberal zone surrounding them. That the disease actually did spread in several instances in spite of this wholesale epilation, the hospital records clearly assert. That it did not spread in more cases, was doubtless due to the vigorous use of antiseptics. Since these considerations impelled me to give up the practice of "isolating" areas of ring-

worm by epilating healthy hairs, I have never had cause to regret it. The proper antiseptic applications will protect the healthy hair follicles better than the removal of hairs can possibly do so.

The average duration of treatment in all cases was five and a half months. In the twenty cases that were cured the duration of treatment averaged seven and a half months. It is probable that could all the seventy-five cases have been subjected to a course of treatment lasting eight months, which according to Wickham¹ is the shortest time in which a cure can be obtained, a much larger proportion would have been relieved. Yet we are obliged to confess that in the case of six of our little patients a vigorous treatment was carried out for periods varying from thirteen to seventeen months without eradicating the disease. It is difficult to tell just what is the cause of the obstinacy met with in such cases. As our hospital records throw no light upon this question, we are almost forced to the conclusion that some idiosyncrasy on the part of the patients themselves makes their scalps peculiarly suitable to the growth and luxuriance of the fungus.

The general method of treatment in all these cases has been, in addition to repeated cutting of the hair and epilation, the application to the diseased portions of the scalp of substances which, either by their chemie properties or by the manner in which they were applied, might be expected to destroy the parasite. Some of these remedies, such as bichlorid of mercury, iodine and carbolic acid, are supposed to act simply as poisons fatal to the fungus; others, like collodion, the various plasters and the zinc and gelatin paint, owe what efficacy they possess probably to their exclusion of the air; croton oil and other similar irritants cure the disease only by causing a suppurative process in the invaded hair follicle which, destroying the follicle, leaves a minute scar in its place.

The preparations of mercury have all been thoroughly tried upon our patients. The bichlorid in particular has been constantly used in various solutions, mixtures and combinations. The treatment of all the vegetable parasitic diseases of the scalp by the extraction of the diseased hairs and the subsequent application of a strong solution of this substance is by no means new, having been introduced by Bazin forty years ago; and it is questionable if this classic treatment does not give as good results in the first stages of the cure, as any more modern method. Upon our cases the solutions used have varied in strength from .5 to 2 per cent. In all cases improvement followed the application of the remedy, but for some reason the treatment was never continued sufficiently long to work a cure. It apparently made no difference what solvent was used for the mercury salt. Solutions in alcohol and solutions containing ether seemed to possess no greater efficacy than aqueous solutions. A 1 per cent. solution containing ether was used for three months without effecting a cure. A solution of the same strength, but containing in addition 30 per cent. of oil of cade, was used for the same length of time with the same result. A 1 per cent. solution in the compound tincture of benzoin proved no more efficacious than the other solutions.

The chief cause of failure in this and in other methods of treatment seems to be the difficulty of making any remedy penetrate to the depths of the diseased hair follicles. This difficulty has long been realized by all physicians who have had much to do

with ringworm of the scalp, and as a result many methods have been proposed with a view to overcoming it. One of them, suggested by Harrison some years ago, consists in the successive application of an alkaline solution of iodid of potassium and a solution of bichlorid of mercury. The idea seems to be that the iodid solution, being more penetrating than the bichlorid, prepares the way for it and by the power of chemie affinity carries it deeper into the follicles than it could go unaided. The method has been thoroughly tried upon some of our cases with mercurial solutions varying in strength from 2 to 4 per cent. The bichlorid being changed to the biniodid upon the scalp, the treatment is naturally a severe one, producing considerable pustulation. For this reason it is difficult to use it for a long period of time. In two cases, however, it was continued for about five months without effecting a cure.

The use of the galvanic current to favor the penetration of parasitocides was suggested by Ambrosi⁴ in Italy and by Cantell⁶ in this country in 1888. Upon our cases the method has been employed in connection with an aqueous solution of bichlorid. A sheet of lint saturated in a 1 to 1,500 solution was placed upon the scalp and pressed in contact with the diseased area by the positive pole of the battery. The other pole was placed upon an indifferent spot and the current allowed to flow for fifteen or twenty minutes twice daily. Unfortunately, the records give no information whatever as to the strength of the current. This treatment was tried upon three cases for two months, but with no greater improvement than would have resulted had the same solution been thoroughly rubbed into the scalp.

Still another method of promoting the penetration of bichlorid was suggested by Dr. A. C. Lewis, one of the resident physicians of the hospital, who first used it early in 1890. In the *New York Medical Journal* for Oct. 10, 1891, Dr. C. G. Kerley reports brilliant results from the use of the same prescription, an emulsion made by adding a saturated alcoholic solution of bichlorid to kerosene oil. The emulsions used upon our cases have varied in strength from .5 to 4 per cent. The capillarity or these petroleum oils is well known, and the microscope shows that in all probability they penetrate deeply into the hair follicles; but it is a question if the oil can carry with it the fine particles of bichlorid which it holds in suspension. This emulsion has been used in the hospital upon sixteen cases, with improvement in all cases; upon which the treatment was continued longer than a week or two. Although the average duration of treatment in the cases Dr. Kerley reported as cured was six and a half weeks, we have treated several patients for periods varying from six to ten weeks without effecting a single cure.

The oleate of mercury, one of the most popular remedies for ringworm, has been used upon about fifty of these cases. It has been used diluted with various oils, ointment bases and solvents, the strength of which varied from 2.5 to 20 per cent. One case which had already undergone a long course of treatment with other remedies was cured after ten days' use of a 10 per cent. solution of this substance. Two other cases were cured after three and four weeks' treatment with equal parts of the 10 per cent. oleate and lanolin. Two more cases yielded after six and nine weeks' use of a strong ethereal solution of the oleate. In several instances, however, similar appli-

cations, although causing undoubted improvement, failed to eradicate the disease and were given up after two or three months' trial.

Closely resembling the oleate of mercury in its penetrating qualities is the ointment of the nitrate of mercury. This vigorous agent has been used diluted with simple ointment bases and as the most active ingredient of several prescriptions upon eight cases. It is probably as effective a remedy as the oleate; but as it is too irritating for long-continued use, it is practically of far less value. None of our cases were cured while applications of any preparation or combination of this substance were being used. The long-continued use of this and similar irritating remedies fails to accomplish a cure for this reason; the effect of the remedy upon the epidermis is to transform its superficial layers into a thin, horny pellicle, which acting like a varnish upon the surface of the scalp, in itself forms an efficient obstacle to the penetration of subsequent applications. It is only after this pellicle is carefully peeled off that any parasiticide can be expected to reach the hair follicles.

A mixture of equal parts of iodine ointment and mercurial ointment diluted and undiluted has been used upon nine cases with varying results. One of these cases was cured after five weeks' treatment with the full-strength mixture, but two similar cases after being treated with the same prescription for six months still showed signs of active disease. In another scalp under the same treatment for ten weeks the disease actually spread.

Ointments containing white precipitate and the red oxid of mercury have been used upon many of these cases. All that can be said in their favor is that they cause some improvement at first and later hold the disease in check, and prevent extension to healthy hair follicles. The following prescription has been used in several cases for long periods of time, and although it can scarcely be expected to eradicate the disease, it is an excellent application to use when we wish simply to guard against contagion and auto-infection.

R Unguenti hydrargyri oxidi rubri . . . 3 iii 12
 Unguenti sulphuris 3 v 20
 Unguenti zinci oxidi. 3 i 32
 Misce et fiat unguentum. Sig.: Apply once or twice daily.

Except in such prescriptions as the above, sulphur has not been very thoroughly tried in the hospital, the results in the few cases upon which it was used not having been sufficiently encouraging to warrant further trials. The same thing is true of sulphurous acid, the sulphites and hyposulphites. Our experience with these substances has been too meagre to enable us to form an estimate of their value. With ichthyol, however, the case is very different. This remedy has been used in many combinations, the one which we have used most frequently being a mixture of equal parts of ichthyol, oil of cade, and either cotton-seed oil or crude petroleum. Most of the patients upon whom this has been tried have been decidedly benefited, but only one of them was cured while using it. In one case, however, it was applied for ten weeks without improvement, and in another the disease spread while it was being used.

Iodine has been used chiefly in the treatment of ringworm of the body, and for occasional application to freshly diseased spots upon the scalp. In cases where the tincture or the solution has been applied as a systematic method of treatment, there has gen-

erally been decided improvement. It is so irritating, however, that even the weaker solutions can not be used for more than a few weeks. In one case the result was exceptional, for after three weeks' treatment with a 4 per cent. solution in crude petroleum the disease was found to be extending.

Carbolic acid has been used upon these cases rather to prevent contagion and the spread of the disease than as an active curative agent. In five cases, however, upon which a 1 or 2 per cent. ointment was employed for this purpose, there was a decided extension of the disease. It is therefore evident that the weaker carbolized ointments are absolutely useless. Where stronger ointments have been applied with the object of eradicating the trouble, they have brought about a moderate amount of improvement. Pure carbolic acid, systematically applied to the diseased spots in six cases, improved the condition in only two of them. It is evidently too irritating a remedy to penetrate deeply.

Naphthalin in 20 per cent. ointment has given encouraging results, two cases having been cured after five and five and a half weeks' treatment. As these were the only cases in which this remedy was used it certainly seems worthy of a further trial. A similar substance, hydronaphthol, has been tried in ointment and plaster upon several cases, with varying results. In one case in which the scalp having been shaved, the diseased areas were covered with the plaster, there was a manifest spread of the disease.

Oil of cade offers no especial advantages as a therapeutic agent in this disease. The best that can be said of it is that it holds the disease in check, and, if its use be long enough continued, that it produces moderate improvement.

Veratria has been used in ointments containing from eight to thirty grains to the ounce. Two cures have resulted, one after five and the other after seven weeks' treatment. It would be fallacious, however, to form a high estimate of the value of this drug from these two cases, for they had previously been subjected to long continued vigorous treatment, and in another case a strong ointment used for nine weeks failed to prevent the extension of the disease. It is a question if it is safe to use such a powerful alkaloidal poison as this in the treatment of this disease.

Salicylic acid in solutions and in ointments has been used upward of fifty times with varying results. An ointment containing 12.5 per cent. of this remedy and 30 per cent. of sulphur cured a patient in three months, but other similar applications have been used in vain for periods varying from six weeks to eight months.

Chrysophanic acid, the use of which in the treatment of this disease was suggested by Unna, has been thoroughly tried upon about twenty of our patients. In some of these there was no improvement whatever, and in most of them the improvement was not sufficient to induce us to continue the trial longer than a few weeks. One case, in which the prescription first suggested by Unna was applied, was cured in nine weeks. From the observations made upon these cases, it seems quite evident that chrysophanic acid does not reach far into the follicles, and is powerless against the fungus which grows there. Hairs removed from scalps which have been subject to this treatment, are seen under the microscope to be compact, free from spores and deeply stained only in the extra-follicular portions, while the intra-follicular portions are succu-

lent, unstained and filled with a vigorous growth of fungus.

Fuchsin, another powerful staining agent which has been tried upon these cases, may be dismissed with a few words. One case was cured which under treatment with a 1 per cent. aqueous solution, but as it had previously been subjected to a prolonged and vigorous treatment with oleate of mercury, it is not improbable that the disease was actually eradicated before the fuchsin was tried. That the remedy is useless in these cases, seems to be demonstrated by the fact that there is absolutely no staining either of spore or of mycelium, however vigorous and protracted the treatment may have been.

Croton oil has been used only upon four or five of these cases. The remedy was in all cases applied frequently to the diseased spots until it produced a localized dermatitis with more or less follicular suppuration. In all cases this treatment was followed by some improvement, but is very severe and likely to cause extensive atrophy of the hair follicles. Probably the true value of this remedy is in the last stages of treatment, when it is introduced into isolated follicles on the point of an electrolysis needle in order to destroy the last lurking places of the disease.

From the foregoing analysis we may conclude that of all the remedies used upon these seventy-five cases, the preparations of mercury have proved the most efficient. Of the others, iodine, naphthalin, salicylic acid and chrysophanic acid seem worthy of further trial, while croton oil, properly used, is as valuable as electrolysis in eradicating the last traces of the disease. The results obtained at the New York Skin and Cancer Hospital in the treatment of ringworm of the scalp, finally, give full corroboration to the recent dictum of Wickham: "No matter what methods are employed, the duration of treatment necessary to the thorough cure of ringworm of the scalp can not practically be reduced to less than eight months."

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- 2 "Essai de Traitement des Teignes, par L'Aldehyde Formique," par M. Pottevin, *Annales de Dermatologie et Syphilographie*, 1894, p. 808.
- 3 "Treatment of Tinea Tonsurans," J. Harrison, *British Medical Journal*, 1888-90.
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DISCUSSION.

Dr. WOLFF of Atlanta considered that in connection with the care of patients in institutions suffering from ringworm of the scalp that isolation was very difficult to obtain; and then there were the factors of the playground, of towels and of the wash bowls. As far as treatment was concerned he had tried almost everything. The plan which he had learned in Unna's clinic in Hamburg he had perhaps found to be the best, and this was that the head was to be shorn, then washed with soap and then the following ointment to be applied with considerable friction twice a day, and used for several weeks:

R Chrysarobin. 5 parts
 Acid Salicylic. 2 parts
 Ichthyol 5 parts
 Vaseline 88 parts

Then if much irritation resulted, a milder salve such as

R Zinci oxidi 6 parts
 Sulph. precip. 4 parts
 Lard. 20 parts

This was used until the irritation was reduced. Caps were to be worn by the patients all the time, except when being treated. Dr. Wolff remarked that he had never seen such rapid cures as in Unna's clinic, where this plan was adopted.

Dr. M. B. HUTCHINS of Atlanta confirmed Dr. Bulkley's

observation since he had been his assistant at the New York Skin and Cancer Hospital. He had tried, where there was only single patches of ringworm of the scalp, a mixture of corrosive sublimate, 1 to 4 grs., with kerosene oil, one ounce, until a thick scaly condition was produced, when the application was changed to an ointment which contained the following:

R Ichthyol. 20 grs. 120
 Acid salicylic. 20 grs. 120
 Zinci oxid 3 i 3200

until the scales were removed. He had seen cases get well in three months under this treatment.

Dr. SWARTZ of Providence, R. I., had seen about six cases in institutions, and he thought that mercurial ointments were too astringent, hardened the tissues and did not kill the spores. One thing had not so far been mentioned, and that was the special penetrating power of formol, which did not thicken the tissues and ought to be tried. Since the parasite spread only by contact it seemed astonishing that was not easily able to destroy the spores.

Dr. A. RAVOGLI of Cincinnati, who had had considerable experience with ringworm of the scalp in children's homes containing from 600 to 900 inmates, had met with only nine cases of ringworm of the scalp last year and three cases this year. As soon as the disease was discovered the patient was sent at once to the Cincinnati Hospital. For treatment he had used all the remedies which had been recommended, but was not satisfied with any one of them, and he had again returned to the older methods. The course which he therefore adopted was as follows: The hair was cut close, then the scalp was washed with green soap and water, after which the diseased areas were rubbed with Hebra's modification of Wilkinson's ointment. This treatment was carried out twice a day until desquamation began, when a rest was allowed. The same treatment was then renewed. In two or three months the child was cured and returned to the institution, and up to the present no case had been returned.

Dr. A. W. BRAYTON of Indianapolis recommended the use of an old depilatory, called Boettger's paste, which he said was an excellent remedy for removing hairs. The treatment of a case of ringworm of the scalp would then be as follows: The hair to be cut close to the scalp; the Boettger's paste (prepared by passing sulphuretted hydrogen into thin milk of lime till the mass assumes a bluish-gray color) to be applied to the thickness of a line and scraped off after a minute or two with a blunt knife, when the hair would easily come away; then the scalp is rubbed with the parasiticide.

Dr. T. C. GILCHRIST of Baltimore referred to the prevalence of ringworm of the scalp in colored children in public schools. The appearance presented was often not that of typical ringworm, but rather of a profuse grayish scabiness of various portions of the scalp. On account of the method of living of the negro population, it was almost impossible to treat these cases thoroughly. Since the hair is so short and curly in many colored children, Dr. Brayton's suggestion of using Boettger's paste as a depilatory would be a valuable one in these cases. Yet with all the disadvantages, the ringworm in colored children appeared to be more easily cured in a few months with somewhat simple treatment than the white children. The treatment recommended was the following: The scalp was washed twice a day with the tincture of green soap and water, and an ointment consisting of hydrarg. ammon. 1 dram, and lanolin 1 oz., was well rubbed in twice a day. In a fair number of the cases tinea kerion developed, showing that the spores had penetrated much deeper, as was shown by microscopic sections. Dr. Gilchrist also remarked that this disease was a very prevalent one in Baltimore, and particular care was taken that a child should be thoroughly cured before it was allowed to go to school.

Dr. BULKLEY of New York remarked that the clippers could

be used just as well as the depilatory and the instrument could be boiled for half an hour after it had been used on each child. He had seen shaving spread the disease, and so he had abandoned it. When ordering the tincture of soap he had added corrosive sublimate, two to four grains to the ounce, if there was no irritation of the scalp. He thought that Dr. Brayton's suggestion of using Boettger's paste was still a good one, since the parasiticide applied afterward would have a deeper penetrating power. The suggestion also of using formaldehyde was a good one, and he intended trying it. In the chronic cases he recommended internal treatment with tonics and also rigid dietary, because unless the soil was altered the case of ringworm was never cured until puberty. He recommended that all children who had any scaly condition of the scalp should be examined for ringworm, *i. e.*, by examining the scales microscopically before entering institutions. He mentioned that the microsporon was the cause of the chronic form, whereas the megalosporon was the cause of the acute.

Dr. C. W. ALLEN of New York said he had cured one case of ringworm in one week. It was an acute case and the ring was partly on the forehead and partly on the scalp. Infant's ringworm was easily cured and was not to be confounded with chronic ringworm of the scalp.

Dr. W. T. ALLEN of Davenport, Iowa, remarked that in an institution containing 500 inmates there was an outbreak of ringworm of the scalp. There were 40 cases at first, which increased later to 80. At the end of the first year only 6 to 8 cases were left, but during the second year there were again 80 children affected. Eight of the original patients had the disease even after three years. None of the cases had been isolated until this last autumn (1895). In the first outbreak 1.5 per cent. of corrosive sublimate with red biniodid of mercury was used as a wash every day. Later much stronger applications were used, even up to 30 grains of corrosive sublimate to one ounce of water. In some cases the effects were serious, and one child, 5 years old, died during the treatment, but in others it was not so severe. The ages of the patients varied from 2 to 16 years of age. There were yet 46 cases under observation. New children entering the institution were attacked with the disease in about six weeks. Boys were more attacked than girls.

MASSAGE.

BY JOHN KERCHER, M.D.

CHICAGO.

Having had a number of years of personal experience in the application of massage; having seen massage applied by so-called professors of massage; also having read all available literature on the subject, I was amazed at the diversity of opinion and often utter lack of knowledge of the subject, as to what constitutes scientific massage. On the other hand there are a few books in the English language that treat the subject in an able and scientific manner. I was therefore prompted to write this article in order that the general practitioner may become better acquainted with the indications, contraindications, physiologic action, etc., of massage. I have for this reason taken up the subject in a scientific manner, hoping that the use of massage be thereby elevated and placed in the hands of physicians, where it belongs.

DEFINITION OF MASSAGE.

Dunglison, 1860—Massage; massement; massing—all have the same meaning—shampooing.

¹ The definition as given in Dunglison's, 1860, is wrong, as will be seen by a comparison of its manipulations:

| | | | |
|---|---|-------|--|
| TABLE OF MANIPULATIONS OF MESSAGE. | Effleurage, with subdivisions meaning Stroking. | | |
| | Frictions, “ “ “ | “ “ “ | Semicircular, circular and to and fro motions. |
| | Petrissage, “ “ “ | “ “ “ | Kneading and pinching. |
| | Tapotement, “ “ “ | “ “ “ | Slapping or percussing. |

Webster's Unabridged Dictionary, 1890—Mass; masse; massa—and meaning dough, mortar, etc. These words seem to belong to the root of the Greek word *μασσω*—meaning to beat, or pound, or knead. The same word is also found in the Arabic language—mass—where its meaning is to press softly.

Quoting Tom Cecil, who in 1888 published a book, and who claims to have been masseur to several London hospitals, he took the following definition from the “*Medicales Sciences*,” Paris:

“It is that action of pressing with the hands the muscular parts of the human body: to exercise traction on the juncture of bones and muscles in order to give them their flexibility or pliability.”

According to Dr. Metzger of Amsterdam, massage is a scientific treatment, *i. e.*, based upon the anatomy and physiology of the human body; its manipulations are certain, that is, given or fixed; it is an art that can not be self-acquired; all manipulations are passive, *i. e.*, applied to the patient without his assistance or resistance; the manipulations are arranged so as to act systematically upon the different tissues of the human body.

Gould's Medical Dictionary, 1891, gives the following: Massage (Fr. from *μασσω*—the Greek, to knead). A method of effecting changes in the local and general nutrition, action, etc., of the body, by rubbing, kneading, etc., the superficial parts of the body by the hand or an instrument. Effleurage, a stroking movement made in a centripetal direction. M. Frictions, superficial rubbing. Petrissage, a portion of a muscle or tissue is picked up, subjected to firm pressure and rolled from below upward. Tapotement, percussion by the hand or an instrument devised for the purpose.

Hare's System of Practical Therapeutics, Vol. 1, devotes 100 pages to Swedish movements and massage. On page 261 is the following definition: “Massage may be defined to be the communication of motion to the tissues of the body from an external source for therapeutic purposes.” This at once distinguishes it from movements in which, as already said, the motion takes place through the joints and is extended to the entire extremities, or the trunk. And it also separates it from general exercise, which implies in addition volition, and therefore the communication of motion from an internal source.

It is not egotism which prompts me in adding another to the already too numerous definitions. The following definition defines massage in fewer words than any of the foregoing: Massage is a process of passive, systematic manipulations upon the soft parts of the body, generally without water. I say generally without water, because if these various manipulations be applied to a person while bathing it is still massage. A female operator is a “*masseuse*,” a male operator is a “*masseur*,” while the patient is massaged (pronounced massayed).

The ancient history of massage condensed.—Rubbing, friction and pressing of the soft tissues for certain painful and diseased conditions, undoubtedly existed in the customs of all nations, civilized, semi-

Is generally given without soap and water. Object—To cause a tissue change, to act as a sedative or stimulant or alterative, according to application.

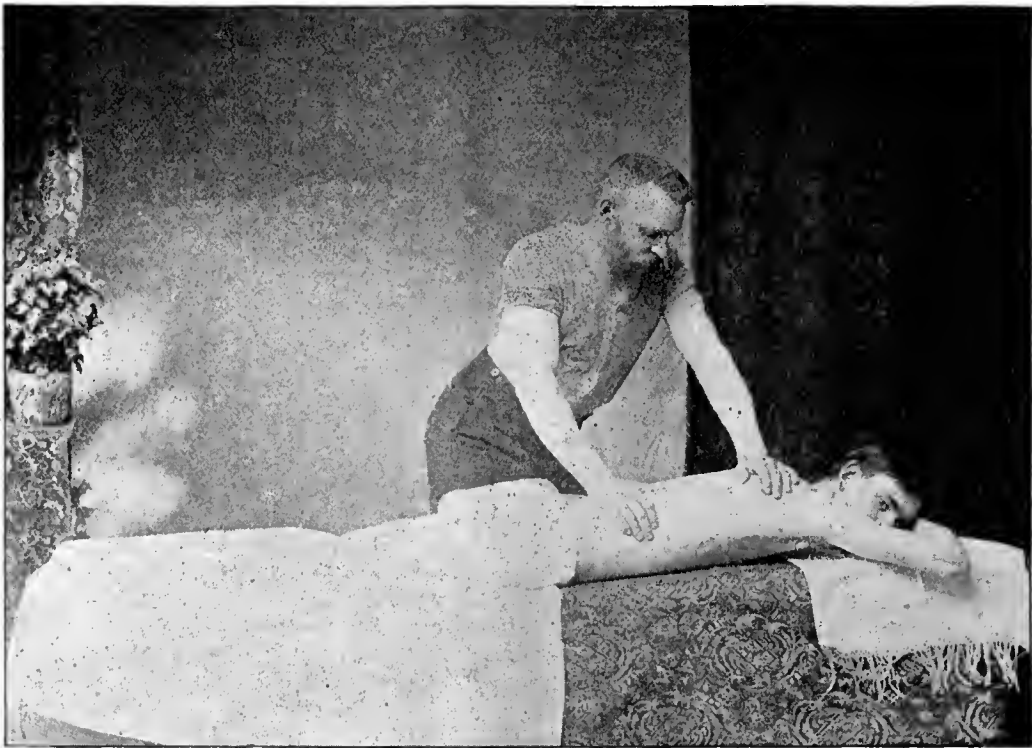
TABLE OF
MANIPULATIONS
OF SHAMPOO. { Effleurage, a Stroking.
Frictions, { Semicircular, circular or to and fro motions.
Slapping, with the flat hand or “hollow” palm.

Is always given with soap and water, with a brush, loofahs, soft rag or glove, etc.; most always preceded by a “sweat” in the hot room. Object—General cleanliness.

civilized and uncivilized, from time immemorable. Sometimes these had connections with religious rites. How these manipulations originated we do not know, except we may assume that in certain affections the people instinctively pressed, rubbed or otherwise manipulated the parts. Any person who has perhaps never heard of massage, rubbings, frictions, etc., may accidentally receive a blow on some part of the body, and immediately the hand is carried to the point and either pressed or rubbed and the pain will be relieved. This same instinct is present in animals. A dog as soon as he is injured will lick the part. In examining the ancient history of Greece, Rome, Arabia, Egypt, China, we find many references made to friction, unctions, rubbing, squeezing, etc., as the following. Herodicus, one of the masters of Hippocrates, in the fifth century B. C., first proposed gymnastics for the cure of disease and the preservation of health. From Herodotus we are informed that after having poured a greasy mixture upon the body, each part

guished Roman physician, who flourished about the commencement of the Christian era, spoke wisely and well of rubbing, in saying that it should sometimes be applied to the whole body, as when an invalid requires his system to be replenished. Hadrian, 76-138 A. D., the able and wise emperor, seeing a veteran soldier rubbing himself against the marble at the public bath house, asked him why he did so. The veteran answered: "I have no slave to rub me," whereupon the emperor gave him two masseur slaves and sufficient to maintain them.

Pliny the celebrated advocate, in one of his letters to the Emperor 103 A.D. says, that his life having been in danger from a severe illness he availed himself of a mode of treatment, which it is presumed was much in vogue at that time. He procured the services of a medical practitioner who cured many of his patients by the process of rubbing and anointing, and so much benefit did he derive from the treatment that he asked the emperor to grant the physician, "who was a Jew,"



should be rubbed. The writings of Plato abound with references, direct and indirect, to friction. Hippocrates, 460 to 380 B. C., says the physician must be experienced in many things, but assuredly also in rubbing. It was Hippocrates, "the Father of Medicine," who used the word *anatripsis*, the Greek equivalent for the process of massaging, although he did not understand the reason of it, as it was not till 500 years after that Galen pointed out that the arteries were not filled with air, as their names seem to imply.

Asclepiades, 128 to 56 B. C., founded a school, practiced at Rome and was very popular with the Romans on account of his simple and agreeable remedies. He relied mainly on diet, bathing, exercise and friction. Cicero, 106-43 B. C., considered that he owed as much of his health to his anointer as he did to his physician. Plutarch, 100-44 B. C., tells us Julius Caesar was pinched all over daily, as means to a cure of a general neuralgia. Celsus, the distin-

guished Roman physician, who flourished about the commencement of the Christian era, spoke wisely and well of rubbing, in saying that it should sometimes be applied to the whole body, as when an invalid requires his system to be replenished. Hadrian, 76-138 A. D., the able and wise emperor, seeing a veteran soldier rubbing himself against the marble at the public bath house, asked him why he did so. The veteran answered: "I have no slave to rub me," whereupon the emperor gave him two masseur slaves and sufficient to maintain them.

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Ambroise Paré, 1517-1590, A.D., who was employed by a family as barber-surgeon and to say the family prayers, but who became the most renowned surgeon of the sixteenth century; the inventor and originator of ligation of arteries, which is the foundation of modern surgery, speaks of friction in dislocations, and recommends passive movements of the joints. Mercurialis, 1530-1606, A.D., an eminent Italian physician who graduated at Padua, published in 1573 a treatise entitled "De Arte Gymnastica" in which he commends the benefits to be derived from active, passive and combined movements.

Alpines, 1553-1617 A.D., a celebrated botanist, occupying the chair of botany at Padua in 1593, in his "Medicina Aegyptia" says that frictions are so much in use among the Egyptians, that no one retires from the bath, without being rubbed; for this purpose the person is extended horizontally, then malaxed, manipulated, or kneaded and pressed, in various manners upon the different parts of the body, with the hands of the operator. Guyon, 1615 A.D., in the "Mirror de La Beauté" says, exercise and friction are advised and it is considered necessary to have the body rubbed gently by some person who has soft hands. Hoffman, 1660-1742, A.D., physician to the king of Prussia, whom we are not likely to forget, so long as the anodyne, which bears his name, continues to be used, in his "Dissertations Physico-Medical" 1708, says that exercise is the best medicine for the body. The illustrious Sydenham, 1624-1689,² abandoned the routine system of practice then prevalent, and based his own upon the theory, that there is in nature, a recuperative power which ought to be aided, not opposed. An example of this is found in his saying that, if anyone knew of the virtues of friction and exercise, and would keep this knowledge secret, they might easily make a fortune. This is fully exemplified at the present day, for in every city of the United States, and indeed, of the whole civilized world, there may be found individuals claiming mysterious and magical powers of curing disease, setting bones and relieving pain by the immediate application of their hands. Some of these boldly assert that their art, or want of art, is a gift from Heaven, due to some unknown power, which they call magnetism, while others designate it by some peculiar word ending with bathing or cure. And it is astonishing how much credit they receive for their supposed genius by many of the most learned people. Should a lone fisherman forsake his boat, a blacksmith his anvil, or a shoemaker his shop and proclaim that he has made a wonderful discovery, that he is charged with magnetism and can cure all diseases, be he ever so ignorant and uncouth, he is likely to have, in a remarkably short time, a large clientele of educated gentlemen and refined ladies. It is not meant to imply that the previous occupation of these people is at all to their discredit, but, were they capable of giving a rational explanation of their methods, the halo of mystery would be removed and their prestige and patronage would suffer a sudden decline.

John Grosvenor, Esq., about a century ago, was professor of surgery, for many years, at Oxford. He practiced surgery only, but in the latter period of practice rendered himself justly celebrated throughout the kingdom, by the application of friction to diseased joints. He had first used it with success in a malady of his own, a morbid affliction of the knees, and by degrees its efficacy was so renowned that he

was visited by patients of the highest rank and respectability from the most distant parts. Mr. Grosvenor further says, in a book entitled "A full Account of the System of Friction," inflammation does not by any means contraindicate the use of massage in such cases, for in the words of Berghmann and Helleday, "Massage will simultaneously further and increase resorption, accelerate the circulation, relieve pain, and reduce elevated temperature."³

MODERN ORIGIN OF MASSAGE.

By this I mean the scientific application of massage, according to a regular system. The system in use today and practiced by all the foremost massage operators, such as Metzger, Prof. Schüller, Douglas Graham, Weir Mitchell, etc., consists of four principal manipulations: Effleurage, friction, petrissage and tapotement. Prof. Robert Bartholow says "massage" is of Arabian origin, because there is a word in the Arabian language *mass*, which signifies to knead. He undoubtedly means the word, "massage" for the system of manipulations is of French origin, although some of the manipulations belonging to the system, were in use centuries ago, by other nations. All authorities on massage, today, agree that the word massage, is French, but originates undoubtedly from the Greek word, *μασσω*, meaning to beat, pound, or knead. Dr. Douglas Graham in the history of massage, *Med. Record*, N. Y. 1879, Vol. xvi, pp. 147-171, says: "To express these various maneuvers collectively, nearly all physicians, who take any interest in the matter, foreign as well as American, seem satisfied with the French word massage from the Greek *masso*, I knead or handle. Therefore the French should receive more credit than any other nation, for our present knowledge of massage, for they first made a scientific investigation of it and formed the various manipulations into a regular system."

In "Tracts on Massage No. III," translated from the German of Reibmayr, with notes by Benjamin Lee, 1887, is found the following: The history of massage, as demonstrated by Weiss (Bella Weiss Ueber Massage, etc., *Wiener Klinik*, 1889, Heft 11-12 and Ritterfeld (Ritterfeld, Confeld, Massage, Wiesbaden 1881), is very ancient. Allusions to it are found in the Chinese literature of a period, three thousand years before our era. Older still than the writings are their traditions, with reference to the subject. The civilized nations of antiquity employed it both as a therapeutic and as a hygienic measure among the Greeks and Romans.

During the middle ages, it vanished completely from the medical schools, receiving only an occasional recognition in connection with midwifery. It thus came into the hands of the laity, and this unfortunately, is sufficient ground, in the minds of many physicians, for glancing askance upon an agent of great value. The first nation to rediscover this therapeutic treasure and rescue it from oblivion was the French, "Fissot 1780" "Weibone" 1795, and Bonnet, 1845, have laid us under obligations in promoting its revival. But the writings of these men scarcely attracted a passing notice, even in their own country. To Dr. Metzger, of Amsterdam and his pupils Berghmann and Helleday, is due the credit of having reduced massage to a system founded upon the basis of numerous experiments and of earning for it the rep-

³ For further reference to this matter see "report on treatment of sprains by massage, by Douglas Graham, M.D., in the N. Y. Med. Record, No. 353, 1877.

² Douglas Graham, "History of Massage."

utation of being a truly reliable agent. His system possesses the great advantage of being as simple as it is clear, and should therefore, be accepted by all adherents of this method of practice.

It is true that massage has received so little attention from the medical profession that Prof. Th. Billroth of Vienna in 1875, and Dr. Wagner of Friedberg in 1876, stated that there were many physicians in Germany who had never heard of massage, and that it was then an every-day question as to what it meant, and some even supposing that Dr. Metzger of Amsterdam was the originator of it. In *Wiener Med. Wochenschrift*, No. 45, 1875, and *Berliner Klinische Wochenschrift*, No. 68, 12, 1876, after making some very commendatory remarks on massage, Professor Billroth concludes: And yet for sixty years prior to this, the word massage had found a place in the medical literature of France, and valuable articles had from time to time appeared on the subject. Dr. Weir Mitchell ("Graham Pract. Treat. on Massage, 1884") says: It is many years since I first saw massage used by a charlatan in a case of progressive paralysis. The temporary results he obtained were so remarkable that I soon began to learn what I could of its employment.

The modern application of massage.—This being of more interest to us and our patients, I will point out how massage is, or should be, applied; and in order to apply massage properly, it is necessary to know the indications and contraindications, the physiologic action upon the tissues, as the skin, muscular, nervous and circulatory systems, the special organs, the changes induced in pathologic or changed tissue, difference of action between active and passive exercises, also general hints and rules to be observed in giving massage, etc. There are certain movements of certain parts, which might be either active or passive, called Swedish movements or physical culture. These are often confounded or classified with massage, therefore I wish to call special attention to the fact that massage and Swedish movements should not be confounded, as they are distinct. Massage means treating the soft parts, muscles, organs, etc., only, while by Swedish movements is meant the movements of the joints, as flexion, extension, adduction, abduction, pronation, supination, traction, etc. Some operators practice massage and others practice movements exclusively. I have always used both for general treatment, spending five-sixths of the time on massage, but change according to indications and object of treatment. The Swede, Peter Link, 1776-1839, was the first to establish a scientific system of the various kinds of movements, and it is therefore called Swedish movements. There is as much or even more variation in the mode of giving these movements as there is in massage. Swedish movements may be given by machinery, as in the Zandersche Institute in Stockholm; there are also institutes in New York and in Battle Creek. The motive power here is generally steam. Various kinds of instruments may be used and the Swedish movements may be active as in gymnastics and Delsarte, or passive, as by machine or operator, or half active and half passive, that is, the patient may offer resistance while the operator makes the movements, or the operator offer resistance to movements made by the patient. Dr. Metzger of Wiesbaden divides massage into four principle manipulations.

MANIPULATIONS.

I. *Effleurage* (stroking).—A. With palm of one hand, used

on small surfaces. B. With palms of both hands, used on large surfaces (is most generally used). C. With thumb or thumbs, on tendons or between muscles or small surfaces. D. With tips of fingers, on tendons or between muscles or small surfaces. Light stroking has a soothing influence on the system; heavy stroking has a stimulating influence on the superficial structures, increasing the arterial, venous and lymphatic circulation.

II. *Frictions* (firm circular, semicircular or to and from motions).—A. With one hand, used on small surfaces. B. With both hands, used on large surfaces. C. With thumb or thumbs, used on small surfaces, as the face, below the eyes, hand around joints. D. With tips of fingers, used on small surfaces, as the face below the eyes, hand around joints. This manipulation reaches deeper than the former, to the subcutaneous connective tissue and fat overlying the muscles, its aim being to transform pathologically changed parts into a condition that will permit them to be incorporated into the healthy tissues by absorption by the veins and lymphatics.

III. *Pétrissage* (kneading or pinching).—A. With two thumbs, used to get the effect upon a certain small localized area. B. With thumb and fingers (see pinching). C. With two hands, used on large surfaces. (N. B. By pinching is meant the squeezing of the muscles between the fingers and the fleshy part of the palm.) The aim of this manipulation is to reach the separate muscles or groups of muscles, to reach as deep as possible, to cause circulatory, nutritive and alterative changes in the soft tissues within reach, muscles, tendons, organs, etc.

IV. *Tapotement* (tapping or percussing).—A. Clapping, used with palms of both hands. B. Hacking, used with ulnar border of hands. C. Pinctating or titillation, used with tips of fingers with a shoving motion. D. Beating, used with clenched hand, with the ulnar edge or with the knuckles. These manipulations are mainly used on muscular parts, as the back, back of legs, gluteal region, and well developed subjects in general.

I give these four principal manipulations, with subdivisions, because they are recognized and used by all the authorities of the day. Anyone attempting to give massage without a knowledge of these principles is unscientific and empirical. The reason why the four principal manipulations are applied in this order is, 1, it is well known that the circulation at the surface is not so active as that of the interior of the body, therefore in massage, effleurage is applied first in order to warm the surface, to stimulate the blood and lymph changes, to remove the old epithelial scales, that the pores and sebaceous glands may be freed from matter which causes obstruction. The frictions which are next applied reach a little deeper. The pétrissage goes below the skin and fat overlying the muscles and reaches the muscular structures and deep-lying organs. Tapotement imparts its stimulus to the deepest structures. Another reason why we should adhere to this table is, that we should have a system and it is, in my opinion, the best, this being the system, or the table of manipulations, recognized by all authorities on massage. But there are would-be authorities who have tables of their own. One author divides the manipulations of massage into: I, frictions; II, pressures; III percussions; and IV, movements. The first three he divides into moist and dry, the moist he calls unctions; they are used to apply a medicinal principle, as oils, liniments, ointments, balsams, pomades, etc. He says, in his book on massage, that unction does not, properly speaking, belong to massage. He also uses fancy names for some unimportant variations of the principal manipulations, such as attouchements, frolement, agacements, chatouillement, titillations, taxis, malaxation, froissement, foulage, etc. As regards his fourth division, movements, I think they should have been left out altogether, as movements and massage should not be classified together, as each is distinct, and the one may be used where the other is contraindicated.

The physiologic action of massage.—One of the first essentials is to make a diagnosis, and a diagnosis comprises a knowledge of the functional or pathologic changes that have taken place in the tissue. Before a remedy is selected to counteract this process, be this remedy a drug, diet, bath, or mechanical, therapeutic or hygienic measure, it is absolutely necessary that the consultant, before he gives his advice, should possess a definite knowledge as regards the action of the remedy prescribed by him. Unless he possesses this knowledge, he will employ these measures in an unscientific way, not knowing what the results of his treatment will be. If you know the action of the remedy or measure you can recommend it where indicated, and warn against its use where contraindicated.

(To be continued.)

SELECTIONS.

Displacements of the Uterus.—Dr. Howard Kelly in a recent article in *American Journal of Medical Sciences*, December, 1896, states that backward displacements constitute one of the most important gynecologic questions of the day, for two reasons; first because of the frequency, and second, because the treatment is in an evolutionary stage. After a summary of the causes, symptoms and discarded older methods, he says: "The most efficient plans of modern treatment, where treatment is required, are purely surgical, attacking the displacement either through the vagina or abdomen, or through both avenues at once. The correct method of dealing with any given case of retrodisplacement will fall under one of the following heads: 1, cases in which no treatment is required; 2, the use of a pessary; 3, manual reposition and massage; 4, operation upon the vaginal outlet; 5, operation on uterus at the vaginal vault; 6, shortening the round ligaments; 7, a suspensory abdominal operation or ventrofixation; 8, an operation upon the vaginal outlet and a suspensory operation combined."

No treatment is advised where the flexion is the discovery of accidental examination, or where the patient's distress is purely mental. On the use of the pessary he contends that its use in retroversions and retroflexions rarely effects a cure, in spite of the numerous statements to the contrary, that it is often useful in relieving local symptoms of the displacement, as a rule not by correcting the displacement but by checking the tendency to still greater displacement. The only pessaries he finds use for are the Hodge and frequently the Mundé with a thick posterior bar. The large pessaries, horse-pessaries, are to be absolutely rejected, as also all soft-rubber pessaries. Processes for treatment under the headings of "Manual reposition and massage" and "the vaginal operation for retroflexion" are then followed by an interesting account of his method in treatment of ventrofixation or suspension of the uterus, which he has applied on two hundred cases in the Johns Hopkins Hospital between October, 1889, and October, 1896. In no case has there been a death in any way connected with the operation, and no case of hernia or interference with the functions of the bladder has been reported. After carefully preparing the selected patient the operation is performed as follows: "An incision 3 to 4 cm. long is made just above the symphysis pubis, in cases in which the abdominal walls are thin or of medium thickness. . . . The peritoneum is opened the full length of the skin-incision, and caught at once on both sides with forceps and drawn outward. One or two fingers are now introduced through the incision and the fundus of the uterus caught and raised into anteflexion. I invariably use as a suture material for suspending the uterus, a medium-sized silk about a half millimeter in diameter. . . . One side of the incision is lifted, exposing the peritoneal sur-

face of the anterior abdominal wall. The movable peritoneum and subperitoneal tissues are then transfixed 1 or 2 cm. away from the lower angle of the incision. The tissue taken in is about 1 cm. in width and 2 or 3 mm. in depth; the same suture is passed through the posterior face of the uterus 1 or 2 cm. back of the fundus, and finally brought out through the peritoneum and subperitoneal tissue on opposite of abdominal wall at a point corresponding to that of entrance. When the suture is tied it brings the uterus up snugly against the anterior abdominal wall in anteflexion. Another suspensory suture is passed like the first, but about 1 cm. higher up on the abdominal wall and half a cm. below it on the posterior surface of the uterus to hold the uterus in permanent anteposition. This is tied and the abdominal wound closed by sewing up the peritoneum with a catgut suture, then drawing the fascia together with silver wire mattress-sutures, finally closing the superficial fat and skin also with catgut sutures."

Treatment of backward displacements by an operation upon the vaginal outlet and a suspensory operation combined is given. In his recapitulation of the subject he says: "My conclusion in the whole matter would be that operative measures are only to be resorted to for the relief of retroflexion in those cases in which there is good reason to believe that the displacement seriously interferes with the patient's health and comfort. Then if the case is one calling for operation in a woman who has borne children, first look well to the vaginal outlet, and restore it if it is broken down. The Alexander operation, as performed by Edebohls will yield excellent results; my personal preference is to deal directly with the retroflexed body of the uterus by a suspensory operation."

Fresh Air Cure for Consumptive Children.—A most interesting charity has been carried on in France for several years known as the "Fresh Air Cure for Consumptive Children." Two hospitals for this purpose are located one at Ormisson and the other at Villiers-sur-Marne. The medical men interested in this work consider it the most promising method yet employed in trying to reduce the rate of mortality from consumption in France, which was becoming fearfully prevalent, the death rate reaching in some cities (Paris, Havre and Rouen) almost 80 per cent.

We quote from a recent report of the work by Dr. Blache; he says: Medicine forms no part of the treatment, except the occasional use of cod liver oil, in the cold season. The work of cure is left, therefore, entirely to fresh air and to the hygienic living of the patients. With the exception of a very few cases where persistent fever keeps them in bed during the first part of their stay at the hospital, all the patients are obliged to follow the regular system of living. They rise early, bathe well, are dressed all in linen garments loosely fitted. Twice a week unless otherwise ordered by the physician, each patient is bathed and vigorously rubbed by an attendant. After the toilet, the patients eat a light breakfast; this is insisted upon for each child, for suitable and regular meals have proved most necessary in aiding the treatment. After breakfast, the children are sent into the garden, the park, or covered playground, where they enjoy games and exercises varying with the seasons. The most serious cases are kept indoors, lying in reclining chairs, well wrapped in warm coverings, and breathing the fresh air admitted to the room. Except for the two principal meals of the day, the entire time is passed in the open air, and the rooms are also ventilated with the greatest possible amount of fresh air. This out-of-door program has been strictly followed since 1890, in all seasons of the year without any difficulty. As to the amount of nourishment taken by the little patients, it is of course rather difficult to give an exact reckoning, but the following table is as nearly correct as is possible.

For the two principal meals of the day:

| | |
|--------------------------------|---------------------|
| Soups | |
| Bread | 150-200 grams |
| Meat | 125-150 grams |
| Vegetables and fruits. | 4-7 deciliters |
| Wines. | $\frac{1}{4}$ liter |

The early breakfast consists of porridge, coffee or chocolate, and the lunch of bread and milk. Considering the youth of the patients and the lack of appetite characteristic of consumption, this is a relatively high average.

Results.—Each year the condition of the patients is set forth in a report to the medical committee of the institution. For five years, or since its beginning, these reports have without the least variation shown the most satisfactory results, surpassing even the hopes entertained by its founders.

| | |
|--|-----------------|
| The yearly average of cases treated. | 109 |
| Number of cures | 47.71 per cent. |
| Number improved. | 40.29 per cent. |
| Number unchanged. | 8.79 per cent. |
| Number of chronic or cachectic | 4.59 per cent. |
| Number of deaths. | 3.44 per cent. |

We have sought to give some explanation for these figures, which we must confess are surprising. The results have been uniform and much more favorable than we had the right to hope for. It is evident that the results arise from special conditions. All the patients admitted are proved to be afflicted with the disease, but we are careful to prevent as much as possible the admittance of patients in whom the disease is far advanced or has become chronic. On the other hand, the majority of cases treated at our hospitals are brought there in the worst conditions, from surroundings most wretched and unhealthful and with hereditary tendencies to disease; and it is exactly this miserable condition in which we find the children that permits them to derive the more benefit from the rational treatment of fresh air, good food and general hygiene, under which we place them. And this system of obligatory outdoor exercise, regular habits, cleanliness and rules of hygiene is the cause of the satisfactory results already shown. Moreover, the consumptive children readily accustom themselves to this life, and then neither the cold of winter nor the heat of summer seems to affect them.

In closing his report, Dr. Blache adds: "We fear that we may be considered too optimistic, but we are anxious to prove as soon as possible the certainty that consumption is eminently a curable disease and curable in infancy. We will say a disease more easily cured than many others, since its cure requires, in a word, only a persevering, regular and systematic application of a special, well understood hygiene."—Translated from the *Journal d'Hygiène* by M. R. B.

PRACTICAL NOTES.

Cathode Rays in the Diagnosis of Pleurisy.—Burchard states that the cathode ray may be destined to render as great services to internal medicine as to surgery. He has already found it a most valuable aid in diagnosing the effusion in pleurisy, as it enables the entire contents of the thorax to be seen in their correct proportions at a glance.—*Semaine Méd.*, December 9.

Experimental Appendicitis.—All attempts to produce appendicitis by introducing a foreign substance into the appendix of rabbits have hitherto failed, as the foreign substances, shot, etc., were all tolerated perfectly, and expelled in the course of time. But with a piece of laminaria introduced which closed the opening, appendicitis followed in every case.—*Bulletin Méd.*, November 11.

Arsenic Combined with Thyroid Medication.—The *Nord Médical* of December 1, describes a case of goitre treated with the thyroid medication, which produced such disturbances in the circulation and neuralgic pains, that it was about to be abandoned, when arsenic was combined with it tentatively. At once all the accidents passed away and the thyroid medication was continued and even increased without their return, except when the arsenic was suspended. As soon as it was resumed they passed away again. The patient was entirely cured of all her symptoms in one month.

Pre-existing Lesions in Fatal Cases of Diphtheria.—It was announced at the last Russian Medical Congress that in 150 necropsies of children who had died of diphtheria, tuberculous lesions were found in 39, and the same number of cases of nephritis. The two forms of lesions only coincided in 11. In 33 cases the nephritis had evidently been chronic. It was therefore stated that in the speaker's experience, 40 per cent. of the children who succumbed to diphtheria were already affected with some severe chronic disease.—*Presse Méd.* November 21.

Massarini's Improved Solution for the Hypodermic Treatment of Surgical Tuberculosis.—Neutral sterilized glycerin 40 grams, metallic iodine 1 gram, potassium iodide 5 grams, guaiacol 20 grams. For subcutaneous injections. The presence of guaiacol prevents pain in the injections and also the formation of abscesses. It is used in the same way as Durante's solution, which otherwise it resembles, but with a more powerful therapeutic effect.—*Semaine Méd.*, November 18.

Ear Suppositories.—Radlauer of Berlin makes suppositories for the ear of cocain, menthol, resorcin, cocoa butter and olive oil, which also contain a cotton wad to prevent the escape of the fluids as they dissolve. They are recommended highly by Lasser, as they are effectual and save the introduction of the various medicines separately. The patients can insert them themselves, if necessary to save time and trouble in clinics, etc. They are designed to heal inflammations, to soften accumulations of wax, to prepare the ear for operations, etc., and are made in two sizes, for children and adults.—*Therap. Woch.*, December 13.

Significance of Hernia in the Etiology of Gastro-intestinal Disorder.—Schutz impresses upon all the necessity of thorough and careful palpation of the entire abdomen in the case of obscure gastro-intestinal disturbances, and especially of all the typical hernial sites. In this way often the real cause of the trouble will be found, unsuspected hitherto, and proper treatment ensures recovery. At the same time he warns that it will not do to ascribe everything to a hernia, and thus overlook possibly the cause elsewhere.—*St. Petersburg Med. Woch.*, September 26.

Biernacki's Ulnar Symptom in Mental Disease.—Hess urges all to coöperate in determining the importance of this sign in mental disease and paralysis. So far 417 tabetics and paralytics have been tested for it and 66.9 per cent. found to be without sensation or reaction when the ulnar nerve is pressed at the "crazy bone" point. Three hundred and fifty-four paralytics showed similar analgesia in 70 per cent. According to the sex, 73.7 per cent. of the men were analgetic and 43.7 per cent. of the women. Further investigation of the subject may be of great value in time, as if this sign proves what is expected, it will render material service in diagnosing doubtful cases.—*Deutsche Med. Woch.*, December 17.

Double Pneumonia with Hypothermia and Thrush Treated with Cold Baths.—The patient was an insane, elderly woman. The temperature fell to 36.8 degrees C., with such marked adynamia that a fatal termination seemed imminent. Mouth and gums were covered with thrush. Three baths in twenty-four hours, at 25 and 22 degrees C., were administered in the hope of stimulating the vital energies, lasting ten minutes each, nine baths in all. The improvement was perceptible the first day, and all the grave symptoms disappeared during the third day, when the pneumonia was in complete defervescence. The baths were discontinued as soon as the adynamia had passed away. The thrush was treated locally with boric solutions as usual.—Dr. Voisin in *Province Méd.* December 5.

Phosphuria in Diagnosis.—Investigation of the phosphates is indispensable in some diagnoses, which would be very difficult without the knowledge thus obtained. The diagnosis of hysteria for instance, is settled when after the attack, the proportions of the phosphates are inverted and the weight of the

phosphoric acid is normal or slightly diminished. On the other hand epilepsy causes an increase of the phosphates and also of the phosphoric acid. In the same way ascertaining the conditions of the phosphates enables the differential diagnosis between tuberculosis and incipient chlorosis to be established. In cases of phosphuria the surgeon should always reserve his prognosis even in the case of wounds and fractures and as well when intervention is being considered.—*Nord Médical*, December 1.

Hiccough Cured by Traction of the Tongue.—Professor Lepine of Lyons stated that he had arrested and cured a case of hiccough of four days' standing by drawing the tongue out and keeping it outside of the mouth for a few minutes. He does not know whether the procedure is of any practical utility in such cases, but theoretically it is of interest. It may be asked if rhythmic tractions of the tongue excite the respiratory center, as they do in restoring respiration in cases of asphyxia, how can they inhibit this center, as in the case observed? This apparent contradiction is explained by some experiments made by Professor Lepine in 1876, showing that the result of excitation depends, in the greatest part, on the state of the nervous apparatus concerned; so that, while excitation of the nerves at the base of the tongue will excite the respiratory center when this is paralyzed, similar excitation will depress it if it is in a state of exaggerated excitability.—*Universal Medical Journal*.

Spontaneous and Artificial Evacuation of the Stomach.—The phenoscopes is rendering many services to science, as expected (described in the *JOURNAL*, page 490, Vol. XXVI). The latest is a contribution to our knowledge of the evacuation of the stomach. J. C. Roux has found with it that the food taken into the stomach remains at the same level during the entire period of digestion, viz., from three and a half to four hours. The limits of the stomach remain the same during this time, except the lesser curvature and the pyloric region, which gradually tend toward the right. At the end of three and a half to four hours after the meal, the evacuation of the food matters occurs "brusquely and all at once." He also has established the fact that this sudden evacuation of the contents of the stomach can be produced artificially at any moment during the period of digestion by administering to the subject a small quantity of a concentrated solution of peptone. This fact is interesting as it shows that the duration of the period of gastric digestion can be regulated at will.—*Bulletin Médical*, December 2.

Successful Treatment of Saturnine Encephalopathy by Lumbar Puncture.—Quincke's lumbar puncture has been principally used for diagnostic purposes, but Seegelen reports a grave case of lead poisoning completely cured by it in the *Munch. Med. Woch.* No. 47. About 60 c.cm of the spinal fluid was withdrawn, at first clear and then becoming turbid. It was alkaline, with a density of 1008, and showed in the microscope some leucocytes and endothelial cells. The part of the fluid that was limpid is supposed to have been derived from the medullary region, still unaffected by the disease, while the remainder came from the cerebral region, altered by the effects of the intoxication. The patient was kept under observation for weeks and showed no return of the coma, clonic spasms, etc., nor of any of the symptoms.—*Bulletin Méd.* December 2.

Helminthiasis.—Cima states that 46 per cent. of seventy-three children in his care for diverse diseases were found infested with helminths, twenty-eight had the trichocephalus; twenty-two ascariides; four the tenia nana; three the oxyuris, and one the tenia medio-canellata. Several were affected with nervous troubles, such as chorea, which were cured with exclusive treatment with vermifuges. The four children with the tenia nana presented a strange combination of symptoms; pains, a peculiar gait, ataxic and choric, with paresis of the left

limb. These symptoms all passed away with redoubled vermifuge treatment. They may have been due to excitation of the gastric plexus. Careful search was made for Charcot's crystals, which Leichtenstern considers a pathognomonic sign of helminthiasis, but they were found only seven times in all the ten microscopic preparations made of the feces in each case. They were found only in mucous dejecta streaked with blood, which leads him to consider them analogous to the crystals found in other mucous secretions, nasal, bronchial and spermatric.—*Bulletin Méd.*, December 16.

Ihle's Method of Suturing the Abdominal Walls.—Ihle has been using the following method since October, 1894, with perfect success even in the most obese cases: A curved needle with a strong thread is passed through the abdominal wall a few centimeters to one side of the wound, through the skin and subcutaneous fat, and brought out through the wound between the layers of fat and muscular tissue. The needle is then inserted in the other corresponding side of the wound, between similar layers of fat and muscular tissue, and curving downward is passed through the muscular layers into the abdominal cavity, thus inclosing the peritoneum at the edge of the wound. When it appears in the abdominal cavity it is carried to the opposite side and the same process is repeated inversely, passing it through first the peritoneum and then the muscular layers, to emerge at the edge of the wound between the layers of fat and muscle. It is then passed across to the opposite side and passed in the same way into the tissues between the fat and muscular layers, emerging outside through the subcutaneous fat and skin. Before the threads are tied they are pulled tight laterally, to make the coaptation of the low-lying muscles and fascia complete.—*Cbl. f. Chir.*, December 5.

Necessity of Operating for Incontinence of Urine in Commencing Prolapsus.—Very few consider it necessary to operate for incontinence of urine in these cases, as the larger operation soon required is supposed to include this. But Boursier stated in the November *Archives Clin. de Bordeaux*, that this is erroneous, and that the incontinence frequently persists after anterior or posterior colporrhaphy. He treats it at once with a combination of Duret's process (incurvation of the axis of the urethra, elevation of the meatus and lengthening the posterior wall), and Gersuny's torsion of the urethra. He and Pousson have been successful with this, while in other cases treated merely with the colporrhaphy and colpoperineorrhaphy the incontinence continued. He first inserts a bougie into the urethra, and circumscribes the meatus by a circular incision .5 cm. from the orifice. The canal is then dissected about 1.5 cm., after which the tissues of the vestibule are incised vertically to the base of the clitoris. The bougie is then withdrawn and the dissected portion of the canal is twisted one-half of its circumference on its axis, and drawn upward and forward, when it is fastened with a series of stitches in the upper angle of the vertical incision. The rest of the wound is then closed with a few catgut stitches.

Strangulation of Twisted Intestine after Extirpation of Carcinoma Ceci.—An instructive case is described at length in the *Cbl. f. Chir.* of December 5, in which a fortnight after resection of the cecum and ascending colon (Helferich), the patient returned with acute ileus, fecal vomiting, pains, etc. A second operation showed that the small intestine that had been implanted in the colon had slipped through the space left by the previous operation between the free edge of the mesentery and the stump of the colon, and had become twisted on its axis, closing the lumen completely, with adhesions to adjoining loops, requiring a two hour operation to make things right again and impressing upon Helferich the necessity of suturing these parts together henceforth, so that no space will be left. It is a difficult thing to do, and in some cases can only be accomplished by suturing a piece of the omentum into the space if

the resection has been very extensive. In another case since, he was able to close the entire mesenteric slit by a direct suture, and in addition he fastened the side surface of the mesentrium of the part of the small intestine leading away from the colon, to the retro-peritoneal surface of the wound in such a way that this portion of the small intestine took the place of the extirpated colon. Small tampon on the intestinal suture, drainage toward the rear.

Catarrh and Whooping Cough Treated by Formalin.—Following upon the use of formalin in tuberculosis of the larynx by Dr. Solis-Cohen and others, the remedy has been recommended in cases of influenza and catarrh. Dr. Starenbagen was probably the first to employ inhalation of formalin vapor for the latter trouble; he cured himself of bronchial catarrh. Then Dr. Gregner experimented with both inhalations and solutions, as gargles or lotions, and found that some slight irritant action attended the use of inhalations from dilute solutions. This irritation was soon overcome, while gargling could be done with a one-half per cent. (or even 1 per cent.) solution without discomfort. The London *Therapist*, December 15, adds a reference to improvements that are being made in the administration of formalin and paraform in cases of respiratory affections, as follows: The most recent contribution to the therapeutic employment of formalin in the treatment of catarrh and other allied diseases of the respiratory tract, was made by Dr. J. Lardner Green, at a meeting of the Southern Branch of the British Medical Association, held in Salisbury on November 25. This paper it is hoped will shortly be published *in extenso*. The author gave an account of the favorable result he had obtained from the use of formalin vapors, and suggested its employment not only in catarrh but also in cases of pneumonia, bronchitis, etc. With a view to the more extended employment of formalin vapors in this direction by medical men, it is necessary that a convenient and portable means of generating the vapors should be available. Just at the right moment, therefore, it has been discovered that the solid inert form of formic aldehyde known as paraform, may be volatilised and polymerised at a low temperature, giving off active formalin vapors by the employment of suitable apparatus, by means of which a current of air and water vapor is directed over the surface of the paraform. The *Therapist* further alludes to the experience of Dr. Hinman in an outbreak of whooping cough that occurred in an orphanage. The patients were all confined in one ward with closed doors and windows, in which a 1 per cent. formalin solution was freely sprayed twice a day, and also during the night. The immediate result of this treatment was an abatement of the paroxysms of coughing both in virulence and frequency, whilst there was a gradual but marked improvement, and all dangerous symptoms disappeared comparatively quickly.

Urticaria of the Respiratory Passages.—The *British Medical Journal* quotes Delbrel as having treated and collated numerous cases of this affection, and states that from his research and experience, he has come to the conclusion that there are two types of urticaria affecting the respiratory organs: 1, in certain cases the cutaneous eruption appears first, and is followed by respiratory trouble; 2, in others the respiratory symptoms first appear, to be followed later by the eruption, and it is in this latter that the greatest difficulties of diagnosis and the greatest danger to the patient may arise. In many instances the urticarial affection so closely resembles other respiratory disorders that in the absence of any cutaneous condition diagnosis may be almost impossible, and it may even happen that the only manifestation of the disease is that affecting the respiratory mucous membranes. Some cases simply resemble an attack of asthma; others manifest themselves by suffocative attacks with irritating, hacking cough, closely simulating edema of the glottis, for which they may be mistaken. In

such cases a laryngoscopic examination may be of great use, though, unfortunately, it may fail, even in skilled hands, as it seems to cause increase in the symptoms. In the instances where it has been carried out, red, raised erythematous patches have been found in the posterior pharynx, and though it may be impossible to obtain a view of the eruption in the larynx or trachea, the existence of such patches in their neighborhood may be used. In the cases where the respiratory affection is severe the symptoms may be the most alarming. There is no regularity as to the time of their appearance after the ingestion of some article of diet, etc. The author states that severe cases not infrequently end fatally; others may last for periods varying from a few hours to several days, and the appearance of urticaria seems to be a favorable sign. He suggests that in acute cases with severe pulmonary symptoms and no cutaneous eruption brisk friction should be applied to the skin in order to induce its appearance.

Radical Treatment of Congenitally Malformed Anus.—Gangolphe in *Revue de Chirurgie* for April counsels the employment of peritoneal incision and enterorrhaphy in cases of preternatural anus. There are, he points out, two methods of dealing with this condition: In one the surgeon works from without inward in the immediate neighborhood of the opening and, after gradual dissection, exposes the two extremities of the divided intestine, and draws these outward; in the other the peritoneal cavity is opened by an incision made through the abdominal wall at some distance from the false anus. The author holds that the latter method possesses many advantages. It is rapid, and the surgeon, without dread of wounding any important organ, cuts directly into the abdominal cavity. It is sure, as the finger introduced into the abdomen can explore the structures in the immediate neighborhood of the false anus, and can guide the scissors or other cutting instruments by which the perforated portion of intestine is set free. It permits free exposure and complete isolation of the structures submitted to operation. The risks of infection are diminished, and the manipulations of the surgeon facilitated by this free exposure of the perforated or divided portion of intestine. It is applicable to every case of false anus, and is likely to prove successful when the former method has failed. The author concludes with a description of his operative method, which with variations in detail to meet special circumstances, he has practiced with complete success in three instances. The first stage consists in making about the false anus an oval incision extending through sound skin and other layers of the abdominal wall as far as the peritoneum. This membrane is now incised at the upper wall so as to permit the introduction of the finger into the peritoneal cavity for the purpose of exploration. The extent of the adhesions of the intestine to the abdominal wall having been determined, the oval portion of abdominal wall formed by the first incision is set quite free, and the divided portion of the intestinal canal is freely exposed. The subsequent stage of the operation will depend on the size of the false anus and the extent of the intestinal adhesions. If the opening be small and involve only a portion of the circumference of the gut, it may be closed by lateral suture after excision of surrounding callous tissue. If there be much loss of intestinal structure, and a spur has formed at the seat of the false anus, the author would set free both ends of the intestine, and then bring them together either by circular suture or by Murphy's button. The latter method, he states, is indicated in any case in which the patient can not tolerate a long operation, and when the surgeon is inexperienced in the application of intestinal sutures, or is operating under unfavorable conditions. In cases of extensive adhesions it would be necessary, after apposition by suture or button at the ends of the intestine, to separate the loops of intestine from one another and from the abdominal wall by very careful dissection, and after closure of the external wound to drain the seat of operation.

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SATURDAY, JANUARY 9, 1897.

IDENTIFICATION OF CRIMINALS.

Under a title which may be rendered into English as "General Instructions for a system of Identification," Sr. JUAN VUCETICH, Chief of the Statistical and Anthropometric Identification Office of the Police of the Province of Buenos Aires, has published the second edition of a work on identification by scars and marks. The first edition was published in 1895. In its preface the author related the case of a criminal who was sentenced to confinement for ten years, but who escaped and was subsequently captured and tried for some fresh crime. The evidence was insufficient to convict and the man was discharged. An effort was made to detain him as an escaped convict, but the evidence on record failed to establish identity. Sr. VUCETICH believes that had his system been in use at the time this criminal could not have escaped identification. Its use, he considers, will be of immense advantage in detecting old offenders and particularly in the apprehension of deserters from the army and navy. His proposition was submitted to the Minister of the government and was by him approved and adopted as the official instructions for the use of the police of the province, to go into effect Jan. 1, 1896.

Sr. VUCETICH modestly states that his work is simply the application of the conclusions reached by BROCA, LOMBROSO, BERTILLON and others. The study of the works of these authors suggested the idea of identification by scars and marks and furnished him with most of his materials. But like all those who

apply book knowledge in the elaboration of methods for practical work, his methods are too recondite. He has built up a system which requires careful study and an excellent memory to make use of the proper official terms to be used in a given case. The height of the individual appears to be the only measurement taken; but 145 illustrations are given showing the various points to be noted in connection with the contour of the face, the eyebrows, eyes, nose, mouth and ears. The surface of the body is divided into considerably more than a hundred regions and a long list of abbreviations and signs for indicating the character, size and location of marks and scars is given, with the result of building up an intricate system out of that which should have been kept as simple as possible. Directions are given for taking photographs and also for recording the digital impressions of each individual.

While disclaiming any title to originality in the system advocated and now officially adopted, its author takes credit on behalf of the Province of Buenos Aires for having been the first to apply a system which without being anthropometric has all the accuracy and precision of this system; but even this claim does not hold good in the light of a fuller knowledge of what has been accomplished elsewhere. A system of identification by scars and marks has been in use in the United States Army since 1889. The effort in our army has been to preserve the simplicity of the system and to avoid all tendency to elaboration of details. Instead of a tedious description in words requiring thought to ensure an accurate record and more thought to enable the reader of the record to realize the locality, size and general appearance of the scar or mark, the record of the United States Army may be made and read with precision by one who is ignorant of the name of the region on which the scar is situated. This is effected by placing a representation of the mark to be described on the appropriate part of an outline figure of the person. No results have yet been announced in Buenos Aires because no identification can be made until the files of the identification bureau contain a number of cards or descriptions, and time is required to effect this. Since the system was established by the Surgeon General's office of the United States Army, 785 identifications have been made and there are now on file the cards of over 13,000 men of undesirable character, each of whom can be identified should he present himself for enlistment before a recruiting officer or should a call from other quarters be made for his identification.

THE CHEAPENING OF THE PROFESSION.

A recently published work on "The Mystery of Sleep," among other statements wise or otherwise, says that if the investigation of the mystery of sleep

were taken up with the same incentives and by the same class of minds as those now engaged in the study of electricity, it would be as clearly understood as is that agent at the present time. Of course this involves the assumption, based on very insufficient appreciation of the facts that we have at present a better knowledge of the nature and phenomena of electricity than we have of those of sleep, but the feature of the utterance that chiefly calls for notice is the implied assumption that a superior grade of intellect is engaged in the field of physical than of physiologic research, in short, the too common notion that the medical profession does not contain the highest type of intellect as compared with scientific workers in other special lines. When this notion is given expression it is often enough, it is true, associated, as occurs in this instance, with evidence of gross ignorance on the part of the utterer; but this does not altogether relieve the sting of the fact that it exists. There is no need of attempting to refute the error to medical men or to scientific workers generally; they know well enough already that the medical profession throughout the world has its full share of the greatest minds as it has always had, the only point to be considered here with any profit is why should the contrary idea exist to any extent whatever among the average intellects of the general public. We all like to be estimated at a full or at least a fair valuation; our philosophy does not usually reach the point of making us absolutely indifferent to public opinion even when we know it to be misled.

The real trouble seems to be in this matter that the medical profession is judged by its minimal average, while physicists and other scientists are only recognized above a certain high standard. The average practical electrician is not an especially accomplished man and is hardly recognized as a scientific worker; but the public regards one like EDISON or TESLA, who may be really only an unusually ingenious and successful practical mechanic, as an especially brilliant corypheus in the world's scientific advance. On the other hand, all doctors are too often counted alike, from the painstaking physiologic investigator down to the advertising peddler of patent pills, and this even by the literary magnates of our Eastern centers of culture. To paraphrase Mr. BIGELOW's dictum properly one would say that if the mysteries of sleep were studied by especially active minded practical mechanical geniuses and business men, with the facility of adapting whatever facts scientific research can give to economic uses, and with the intent to appropriate by patent all useful results for personal profit, they would become as much revealed as he supposes those of electricity to be. It can be safely assumed that the author did not allude to the purely scientific investigators who study the physical agencies for science's sake alone, or he would not have shown the lack of

knowledge as to the work of the physiologists who have traced the phenomena back to the vital processes and have given us far more rational theories of sleep than we can be said to possess in regard to the intimate nature of electricity. As to the practical points involved, they have been solved more or less fully long since by mankind in general, and Mr. BIGELOW's book finds no additional data of value to enlighten us.

The fact that such misapprehension can be shown by an eminent literary man in a work touching on a semi-medical theme, is enough to suggest to our profession the fact of the need of a better education of the public in this respect. It was not always the case that the medical profession was valued below any of the others; in the early history of this country doctors seem to have been rated among the best. The JOURNAL has already editorially called attention to the fact that in the first Continental Congress physicians were represented even out of proportion to their numbers in the general population. At the present time there are nearly a hundred thousand physicians in our country and over twenty thousand medical students, and the public estimation of the profession appears to have, in a measure, grown in an inverse ratio to its increase in numbers. We have cheapened ourselves by making ourselves too common, and the over-use of what seems to be regarded as the only legitimate mode of advertising, viz., connection with some sort of institution for making more physicians, is daily increasing the evil. A year or two ago there were counted fourteen medical colleges in one great center, today the number is said to be nineteen; perhaps next year it will be twenty or more. The advance sheets of the report of the United States Bureau of Education for 1894 and 1895 call attention to the fact, that while it took sixty years (between 1765 and 1826) to establish the first twelve medical schools in this country, half this number were started in one year, 1893, and if the estimated increase in Chicago is correct, this ratio is very rapidly increasing.

The medical profession is said to have led all the other so-called learned professions last year in the number of suicides of its members, a not very enviable distinction, but one that it may continue to hold if its members continue to increase with a correspondingly cheapened popular estimation. The reforms that are under way do not go far enough, or perhaps we should say that they are too slow in their action to materially mend matters. A four years' course and State examinations are excellent, but they must be made universal, and even when that is accomplished it will be years before we can realize fairly their benefits. In the meantime, at all events, it would seem worth while to call a halt in the present undue multiplication of medical colleges of every kind, if there is any way that this can be accomplished.

THE METOPIC SUTURE.

At birth the frontal bone consists of two halves, separated by the interfrontal or metopic suture. Toward the end of the first or the beginning of the second year, this suture begins to close from below upward. In cases of premature closure before birth, the suture closes both from above and below toward the middle, and a marked cranial deformity ensues, known as trigonocephaly. As the name indicates, the skull is of a triangular shape, with the apex in front, so that the forehead runs out into a very sharp point.

In the lower animals the frontal bone remains in two halves during life, but in the primates a single bone is the rule. Persistence of the frontal suture is known as metopism, and is found in various degrees. It may be, 1, entirely open; 2, open at both ends; 3, closed only at the lower end; 4, closed only at the upper end. Its frequency varies in different races, as shown by ANOUTCHINE's statistics:

| | |
|----------------------|------------------------------|
| White race | 11,459; crania 8.2 per cent. |
| Mongolian. | 621; " 5.1 " |
| American | 1,191; " 2.1 " |
| Malay. | 892; " 1.9 " |
| Negro. | 959; " 1.2 " |

What is the cause of metopism? Has the process of synostosis never commenced, or has its course been arrested? As ANOUTCHINE's figures show a marked preponderance of this condition in the higher races, many authors have considered that its presence is due to an increased size of the frontal lobes and a relative increase in the intellectual faculties. Thus PAPILLAUD ("La Suture Metopique," Paris, 1896), from comparison of a large series of crania of various races, sexes and ages, concludes that metopism is due to the influence of the brain, and is therefore an evidence of superior cerebral activity. "Metopism," says BROCA, "corresponds to a notable enlargement of the anterior cerebral fossa, coming on during childhood, either from the rapid development of the frontal lobes, or from slight hydrocephalus, traces of which can be found in other parts of the cranium." TOPINARD thinks hydrocephalus is the most probable cause. He adds, "No matter what is the mechanism producing it, is metopism a step toward perfection or a reversion, a condition foreshadowing the future, or a pathologic state? We have shown that cerebral hypertrophy leads to mania as well as to genius, and that the difference may be without a difference. Is not a double frontal bone a corollary, does it not indicate the effort of the encephalon to make a place for itself in the cranium, and being found more frequently in the higher races are they not paying too great tribute to the pathologic states resulting from it?"

TOPINARD examined the crania of 361 insane persons and found the proportion of persistent metopic sutures very large (17.7 per cent.); SIMON (*Virchow's Archiv*, 1873, p. 576) found only 9.4 per cent. in 809 crania.

Attention may be here directed to the practical significance of this anomaly, viz., that in wounds of the median line exposing the skull, the possible occurrence of this metopic suture should be borne in mind, otherwise it may be mistaken for a fracture.

LORD KINNEAR.

The JOURNAL suggested in its editorial column (Oct. 24, 1896, p. 920), that as the season was approaching for the annual distribution of peerages in Great Britain, it would be a fitting time to recognize the learned profession of medicine by promoting one of its members to the peerage.

We are therefore pleased to chronicle the fact that Sir JOSEPH LISTER was created Lord KINNEAR December 31.

This material recognition can not be otherwise than gratifying to the medical profession throughout the world, for whatever we may think of rank or title, we must admit that the world sits in judgment, and that its decrees favor rank and station, as a means of distinction. Republics are alone ungrateful, and since the foundation of the world, have paid little reward to their citizens who have rendered services to the state or distinguished themselves as discoverers in any branch of science. True, France has still the "Legion of Honor," but that was transmitted from the first Empire, and can not be cited as disproving the rule. Ingratitude is the basest of all personal attributes, and a government should no more lay itself liable to this charge than an individual, and the educated citizen of the world, who looks upon the age he lives in without regard to political divisions, is naturally pleased that radicalism in the French Republic not only left the Legion of Honor untouched, but added a few medical life senators. The various orders of other countries, such as the Iron Cross of Prussia, the Victoria Cross, and the like, have been appreciated by all good men as above riches or political position, as a public certificate of honor natural to the man, of which the decoration is only the symbol.

The services to the profession and to mankind which have made the name of JOSEPH LISTER famous in the annals of his profession, and the recognition by his government a suitable one, may be briefly mentioned as follows: He was born in 1828 and at the age of 19 received the degree of B.A. at London University. In 1852 he received the M.B. degree from University College, London, with the scholarship and gold medal. In the same year he became Fellow of the Royal College of Surgeons, and at Edinburgh during the year following, his first original investigation was entitled "Observations on the contractile tissue of the iris." Among his other contributions to medical science are "Observations on the minute structure of involuntary muscle fiber," "On the early stages of inflammation," "Spontaneous gangrene from arteritis and

causes of coagulation of the blood in diseases of the blood vessels," "Preliminary account of an inquiry into the functions of the visceral nerves, with special reference to the so-called inhibitory system," "Observations on ligature of arteries on the antiseptic system," "Remarks on a case of compound dislocation of the ankle with other injuries, illustrating the antiseptic system of treatment," "On some cases illustrating the results of excision of the wrist for caries, treatment of deformity from contracted cicatrix, and antiseptic dressing under circumstances of difficulty, including amputation at the hip joint," "A further contribution to the natural history of bacteria and the germ theory of fermentative changes," "On the relations of microorganisms to disease," etc.

For several years he was lecturer on surgery in the Edinburgh Extra-academical School, and afterward elected Professor of Surgery in Glasgow University and surgeon to the Glasgow Royal Infirmary. Here it was that his investigations led him to formulate the principles of antiseptic surgery, which revolutionized this branch of medical science. He attended the International Medical Congress at Philadelphia in 1876.

Professor LISTER was awarded a medal by the Royal Society of London in 1880. He was created a baronet in December, 1883, and has received degrees from the Universities of Cambridge, Edinburgh and Glasgow.

THE PRESS AND QUACK ADVERTISEMENTS.

At the recent discussion of this question by the Chicago Physicians' Club the lay press entered what was practically a plea of confession and avoidance. In lieu of denunciations of medical abhorrence for mossgrown mendacity (which the "false and fraudulent advertising" of the quack has entailed for centuries), so common in the editorials of the newspapers, the newspaper representatives admitted abuses of the advertising columns, pleaded impossibility of censorship and denied the authority of the Code of the AMERICAN MEDICAL ASSOCIATION. One representative said that the policy of a newspaper must be dictated by the counting room. This, the other representative (who, when editor of a great Chicago newspaper, purged his advertising columns of massage shops and clairvoyants) refused to consider true. Even were this claim true, it must on the most ordinary business principles, as the medical representatives pointed out, exclude quack advertisements since, as was long ago shown by the *National Advertiser*:

Exceedingly large advertisers tend to discourage the smaller ones and hence, while a certain amount of revenue can be obtained from any colossal advertiser, the diminution of receipts will be noticeable from the many minor advertisers who become overshadowed by the gigantic one. Many of the leading papers in the leading cities are publishing colossal advertisements of certain "advertising doctors." The aggregate amount expended by these "doctors" is very great and while it is probable that there may be enough weak, sickly and

gullible men and women in America who will be induced, in their weakened condition, to pay a stipend each month to these charlatans, it can only be a question of time when both they and their methods must cease. Meanwhile the papers that are receiving large revenues from them are keeping out many good and legitimate advertisers whose aggregate revenues would probably exceed that of the sporadic "doctors." It would seem that shrewd publishers should be able to see these truths, see what the tendency must be, and see the inevitable outcome. Especially should publishers be able to see this in the fact that these so-called physicians pose as philanthropists. In their announcements they say they "make no secret of the fact that they aim to be in every sense the people's physicians and that they are more anxious for the approval and respect of the public than for the financial returns of their work." The practice of medicine was not a necessity to them. They were men of independent means before they placed a line in the columns of these newspapers and they had no need to look to the returns of their work for either livelihood or profit." Such disinterested, such high minded philanthropy has not been known to the world since the days of HOWARD and it is to be hoped that publishers may understand and profit by the lesson it conveys.

The press is now dominated by display advertisers who, having driven small advertisers from the field, pool their issues and dictate advertising rates. The quacks have not yet formed a "trust," but the indications are that the big quack will eat up the little one, thus rendering advertising impossible, except to incorporate quacks who can induce banks to loan on their stock. Even this is fraught with danger to quack and bank alike, as witness the fate of a Nebraska rupture-cure company. The head of this induced an Omaha national bank to invest in his stock and give itself as financial and medical reference. Through the credit of the bank, enormous advertisements were inserted in leading newspapers. The bank was forced to suspend lately. The "Napoleon of finance" who headed the rupture-cure company has just been sentenced in the Omaha federal court for fraud and misrepresentation. The advertising bills are still unpaid. Ordinary business sagacity would therefore dictate exclusion of mendacious quack advertisements from newspapers.

A REVEREND ALIENIST.

The daily press informs us that a certain clergyman by the name of BOYD, residing in St. Louis takes issue with the well-known alienist, Dr. CHARLES H. HUGHES of that city as follows:

Upon what authority is it charged that JOSEPH B. McCULLAGH committed suicide! Upon the authority of only one man, Dr. C. H. HUGHES, a neurologist, a man whose business it is to prove all men insane, to prove that we are insane. Shall we accept such testimony as this? Most assuredly not. I am surprised that this man should stand up as a public prosecutor and try to prove a crime against so well-known and so great and intellectual man as our friend. It is surprising to me that a man of the character of this neurologist would have the audacity to accept the position of public prosecutor, such as he has done, and I trust and believe that no one who has heard these facts will ever believe that Mr. McCULLAGH's death was due to suicide. To my mind it was just as surely an accident as any accident that ever occurred.

The great editor is dead. He is unable to make any defense, and it ill becomes us under such circumstances to charge upon him what is considered almost a crime.

According to Mr. BOYD insanity is a crime, and Dr. HUGHES a "prosecutor."

The truth is that Mr. McCULLAGH had for some months been very ill with insomnia and nervous prostration, and if we mistake not, under the care of Dr. HUGHES. We do not know whether our colleague at any time pronounced his patient insane, but at this distance it would seem appropriate to believe the opinion of the attending physician rather than that of a gentleman who seems to have exercised his constitutional right of free speech, with less regard for accuracy than for the ears in his immediate vicinity.

CORRESPONDENCE.

Medical Practice in Cuba.

PHILADELPHIA, Dec. 30, 1896.

To the Editor:—It may interest your readers to know how much a graduate of our medical schools has to pay in Cuba for the right to practice medicine.

A graduate of the University of Pennsylvania was practicing in a town of about 1,000 inhabitants, and in a municipal district of about 14,000.

To begin with, he had to pay \$494 for a license to practice. This was given after an examination in all the branches of the medical curriculum of the University of Havana. After such examination he had the option to take the degree from that University, but this would have cost him \$1,500. The license must be renewed every six years, without an examination, but with a renewal of the payment.

Beside this, the Doctor paid \$10.60 quarterly in professional taxes to the state, and \$2.50 half yearly to the city. He had further to provide himself with personal papers—a sort of ticket of leave system—which in the case of a practicing physician, cost \$10.60 annually.

Our country Doctor had to pay therefore the sum of \$140.45 annually. An examination of the Spanish Cuban budget will show how this money was expended. Our Doctor paid:

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|---|-----------|
| To general obligations, charges of the debt, etc. | \$ 66.95. |
| “ public worship and justice | 4.65. |
| “ army and navy. | 41.15. |
| “ treasury department. | 3.74. |
| “ interior department | 20.91. |
| “ public improvements, including education | 3.05. |

Total \$140.45.

It will be seen that our friend was paying 77 per cent. of his taxes toward securing two inestimable blessings: an army and navy for his own subjugation, and the payment of a debt contracted by Spain for the subjugation of the same worthy Doctor and his fellow natives.

JOHN GUITÉRAS, M.D.

Locum Tenens.

DECEMBER 26, 1896.

To the Editor:—Please answer the following question: Dr. A. was engaged to attend Mrs. Blank in confinement. When labor came on the husband telephoned for the Doctor, but received a reply from the residence that he was absent from town for the night. The husband then called Dr. B., who responded and delivered the woman. The next morning Dr. A. called on Dr. A. and told him that Mrs. Blank had been confined during his absence. Which physician should properly look after the case during the puerperium? The two physicians are the best of friends and enjoy the easiest professional intercourse.

Respectfully, M.D.

Answer: Dr. A. should attend the case. Dr. B. was simply *locum tenens*.

PUBLIC HEALTH.

Anti-depopulation Congress.—The subjects discussed at this congress, held in Paris in December, were: To increase the nuptialty and natality, protection of maternity, protection of infants and children of all ages and of adults, and means to secure the adoption of the resolutions of the congress.—*Progress Médical*, December 5.

Prevalence of Syphilis in Russia.—A congress for the study of prophylactic measures against syphilis will meet in Russia before long, and preliminary investigations are now being conducted on a large scale. According to the *Annales de Derm. et de Syph.*, this disease is assuming such proportions in that country that in certain regions the number of syphilitics is no longer counted, merely the non-syphilitics.

Cremation or Removal of Garbage by Railroad.—The committee appointed by the Paris Académie de Médecine to investigate this question, report in favor of the removal and distribution of the garbage of Paris by railroad, stating in conclusion that the 1,000,000 cubic meters of refuse spread on poor land would produce nearly 100,000 tons of cereals and meat, milk and wool from 40,000 to 50,000 head of animals. To incinerate this 1,000,000 tons would cost 3,500,000 francs, aside from all questions of hygiene. This conclusion is the result of eleven years' study of the subject.—*Bull.*, November 3.

Alcoholism and Crime.—The statistics of the Belgian prison at Louvain show once again the importance of alcohol as a factor in crime. Out of 2,826 criminals received there during 1874 to 1895, drunkenness at the time of the crime was proved in 12.4 per cent. of the total cases; in 40.7 per cent. of those under life sentence, and in 43.1 per cent. of those condemned to death. Habitual drunkenness was proved in 44.7 of the total number received; in 54.6 per cent. of those under life sentence, and in 60 per cent. of those condemned to death. The importance of alcohol as a factor in criminality thus increases with the gravity of the crime; not so much transient drunkenness as habitual alcoholism. The tabulated statistics are given in the *Journal de Méd. de Paris* of December 6.

Sanitary Regulations of Hungary.—The *Deutsche Med. Woch.* December 17, states that the sanitary regulations of Hungary are only surpassed by those of England, and in some particulars, are superior to the English. Medical care and assistance is assured to all by their systems of community doctors, and fines are enforced for neglect to summon a physician when a child under seven is ill, and also for administering opiates, etc., to children without a physician's prescription. It is one of the duties of the Minister of the Interior to send an expert to localities where the death rate is higher than usual, even when there is no epidemic, to ascertain and remedy the causes. All manufacturing establishments are compelled to keep appliances and dressings for wounds and to arrest hemorrhage constantly in readiness. Pensions are bestowed upon the widows and orphans of physicians, surgeons and nurses who die in the performance of their duty. Syphilitics are received into military hospitals, if there are none others convenient. The regulations in regard to epidemics, midwives, charlatanism, and sanitary homes for the poor are especially stringent. With it all, however, the death rate was 32.5 per thousand in 1890, and 29.4 in 1895. In Prussia the same years it was 21.5 and 21.8.

Immunizing Against Diphtheria.—The frequency of diphtheria contagion among the numbers of children received at the great Berlin hospital, the Charité, for other diseases, induced those in charge to experiment with the diphtheria immunizing antitoxin on a large scale. The results are published in the *Jahrbuch der Kind.* No. 1, in which it is announced that every child received into the hospital since the beginning of 1896, has received a preventive dose of 200 to 250 immunizing units, and

only one case of diphtheria has occurred among them during that time, and this case was the one child exempted from the immunizing on account of severe articular rheumatism. Previous to these attempts, one-half of the children who died in the measles ward, succumbed to croup. Since they have been immunized in this way, the mortality has been reduced one-half, and no cases of consecutive croup have appeared among the 99 cases received. Löhr states his conviction that the croup after measles is nothing but a secondary diphtheria, as he has always found diphtheria bacilli in the fibrinous patches. Similar favorable results were obtained in the scarlet fever pavilion. In spite of the fact that the 460 children received into the hospital were often in the gravest condition from other diseases, no threatening after-consequences were observed in any case. Exanthema appeared in 4.34 per cent. of the cases, but never anything more serious, even in the most advanced stages of other diseases. The *Deutsche Med. Woch.*, December 17, regards Löhr's communication as a distinct advance in this line, and urges all to read and ponder his report, which is sure to overcome the prejudices still held by many against this life-saving measure.

The Stamping-out of Typhoid at Wheeling, W. Va.—Confirmation of the good news that had reached us through other channels of the improved conditions at Wheeling, is well set forth in an article by Dr. C. F. Ulrich, in the *Dietetic Gazette*, December. The writer accords to the late Dr. J. E. Reeves an important part in the fight for a purer water supply that was begun about twenty years ago, when typhoid fever had a prevalence almost epidemic in gravity. In his first year's practice, the writer had in the same month, twenty-two cases of fever within two blocks' radius of his office. And now behold the difference; he has not had a case for two years and over! There was a time when he and his fellow physicians had more cases of fever than of all the other serious diseases "put together." From 1873 to 1893 there was an average annual mortality by typhoid of 47. In 1894, just after the opening of an improved water supply, the typhoid deaths were 16; in 1895, 10; and in nine months of 1896, 16. The first public result of the agitation by Dr. Reeves and others was the establishment of a crematory for the destruction of garbage and night soil. Next, the water plant was moved to a point higher up the Ohio River, a mile above the point of discharge of the Wheeling sewers. This change was effected and the new pumps set in motion in January, 1894. This improvement is not to be regarded as an ideal reform, since there are many cities and towns on the river above Wheeling that pour fourth their sewage into that stream. Dr. Ulrich continues as follows: "But there is a sort of purification taking place in the water as it flows down; the sediment being deposited in the bottom and sides of the stream, carrying with it a large proportion of the malignant bacteria that are entangled with the solid material of the water; whereas the water that flows past the upper end of the city as far as Eighth Street, receiving the outpourings of the sewers and surface-drainage of the First Ward, could not possibly be thus purified. This territory has in it the old hospital, and this, until a few years ago, was the only hospital the city possessed. Within five or six years past another public hospital and three private institutions of that character have been established in the city, so located, that even before the removal of the pumping-station, their waste material would not have been within reach of the intake of the pumps. Now we can make a comparison between the state of things then and now. Then we had the garbage dumped into the streets and alleys, the privy-vaults overflowing, or their contents taken out and emptied into the river; all the filth from the dwellings, stables and out-houses of one-eighth of the city, including the Wheeling Hospital, which then did all the work of the city, washed into the river and immediately pumped into the reservoir, whence it was distributed to all the dwellings as a pleasant beverage. Now, we have

the garbage and the human excreta destroyed by fire, the intake of the water-works located a mile above the upper end of the city, fifteen miles below the next town on our side of the river, and nine miles below the nearest village on the other side. Then, nobody paid any attention to the sanitary condition of the water, fearlessly drinking it as it issued from the hydrant. Now, many of our families possess filters in their dwellings; others use artificial ice, manufactured from distilled water, melting it as required for use. Again, others, who can not afford these luxuries, boil a sufficient quantity of water every morning to last for the day."

Composition of two Deposits in Water Pipes.—In the *Analyst*, July, Dr. Voelcker, before the Society of Public Analysts of London, reported, first, a case showing how the action of a soft water on galvanized iron pipe may give rise to serious results. We had lately occasion to examine a deposit which had formed in a pipe connected with the hot water apparatus of a private house in the country. The pipe in question was completely blocked up with a white deposit, and the owner of the house was very disappointed to find that the water which we had previously reported to be a very soft and pure one, and suitable for general domestic use had, after a comparatively short time, given rise to a deposit in the hot water pipes. The owner was under the impression that the deposit was due to lime. Upon analysing the material we found that it contained no lime, but consisted almost entirely of a basic carbonate of zinc, together with oxid of zinc. On inquiry we found that the water was lifted by a ram to the height of 300 feet, along about half a mile of galvanized iron pipes. These appear to have been very rapidly attacked by the water, the zinc being dissolved and deposited in the pipes at those points where the water was very hot, and also in the boiler and hot water cylinder. Dr. Voelcker said that upon first inspecting the pipe in question, he naturally thought that the deposit was of the ordinary nature, viz., carbonate of lime. His brother (Mr. E. W. Voelcker), however, noticed that it was particularly soft; this led to a further examination of the deposit, when it was found that there was no lime at all in it, but that it consisted mainly of carbonate of zinc. On referring back to the analysis of the water, which had been made some time previously, it was found that the water was distinctly soft, it containing only about six grains of total solids per gallon. The portions of the pipes upon which the deposit had mostly formed were those nearest the boiler. The deposit contained something like 64 per cent. of basic carbonate, and some excess of oxid of zinc, which might have been due to change in the basic carbonate consequent on the heating. The chlorine amounted to about one grain per gallon. As regarded the composition of the carbonate, there certainly was a large quantity of oxid of zinc present in the deposit, but ordinary carbonate of zinc would, without doubt, have been decomposed by the high temperature and pressure to which the deposit had in all probability been subjected. The water was slightly acid. It was taken from a Welsh mountain stream, and contained very little organic matter. The oxygen absorbed was a mere trifle, and the water was not colored like a peaty water would be. The second instance shows the action upon iron of a very hard water containing a good deal of sulphate of lime and organic matter. The well water in question contained over 40 grains per gallon of total solids. It was noticed that on the pump-rods in the well a black scale was formed, and in the stand-pipe there was a considerable amount of deposit. The analysis of the scale and of the deposit revealed the presence of a notable quantity of free sulphur. In the deposit in the stand-pipe the free sulphur amounted to over five per cent. This probably is to be accounted for by the action of the organic matter on the sulphates in the water, sulphureted hydrogen being produced and then absorbed by the hydrated oxid of iron formed by the rusting of the iron pipes, while the subsequent oxidation resulted in the liberation of sulphur, the action being the same as takes place when the oxid from gas-purifiers is exposed to the air.

NECROLOGY.

William H. Pancoast, M.D.

The distinguished surgeon and physician, William H. Pancoast, died at his residence in Philadelphia, January 5, after an illness of a few days. He was a son of Dr. Joseph Pancoast, professor of anatomy in Jefferson Medical College, and was born in Philadelphia, October, 1835. He completed his collegiate education at Haverford College, Philadelphia, and was graduated with the degree of B.A. at the age of 18, subsequently receiving the degree of M.A. from the same institution. He pursued his medical studies at Jefferson Medical College and was graduated from this institution in 1856. Two and a half years following were spent in Europe, visiting the great hospitals of London, Edinburgh, Paris, Vienna, Berlin, etc., and in the pursuit of his profession and in the study of special courses. While in Paris he was a special student of Civiale, the distinguished French surgeon. He returned to Philadelphia where he commenced a general practice, but devoting himself chiefly to surgery, also to private teaching and anatomy. He was a member of the Academy of Natural Sciences of Philadelphia; fellow of the College of Physicians of Philadelphia; member of the Philadelphia County Medical Society, of which he was president in 1869; permanent member of the Pennsylvania State Medical Society, of which he was vice-president in 1870; of the AMERICAN MEDICAL ASSOCIATION, etc. His contributions to medical literature consist of articles written for various medical journals. He published a report of the surgical anatomy of the band which united the Siamese twins. He was elected visiting surgeon to the Charity Hospital, Philadelphia, in 1859—a position which he held for ten years, and during which he established a large surgical clinic. Upon his resigning that position he was elected consulting physician and placed upon the board of trustees. In 1862 he was appointed demonstrator of anatomy of the Jefferson Medical College and held that position for twelve years; was appointed lecturer on surgical anatomy in the summer school. In 1866 he was elected one of the visiting surgeons to the Philadelphia Hospital. During the absence of Professor Joseph Pancoast in Europe in 1867 and 1868 he was appointed adjunct professor of anatomy and in that season lecturing as demonstrator of anatomy, teaching operative surgery, holding surgical clinics at the Philadelphia Hospital and at the Jefferson Medical College. In 1873 and 1874 he served a second time as adjunct professor of anatomy in the Jefferson Medical College, aiding his father; and in the spring of 1874, on the resignation of his father, he was elected professor of general descriptive and surgical anatomy of that institution. During the War of the Rebellion he was appointed surgeon-in-chief and second officer in charge of the Sixth and Master Streets Military Hospital, Philadelphia; and for volunteering surgical services in the field upon three occasions during the war he was elected a member of the Loyal Legion. He was one of the founders in 1887 and professor of anatomy and clinical surgery in the Medico-Chirurgical College of Philadelphia. He was president of the Section on Anatomy of the Ninth International Medical Congress. His home was the center of hospitality and no medical gathering was quite complete without the presence of Professor Pancoast. Socially he was one of the most genial of mankind, and he will be greatly missed by the members of the AMERICAN MEDICAL ASSOCIATION, a majority of whom had the pleasure of his personal acquaintance.

Charles Frick, M.D.

BALTIMORE, Jan. 2, 1897.

To the Editor:—I send a slight tribute to the memory of Prof. Charles Frick, to whom a memorial room and library were dedicated here on the 10th ult. Professor Frick held the chair of materia medica in the University of Maryland and

died March 25, 1860, from diphtheria contracted in an attempt to save the life of a poor negro girl by tracheotomy. His patient recovered by the loss of his own life after tracheotomy performed by Professor Milbenberger. Professor Frick was unquestionably the ablest and most original physician whom Baltimore has ever given to the medical profession. Prof. S. D. Gross gave an excellent memoir of him in his "Lives of Eminent American Physicians." Yours respectfully,

EUGENE F. CORDELL, M.D.

CHARLES FRICK, M.D.

Though time oft mantle of oblivion throws
O'er lives that in brightest lustre seem'd to close,
It has not yet effaced the memories thick
That cling about the honor'd name of Frick.
Him nature form'd in gentlest, manliest mold,
Unselfish, patient, modest, yet large-soul'd,
And amply gifted with those powers rare
That mark the man of genius everywhere.
Him nature taught her secrets to explore,
To penetrate disease's inmost core,
And in the crimson current's heated tide
To trace the paths where fevers lurk and hide,
To carve and clear away by methods new,
To analyse, to measure, gauge, and view
With sharpest glass, cast, pigment, granule test,
And over cell and fiber hold inquest;
Reaction to determine and to sift
The ashes of life's wear and tear for golden drift;
Naught to take on faith but all things to try
In the crucible of his own alchemy;
Authority duly to respect but thrust
From musty shelves the antiquated dust;
To grasp the essence of a thing forsooth,
And let in grateful light upon the truth.
Such was the man—his work; faithful in all
And brave, 'till came the fatal duty's call
And—ere into full noon the morn of life
Yet had ripen'd—cut short his noble strife.
Like some young lusty oak whose head doth cleave
The sky, far o'er the grove, where zephyrs heave
A purer breath, and the great king of day
Emits his brightest, first and latest ray;
When storms arise and darkness rules the air—
Save for the forked lightning's angry glare—
His ample bosom rends the bolt—although
Safe are his humble comrades far below.
These glorious lives, they are *our* heritage,
Friend, hero, benefactor, martyr, sage;
And though to them the world is so unjust,
Nor craves for them their due—memorial bust,
Nor gilds their mem'ries with immortal fame,
Such as he who for his country dies may claim,
No nobler deeds the page of history bears,
Nor lives the man who nobler does and dares.
No matter though there be danger and death,
No matter though it call for one's last breath,
May those be always found dispos'd and quick,
To do, and if need be, to die like Charles Frick!

C. E. SEGER, M.D., of New Hackensack, Dutchess County, N. Y., one of the best known physicians of the Hudson Valley, died at his home in that village December 10, after an illness of two weeks of typhoid fever. He was 54 years old. He was an alumnus of the Albany Medical College, of the class of 1863. He was health officer of the town in which he lived.

JAMES B. GILBERT, M.D., of New York city died December 9. He was born in Gilbertsville, N. Y., in 1852; was graduated from Phillips Academy, Andover, Mass., in the class of 1870, and from the medical department of the University of the City of New York in 1873. After two years in the General Hospital in Vienna he returned to that city to practice general medicine.

THEODORE GEORGE WORMLEY, M.D., of Philadelphia, died January 3, aged 70 years. His death was due to gastritis. He was born in Cumberland County, Pennsylvania. He attended Dickinson College and in 1849 graduated from the Philadelphia College of Medicine. In 1850 he went to Columbus, Ohio, and two years later he was appointed professor of chemistry and the natural sciences in Capital University, Columbus, which

position he held until 1865. While in Columbus in 1854 he was made professor of chemistry and toxicology in Starling Medical College. This he held until 1877, when he was elected to the same professorship in the University of Pennsylvania, which he occupied until his death. For eight years Professor Wormley was State gas commissioner of Ohio, and was State chemist of the Ohio geological survey from 1869 to 1874. Professor Wormley was a member of numerous scientific bodies and was a frequent contributor to scientific journals.

FRANK OBERHOLT, M.D., of Harlan, Iowa, December 9.—L. A. Lagle, M.D., of Tuscola, Ill., December 9.—J. S. Serrin, M.D., of Indianapolis, December 13, aged 65.—J. D. Pollock, M.D., of Aurora, Ill., December 14, aged 86.—S. W. Jones, M.D., of Leavenworth, Kas., December 16.—Gustavus B. Taylor, M.D., of Owensboro, Ky., December 1.—John S. Blankenship, M.D., of Rushville, Ill., December 2.—W. H. Hayman, M.D., of Chicago, December 2. He graduated from Rush Medical College in 1886.—John C. Hall, M.D., of Medical Lake, Wis., November 29, aged 75.—Walter H. Leighton, M.D., of Togus, Me., November 30.—W. M. Cochran, M.D., of Butler, Ohio, November 30, aged 33.—J. M. Rainey, M.D., of Nashville, Tenn., December 10.—K. A. Bushnell, M.D., of Little Falls, N. Y., December 24, aged 40.—Charles G. Anderson, M.D., of Belmont, N. Y., November 26, aged 62.—William Wallace, M.D., of Brooklyn, N. Y., December 23, aged 61. He was born in Ireland and was graduated from the Royal College of Surgeons in 1856 and the Royal College of Physicians in 1860. He was acting assistant surgeon in the royal navy during the Russian War and was on the staff of the Royal Infirmary and Maternity. He came to this country in 1864 and began the practice of medicine in Brooklyn.

BOOK NOTICES.

An Autumn Singer. By GEORGE M. GOULD, A.M., M.D. Philadelphia: J. B. Lippincott Company, 1897.

Those who know Dr. Gould only as a lexicographer, a leader writer, a metaphysician, or sociologist, will have a surprise in store for them when they view him as a poet.

In his prose writings we seldom see his sympathetic side. He writes prose to correct some abuse. There are so many abuses to correct, and so few with the courage to correct them!

Think of a grave physician skilled in comparative anatomy, writing like this:

"A bit of sunshine, warmed by spring,
A heart of song, a fluff of feather,
A wing put there, and here a wing,
A breath blown in—all kissed together
With sweet low croon of half-heard words,
This was the way Love made his birds!"

This is rather romantic embryology, but sentiment rarely runs smoothly with science, and the verse is sweet nevertheless.

Here speaks the philosopher:

THE SOUL'S MASQUE.

The soul is like the man in visored steel
Whose face by strange mysterious decree
He dare reveal to none, none live and see.
The body is the masque whose folds conceal,
More absolute than iron's locked anneal,
Soul-prisoner hid within, whate'er the plea,
Self's secret deep is kept more utterly
Than were it doom of death should we reveal.

And hence our piteous, awful loneliness!
Alone we live and die, and can not tell
The truth although the secret kill; unshown
Soul's face to dearest friend! More merciless,
Fate makes us mysteries to ourselves—in cell
Of flesh unknown of all, by self unknown!

Here speaks the lover to the "soft insistent breeze."

ABSENCE.

"Go, go, and kiss her hair,
Winds that run and woo;
Kiss her eyes, wonder fair,
Say her lover's true.

O, homing wind, o'er all the far way glide,
And tell her who waits at the window side
The curtain fluttering beg her open free
The blinds, her arms, her heart, to us, to me.

Blow, blow and stronger blow,
Wind from out the south;
Kiss her eyes, and below—
Tenderly—her mouth."

One of the prettiest things in the book is the following:

JUNE.

"As soft as silence is the moon;
The leaves of every tree are stilled;
The trees are full of love and swoon
To joyous sleep, with dreams fulfilled,
While high and faint the half-heard croon
And lullaby of day, distilled
To monotone of ending tune,
Drops softly down to dream unthrilled
Of aught except the bliss and boon
Of Heaven that broods, and God who willed
That earth beloved should be of June."

In the brief space of a book notice we can do no more than reprint the foregoing extracts as samples of the goodly contents of Dr. Gould's newest book, and to compliment the author on the production of a work which abounds in the true spirit of poesy, which with tender sympathetic touch reveals nature itself. Whatever may be the conclusion of the literary critic concerning the versification, none can doubt the sincerity, the wisdom, and the virility of the sentiment underlying the verses. We hope that Dr. Gould will not rest here, but continue to sing as taught by the Muse, who according to Homer "loves the harmonious race" of poets, notwithstanding the advice of Horace, that a new poet should keep his manuscript in his portfolio nine years before publishing.

Eating and Drinking. The alkalinity of the blood, the test of food and drink in health and disease. By ALBERT HARRIS Hov, M.D. Cl. 8vo, pp. 303. Price \$1.50. Chicago: A. C. McClurg and Company.

This book is a well written monograph on dietetics from a rather narrow standpoint, but an entirely sound one. It contains an introduction and six chapters as follows:

I. Air, water and food, and the relation of vegetable to animal life. II. How food is digested. III. The effect of different kinds of food on the blood. IV. The food of primordial man. The classification of fruits, and the proper and improper use of them. V. Drinks, harmless and harmful. VI. Food and its effects on the alkalinity of the blood. The work is intended more for physicians than for the general public.

The author follows Haig closely in his belief in the universality of the uric acid diseases and the necessity for the administration of alkalies. He opposes the use of fruit in all such conditions and goes to the verge of radicalism against what he calls artificial fruits.

Nevertheless, the book is highly instructive, and well worthy a place in the medical library. The author shows a thorough familiarity with his subject.

The Diseases of the Male Urethra. By R. W. STEWART, M.D., M.R.C.S. Pp. 221. Illustrated. New York: William Wood and Company. 1896.

This little book is one of the "Medical Practitioner's Library" series, and bound uniformly with the other volumes of the series.

"With the advent of improved instruments for intra-urethral inspection, together with the general advancement in our knowledge of bacteriologic and pathologic subjects, a new era in urethral pathology has been ushered in and many radical advances have been made not only in the pathology but also in the treatment of urethral diseases." The author is conservative in the main and his advice is sound. We entirely agree with him in regard to the letting alone of strictures of large caliber.

The chapter on epididymitis is defective in diagnosis; the author assumes apparently that all cases of epididymitis are due to invasion of the gonococcus. He nowhere mentions that very many cases of tubercular epididymitis exist and that in every case of tubercular testicle the first signs have been seen in the epididymis, and that such cases being frequently accompanied with discharge through the urethra, are too often mistaken for gleet. The book is an excellent one and we cheerfully commend it.

ASSOCIATION NEWS.

Section on Physiology and Dietetics.—It is the earnest desire on the part of the managing officers of this Section that its work at the coming meeting in Philadelphia shall be attended with success.

The field in which subjects for contributions may be chosen will, on a little reflection, be seen to be large and varied.

It is therefore hoped that the members of the AMERICAN MEDICAL ASSOCIATION who are expecting to attend this semi-centennial meeting will be free to make contributions to this Section, and that they will send at an early date the titles of their papers to my address or to that of Dr. E. Cutter, the Secretary, Equitable Building, New York City.

AUGUSTUS P. CLARKE, M.D., Chairman.

825 Massachusetts Avenue, Cambridge, Mass.

SOCIETY NEWS.

The Congress of Internal Medicine to be held at Berlin next June, will discuss chronic articular rheumatism, address by Bäumler; epilepsy, Unverricht, and morbus Basedowii, Eulenberg.

The Pan-American Congress.—Between four and five hundred members attended the congress and enjoyed the hospitality of the City of Mexico and its beautiful scenery while participating in the great scientific meeting, which draws the ties between the great nations of the two Americas closer together. The wonderful energy and progress of Mexico in the last decade in scientific matters was duly acknowledged, and her enlightened government congratulated. An international committee of public health suggested by Dr. Trader was voted and organized *ex professo*, its principal duty at present to draw up an international sanitary code. In the Section on Medicine, after the address on serotherapy by Dr. Lavista, various papers were read on malaria and its treatment. The physicians of the City of Mexico declared that no cases were known there except those contracted elsewhere. Dr. Bedford Brown's address is given in full in the JOURNAL, Vol. xxvii, p. 1319. Dr. Terrés (Mexico) observed that those unaccustomed to such tasks found it difficult to distinguish the Laveran plasmodium in the blood, and that it was sufficient for all practical purposes to note the coffee-colored pigment and the granulations, either free or inclosed in spherical bodies. He added that the quinin should be administered as soon as the diagnosis is established, as he considers it an error to wait to give it previous to the recurrence. He has never observed glycosuria consecutive to malarial attacks. Dr. Bibb stated that the semilunar forms of Laveran's parasite were characteristic of pernicious malaria, but Dr. Terrés denied this, having found them frequently in the course of his 500 examinations of the blood of malarial subjects, and never corresponding to malignant types. Physicians of Mexico and Cuba denied the existence of latent forms of paludism, as the characteristic elements are missing in the blood in what are known as the latent forms. Coronado (Havana) urged the establishment of an American pyretology, which is entirely distinct from the European pyretology. Tuberculosis was also studied from various points of view, Dr. Crook (New York) recommended creosote as very successful in his experience. He gives 25 to 60 drops in twenty-four hours, combined with cod liver oil, and the germs disappear from the sputa as the treatment progresses. Altamirano (Mexico) considers intestinal tuberculosis a contraindication to the use of creosote, and as it is painful administered hypodermically he substitutes guaiacol for it. Terrés always administers the creosote by the rectum, combined with cod liver oil and the yolks of eggs. Its beneficial action is most evident in this way. Dr. Holmes (Denver) described his method of early diagnosis of tuberculosis before any of the typical symptoms appear, by microscopic examination of the leucocytes, which show the characteristic disorganization of the tissues in this disease by their altered shape and certain special micro-chemic spots. The fact was mentioned that tuberculosis in the Mexican mesa was essentially a long,

chronic disease, extending over fifteen to thirty years and never acute. The especial benignity of pulmonary affections in San Diego, Guanajuato, was the subject of an address by Dr. Cano. Yellow fever was also discussed by experts, and the value of investigation of the toxicity of the urine for the prognosis established. Dr. Pepper addressed the congress on the subject of the cathode ray in thoracic aneurysm, and presented the fine set of photographs he exhibited to the N. School of Medicine. He dwelt upon the great advantage to be derived from the cathode photographs in the cases of aneurysm, especially when all symptoms point to an aneurysm, and still the photograph shows the organ intact. Dr. Llambias of the Argentine Republic describes the anatomic causes of ruptures of the aorta, which he ascribes to previous alteration in the arterial walls, and not to traumatism. Dr. Debayle of Nicaragua described his method of saturating the tissues with antiseptics by immersing the part or the whole body in a continuous bath, which has given him very satisfactory results, in gangrene especially. The amount of antiseptics employed must be less than the toxic dose, and the state of the patient carefully watched, especially the renal excretions, which must be examined for traces of the antiseptic fluid. The congress was also requested to enlighten an individual presented by Dr. Ortiz of Morelos in regard to his or her sex, a peculiar case of pseudo hermaphroditism, who left the hall a man. The section adjourned after papers had been read by Dr. Kellogg on the treatment of chronic diseases by diet and exercise, by Dr. Curtin of Philadelphia on the importance of heredity in the etiology of Graves' disease, by Dr. Debayle of Nicaragua on tricuspid insufficiency of reflex gastro-intestinal origin, mentioning the diagnostic importance of the accentuation of the second sound and of the right "galloping sound," and by others. The congress will convene next at Caracas.—*Rivista Quincenal*, December 1.

MISCELLANY.

The First Hydrotherapists, and the most extreme and successful in enforcing their views upon mankind, were Mohammed and Moses, who even incorporated hydrotherapy in their religions, states the December *Janus*.

The Parthenon at Athens, which has been in danger of falling into total ruin for some years owing to the action of the recent earthquakes, is now being repaired by a commission acting under the authority of the Greek government.

Serotherapy of Smallpox.—O Brazil *Medico* states that the President of the Republic has summoned Dr. Caldas to Rio Janeiro to investigate the results of his application of the serotherapeutic processes to smallpox, with which he claims to have been very successful.

Congenital Anonychia.—Jacob of Berlin describes a case of three children in one family, all otherwise healthy and well developed, and of robust parentage, who have no traces of nails on either fingers or toes, except on one finger in one girl.—*Deutsche Med. Woch.*, December 10.

Dry or Mummy Preparations.—Bruns recently exhibited a valuable set of limbs, especially adapted for educational purposes, which he had prepared by soaking them in undiluted alcohol for a quarter of a year, and then merely hanging them up in the air to dry for another three months. By renewing the alcohol frequently the length of time they are soaked can be shortened.

Experimental Study of Thoracic Surgery.—Quenu and Longuet have secured interesting results by compelling animals to breathe with their heads in a balloon filled with compressed air at a high pressure and then opening a flap in their thorax. The lung bulged out, pink and convex, still breathing regularly. It was easy to palpate the entire organ by slipping the hand inside the opening. The respiration remained normal, without asphyxia or syncope, and the lung seemed to effect its own hemostasis in the hernia when it was incised.—*Bulletin Médical*, December 5.

Paradoxical Action of Lavage of the Blood.—Carrion and Hallion have been studying the diuresis produced by injections of

NaCl, 6 to 9 grams per 1000. They assert that numerous tests before, during and after the injections have proved that when the urinary secretion is most abundant the elimination of urinary substances, aside from the NaCl, diminishes to a very small proportion. The chlorid of sodium seems to take the place of the other elements.—*Bulletin Médical*, December 5.

Male versus Female Clerks.—According to English statistics, the number of days lost in their work by the government employes on account of slight indispositions, was 154 by the women to 100 by the men. In France the proportion is even larger, being 174 by the women to 100 by the men.

A Vast Pill Business.—We note an item among other interesting bits of news transmitted by the news gatherers of the daily press, that the business of a certain patent-pill nostrum in New York city, was sold to an English syndicate for \$2,000,000! The former manager of this pill factory, we are informed, is to be retained for five years by the new company at an annual salary of \$50,000! "*O dura Messorum ilia*."

A Surgeon on the War Path.—Lepelletier had occasion recently to address the graduates of the military school at St. Cyr, France, and called upon them "to arise in their might and as surgeons of the honor of France, perform *rhinoplasty* upon the territory of their fatherland, and restore the flap of living flesh so brutally severed by the conquering Germans."

Tuberculosis of the Inferior Maxillary Bone.—In all the cases treated in Czerny's clinic during the last twelve years there have only been eight undoubted cases of tuberculous affections of the lower jaw. As medical treatment proved ineffective, he advises prompt resection as soon as the diagnosis is certain, in young persons, and in elderly patients, cleaning out the cavity, followed by resection if necessary later.—*Centralbl. f. Chir.*, December 12.

Permanently Slow Pulse.—Brissaud describes at length in the *Presse Méd.* of November 21, a peculiar case of facial paralysis with genital and prostatic lesions of probable tuberculous etiology, which establishes once more the exclusively bulbar origin of a morbid permanently slow pulse. He mentions the fact that Napoleon had only 42 pulsations to the minute, but this was normal and does not come under the head of bradysphyxia, as the morbid condition is called.

Blatta Orientalis in Medicine.—At a certain London hospital a patient was given some extract of malt with instruction to take a teaspoonful twice a day, commencing on the following morning, and to report himself at the end of a fortnight. At the expiration of this time he returned and said to the physician, "Please, sir, am I to go on taking them insects you gave me?" "Insects," said the physician, "what insects?" "Why, them cockroaches, sir. I've taken one night and morning in a teaspoonful of the sticky stuff." Inquiry elicited that the cockroaches had not been dispensed, but had got into the jar during the first night of its stay in the patient's house.

Calliano's Method of Artificial Respiration.—Calliano has simplified the familiar Sylvester method of artificial respiration, which requires two persons to accomplish and is liable to produce injuries in the hands of the unskillful, by tying the hands of the asphyxiated person together behind his head with a handkerchief. This expands the chest and produces the inspiration of the Sylvester method. All that is necessary now is to expel the air by compressing rhythmically the thorax with the two hands, eighteen to twenty times a minute, and thus alternate expiration with the mechanically produced inspiration.—*Gazzetta d. Osp. e d. Clin.*, No. 98.

The Thomson Case. A Miss Thomson died recently in the private office of Dr. Boisleux of Paris, in the course of an operation, and her lover, Mr. Mansuy, committed suicide when the news reached him. The authorities refused to issue a burial

permit and examination of some letters raised the suspicion of a criminal abortion. Dr. Boisleux and the physician who accompanied Miss Thomson to his office and assisted at the operation, were arrested and are now in prison, while a committee of experts, including Professor Brouardel, the dean of the Faculté, are investigating the case. The first lesson to be drawn from it in the meanwhile, according to the *Journal de Paris*, is never to perform any important gynecologic operations in one's private office.

No Inquest Authorized.—The supreme court of Georgia declares, in the case of Meads, Coroner, v. Dougherty County, July 13, 1896, that there is no law in that State which either requires or authorizes a coroner to hold an inquest over "a lot of bones, bleached by time," constituting parts of a human skeleton casually found upon the bank of a creek, it being obviously impossible to ascertain who the deceased was, how long since death ensued, or in what manner it was caused. Such bones do not constitute "a dead body" within the meaning of the act of Dec. 18, 1893, relating to coroners' inquests. And the interment of such bones in a "soap box, without expense to any one," the court further holds, does not entitle a coroner to the fee of \$15 prescribed in section 3701 of the Code "for furnishing coffin and burial expenses."

Quack Sentenced.—An alleged "homeopathic" practitioner has been carrying on an immense business in Germany, dispensing drugs by mail all over Europe, claiming to cure coughs, stomach and liver troubles, etc., with a host of employees who prepared the medicines in the rear rooms of his fine pharmacy, which he kept open as a blind. He has been condemned to four years and a half in prison, with a large fine and the suspension of his civil rights for five years. His advertising bills amounted to over 160,000 marks annually. Another celebrity of the kind is still prospering, the "Miracle Doctor" Ast, as we notice that he has just purchased an estate, for 225,000 marks, which confers several knightly privileges upon its owner in the local legislature.—*Deutsche Med. Woch.*, December 12.

Dyspepsia in the Etiology of Chlorosis.—The frequency of dyspeptic disturbances in chlorosis is familiar to all, but Mongour states that they are the actual cause, and that appropriate treatment, milk diet, daily lavage of the stomach, etc., without the specific iron medication will cure the chlorosis with no further treatment. If the patients resume their old habits of life and diet, the chlorosis may reappear, but appropriate stomach treatment will conquer it again, while the "usual martial treatment of chlorosis entails the complete destruction of the glandular apparatus of the stomach and an irremediable chronic lesion." His arguments as set forth in the November *Archives Clin. de Bordeaux*, with numerous observations, are certainly worthy of consideration.

Must Show Amount Expended.—In the personal injury case of Fry v. Hillan, where \$350 was claimed for drugs and medical attendance, there was no proof as to the amount so expended, only testimony of the plaintiff that he had employed doctors for a long time. Under these circumstances, the court of civic appeals of Texas holds, October 14, 1896, that it was error to instruct the jury that they might find for the amount expended for medical attention and drugs, as the jury might conclude from it that they were authorized to allow what they saw proper without any testimony as to the amount, whereas that is not true.

Annual Distribution of Prizes at the Paris Académie de Médecine.—Beside the Saint Paul prize of 25,000 francs divided between Roux and Bebring, over \$11,000 were distributed among the successful competitors, most of them French professors, internes and students. Many of the prizes were divided among two or more, and large numbers received honorable mention for their contributions. We notice among these the names of S. A.

Knopf of New York, Claus of Antwerp, Ehlers of Copenhagen, Lambros of Athens, Stricht of Ghent and Arthus of Freiburg. Other foreigners honored were Brun of Beyrouth, several physicians in the colonies, M. and Mad. Christiani, M.D., of Geneva; Theremin of St. Petersburg, Duvigneau of Cochinchina, Matignon of Peking and Felix of Brussels. The largest undivided prize was awarded to Gilles de la Tourette, 3,000 francs.

A Contribution to the Question of Cheap Living.—An article in the *Deutsche Med. Woch.* of December 3 describes the methods of preparing the family meal which have prevailed for three generations in certain Thuringian towns to the satisfaction of all. Each family has one or more earthen crocks and these are filled with materials for the family dinner and taken to the baker, who places them in his oven after he has baked his bread for the day. The heat is sufficient to cook the meat, potatoes, vegetables, etc., in the crock slowly and evenly, so that when the family call for the crock on their way home from church or work, they have an appetizing and wholesome hot dinner ready for them at the trifling expense of 3 pfennigs, the baker's charge. As every family does the same, there is nothing derogatory in the practice. An English friend informs us that the same practice is current in Cumberland to a certain extent and that she has a most vivid remembrance of the delicious odors that proceeded from the crocks the millhands were carrying home on their return from work as she passed them on her way from school.

Bravery of Military Surgeons in Cuba.—From the *Revista de Sanidad Militar* of Nov. 15, 1896, we learn that on August 21 last a board of army medical officers was convened in Havana, Cuba, to consider the various acts of heroism officially reported as having been performed during the present war in Cuba, by army medical officers, and to determine to whom should be adjudged a purse which had been offered by a retired medical officer, D. Eduardo Pérez de la Fanosa, now residing in Madrid, Spain, to the medical officer who had most distinguished himself in the line of duty on the field of battle. In offering the purse the donor stated that while it was perhaps of small intrinsic value it represented his affectionate regard for the corps to which he had for so long belonged. The secretary of the board read reports from all parts of the island which showed there was no lack of praiseworthy acts to the credit of the army medical department. Many of these reports related to deeds of which members of the board had personal knowledge. After due consideration the board reached the unanimous opinion that the deeds which should be singled out for this special mark of commendation were those performed July 5, 1896, by Dr. Jerónimo Durán y Cottés. On that day the battalion of Antequera, 600 strong, Lieutenant Colonel Escudero commanding, encountered at Hato-Jicarica, Matanzas, a force of 3,000 insurgents under various leaders, among whom were Lacret and Clotilde Garcia. In the fight Dr. Durán, the medical officer of the battalion, was struck by a Mauser bullet while dismounting to attend a wounded man. The ball penetrated the center of the popliteal space and traversing the joint made its exit on the left side of the patella. The bleeding was so free that it was feared the popliteal artery was injured; but notwithstanding this, Dr. Durán proceeded with his work after applying his handkerchief as an extemporized tourniquet to restrain hemorrhage. He had the wounded brought to the place where he had been disabled and attended to them. Sixteen men were brought in. Among them were a soldier wounded in the abdomen, with protrusion of the intestine requiring reduction and suture of the abdominal wall; a case of hernia of the testicle requiring closure of the scrotum; a wound of the gluteal region from which the bullet had to be extracted, and a fracture of both bones of the leg, which was reduced and immobilized by splints of Mauser bayonets. After the fight

the Doctor started for Havana, but was unable to complete his railroad journey. He went into hospital at Matanzas, where he remained under treatment twenty days. The board appointed September 15 as the day on which the formal and public presentation to Dr. Durán would be made.

Louisville.

YEARLY HEALTH REPORT.—Health Officer White has just submitted his report for the year 1896, and it contains some interesting facts. The mortality report is as follows: Estimated population 211,100; total number of deaths, 3,206; white, 2,347; colored, 859. Annual death rate per 1,000 inhabitants, 15.1; average death rate, white (population 173,600) 13.5; colored (population 37,500) 22.9. Consumption caused 389 deaths, typhoid fever 96, pneumonia 251. There were 353 cases of diphtheria placarded with 72 deaths during the year, showing a mortality of slightly over 20 per cent.; 340 cases of scarlet fever were placarded with a mortality of 4.1; 1,383 vaults were cleaned during the year, 776 diseased cattle killed; 5,580 diseased cattle condemned and sent from the city; 2,457 cases were vaccinated. There were 304 more deaths during 1895 than during the past year. The number of deaths from typhoid fever alone is a fairly good method of estimating the health of the city. During 1895 there were 195 deaths from this cause, or 77 per 100,000 of the population, during 1896 there were 96 deaths from typhoid fever, or 45 per 100,000, a reduction of 37 per 100,000. This decrease in typhoid fever is attributed by the Health officer to the much improved sanitary condition of the city, which has been made possible by the numerous sanitary regulations which have originated in the health office and which the officer in charge has been enabled to enforce. Among these may be mentioned better sewer connections, which has been one of the chief objects of the department during the year; inspection of the milk; placarding the buildings in which there are infectious or contagious diseases, though typhoid fever is not included in the list of diseases to be placarded at present; enforcement of a sanitary nuisance ordinance; the flushing and thorough cleaning of the Water Company's reservoirs, the first time in eleven or more years; a vigilant supervision of the city well-water, frequent tests being made by careful analyses.

Dr. CHARLES GROVES was thrown from a buggy and in the fall, sustained a compound Pott's fracture of the right ankle, which may result in the loss of his foot, though there are hopes that this will not prove necessary.

CITY SUED.—A suit was brought recently against the city by the Nazareth Literary and Benevolent Association, for \$250, claimed to be due for services rendered by four sisters of charity at the Eruptive Hospital. These sisters were removed by the general council soon after its election and salaried nurses employed when necessary. Shortly after this the above organization brought suit for the sum named, and in the common pleas division of the court were adjudged the amount asked for. Soon after the city attorney entered a motion for a new trial, the existence of a contract being denied by him.

SPRING AND SUMMER SCHOOLS.—The Kentucky School of Medicine and the Hospital College of Medicine began their annual sessions on the first of January, both with large classes. The faculty of the former school instead of the regular lectures on New Year's day gave a reception to the students and their friends during the afternoon, which was largely attended. The Gray Street Infirmary, connected with the Hospital College has been completed in time for the opening of the session and will add very much to the teaching facilities of the school. Students entering the colleges this year must attend four courses of lectures before they can graduate.

PHYSICIANS' LICENSE.—When the bills for licensing physicians were presented some time ago (\$10 a year when the income is less than \$2,000; \$20 when between \$2,000 and \$5,000; \$40 when between \$5,000 and \$10,000 and \$100 when over

\$10,000), Dr. J. M. Mathews, President of the State Board of Health, on behalf of the physicians of the city, brought suit against the city and the Sinking Fund Commissioners, to prevent the collection of these licenses, on the ground that it was unconstitutional. Judge Toney on the 2d inst. in joint session handed down an opinion covering twenty-five pages of type-written matter, in which he decides in favor of the plaintiff and overrules the demurrer entered by the defendant at the time the suit was brought. The tax was originally imposed by the council on physicians, surgeons, architects, veterinary surgeons, chiropodists and civil engineers. The judge said in part as follows: "The first question that presents itself is: What is the real legal character of this tax? Certainly it is not a police regulation. If it was a police regulation the ordinance would be manifestly void, upon familiar principles of law. It is strictly a revenue ordinance, wholly disassociated from any purpose of police regulation. It is a tax not upon property, nor upon income, but upon the calling or profession of medicine or surgery. It is competent undoubtedly for the legislature, if it sees fit, to tax his income, which is a wholly different thing from the privilege which as a citizen he enjoys of trying to earn an income in his particular calling. Still the question under consideration admits the power of the State to restrict or prohibit the natural right of the citizen to follow his calling, business or occupation as a physician, unless and except upon payment of a privilege tax first be made. The right to earn a living or an income is not a grant from the State, nor from the city, but it is a natural and inalienable right, inherent in every man. It is not transferable nor subject to seizure, nor vendible under execution. In other words, it is not property, in any just or legal sense of the word. It antedates the formation of society or government, and is therefore a natural, absolute right. But the State has power, undoubtedly, for the purpose of revenue, to lay a restriction on this natural right and to prohibit the citizen from enjoying it until and except he pay, as a condition precedent, a license or privilege tax so to do. And the State has also the right and power to delegate to city, municipality, this branch of sovereignty, in fact raise revenue for the purpose of defraying the expenses of the municipal government. The character, extent, and scope of the delegated power of taxation distinctively and exclusively depends upon the language of the statute delegating such power. It is plain from the sections 3 and 40 of the ordinance that the license fee or privilege tax in dispute is not a tax on the income of the plaintiff: that is, a tax on the amount of money which he had earned in his profession the previous year, or which he may or may not earn in the year which the license is required to be taken out. He may decline to further practice his profession, in which event the city makes no demand whatever for what he had earned the year previous, and he would have to pay nothing for having practised his profession and having earned an income from it the year before. This may properly be termed a privilege tax on the privilege of earning a living by his particular profession." As to the proposition of the ordinance to grade the tax, the Judge says: "The palpable injustice and inequality of the classification is strikingly apparent in the first and fourth of said classes. One whose yearly business amounts to less than \$2,000 shall pay a yearly license of \$10. Is it equal or just that the physician or surgeon just commencing, and who perhaps the first year of his practice does not make \$100, shall pay the same license as one who has practised several years, whose business amounts to \$1,900? Is it equal or just that one whose yearly business amounts to \$10,000 shall pay the same amount as license as one whose yearly business amounts to \$50,000? Yet such is the justice, uniformity and equality of the personal classification of physician and surgeon sought to be established in section 3. If there is to be a personal classification, with a corresponding scale of license tax upon the right of physicians and surgeons to earn a livelihood in their profession, such classification and scale or graduation of license or privilege tax should be intrinsically uniform and just. Thus viewed, section 3 of the ordinance is not only unreasonable, but unequal and unjust, arbitrary and irrational."

Hospitals.

THE INFANTS' HOSPITAL on Randall's Island, N. Y., is to be investigated by the grand jury. During the last three years the annual death rate has averaged about 43 per cent. — Owing to a disagreement with the board of trustees of the New York Medical College and Hospital for Women, the staff and nurses

of this institution have resigned. — The New York Polyclinic Hospital was damaged by fire December 25. The patients were moved without loss of life. Loss about \$50,000.

THE PUBLIC SERVICES.

Army Changes. Official List of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from Dec. 26 to 31, 1896.

Major William C. Shannon, Surgeon (Ft. Custer, Mont.), leave of absence granted on surgeon's certificate of disability is extended three months on surgeon's certificate of disability.
Capt. William L. Kneidler, Asst. Surgeon (San Diego Bks., Cal.), leave of absence granted for seven days is extended twenty-three days.
Major William R. Hall, Surgeon, relieved from duty at Whipple Bks., Ariz., and ordered to Washington, D. C., for duty.
First Lieut. Irving W. Rand, Asst. Surgeon, relieved from duty at Ft. Clark, Texas, and ordered to Ft. Huachuca, Ariz., for duty.
First Lieut. Alexander S. Porter, Asst. Surgeon, relieved from duty at Ft. Huachuca, and ordered to Whipple Bks., Ariz.

Navy Changes. Changes in the Medical Corps of the U. S. Navy for two weeks ending Jan. 2, 1897.

P. A. Surgeon R. M. Kennedy, ordered to the naval hospital, Norfolk, Dec. 28.
Surgeon Charles T. Hibbett, ordered to the Norfolk navy yard, Dec. 22.
Surgeon N. McP. Ferebee, detached from the Norfolk navy yard and ordered to hold himself in readiness for sea.
Surgeon R. Whiting, detached from the "St. Mary's" and ordered before the retiring board at Washington Dec. 28, then placed on waiting orders.
P. A. Surgeon R. P. Crandall, detached from the naval hospital, New York, and ordered to the "St. Mary's."
Asst. Surgeon L. Morris, ordered to the "Essex."
P. A. Surgeon A. R. Wentworth, detached from naval hospital, Portsmouth, N. H., on relief, and ordered to the "Marblehead."
Surgeon E. H. Green, detached from the "Marblehead" on reporting of relief and ordered to naval dispensary at Washington, D. C.
P. A. Surgeon H. B. Fitts, ordered to naval hospital, Portsmouth, N. H.
Surgeon A. C. H. Russell, detached from the naval medical examining board, New York, on relief, and hold himself in readiness for the "Lancaster."
Surgeon J. M. Edgar, detached from the "Saratoga" and ordered to the "Vermont."
Surgeon H. Wells, detached from the "Vermont" on relief and ordered as member of naval examining board, New York.
P. A. Surgeon W. C. Braisted, detached from the "Columbia" and ordered to the naval hospital, Newport, R. I.

Change of Address.

Duncan, W. E., from Aberdeen, S. D., to 603 W. 63d St., Chicago, Ill.
Fortier, J. J., from Chicago, Ill., to West Superior, Wis.
Lockwood, W. D., from Eureka, S. D., to Rock Port, Mo.
McDaniel, E. D., from Milton, Fla., to Mobile, Ala.
Meauy, W. B., from 2602 Locust St. to 3907 W. Belle Place, St. Louis, Mo.
Monette, G. N., from 1620 Calliope St. to 1124 St. Charles St., New Orleans, La.
Oneal, Oren, from Wabash, Ind., to 291 Ontario St., Chicago, Ill.
Paine, H. M., from West Newton, Mass., to 69 N. Fo. syth St., Atlanta, Ga.
Whitman, C. H., from Mt. Pleasant Hotel to 529 S. Broadway, Los Angeles, Cal.

LETTERS RECEIVED

Adams, Ovid L., Shelbyville, Ind.; American Therapeutic Co., New York, N. Y.
Boehringer, C. F. & Soehne, New York, N. Y.; Butler, T. J., (2), Lockport, Ill.; Bunesch, A. B., Publishing Co., St. Louis, Mo.; Bacon, James, Philadelphia, Pa.; Bovinine Co., The, New York, N. Y.
Condon, W., Humphrey, Neb.; Carroll, Dr. Mrs. A. M., East Branch, Pa.; Chambers, J. H. & Co., St. Louis, Mo.; Castle, Wilmot & Co., Rochester, N. Y.; Cullen, C. W. & Son, Cullen P. O., Va.; Columbus Phaeton Co., Columbus, Ohio; Cook, G. F., Oxford, Ohio.
Dombrowski, J. P., Peoria, Ill.; Draper, J. B., Oswego, Kan.
Enochs, E. J., Jackson, Miss.; Eaton, Roy R., Lowell, Mich.
Fletcher, M. H., Cincinnati, Ohio; Flag, Chas. E. B., Fort Duchesne, Utah; Fasset, C. W., St. Louis, Mo.; Fortnightly Press Co., The, St. Louis, Mo.
Goss, E. L., Sheffield, Iowa; Gordan, W. S., Richmond, Va.; Globe Mfg. Co., Battle Creek, Mich.
Heppner, A. H., Brooklyn, N. Y.; Harvey Medical College, Chicago Ill.; Hay, E. C., Hot Springs, Ark.; Hummel, A. L., Adv. Agency, New York, N. Y., (2); Hilly, M. B., Chicago, Ill.; Helise, W. F. C., Chicago, Ill.
Ingals, E. Fletcher, Chicago, Ill.
Jelks, J. T., Hot Springs, Ark.; Jackson, H. A., Searsboro, Iowa; Jenkins, S. A., Zanesville, Ohio; Jegl, H. A., Arcadia, Wis.
Koch, Chas. & Co., New York, N. Y.; Koehl, Samuel & Co., New York, N. Y.; Keyes, T. B., Chicago, Ill.; Kennedy, Victor, Shelbyville, Ind.; Klebs, A. C., Citronelle, Ala.
Lapsley, R. M., Keokuk, Iowa; Latta, S. W., Philadelphia, Pa.; Lord & Thomas, Chicago, Ill.
Murphy, J. B., Chicago, Ill.; McShane, B. E., Hales Corners, Wis.; Moore, D. L., Columbus, Ohio; McClelland, C. B., Champaign, Ill.; Marchand, V. H., Habsstadt, Ind.; McBride, D. H. & Co., Chicago, Ill.; Melier Drug Co., St. Louis, Mo.; Merrick, M. B., Passaic, N. J.; Mitchell, W. F., Lancaster, Mo.; Morrison, Joseph B., Maryville, Mo.; Meiklejohn, Julia, Elgin, Ill.
Neilson, T. B., Philadelphia, Pa.; Nicholson, W. A., Franklin, Pa.
Ogden, H. V., Milwaukee, Wis.
Peacock Chemical Co., St. Louis, Mo.; Parmele, C. R. Co., New York, N. Y.; Perkins, Louis J., Pendleton, Ore.
Rigand & Chapoteaut, New York, N. Y.; Riley, W. H., Boulder, Colo.
Steiger, E. & Co., New York, N. Y.; Sullivan, G. M., La Belle, Mo.; Schleffelin & Co., New York, N. Y.
Todd, Wm. J., Mt. Washington, D. C.
Weber, William, Columbia City, Ind.; Woodruff, J. C., Charleston, S. C.; Weiland, F. W., Dubuque, Iowa.

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ORIGINAL ARTICLES.

THE OPERATIVE TREATMENT OF PTERYGIUM.

Read before Mississippi Valley Medical Association, September 18, 1896,
at St. Paul, Minn.

BY EDUARD BOECKMANN, M.D.

ST. PAUL, MINN.

It is a pleasure to me to have the opportunity of directing the attention of the Mississippi Valley Medical Association to an operative procedure for pterygium which I have employed for nearly fifteen years with eminent satisfaction and of which I gave a preliminary description in the *Medicinsk Revue*, September, 1885, published in Bergen, Norway. My original operation has in the course of time undergone some modifications, and as I can not, for the time being, conceive of any further improvement, I thought it might be of interest to present it to the medical public at large, and I have chosen this opportunity for the following reasons:

Pterygium is of frequent occurrence in the Mississippi Valley.

The members of the Association are undoubtedly, from personal experience, familiar with this characteristic affliction and many of you without doubt have treated it surgically in the capacity of oculists, surgeons, or general practitioners.

In a goodly number of cases you have obtained good results not only immediate, but also permanent.

The majority of you have, I suppose, employed excision, which is commonly recommended, but which *per se* is unjustifiable, and not infrequently followed by relapse.

Other operative procedures have not yet proven their ability to effect a cure in all cases.

Finally, pterygium is so easy of access, the operation for it so devoid of danger both to life and eye, and its clinical nature so evident, that we must make the reasonable demand that it should be satisfactorily performed with permanent good results by every one in possession of surgical and antiseptic qualifications and in every case.

The etiology and pathogenesis of pterygium are unfortunately not yet satisfactorily settled; it is still a somewhat mysterious calamity. In the days of humoral pathology, pterygium was the local evidence of a constitutional malady which should be treated before and after operation with iodids and sarsaparilla. Nowadays we believe just as much in this as that pterygium is due to strain of the interni, and that it should be treated with glasses. It is a trifle annoying that pterygium preëminently occurs in people who do not strain their interni, and that it occasionally occurs over the interni, which hardly can be over-exerted. A wound of the limbus can not by itself produce pterygium, or we would see pterygia daily in scrofulous ophthalmias; experimentally, pterygium

can not be produced by such wounds; we can safely eliminate this theory which, I grant you, sounds very plausible. Episcleritis has also been advanced as a cause. I acknowledge that episcleritis is or has been present in every case of pterygium, but an episcleritis, which is a disease of quite frequent occurrence, does never (as is notorious) *per se* give rise to true pterygium, so that under all circumstances there must be something peculiar to that episcleritis, which by some is accepted as the cause, and as there is also much which speaks in favor of such an interpretation, it is thus not improbable that the microorganisms, found by some observers in several cases of pterygium, play their part in its causation.

The circumstance that pterygium by preference occurs in people who are especially exposed to wind and dust; furthermore, that a good many positively date the beginning of their trouble to such an exposure; and finally, that I have actually a few times found in my operations on pterygium a minute foreign body in the episcleral tissue near the head, has created the firm conviction that the cause must be an infected episcleritis, in all probability due to a foreign body and that the peculiar mode of growth of the pterygium over the cornea results from the endeavor of the diseased tissue to rid itself of the offending particle. Such a traumatic infected episcleritis, limited to that part of the eyeball exposed, when the lids are open, is a common affection among the farmers of the west; but only when this episcleritis invades the cornea, dragging the superadjacent conjunctiva with it, do we call the disease a pterygium; there are, however, more such episcleritides than pterygia. As long as this episcleritis is active, the process is progressive in all directions, most conspicuously toward the center of the cornea, where the supposed foreign body presumably makes its escape.

As is well known, pterygium is divided into two general classes: crassum or sarcomatosum, and tenue or membranosum; this simply means that in the first group the disease is active or progressive, and in the second passive or stationary.

It may perhaps seem superfluous that I have dwelt so long upon the episcleritis, which I believe to be the cause of pterygium, since even a successful treatment of this condition can not effect anything toward the cure of pterygium itself, which is the affection we are consulted for, while we rarely are asked to treat the underlying condition, which gives the patient little annoyance, if any at all. Nevertheless, we must take cognizance of this casual factor, because, first, there may be question in some cases of a prophylactic operation, and second, in our operation on the pterygium proper we should also eradicate the episcleritis.

Pterygium is only a clinical term. Scrutinized from a pathologic standpoint it offers unmistakable evidence that it is a dislocation of a certain part of

the conjunctiva toward and upon the cornea, because: First, the pterygium is histologically identical with the conjunctiva; second, it is continuous with it; third, we can observe how the semilunar fold in nasal pterygia is drawn forward and later obliterated; and fourth, we also notice how the caruncle is dragged forward from its original position to assume the shape of a horizontal oval.

The dislocated part of the conjunctiva is usually the seat of a moderate conjunctivitis in the progressive form; in the stationary form the conjunctiva is normal except at the point of attachment to the cornea where there is a limited hyperplasia.

To sum up: Pterygium is a dislocation of a certain part of the conjunctiva over the cornea, dependent upon a localized episcleritis, in all probability due to an infected foreign body, which has penetrated the subconjunctival tissue and which is expelled at the apex of the pterygium, whereupon the latter becomes stationary.

While the preceding considerations ought to furnish valuable indications for the treatment of this affection surgically, a short synoptic review of leading symptoms is necessary to determine *when* such procedures are desirable.

The principal symptoms of pterygium are deformity, limited mobility with double vision, epiphora, irregular astigmatism, and amblyopia.

Deformity, whether great or little, is a plausible indication for operation for cosmetic reasons. Limited mobility justifies operation as soon as it produces double vision. Annoying epiphora, a natural result of the displacement of the parts concerned in the physiologic absorption of the tears, is likewise indicative of operation. Double vision and epiphora belong, however, to advanced stages of the disease, where more important indications present themselves for consideration. Amblyopia, due to irregular astigmatism, may occur in pterygia which have not encroached on the pupillary area; it is caused by traction on the cornea and is relieved by operative interference. Amblyopia caused by invasion of the pupillary field is by all means the most important symptom of advanced pterygium; surgery at this late stage of the disease will certainly accomplish much good, but it is not to be compared with the results afforded by operation undertaken before this invasion has occurred, and it is a very difficult matter to distinguish between a stationary and a progressive pterygium.

There are therefore in my opinion weighty reasons, cosmetic as well as prophylactic, to advise early operations, which in addition are easier to perform and give more ideal results than those undertaken in later stages.

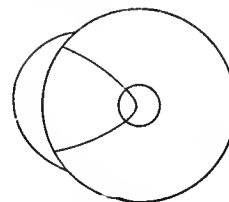
I am thus totally at variance with the majority of authors who advise operation only when the pupillary field is invaded.

Unfortunately pterygium occurs preëminently in a class of people and usually at an age, when they do not particularly care about a little disfigurement, limited mobility, epiphora, and irregular astigmatism, in many cases also little about the amblyopia; at any rate in my experience, it is a noticeable fact that the minority of cases submit to operation, which is to be regretted, as I maintain that pterygium is absolutely under our surgical control.

The treatment of pterygium can, according to the preceding, only be an operative one. A dislocation of the conjunctiva must be treated upon the same surgi-

cal principles, which obtain in any dislocation, by *reposition* and *fixation*. I protest against operative procedures which aim at excision of the pterygium, as such mutilation is as unjustifiable here as in dislocations in any other parts of the body, and its only excuse is that it ordinarily is followed by good results.

Before I pass to the description of my operation of reposition and fixation for the cure of pterygium, a few remarks on the antiseptic technique will be in order, so that septic complications of annoying, even if not dangerous character, may be avoided, and a rapid and uneventful recovery ensue. For the operator, it is sufficient that he disinfects his hands. I confine myself in this respect to scrubbing thoroughly in a warm 1 per cent. lysol solution; then I wash the patient's face with the same sort of solution. The instruments, gauzes and bandages and the bottle containing the cocain solution, have been sterilized in Boeckmann's small sterilizer for combined sterilization. The field of operation is flushed with the cocain solution (my favorite formula being cocain mur. 3 per cent. dissolved in a saturated solution of boracic acid and sulphate of quinin); to quiet the other eye, a few drops are instilled into it. The speculum is introduced and I proceed to the



Reposition.

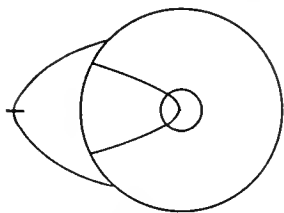
Reposition: The head of the pterygium is grasped with a good forceps and it is carefully dissected from its corneal attachment either by scissors, knife or evulsion. It must be dissected to its full extent and even a little beyond; after this the dislocated conjunctiva is unfolded by putting it on the stretch, which is simply effected by placing the blades of the scissors underneath it and lifting it up away from the globe. After this the conjunctiva will retract somewhat from the corneal periphery and assume its anatomical position as nearly as possible.

Fixation: In order to effect this properly we must recognize as a fact, that a *sine qua non* for the establishment of pterygium is the existence of the subconjunctival connective tissue. This is indeed the medium which makes it possible for the conjunctiva to slide over the cornea; if it did not exist, if in other words the conjunctiva around the cornea was intimately connected with the sclera, a pterygium would be an impossibility. If we remove the subconjunctival tissue to an extent that the edge of the replaced conjunctiva is freed therefrom and brought into direct contact with the sclera itself, a solid adhesion between the two will result and a successful fixation established.

With one forceps therefore, the conjunctiva is lifted up near its junction with the corneal margin (above or below) and with another forceps the subconjunctival tissue is dragged forward, and, steadily pushing the conjunctiva back, a good sized band of connective tissue is removed with the scissors along the whole extent of the conjunctival edge. If there is active episcleritis we do well to remove all inflamed tissue as good practice for the cure of the episcleritis itself and as an additional safeguard against a possibility of relapse.

After the excision of the subconjunctiva, the conjunctival edge will retract further backward, whereupon the whole wound, scleral and corneal, is thoroughly scarified and scraped for inflammatory remnants with a cataract knife. The hyperplastic conjunctival edge is trimmed off. To secure the conjunctiva in position, until adhesion is firm, and to prevent it from sliding over the cornea again by the movements of the eye, I fasten the edge to the internus (externus) muscle at its insertion with a single fine catgut suture and the act of fixation is complete.

We have now a triangular wound outside of the cornea, the free edge of the cut conjunctiva in direct contact with the denuded sclera, and a fresh corneal wound extending to Bowman's membrane. Cicatrization will follow rapidly from all sides and by virtue of this cicatrix a recurrence of the dislocation will be prevented for all time.



Fixation.

The after-treatment is extremely simple. The eye is occluded with folded sterilized gauze; the bandage is changed daily and a 2 per cent. solution of nitrate of silver applied to the conjunctiva for a week; the bandage is then removed and the patient discharged.

Only one eye is operated on at a time as bandaging of both means discomfort. I take the liberty to recommend this operation to the profession as being in my mind and according to my experience a rational, a justifiable and, when properly performed, an always reliable method.

Lowry Arcade.

AMBULATORY TREATMENT OF FRACTURES OF THE FEMUR; NEW MATERIAL FOR SPLINTS AND ORTHOPEDIC APPARATUS.

BY ALEX. C. WIENER, M.D.
CHICAGO, ILL.

Although I am perfectly well aware of the obstacles which still beset the ambulatory treatment of fractures of the lower extremities, I nevertheless claim that it is not necessary to confine the patient to bed for more than a week, even with fracture above the middle of the femur. On admission, the whole extremity should be carefully disinfected with soap, water and alcohol, and the hair removed. Then strips of cotton lining are pasted on the skin with Heusner's fluid adhesive plaster, and included in the dressing in such a manner as to leave the ankles free and to allow a small square board to be fastened at least three inches below the sole. To this board weights for extension are fastened. In the morning when the ambulatory apparatus is put on again, the weights are taken off and the strips are reversed and fastened with pins. In this way is secured a permanent extension with weights varying from ten to fourteen pounds according to the strength of the muscles. If, while

the leg is being dressed, it is carefully stretched, the patient experiences very little pain or inconvenience.

A glue dressing should be carefully applied and, beginning from the toes, should include the whole extremity up to the inguinal region. Rollers of soft muslin or, better, of light flannel, should be used, and also the best white glue. The glue should be boiled and then cooled sufficiently not to scald the patient. The rollers, which are about two inches wide, should be moistened on the end with glue and pasted on the skin in such a way as to prevent creases. Should it become necessary to fold the bandage, it must be cut and repasted. It is of the utmost importance that the toes, the foot, the leg and the space of 10 or 12 inches above the fracture, be provided with this tightly fitting compression bandage, as it would be impossible to endure a perpendicular position of the injured limb without it. Care should be taken that those parts at the joint of the foot which are especially subjected to pressure—the heel, Achilles tendon and the instep—are protected from pressure by a thin layer of absorbent cotton, and that the bandages are not pasted in this place, as motion will cause the glue to crumble and the skin will be irritated. I wish to particularly emphasize that in applying the bandage too much care can not be exercised in placing the foot in a perpendicular position to the leg, in order, by shortening the Achilles tendon, to prevent an equinus position, as this would be difficult to correct later on. On taking off the first bandage it may frequently be observed that the foot is already in a pes equinus position, which will later prevent the patient from using the extremity, even if the fracture is well healed, and a tedious and painful course of treatment will be necessary to overcome what might have been avoided in the first place by the observance of a few simple rules.

A firm "contentif" (compression) bandage in which the patient can walk may be obtained by including strips of thin fiber or pasteboard at the seat of the fracture. This will make a dressing not thicker than the blade of a knife, very light and yet firmer than the plaster dressing. If after a few days the bandage becomes too loose, a strip must be cut out and the defect remedied by pasting on new strips. Glue as an adhesive material produces compression like collodion, but, at the same time, does not interfere with the sudoriferous glands of the skin and forms a safe protection against the invasion of pus microbes and saprophytes. As soon as the glue touches the skin the patient will experience a sensation of coolness and relaxation. With this bandage, which within twenty-four hours becomes thoroughly dry, forming a solid capsule, the patient is enabled to walk about on crutches, since the leg can be suspended in a perpendicular position without pain.

The three following cases of fracture of the femur in the service of Drs. Lee, Halsted and Moorhead, were treated at the Cook County Hospital:

Case 1.—I saw the patient about nine days after the accident, when he was placed in an extension apparatus with twelve-pound weights. He was furnished with a tightly fitting glue dressing and the same was strengthened on the femur with thin pieces of pasteboard. After the extension apparatus was put on he walked from the table with the aid of two canes. He never experienced any inconvenience or edema. On one occasion I found him playing ball on the hospital grounds. At the end of six weeks the apparatus was taken off. The leg was shortened less than one-fourth inch. The muscles of the femur, particularly the quadriceps, which is most liable to atrophy, had the same strength as on the other side. At no time did edema or other disturbance of the circulation occur.

Case 2.—Patient was run over by a heavy cart shortly before his admission to the hospital, the wheels passing over the right femur. He entered the hospital May 6, 1896, and was put in an extension splint for six weeks. The first day he was up walking on crutches he fell again and fractured the femur again at a point just below the callus. The first fracture was located in the upper third of the femur, ten inches above the upper edge of the patella. The second fracture was eight inches above the patella. Eight days after the second accident the patient was furnished with a glue dressing, and two days later with an ambulatory apparatus. (I prefer to have the glue dressing thoroughly dried first; this takes about twenty-four hours.) One inch of shortening had resulted from the first fracture, the knee joint being almost immovable; the quadriceps muscle had atrophied to such an extent as to cause a difference of one and one-half inches in the circumference of the thigh. Four weeks later the extension apparatus and glue dressing were removed. Callus at site of first fracture was quite large, while that at the site of second fracture was scarcely perceptible. The quadriceps muscle was much more developed, the difference in circumference having been reduced to three-fourths inch. The knee joint could be bent to half a right angle. The astragalo-tibial joint was freely movable. No disturbance in circulation was noticeable at any time. A decubitus about the size of a half dollar located on the posterior surface of the thigh, which had resulted from the dressing of the first fracture, was healed up. There were no signs of pressure from the apparatus, which was worn over four weeks. There was a slight elasticity in the bone at seat of fracture. The patient was provided with a flannel bandage and sent home.

In this case we have right at hand a comparison of the old method of treatment and the new method. Under the former method the patient was compelled to lie in bed for six weeks and then, being unable to stand, had to use crutches. The muscles of the whole leg were atrophied, the knee stiff and the astragalo-tibial joint almost immovable. There was an extensive and luxurious callus and one inch of shortening. During the ambulatory treatment of the second fracture we not only took care of the fracture itself, but succeeded also in mitigating the bad effects of the first fracture.

1. The muscles of the leg, especially the quadriceps muscle, had gained considerably in strength, the difference being only one-half inch in the circumference. 2. The knee joint was immobilized to 45 degrees and the ankle joint absolutely free in mobility. 3. The original shortening of one inch was reduced one-fourth inch. It is remarkable that the formation of callus is very small under the ambulatory treatment compared with the callus formation under the stationary method of treatment. During the course of the stationary treatment the patient had lost in flesh and looked pale. When he left the hospital he was in the best of health and spirits, having enjoyed an outdoor life during the hot season. The measurements in this case were also taken by Dr. Jackson, interne of the hospital, so as to avoid any mistakes.

Case 3.—Strong laborer; oblique fracture of the left femur seven inches above the upper edge of the patella; considerable extravasation of blood; difference in circumference three inches; overriding of the fractured ends; shortening two inches. Admitted October 23; provided with a glue dressing October 26, combined with extension. As a shoe with a high sole for the healthy side could not be procured at once, it was necessary to postpone putting on the apparatus until the evening of November 2. He then walked through the ward with the aid of two canes, and the next day being election day, he was driven in a buggy three miles to his district to cast his vote. He returned to the hospital next morning in good condition, having been driven over rough roads and walked through a considerable crowd. Having gained confidence in the treatment he asked for his discharge from the hospital, which was granted. He is now going about at home still provided with the apparatus.

The construction of the apparatus has already been described in detail in the *Railroad Surgeon* of Feb-

ruary, 1896, and the *Chicago Medical Recorder*, February, 1896. The fractured shaft rests immobilized in the apparatus, the weight of the body being transferred to the tuber ischii, which is astride the uppermost steel bar. The apparatus is about two inches longer than the extremity, so as to allow the extension of the extremity. The same apparatus may be used in any joint disease in which the indications are rest of the joints, extension, and at the same time outdoor exercise.

The only objections to the general use of the apparatus are, 1, the expense; 2, the adapting of the steel bars. In experimenting to overcome these disadvantages I have succeeded in finding a material which, in my opinion, is ideal for use in general practice as well as in surgery. It is fiber. It is used in three thicknesses. The thinnest one takes the place of pasteboard in glue dressings and molds itself closely to the outlines of the extremity. I have experimented with the two next sizes for quite a while, and find that when soaked in hot water for different lengths of time it readily adapts itself to the outlines of the extremity. When soaked in hot water for about ten minutes it can easily be adapted to the outlines of the arms or legs. In order to mold it right to the skin around the joint so as to secure a capsule for the same, it is necessary to soak it for twenty-four hours. When dried, fiber takes the place of wooden, hard rubber or papier maché splints. In a half-soaked condition it replaces pasteboard, felt and pliable wood. When thoroughly softened it replaces leather for making capsules and immobilizing splints for diseased joints. When dried again it retains the form of the part of the body to which it was applied, and the different parts can be connected with steel bars by means of copper nails. The way to proceed is, to cut out a pattern of simple parchment paper and then cut out the same in the fiber sheet. Then this fiber pattern should be soaked in water, placed around the extremity and held there with tightly fitting rollers until dried. It is then taken off and connected with steel bars. I consider fiber the most universal material yet devised, and recommend it for extensive use by the general practitioner, as well as for railroad and army purposes, as it takes up but little room and is inexpensive. It can be kept clean. Stains may be removed with water and soap. When applied directly to the skin it does not irritate, as its surface is absolutely smooth. Greasy matter may be easily washed off with alcohol or ether. I now use it extensively in ambulatory apparatuses for joint diseases in clinical work, in correcting malpositions of joints, combined with rubber bands and permanent extension. The fiber capsules are adapted during the hour of the clinic and brought to the instrument maker.

The surgeon does not have to depend on a special instrument maker, as any skilled locksmith is able to connect the fiber casts with longitudinal steel bars according to given measurements. For this reason, the introduction of fiber in surgery is likely to result in a more general use of the extension splint.

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A LARGE FIBROUS NASAL POLYPUS.

BY F. A. LONG, M.D.

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Fibrous polypus of the nose is much more formidable than the soft or mucous variety, but is fortunately

rarely met with. The tumors may attain enormous size and give rise to frightful deformity. It may occur at any period of life, arising from the periosteum or the bone proper, usually from the posterior nasal or the cavities accessory thereto, but with a special predilection for the roof of the posterior nares. Its growth is far more rapid than that of the mucous variety; the filling of the nasal and post-nasal spaces does not stop its growth, and the continued and ever-increasing pressure forces the bones of the nose apart (as is apparent to any observer by the appearance of frog-face), causes absorption and caries of the bony walls and ulceration of soft tissues, giving rise to an acrid discharge and also to frequent hemorrhages. Repeated severe hemorrhages may sap the patient's vitality. The constant direct absorption and swallowing of purulent discharges may gradually end life by septicemia. Sarcomatous degeneration is liable to take place, ending in a horrible death.

The appearance of the fibrous variety is so different from the soft that a mistaken diagnosis is impossible. It lacks translucency, has the color of surrounding tissues, perhaps a little deeper red, is firm and resistant to the touch.



EXPLANATION OF CUT.

a. Anterior surface presenting at left nostril; t, portion showing convolutions of inferior and middle turbinates; s, sulcus dividing polypus into nasal and naso-pharyngeal lobes; n p, naso-pharyngeal lobe; p, pedicle; length along left side of mass from a to n p, $2\frac{3}{4}$ inches, height at t $1\frac{1}{4}$ inches. The cut is nearly natural size.

With these preliminary remarks I wish to record the following:

A young German-American farmer presented himself complaining of total nasal obstruction. He had the general appearance of good health, but "frog-face" was at once apparent. Complained of some headache, of lack of ambition and of eyes watering constantly, mostly on left side. He frequently felt nausea, worse when reclining. The trouble came on insidiously and he thinks it may have been a year in its development. On inspection a solid mass completely occluding the anterior nares, presented itself at the left nostril. The septum was deflected decidedly to the right side; the soft palate was bulging downward. Digital exploration of the naso-pharynx revealed the entire space anteriorly occupied by a solid mass, its attachment uncertain.

The mass was removed with a polypus forceps through the anterior nares, the deflection of the nasal bony walls caused by the pressure of the mass

and the very slender pedicle (see cut), having made removal by this method and through this way comparatively easy. Macroscopically it is a soft, fleshy mass $2\frac{3}{4}$ inches long by $1\frac{1}{4}$ high in the middle portion (t) showing here beautifully the impression of the turbinated bodies on the tumor; width across the base, which corresponds to the floor of the nasal fossa, $\frac{3}{4}$ inch. Just back of the attachment of the pedicle is a deep sulcus (s) caused by its impingement on the nasal septum posteriorly, and which divides the polypus into two lobes, the nasal and naso-pharyngeal. The naso-pharyngeal lobe (n p) is $1\frac{1}{2}$ inch wide and $\frac{3}{4}$ inch high turned toward the right side, and by its shape, size and position occluded the right nasal fossa behind. The pedicle is very slender, $\frac{3}{4}$ inch long, very much constricted at the polypous end, showing conclusively that the polypus originated in one of the accessory sinuses, probably the sphenoidal. From the sulcus forward the growth is an almost perfect cast of the left nasal cavity.

This case is believed to be sufficiently unique to deserve a place in the literature of nasal polypi.

THE PHYSIOLOGIC ACTION OF THE THYROID GLAND.

BY HUBERT RICHARDSON, M.D.

BALTIMORE, MD.

The very different results obtained by the administration of the thyroid gland, or its extracts, and the reports of its success in so many forms of disease, require some further explanation, and I here give the results of a few observations made during the past six months on its possible physiologic action among the insane.

In the paper read by Dr. C. G. Hill on the subject of thyroid feeding, an analysis of the urine made by Dr. Whitney is given, which shows that though the excretion of chlorids, phosphates, sulphates and to a lesser extent urea are slightly increased, the total solids are decreased, pointing to the non-elimination or non-formation of the more toxic products of metabolism, with the possible exception of the ethereal sulphates. Dr. Haig showed by experimentation on himself that thyroid feeding produced a retention or possibly a reduced production of uric acid. Dr. Perry, in his paper on the blood in thyroid feeding, has pointed out that the blood coagulates more quickly, that very slight leucocytosis, or none at all, takes place, but that there is an increase in the number of lymphocytes. A general desquamation seems to take place in the mucous membranes, as well as in the skin, pointing to an increased activity of cell production. Horbaczewski has shown that uric acid is formed from the destruction of polynuclear cells and that those drugs which produce a leucocytosis also cause increased elimination of uric acid, with a few exceptions, as antipyrin, which he suggests produce the leucocytes by the arrest of destruction consequently diminishing the excretion of uric acid.

In my own analyses I have found that the first result of thyroid feeding was to reduce the elimination of uric acid, though after a week or ten days it became normal, or slightly excessive, as the patient improved, presumably by increasing the production of the lymphocytes and also those of the mucous membranes and decreasing at first the destruction of the polynuclear cells. I have observed that when the

thyroid is given to patients whose urine showed excess of toxins, viz., uric acid, ethereal sulphates and pigment, it either produced little or no effect, or caused fever and debility without improvement. The best results have been obtained with patients who had been for some time in the institution and whose elimination had been attended to. I would infer from the above that the physiologic action of thyroid is, 1, increased production of lymphocytes and increased cell production generally, especially in the mucous membranes; 2, an arrest of the destruction of the polynuclear cells.

The above hypothesis would help to account for its success in some reported cases of albuminaria.

THE PALLIATIVE TREATMENT OF CANCER OF THE CERVIX UTERI AND BLADDER IN WOMEN.

Read at the Thirteenth Annual Meeting of the New York State Medical Association, Oct. 14, 1896.

BY NATHAN G. BOZEMAN, M.D.

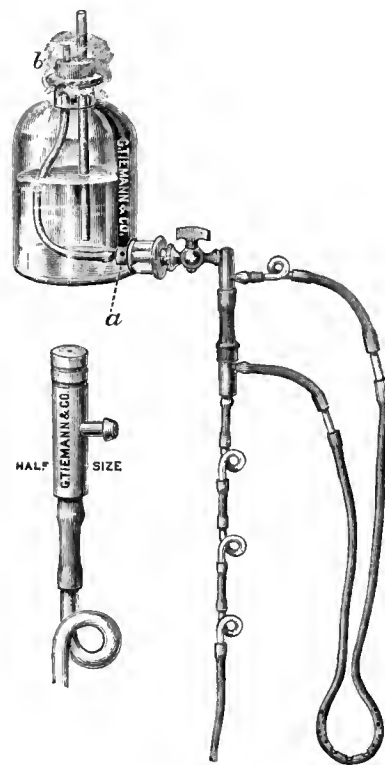
GYNECOLOGIST TO ST. FRANCIS HOSPITAL, J. C., ST. MARY'S HOSPITAL, HOBOKEN, AND BAYONNE CITY HOSPITAL, NEW YORK.

I shall confine my remarks to the treatment of carcinoma of the cervix uteri and the bladder in the stage of the disease when any operative measure may be of doubtful expedience, or in cases where operations have been undertaken and the disease still progresses, the condition of the patients being most distressing from hemorrhage, sepsis, incontinence of urine and all the evils resulting therefrom. My interest has been aroused in this class of patients, and no doubt you feel the same, because of their hopeless condition and the difficulty of caring for them in our public hospitals. Certainly, treatment will be directed to alleviating their suffering and rendering their surroundings as wholesome as possible.

Women afflicted with inoperable epithelioma of the cervix uteri, when they are not undergoing any treatment, complain most frequently of hemorrhage and a foul-smelling, bloody discharge from the vagina. The vaginal examination reveals a hard unyielding band of sclerous tissue in front of the cervix extending nearly around the vagina and constricting it; beyond this is the diseased cervix, which is either destroyed, leaving a deep cavity with necrotic walls, or there may be a cauliflower growth on the cervix. Usually digital examination causes excessive hemorrhage, which is controlled by placing the patient in the supported knee-elbow position, exposing the cervix by introducing a perineal elevator guided by the finger and gently brushing over the bleeding surface with a solution of persulphate of iron, or if necessary, touching it with the Paquelin cautery, then packing or columning the vagina with dry cotton. Great caution must always be observed not to injure the ulcerated surface with the end of the speculum. This accident I have found causes more bleeding than the digital examination. To guard against this I also use the knee-elbow position.

In some cases the first indication is to overcome the partial stricture of the vagina which I have referred to, in order to gain free access to the disease and to allow the uninterrupted escape of the discharges. This is accomplished by means of hard rubber intravaginal dilators of suitable sizes to admit of easy introduction. They are worn for several hours a day and are removed for douching. This gradual

dilatation is continued until the contraction has yielded. The treatment sometimes is painful and has to be alternated with columning the vagina. The column of antiseptic gauze and dry cotton I employ in all cases after first dusting on aristol or some other antiseptic powder, for a twofold reason: pressure and absorption of the secretions. When it is properly introduced it may be worn forty-eight hours, then removed for thorough vaginal douching during the next twenty-four hours. It produces pressure on the diseased surface and against the constricting band in the vaginal wall. The secretions are retained in it for a considerable time and it prevents bleeding; consequently the surface of the ulcer is maintained in a fairly clean state. I treat my patients about three times a week and I find that they are kept quite free of pain and are not annoyed by the discharges. The disease has a natural tendency to extend, but in none of my cases has a perforation occurred into the rectum.



Bozeman's Air and Water Irrigator.

I have had several where the bladder became involved and here is when I believe most of the pain from the disease begins. The first manifestation of the extension to the bladder is a severe form of cystitis with excessive vesical tenesmus and frequent urination, but when the perforation of the vesico-vaginal septum takes place and the urine finds a free outlet, all these painful symptoms subside; a vesico-vaginal fistula is then established and the bladder has physiologic rest.

Some of us are familiar with the pitiable and loathesome condition of urinary fistula cases in former times, when the sloughing of the vaginal and bladder walls was due to prolonged pressure of the head in the parturient state, and we all know of the successes of my father in his untiring efforts to close these openings and restore such patients to health, so that now by following his teachings we are enabled to close all forms of vesico-vaginal fistulae. Those caused by carcinomatous ulceration, however, should

never be closed. We must content ourselves with other means of treatment.

In three cases which I have had under observation I have used continuous irrigation of the vagina and bladder, alternating with Dr. Nathan Bozeman's vesical drainage support, which is worn in the vagina and collects the urine and conducts it into a soft rubber receptacle which is attached at the knee.

Now as to the continuous irrigation. When this process is kept up for any length of time we must of course economize the fluid which we use, so I have had constructed an irrigator¹ which does this by mixing air with the solution and the two, while coursing through a perforated tube in the vagina when the patient is in a recumbent or sitting posture, produces a current which carries off with it all secretions and particles of debris. The reservoir, a glass bottle, stands upon a table near the bed and is connected with the perforated tube in the vagina. The bottle has a constant outflow, that is, as the fluid escapes from it by the opening at the bottom, air passes down the long glass tube and takes its place. The pressure is thus maintained constant and it is represented by the weight of the column of fluid extending from the lower end of the perpendicular glass tube to the circular opening at the bottom of the vessel. The stop-cock does not regulate the velocity of the efflux but shuts off or turns on the flow. A certain proportion of the fluid, as it escapes from the bottle, collects in a small reservoir, where it is also maintained at a constant level. In the bottom of it is a round opening, the area of which is such that with a column of liquid two inches high one-half an ounce escapes per minute. This is made to produce suction. The excess collects in an intermittent syphon and is discharged by it. The suction pump and the intermittent syphon being connected with the perforated tube in the vagina alternating columns of air and fluid pass quickly through it, carrying off with them the urine as it is secreted. Three hours is about the longest time that a bottle holding one gallon will irrigate and drain. I have now under observation a patient who has been using the irrigator with very great comfort to herself for nearly a year. In her case I am also making applications once a week of hydrogen peroxid. The upper portion of the vagina, the cervix and the bladder are destroyed, but still she can be drained and is comparatively easy. In summing up I would recommend:

1. Keep the seat of the disease in an aseptic condition.
2. Prevent or counteract any narrowing of the vagina in front of the disease.
3. When the bladder becomes involved use effective irrigation and drainage to carry off the urine as soon as it is secreted.

THE THERAPY OF CALCIUM SULPHID IN INFLAMMATORY DISEASES OF THE AIR PASSAGES.

W. BAYARD SHIELDS, M.D.

ST. FRANCIS, ARK.

My attention was first attracted to the therapeutical uses of calcium sulphid in inflammatory diseases of the air passages by an article which appeared in the *JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION*,

¹"An Air and Water Irrigator and Drain for Prolonged Douching in Deep Cavities." *New York Medical Journal* for May 27, 1893.

April, 1892, written by Edward F. Wells of Chicago. Dr. Wells has been using this drug in tuberculosis for a number of years and claimed to have had good results in selected cases. He had antedated Burgeon's treatment of rectal injections of sulphuretted hydrogen gas by several years. It seems that his attention had first been called to this treatment by noticing that his tubercular patients who frequented sulphur springs improved more rapidly and uniformly than those going elsewhere. There seems to be no doubt in my mind that to a certain extent that this drug has a beneficial but not curative effect in tuberculosis, as my experience leads me to know that I have seen cases in which it ameliorated the symptoms, resulting in a number of cases in an improvement in general condition and a gradual reduction of fever conducing to the general comfort and well being of the patient. In several there seemed to be a cure, but I am satisfied after a more extensive use of the drug that I was mistaken in my diagnosis, especially as there was no microscopic examination of the sputa made, although they had other signs of tubercular disease. These apparent cures were probably cases of purulent bronchitis, a disease not uncommon in very miasmatic districts and frequently accompanying remittent and intermittent malarial fever. In these fevers with the lung complication I invariably give a calcium sulphid and quinin combined with excellent results. In abscess of the lungs it seems to have a beneficial effect, liquifying the contents of abscess more rapidly and hastening its discharge.

Within the past two years I have treated not less than fifty cases of pneumonia with an extremely small per cent. of deaths, giving quinin four grains, calcium sulphid one grain every two hours for four doses and then every three hours in connection with 1-75th of a grain of nitroglycerin, the latter in place of alcohol. Pneumonia is a disease of a serious nature in the section in which I am located on account of the complications of anemia following malarial disorders, and my death rate was much larger under the old treatment including the free use of alcohol than it has been under my present mode of treating this disease. The calcium salts seem to inhibit the pneumonic inflammation to a great extent, in which way I do not know, but imagine on account of it being an anti-uric acid remedy of no feeble power, and that the uric acid diathesis is a predisposing cause which favors the activity of the pneumococcus in the production of this disease. Nitroglycerin, a remedy which has been advocated a number of years in pneumonia, has in my hands filled my utmost expectations in relieving the lungs by dilating the arterioles of the system and hence relieving the venous congestion. It also more than takes the place of alcohol as a stimulant as it has no bad effect on the digestion, and flushes the kidneys, thus assisting to relieve the body of effete material.

It is more especially in the inflammatory diseases of the throat, tonsillitis and quinsy, that I have most remarkable and gratifying results by the use of calcium sulphid. I had not seen the use of this drug advocated in these affections, but going upon the well-known fact that its use modified the furuncular inflammation, frequently preventing the formation of abscess, I was lead to the conclusion that it might in the same way inhibit the tonsillar inflammation. I commenced with small doses, one-fourth of a grain every three hours, but not getting good results, increased to one grain doses every hour until four doses were

taken, then every two hours for six doses, then every three hours apart until all inflammatory symptoms would disappear. These are seemingly large doses but I have observed no bad effects of weakness in any case. In the past four years I have treated not less than one hundred and fifty cases of quinsy and tonsillitis according to this plan and have recollections of only four cases in which it failed to relieve promptly and effect a perfect cure in from two to six days. The relief is so sure and prompt in my hands that I am inclined to think that perhaps local conditions in this miasmatic climate favor the production of those cases of tonsillitis which are more amenable to this treatment than it would be in other sections.

Many of these cases had been treated by other drugs such as guaiacum, the salicylates, quinin, opium and salol during former attacks, but I found that the calcium sulphid relieved and effected a cure more rapidly than the other treatment. Recently I have seen it advocated in tonsillitis but think the reason why more uniform success has not been obtained in its use is in not giving it in large enough doses. If the heart acts feebly in any case, or there are organic lesions I use heart stimulants such as small doses of digitalis and nitroglycerin combined, for fear that the calcium sulphid should have a depressing effect in these cases. In no case have I used local applications of gargles, simply confining myself to the use of the single drug and in a few cases giving an opiate. I also would keep the bowels open with salines and allow a restricted diet. I do not see the necessity of using the new drugs advocated in this disease when we have an old one which relieves more certainly and promptly than any other.

CATCHING COLD—ITS CAUSE AND PREVENTION.

Read by invitation before the St. Louis Academy of Medical and Surgical Sciences, Nov. 28, 1896.

BY FAYETTE C. EWING, M.D.

Late Senior Clinical Assistant Central (London) Throat, Nose and Ear Hospital, and at the London Throat Hospital; Fellow of the British Rhinological, Laryngological and Otological Association; Laryngologist to Missouri Baptist Sanitarium; Aurist, M. E. Home, etc. Member of the St. Louis Medical Society and of the American Medical Association.

I think I may assert without fear of contradiction, that there is no commoner morbid condition to which the human family is subject, than that designated "a cold." People speak of having "caught cold," by which they do not mean that they considered the condition so desirable that they troubled themselves to lay hold on it, but rather, the opposite, whereby the pathologic process inaugurated itself in their systems in spite of their desire and attempt to escape it. Again, almost invariably, the adjective "bad" is prefixed to "cold," so that by common consent we have only "bad colds." All this serves to emphasize a point I wish to make, viz., the absolute fear in which that congestion of various organs resultant from meteorologic conditions is held by the laity. This is not surprising, when we consider that fully three-fourths of the diseases of the respiratory passages, constituting such an important class, originate in colds; and added to these are many, of other organs, that are indirectly due to the same cause. When we realize the importance of the subject, it seems strange that there should be no unity of opinion among physicians as to the precise manner in which it is acquired. Numerous

theories have been advanced, yet none seem sufficiently substantiated to be accepted by the profession at large. Of those that have been held worthy of note, I may call attention to the following: Rosenthal declared that a lowered temperature, acting upon the peripheral vessels excites contraction shutting off the blood current and causing congestion and inflammation of internal organs. This assertion is not above reproach, for, very often parts that are not internal are affected: The Schneiderian membrane lining the nasal tract, is more frequently attacked by inflammation than any other portion of the anatomy, and it is not internal, since it is always exposed to the atmosphere.

Seitz affirms that the morbid state we are discussing, is occasioned by the removal of heat from some part of the body resulting in a functional derangement of the heat centers, with attendant pathologic changes in some organ possibly distantly removed from the part exposed. The fact that some time elapses between the exposure and the condition may be accepted as favorable to this theory.

Woakes believes in a vaso-motor disturbance using the term "modification of nutrition," arguing for a uniformity of type. He declares that there is a normal animal mechanism represented by the sympathetic chain of ganglia through its afferent and efferent branches.

Bosworth more forcible and comprehensive than the others, accepts Seitz's theory in part, but attributes the effect to those nutritive changes that are ever progressing, and whose proper functioning is dependent upon the temperature being maintained at 98.6. He affirms that, "In the ordinary phenomena of taking cold, we have still the results of a low temperature acting on the heat-producing processes, but in an indirect manner. The direct action of the cold is, as a rule, upon the surface of the body, but the resultant morbid condition is upon some organ remote from the exposed part. In both cases, however, the cause and the effect are the same, and the connection between the exposure and the resultant inflammatory condition is the disturbance of those nutritive changes in the tissue which result in the production of animal heat." The nutritive processes in every part of the body are controlled by a central nervous system from which there is a general distribution of force. The "nutritive changes" having been arrested, or interfered with, in a certain portion of the body, the central system contributing the same amount of force, naturally there results increased nutritive activity elsewhere, constituting inflammation. The fact that the nasal membrane, in this climate, is generally affected with more or less chronic inflammation, makes it the point of least resistance and accounts for it being most commonly attacked. Bosworth illustrates this by citing the example of a chandelier whose jets represent the nutritive processes and the supplying stem the central nervous system. Should all the jets be lighted at one time, the result is even light, but when we turn off all except one, this one flares up unevenly with extra force.

PREVENTION OF COLD—NATURE'S PART.

That catarrhal diathesis which predisposes to colds, may be hereditary, or acquired. Its avoidance or prevention when once established, can be accomplished only by a gradual hardening of the system, which must be educated to the making of an amount of heat

to compensate for that which is lost under circumstances of extra radiation. The conditions of life on this sphere, render exposure inevitable—we can not dodge it. Rich and poor, high and low, one time or another, will feel the breath of this *bête noire* of our existence, who gives no quarter, and shows no mercy. Only by fashioning ourselves to withstand its assaults, can we hope to win in the “rough and tumble” battle, with this “catch as catch can” wrestler. Nature, our universal mother, seeming cruel, is often kind. She is the great equalizer, ever ready to give here, for what she takes there. She will deal fairly with us if we trust her, but we must not ignore her rules. Today, with irrevocable hand, she presses into place one chord of that divine instrument we call the larynx, and tomorrow, with compensating kindness, she sweeps the other across the median line, that it may vibrate in touch with its fellow, and, where there was silence, there is song. Should indifferent chance stop an ear, she makes its mate responsive to higher keys, and lower tones, that the harmonies of life’s little time may be not lost. She shapes the body to the shortened limb, that grace may move without a halt. Pomona-like, with hands full-fruited, she would give what is asked, but is zealous of our faith and thrusts nothing upon us. She would forestall the finger of time, and with its line of wrinkle trace a smile; she it is, who lifts the weary heart that tears may be delayed. Nature is constantly striving to adapt herself to our necessities, but she may need time in which to weave for us a garment not made with hands. When heat is demanded, she endeavors to make it, but when her services have been spurned on so many occasions as to constitute a lengthened period, she can not be expected to supply in emergency. On this principle, she deserts the man who wraps his throat to scare away the roaring elements with a red rag. She is jealous of the rag, and the latter’s services having been invoked in preference to her, she declines to interfere when it happens to be left at home. The hardening process should begin with infancy. Should the timid and captious knit their brows at this wholesome doctrine, I would add that we do not consider feather-headed mothers, nor that lighter genus, hysteric fathers, who are ever ready to trace a cold in their children to some supposed indiscretion of their more sensible wives. Intelligent discrimination is always required in the interpretation of hygienic rules. Idiosyncrasies are inevitable, and since no two constitutions are exactly alike, only directions that are generally applicable can be laid down. Each parent must discern any condition that would render the rule applicable to her child, or only in a modified form. A person may become strong, or delicate, through habit. Habit is a knife that cuts both ways—he who wields it, may turn it for, or against, himself. Nature gave us hair as a protection to the scalp, and but for habit, one would contract cold not more readily from lack of covering on the head, than from exposure of the face. Children, from infancy, should be accustomed to bare heads. That foolish woman, so solicitous lest the cold penetrates her baby’s skull, might still her fears, if she would pause long enough to recall her girlhood days, when habit enabled her to dance all night in a draughty ballroom, with, mayhaps, nothing more substantial to shield her neck and chest from the flirting zephyrs, than a coat of paint. The *fin de siècle* mother lolling in her cushioned carriage, with hands encased in fur, and rubber bottles at her feet, need but drive through

“Hell’s half-acre” of the modern city, to note the contrast in health between the ragged urchins with snow numbed feet, and her puny pale-faced boy she left at home because it was “too cold to take him out.” Truly, nature “tempers the wind to the shorn lamb.” The free air grows the rose, and the sunlight gives it tinting, whether on rocky soil, or velvet cheek. Coddling and care can not save us from the demon we dread. A large proportion of the human family earn their livelihood in the open air, with the attendant exposure. In such climate as that of Western Oregon and Washington, where rain is steadily falling for half the year, people go about their business oblivious to it, so far as a consideration of the effect upon health is concerned. Daily contact soon inures them to it, and the diseases resultant from exposure are not materially multiplied. What necessity does for the poor, compelled to toil in rain or shine, and for the inhabitants of the Puget Sound district, we, who are more favored in environment, may do for ourselves by applying the universal law, which teaches that the more we house ourselves, the less vigorous become our constitutions in direct ratio as we pamper an organ, its susceptibility increases.

Admitting the stability of our argument, we may pass to an enumeration of some of the special factors in the production of colds. The evils arising from over-wrapping have been lightly touched upon, but in discussing the very important matter of

CLOTHING

it would be well to be specific. If we admit that the theory of catching cold is based upon an interference with nutrition in some portion of the body, we can not deny the necessity for warm and comfortable covering that will insure equable protection for the heat forces in every organ. Opposed to this, are the commonly used chest protectors that every druggist exhibits in his window as a preventive of lung and bronchial disease. Acting in a similar manner to the flannel throat-band, or woolen muffler, they contribute to the delicacy of the parts they cover, and bring about the troubles they are supposed to prevent. Fur caps and boas are equally an abomination, and according to Bosworth, the deaths in New York City, resulting from the use of seal skin sacques, exceed those from smallpox. A lady proud of her five-hundred dollar furs, calls upon a friend and sits in a furnace-heated house in a temperature of 80 degrees F. for several hours, because she would not think of removing so enviable and becoming a garment. She becomes overheated, goes home in a zero atmosphere, is suddenly chilled and finds herself in bed the next day. This is not an exaggerated illustration of the evil effects of concentration of clothing. We are constantly being called upon to treat lesser ills, yet the thoughtless victims would scorn to acknowledge the cause. No clothing compares to wool as a preventive of heat radiation, because none is so light, porous, and elastic. It is also absorbent, but does not absorb into the fiber. Cotton, linen and silk, are heavier, less elastic, much less porous and far better conductors of heat. The perspiratory glands assist us in the elimination of effete matter, and in using wool next the skin we have a material that takes up the perspiration and prevents a constant soaking in our excreta. One should wear wool the year round, and now that so many weights are manufactured and of such soft texture, the garment may be adapted to the season. The better plan

would be to confine oneself to the medium weight and have outer clothing suitable to the season. A person should wear just enough clothing to keep him from discomfort, no more, no less. Having observed in my practice, the undesirable results from over-dressing, and being convinced of the invariableness of the law I am trying to impress upon my readers, I am tempted to say that given an intelligent subject, if the exposure is to be for a short time only, when the thickness becomes a question for decision, dress in the light rather than the heavy garment, and trust the heat centers to supply the possible deficiency. Physicians, whose vocation calls them out at all hours, realize how frequently they miss their estimate of the weather, and find themselves too thinly clad, yet they may experience no ill effects, because of the movement which increases the supply of animal heat. A man may subject himself to such condition as to cause a tremendously increased radiation of heat from his body, as for instance when in swimming, and catch no cold, for the same reason. The motion stimulates the heat-making machinery, and compensation is maintained, yet if a bath be too prolonged, the processes tire, are unequal to the strain, and the bather becomes chilled or cramped. As a rule, Americans load themselves with heavy clothing and have their feet—whose large amount of surface exposure makes them excessive radiators of heat—covered with thin stockings and paper-soled shoes. If we would only learn from observation of our more robust English cousins, one source of catarrh would be removed. Rubbers are useful enough in heavy rains, but we should not make ourselves dependent upon them because of wet streets, but guard against such dangers by wearing thick soled shoes and woolen stockings. The feet are so much in contact with cold pavements and dampness that they are least adapted to scant covering.

THE AIR WE BREATHE

contains anywhere from 60 to 80 per cent. relative humidity and along the seaboard it may range as high as 90 per cent. This moisture is necessary to the preservation, in a healthy condition, of the mucous membrane lining the air passages. In mountainous climates where the relative humidity is very low, the muciparous glands of the Schneiderian membrane become exhausted in their extra endeavor to supply the deficient moisture necessary to the dry air passing into the lungs. Watery vapor prevents dessication, and if the air we breathe did not contain moisture, both animal and vegetable life would be impossible. Fishes die when removed from the water, though the air contains much more oxygen than the water, and all organisms would perish if deprived of atmospheric moisture. Dew and rain have been called the scavengers of the atmosphere. According to present scientific knowledge, certain atmospheric particles are considered accidental, and of these dust occupies an important place. Of the various kinds of dust, some are very deleterious to animal life, though most of them are harmless. Yet, if we eliminated the aqueous vapor, suffocation would result. Therefore we have a ready explanation of the unhealthful effects of

FURNACE HEAT,

which dries the air we breathe, giving the muciparous glands additional work, tending finally to their exhaustion, weakening the system in part and whole,

and making a constitution incapable of enduring sudden and prolonged exposure. Children should be kept out in wind and sent out in weather. Every hour passed in the open air tends that much toward developing a constitution that will last to three score and ten. This, of course, applies to children with normal or open respiratory passages. No child with obstructed nose can escape the cold-catching habit. The function of the nasal passages, which are sufficiently supplied with blood vessels to elevate its temperature several degrees, is to cleanse and warm the air destined for the lungs, as well as arrest the multitudinous microbes with which it is laden. Whether on ice or snow, the shifting sunbeam is never cold; no parent need fear the specter that would seize the racing, rollicking, well-wrapped sprite that glows with its own heat. This brings us to the consideration of

THE DAILY BATH.

The Americans are not a bathing people; certainly not in the same sense as the Englishman, who has been known to take his tub traveling with him, that he might not forego what is a delight to him as well as a necessity. We build our palaces and construct marble pools that a Roman might envy, and hang our bath rooms with paintings as suggestive as the Venus Anadyomene, worthy Apelles' fabled touch, yet we forbear to take the plunge. When we do perform our ablutions it is for cleanliness alone. Remembering that cutaneous transpiration has much to do with the proper regulation of animal heat, and is largely dependent upon the functional health of the skin, we should be sufficiently impressed with the necessity of the bath as a matter of hygiene. Indeed, bathing for cleanliness is of secondary importance. Nothing conduces more toward strengthening the system and making it proof against colds, or breaking off the habit when once established, than the daily bath, which is best taken on arising. The water should be cold, direct from the hydrant, and in winter the temperature of the room at least 60 degrees F. The sponge, shower or plunge (selected according to the constitution of the bather) should be accomplished within a minute. It is well to begin with the sponge, which can be taken by all except the most delicate. The sponging can be taken as readily by wringing a towel sufficiently to prevent dripping, and sawing it rapidly over the body. A quick drying follows, and this, succeeded by a vigorous rubbing with a coarse linen crash, until the body is in a warm glow. The test is the after-feeling of well-being and warmth. Should these directions be carefully complied with and this reaction absent, there are some special reason why the bath is contraindicated. The wrapping of a towel, wet with cold water, around the neck preliminary to the general dip, tends to stimulate the throat's resistance to sudden draught and cold.

FOOD

exerts an undoubted influence in producing that vigor and strength of constitution that is required to withstand varying atmospheric conditions. In supplying the table the season should always be considered. We know that fatty and albuminous foods contribute more heat than vegetables and fruits; and for this reason such a diet is indicated for cold weather and should be curtailed with advancing summer. The Esquimaux, influenced partly by the law of environment and partly by that instinct which guides an animal in selecting what

is best for its needs, subsists entirely upon fats and oils. The South Sea Islander, with as little design, turns to succulent vegetables and fruits. The exigencies of life, thus supplied by nature in opposite zones are combined in our varying climate, and we should be guided into an intelligent application of what is best suited to our requirement. The system is capable of oxydizing just so much food, and when we overcharge it with heavy eating in spring, giving it more fuel than is necessary to keep the furnace heated to 98.6 degrees, the body's temperature, we find it overtaxed and the blood charged with effete matter, constituting spring fever. Thus we may appreciate the wisdom of the Catholic church in establishing its period of abstinence in the early spring.

PUERPERAL ECLAMPSIA, WITH REPORT OF A CASE AND TREATMENT.

BY NORMAN W. BELLROSE, M.D.

EATON, COLO.

I doubt very much if there is a disease of pregnancy in regard to which there is a greater diversity of opinion as to its etiology and pathology than puerperal eclampsia. Do we know its cause? Yes, I think we do.

Braun tells us that the kidneys are responsible, and is an advocate of the nephritic origin. Playfair, on the other hand, does not consider the albuminuric theory as clearly proven. Lever, in 1843, pointed out the connection between albuminuria and eclampsia, and that the two conditions occupied the relative position of cause and effect.

Further investigations, however, lead one to believe that the kidneys are not wholly responsible. In twenty-eight cases of eclampsia reported by Schauta, three were found to have normal kidneys. Ahlfeld found in seventeen cases two in which the kidneys were normal.

Vinay, after making thorough microscopic examination, states that in a large number of cases the disease can hardly be attributed to renal lesion. Rivere, Auvard and others declare eclampsia to be a form of auto-intoxication. I believe that the theory of toxemia, not one but several different poisons, is generally upheld. I am a firm believer in the toxemia theory of Rivere and Auvard; but, nevertheless, I can not but believe that the kidneys play an important part in the toxemia of eclampsia.

Bouchard has said that man is constantly menaced by poisoning. He labors each instant for his own destruction, making incessant attempts at suicide; nevertheless this intoxication is not realized, for the organism has multiple resources to escape it.

It is not necessary for me to tell you that in pregnancy the composition of the blood is profoundly altered, and that the quantity is somewhat increased. Why is this? Because the quantity of blood before pregnancy is inadequate to meet the condition of pregnancy. We know the pregnant woman has to provide nutriment to breathe, to maintain blood circulation, to secrete and excrete for two individuals, herself and her fetus. All this means that extensive changes in the general system must occur. In order to carry on this extra work properly, certain viscera of the circulatory apparatus become somewhat modified in size and in function. I might mention the heart, the hypertrophy of which is a wise provision of nature to meet the increasing demands of the blood

supply in the advancing months of pregnancy. Other organs are likewise increased in size, namely, the liver, spleen and kidneys. The lungs and skin also become more active. Why is this change? My answer is, nature has an increased amount of work to do, and such being the case, she endeavors to increase the working capacity of her organs accordingly. It is my belief that in eclamptic cases the kidneys (possibly the liver, lungs and skin) fail to accomodate themselves to the extra work that the pregnant state requires of them. You are aware that the kidneys excrete largely from the solid constituents of the blood, and that many of the inorganic salts of the urine are elaborated in the kidneys. Toxic substances in the blood, whether generated within the body or derived from without, are in a great measure eliminated by the urinary organs. In pregnancy the need of this elimination is necessarily greatly increased or should be. If the kidneys fail to do this extra amount of work, accumulation is produced and intoxication results. At first this is hardly noticeable; but as pregnancy advances and the amount of toxic matter to be eliminated is increased in the blood, the greater is the effect of the poisons on the great nerve centers, and as a result, other symptoms develop that are characteristic of eclampsia.

Some writers state that eclampsia is the result of albuminuria, which is caused by intra-abdominal pressure, thereby interfering with the renal circulation. If this be true, why is it that a non-pregnant woman can have her abdomen as greatly distended by an ovarian tumor as from plural pregnancy at term, and yet not suffer from either? Statistics tell us that one in three hundred women who bear children suffer from eclampsia, and that about twenty-five per cent. of them die. I can say that I have had two cases out of a record of two hundred and fifty pregnancies. I take pleasure in making report of one of them. I can say, however, that both of my cases made a good recovery.

Mrs. A., primipara, 23 years of age, pregnant about 265 days. She enjoyed fairly good health up to within about fifteen days of full term, having had only light attacks of headache from time to time, with some stomach symptoms. On April 16, 1893, she first noticed that her feet were somewhat swollen. On April 18, about 3 P.M., she was taken with a severe headache, which grew gradually worse until about 8 P.M. At this time it was almost impossible to endure. Not suspecting anything serious, both she and her husband thought it would "wear off" after getting some sleep. She failed in doing so, and at 10 P.M. the pain in the head was no better. I was called about 11 P.M.; arrived fifteen minutes later. I found my patient in a very restless condition; the pulse was tense and about ninety-five to one hundred beats per minute; some nausea and vomiting. The quantity of urine voided during the preceding twenty-four hours was thought to have been about two and one-half pints. About one-half hour after my arrival she had a severe convulsion (epileptic in character), which lasted about five minutes. It was followed by more or less stupor. She would answer all questions rationally but slowly. I at once gave a five grain powder of phenacetin combined with one-eighth grain of morphia sulphate, which relieved the head and nervous symptoms for a short time. Her family physician, Dr. J. Hawes, of Greeley, Colorado, was then sent for; he being out of town, Dr. Wallace was

called. He arrived about 2:30 A.M. on the 19th. There was no question about diagnosis. Fluid extract of *veratrum viride* was given hypodermically, every two hours, beginning with two-drop doses, and was gradually increased one drop at a time until ten drops were given. Dr. Wallace remained until 3:30 A.M., and at Mr. A's request I took charge of the case. At 4 A.M. she had a second convulsion which was of longer duration and more severe in character. The face became more congested. She then went into a profound coma, and did not recover consciousness until about 10 P.M. After the second attack I immediately began giving hydrate of chloral and potassium bromid, of each thirty grains, in four ounces of warm water, per rectum, and repeated every three hours. The convulsions continued in spite of treatment, and by 11:45 A.M. April 19 she had had seventeen. Eight o'clock next morning I decided that the best thing to do was to empty the uterus, and the sooner the better for the safety of the mother and the child. Dr. Wallace was again sent for; he not having arrived at 10 o'clock, I proceeded to prepare the patient and myself for the operation, which was conducted under strictly antiseptic conditions. Squibb's chloroform was administered, more for the purpose of controlling the convulsions than pain, as the patient seemed to be insensible to pain. A soft rubber catheter was then passed into the bladder and about a pint of dark colored urine was obtained which contained about one-fourth in volume of albumin. Dr. Wallace had not arrived at 10:30, so I decided to operate at once with what assistance the nurse could render. The manipulations necessary in dilating the os excited uterine contraction and by the time I had sufficiently dilated it to admit the hand, the child's head had descended and version was impossible. Forceps were applied, and at 11:45 I succeeded in delivering a nine-pound boy. Life was extinct, however. I labored with it for some time, but without success. The placenta was removed by Credé's method with very little difficulty. Post-partum hemorrhage was very slight.

The *veratrum viride* was then continued in nine-drop doses hypodermically every two hours, as was also the hydrate of chloral and potassium bromid every three hours. Rectal enemas of peptonized milk were given every four hours. I also used dry cupping and sinapisms over the kidneys. As soon as the patient could swallow, a thirty-grain powder of compound jalap powder was given in a little water to open up the bowels, and a saline laxative given daily to keep up a free action. After consciousness was restored the hydrate of chloral and potassium bromid were discontinued, and potassium acetate with infusion of digitalis was given instead to keep up a free action of the kidneys. The usual diet and tonics were then given. Up to 6:30 P.M. April 19, she had had twenty-seven convulsions, making seventeen before the operation and ten thereafter. The albumin disappeared from the urine in about ten days. Diplopia was complained of from the fourth to the seventh day. My patient sat up in bed on the tenth day, and on the fourteenth day was dressed. She made a good recovery.

Wilson, Hammond and others, tell us that the eclampsia of pregnancy is caused by the presence of an excess of urea in the blood. How can this be, when Bouchard tells us that to kill a man, it would require the quantity of urea which he makes in sixteen days? Clinical observation is therefore here

in accordance with experimentation in denying to urea the power of producing the intoxication called uremic.

It seems to me that if the nephritic origin of eclampsia is correct as many writers claim, the kidneys would not have cleared up as quickly in this case. I do not think that the nephritic symptoms were in proportion to the gravity of the eclamptic manifestations. In closing I wish to state that I think it is a mistake not to induce premature delivery when the child is viable in eclamptic cases that do not respond to treatment after a fair trial. I firmly believe that in Mrs. A's case the child's life might have been saved if delivered after the third or fourth convulsion.

Since reading the above paper before the Colorado State Medical Society I have again attended Mrs. A. in confinement. The following is a brief history of the case: April 22, 1896, Mr. A. informed me that his wife was again pregnant, and thought "she was about five months along." He was greatly alarmed about her condition, fearing that she would again suffer as in her former pregnancy. I consoled him with the assurance that if the bowels and kidneys were kept active, that I did not think there was much danger of her suffering as before. I requested him to bring me a four oz., bottle full of her urine about every two weeks for examination. The first sample was examined on May 22. The examination revealed the following condition: Sp. gr. 1020, reaction faintly acid, albumin none, average amount voided in twenty-four hours at this time was about fifty ozs. Bowels acting from one to three times a day. She had at times a sense of fullness in the head, but it was never severe. Appetite good, obtaining from six to eight hours sleep in every twenty-four. Her condition remained pretty much as above stated, until about July 1, at which time she had some swelling of her feet, but it never interfered with her wearing her shoes. She also had some headache at times. Appetite was still good. Sleeping quite well; bowels and kidneys still active, some days passing as much as sixty ozs., of urine in the twenty-four hours. July 15 urine slightly turbid, sp. gr. 1015, reaction acid, amount forty-five ozs. She had slight diarrhea, and some nervous symptoms. Drank a great deal of water, so special attention was given to diet. Mr. A. did not bring any more urine for examination. It was not convenient for him as he lived 7 miles in the country; further he did not think it necessary as his wife was "getting on so well." On August 31 I was called to attend her in confinement. She was about four hours in labor, some adhesion of placental membrane, otherwise the labor was normal in every respect. Child, female, weight, eight and one-half pounds, well nourished and active. One-half hour before delivery, urine was voided, later examined and found free from albumin. Pulse, five minutes before birth of child's head, 98, full, soft and regular; ten minutes after completion of labor, 88, character the same. On my return visit (3rd day) she told me that she felt strong enough to sit up, but was instructed not to do so before the ninth day, at the earliest. She is now enjoying the best of health.

The above case demonstrates very clearly to me the fact that a woman once having suffered from an attack of puerperal eclampsia, and who recovers without any permanent injury to the kidneys, will not necessarily suffer from a second attack, if she again becomes pregnant. I do believe, however, that when the kidneys are permanently injured (whether the injury be great

or little) that she would be predisposed to trouble of this kind and that the danger of a second attack would be great. I have been unable to find anything in the text-books that I possess (and they are some of the best) bearing upon this subject. About one year after Mrs. A.'s first illness her husband consulted me, wishing to know what the chances were for his wife to again suffer from convulsions, if she should again become pregnant. I told him that the chances were *very* great, and that a second attack might prove fatal, but it seems that I was mistaken.

The above case is convincing to me that puerperal eclampsia is not caused primarily by a diseased condition of the kidneys, but as before stated, I believe the poisons, or toxic substances, whatever they may be, accumulate in the bloody, and if not eliminated through the natural channels, will produce inflammation of the kidneys, hence the origin of albuminuria. In some cases the great nerve center first becomes affected, causing the convulsion, the kidneys being only secondarily impaired; but if the toxins are eliminated through the natural channels the kidneys and nerve centers remain unimpaired. I believe it is the duty of every physician engaged to attend a case of confinement, two or three months in advance of the expected time (as they sometimes are), should in every case of swelling of the feet, especially if accompanied with some headache and stomach symptoms, give special attention to the kidneys and bowels, and in bad cases the skin and diet. By so doing, much or all of the "toxins" that accumulate to excess in the blood, could be largely eliminated, thereby preventing a possible attack of puerperal eclampsia.

A RATIONAL TREATMENT OF DIPHTHERIA WITH OR WITHOUT ANTITOXIN.

BY EMERSON M. SUTTON, M.D.

PEORIA, ILL.

Recognizing the doubts of all treatments, I submit four cases taken from my case book which were true diphtheria occurring in an epidemic, and which show a positive result:

Case 1.—July 18, 1891. Patient, a female, aged 15. Two brothers had just died of diphtheria when she contracted sore throat and fever with constitutional symptoms. The membrane formed over the posterior fauces, extended anteriorly and to the sides of the throat. Treatment, spray 2 per cent. cocain sol. very carefully and small amount, followed by second spray of Condy's fluid. Ordered to be repeated each hour till all soreness was relieved. Internal treatment, zinc sulpho carb. 1 gr. each hour. Quinia and iron tonic every three hours. Food every fourth hour, taken after spraying. Result, second day membrane disappearing from anterior pillars and only patches left on sides. No fever. Good appetite. Third day, no patches remaining, inflammation subsiding. Fourth day, throat not the least sore. Fifth day, discharged recovered.

Case 2.—July 11, first symptoms developed in boy aged 6. Membrane formed on sides and back of throat. Constitutional symptoms profound on the 13th, when first seen. Treatment: Cocain spray three times a day (at each visit). Permang. potash sol. spray each hour; gargle of solution every fifteen minutes or one-half hour. Internally iron and quinin. Pepsin cordial after food, which was always following cocain spray. July 14, throat not so sore; membrane disintegrating; general condition good. July 15, membrane only in patches. July 18, discharged well.

Case 3.—October 28. Boy aged 8 sent home from school with fever and sore throat, treated by family physician for tonsillitis. October 29, no better under sprays, antipyretics, etc. October 30 and 31, patches coalesced, forming membrane, constitutional symptoms became alarming. Treatment inaugurated for diphtheria October 31, spray 2 per cent. cocain sol. followed by Condy's fluid. Spray every two hours. Internally, milk every three or four hours; 5 drops each, digitalis and nux

vomica tinctures in spirits of mildererus at same intervals as food. November 1, constitutional symptoms less profound, membrane disintegrating. Additional treatment, 1 gr. mild chlorid followed in six hours by magnesia. November 2, much better. Nov. 3 and 4, membrane disappeared, sleep undisturbed after 8 o'clock evening spray. November 5, eats, feels well. Tonic given of quinia and ferrum. November 6, discharged well.

Case 4.—B. N. aged 11, December 3 contracted diphtheria from association. Constitutional symptoms severe, great prostration, membrane extensive, extending to anterior nares. Treatment: Carbolic acid gr. 1, cocain 2 per cent. sol. 3ii, use spray cautiously every two hours, gargle every fifteen minutes with Condy's fluid. Internally, tonic, calisaya. December 4, soreness disappeared, membrane disintegrating, less inflammation. December 5, patches only remaining. December 6, patches disappeared. December 7, discharged well.

Not going farther into the pathology than to state that either preceding membrane formation an intense hyperemia may exist and form a local affection at first, the disease becoming constitutional as well at a later period, or the constitutional may precede the local symptoms, but at the point of infection passive hyperemia first takes place and exudate follows. A treatment that will relieve this hyperemia will prevent the exudate and subsequent systemic poisoning. Such a remedy is a 1 or 2 per cent. cocain solution acting on the capillaries, used in the form of spray. I first tried this in 1891, after noticing the continuance and even increase of the primary congestion following the use of the usual spray, especially observed after hydrogen peroxid, and I found that the immediate relief from the soreness was so manifest that it required no coaxing to gain consent for repeated treatments. The patient could take nourishment at once following the spray, which is itself a great desideratum, and recovery has taken place rapidly in every case, more of which I have to report. A word as to spraying. In some cases it was necessary, at first, to have the patient inhale the spray, as the deeper parts of the throat were affected, and in none of the cases were untoward effects observed.

328 Woolner Building.

TUBERCULIN IN OBSCURE MANIFESTATIONS OF TUBERCULOSIS.

BY W. H. WEAVER, M.D.

CHICAGO, ILL.

If the earliest symptoms and signs of consumption were as easily definable and as pathognomonic of the disease as those manifested in the later stages, it might be easily diagnosed in its incipency. But, unfortunately, this has not been the fact. In a great many cases the onset is sudden or occurs during the progress of a severe cold or bronchial catarrh, or following in the wake of some other acute disease. Frequently, however, it is ushered in by symptoms which point to no particular form of disease, and it is this class of cases that is the most puzzling until we find pronounced symptoms pointing to lung infection. There are often certain symptoms of a general constitutional impairment, insufficient in themselves to render a diagnosis possible, but which do point to a definite disease if properly studied. There are many cases occurring in active practice in which a positive method of diagnosis would be of the greatest advantage. It is often easy to find out what a disease is not, but to tell what it is, is quite another matter.

The patient calls upon his medical adviser frequently, with the consciousness that there is some-

thing wrong. He is told that he has a little malaria or biliousness, and probably the diagnosis is changed frequently at the appearance of new symptoms. Restrictions of diet and some other measures directed toward the improvement of digestion improves his condition for a while. These measures soon fail and the case has advanced another step. There is now a thicker coating on the tongue, a general feeling of malaise with loss of appetite and possibly diarrhea, intestinal indigestion or constipation. There is anemia, insomnia, rheumatic pains or intercostal neuralgia, and possibly the heart's action is accelerated, fatigue toward evening with elevated temperature, chilly sensations and symptoms due to combined poisoning from the ptomains of intestinal fermentation and tubercle bacilli, which resembles malarial toxemia. The blood may be surcharged, or at least infected with tubercle bacilli and their products, long before any local inflammatory action is discoverable in the lung tissue, a sort of prolonged incubative period. Now to make a positive diagnosis of this condition would be to gain much time. There is but one recognized test which may be applied and that is tuberculin.¹ If there is reaction after a test dose of this agent the case is one of tuberculosis, and if afterward treated on that line rapid recover is certain. I have recently had under my care four cases which illustrate this use of tuberculin.

Case 1.—W. G., age 23, had typhoid fever one and a half years ago, from which he made a good recovery. During the past six months he had been steadily declining, continuously complaining of some new symptoms as soon as he had recovered from an old one; diarrhea, headache, loss of appetite, pain in the back, now and then a severe cold. In February he had afternoon fever, temperature 101 degrees F., pulse rapid, losing weight and constant fatigue, examination of lungs entirely negative. A small test dose of tuberculin was given and was followed in about ten hours by a characteristic reaction. About six weeks of treatment restored him to his former good health, which has continued to the present time.

Case 2.—Mr. W. H., age 38, for more than a year has been very susceptible to colds, followed by rheumatic pains in the back, indigestion, rapid pulse, increasing weakness, constant afternoon fever. During the fall of 1895 a severe cold was followed by a descending bronchitis, but no lung infiltration was discoverable, and no bacilli could be found in the sputum. However, a test dose of tuberculin was given and followed by a considerable reaction. Treatment consisted in the use of tuberculin and other measures indicated by his condition and removed every symptom of the previous trouble.

Case 3.—Mr. F. S., age 23, for several years has been subject to a mild form of asthma, seldom coughing but always wheezing and suffering from partial dyspnea. He came to me complaining of weakness, insomnia and indigestion; pulse 95, temperature 99.5 degrees F. Examination of the lungs showed sibilant râles heard over both lungs, no moist râles or other signs of localized infection were found.

This patient was found to be very sensitive to the action of tuberculin, but under its influence recovered from all the symptoms complained of as well as recovering his weight and lost strength.

Case 4.—Mr. F. M., age 22, came to me complaining of a protracted cold, pain in the chest and at times in the throat, cough and expectoration of mucus, loss of strength and weight. Examination of the chest and sputum both negative. Tuberculin gave the reaction and today the patient has entirely recovered from his symptoms.

In a recent article by Dr. Taylor of Minneapolis on "Tuberculin in Pulmonary Consumption" it is shown that 84 per cent. of first stage cases were greatly improved by his use of tuberculin. And as the cases are more advanced the percentage of improvement or recovery grows less. It is also true that a great many cases in the later stages may and do recover reasonably good health.

Now, if we can get the cases in the incubative or first stages a very much larger percentage ought to recover. There is no other method by which this test can be made. Inoculation of rabbits or guinea pigs with blood taken from the patient would hardly be reliable, because the particular specimen of blood obtained might contain no bacilli, and other sources of error would enter into the case, which would involve uncertainties. Tuberculin is used in detecting bovine tuberculosis and has probably never failed as a crucial test. It is undoubtedly just as reliable in the human subject.

Of course where there is expectoration containing bacilli no other test is needed than the microscope. If there is no sputum or no bacilli to be found, the test will be decisive.

It might be objected that as consumption is such a very fatal disease, unless there is some positive cure to be promised the fact of an early and positive diagnosis would be a source of great worry to the patient and sorrow to his friends which would only hasten the rapid progress of the disease. This objection is born of ignorance of both the disease and its treatment and should have no weight with one who has in his mind the welfare of his patient. That consumption is curable, especially in the stage under consideration—the first stage—should be firmly impressed on his mind so that he may not leave any stone unturned which will aid in his recovery. Next to the disease itself this general conviction that the disease "can not be cured" is the greatest obstacle the physician has to encounter in his efforts to enlist the energies of the patient. That physicians as well as others have encouraged a patient to "sin away his day of grace" by calling his disease bronchitis, malaria or something else, can not be denied. Ambition to do something in the right direction should have been instilled into him early, before he became too weak to help himself. By far the greater majority of patients seen by lung specialists are already far advanced in the second and third stages of the disease, and then we are requested not to let the patient know that he has consumption. Who is responsible for this immense loss of time and life?

Professor Jaccoud says in his work on phthisis that "pulmonary phthisis is curable in all its stages and in its two forms—the ordinary and the pneumonic." Tyndale says "consumption is curable." It has been the belief of the great physicians of Europe that consumption is curable—Celsus and Galen, Willis, Laennec, Rokitansky, Schuller and Koch. In this country Lindsay, C. T. Williams, Professor Flint in Pepper's System of Medicine, and Professor Loomis (in Practical Medicine) says that chronic pulmonary phthisis is not necessarily a fatal disease. And it is well known by every physician that cases in all stages recover every day. Now if it is curable in all stages it is certainly most easily curable in the first stage.

Let the profession educate the laity in this direction so that it may be regarded as a curable disease, and this great and general dread of the disease will gradually give way to the desire to know the truth, and a determination to coöperate in the efforts put forth to eradicate the disease. An early diagnosis and successful treatment will be demanded, and it will be counted criminal carelessness or a great misfortune for a patient to advance beyond the first stage of the disorder.

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¹ Recently it has been proposed by Dr. Alfred Worcester of Waltham, Mass., as a test for human tuberculosis.

PYORRHEA ALVEOLARIS.

PAPER NO. 3.¹

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This disease is evinced by simple inflammation of gums around the teeth, followed by chronic inflammation with or without suppuration, with or without calcic deposits, a gradual destruction of the peridental membrane, with recession and absorption of the alveolar process and gums, concluding with loosening and exfoliation of the teeth. The physician is more familiar with this disease, as it appears to him as a consequence of scurvy, mercurial or iodid salivation.

Few diseases have received as many names as that under discussion. More time has been spent in apology for and discussion of new names than in original research as to its etiology. The term pyorrhea alveolaris, which has become so popular, and which I have selected for the title of this paper, does not elucidate the exact condition, since many cases which come to the dentist do not suppurate.

Riggs's disease seems a more appropriate title, since to it is affixed an exact clinical picture of the various stages, from simple gum inflammation to wasting of the alveolar process and loss of teeth.

Many theories have been advanced as to the cause of this disease. None require discussion at this time, except the uric acid hypothesis advanced by Dr. Reese, of Galveston, Texas, May, 1885, and most forcibly advocated by Professor C. N. Peirce. This theory owes its prominence more to the eminent position of Professor Peirce than to the intrinsic value of the experiments upon which the theory is based.²

"I have had three specimens of this tooth deposit examined chemically by Prof. Ernest Congdon of the Drexel Institute, whose experimental skill is a sufficient guarantee for the accuracy of the results obtained. Specimen No. 1 contained, as shown by microscopic analysis, a number of fine needle crystals of calcium urate, a few crystals of free uric acid, and crystals of calcium phosphate. Destructive distillation analysis yielded a strong ammonia reaction. The murexid test for uric acid and its compound was faint, though the characteristic color showed in several places. Specimen No. 2 presented the same crystals on microscopic investigation. The murexid test was strong, producing a number of purplish red spots. Specimen No. 3 yielded similar results. In addition to these analyses by Professor Congdon, some six or eight specimens were examined by Prof. A. P. Brubaker, in my presence, the results obtained corresponding to those of Professor Congdon. In three of these, an abundance of urate of soda crystals were observed. It must be remembered that, as the quantity embraced in each specimen was small in amount, large results could scarcely be obtained or expected."

The publication of Peirce's researches led to investigations of the question, which demonstrated to me that patients may suffer with uric acid diathesis without pyorrhea or even chronic gum inflammation. Moreover, most people over 40 years of age are afflicted to a greater or less extent, while comparatively few have either lithemia or gout.

Certainly no physician would claim that resultant loose teeth were consequent upon scurvy or mercurial poisoning, uric acid much less. From the comparatively doubtful results obtained in so few cases, the claim seems far from warranted that pyorrhea is caused by uric acid or gouty diathesis. Since I prepared my second paper,³ I have continued my examination with the view of obtaining the percentage of cases which actually show uric acid. These examinations were conducted personally by Dr. Jerome H. Salisbury, of the Northwestern University Woman's Medical School. The teeth procured from institutions which make a specialty of extracting were all selected by the writer. All contained the dark calcic deposit above the pus line.

Dr. Salisbury reports thereon as follows:

"I have examined a second series of 300 teeth by the murexid test and microscopically with following results: By the murexid test, six out of the three hundred gave a distinct reaction; eighteen showed crystals under the microscope. The murexid test was performed as follows: The deposit was selected as carefully as possible, removed from the tooth, and placed in a small porcelain crucible. A drop of pure nitric acid was added, and the mixture evaporated on the water bath. When dry the evaporation was repeated with another drop of nitric acid, and the crucible allowed to cool. When cool, the color produced by the nitric acid was observed, and then a glass rod, wet with ammonia water, was brought near the deposit, and any color produced was noted. If no color was observed, the ammonia was allowed to flow over the residue. A yellow color was produced in many cases by the nitric acid, which was deepened by the addition of ammonia. The microscopic examination was made by scraping off the deposit and evaporating it with a drop of hydrochloric acid. The residue was moistened with water, and the insoluble material placed on a slide and covered with a cover-glass. It was examined with a No. 7 objective. We may assert that uric acid occurs in a certain but very small proportion of cases of calcic deposit on the teeth."

Dr. J. A. Wesener, after an examination of several teeth from patients over 48 years of age, under treatment for uric acid, reports that the murexid test was negative and uric acid crystals were absent. Since there is some doubt whether the crystals are free uric acid or calcium phosphate crystals (resembling each other), and since but 6 out of 300 responded to the murexid test, it would seem justifiable to accept as a fair average 12 as responding to both tests. This would give 4 per cent., of cases of which uric acid was present. This corresponds closely with the results previously reported in my second paper upon this subject, when 5 per cent., was found. It will be remembered that the 215 cases were examined independently by two chemists of known ability.

While one-fifth of the 518 cases examined had decided lithemic or gouty symptoms, but 3½ to 4 per cent. gave positive results by the chemic and microscopic examination. These results seem sufficient to demonstrate conclusively that pyorrhea was not due to uric acid, and that uric acid when found is merely an expression of uric-acid diathesis. As so many colors are observed in the porcelain crucible, these examinations should be made by expert chemists.

Ten years ago⁴ I published some observations on pyorrhea, which it was hoped some one proficient in

¹ Paper No. 1, Dental Cosmos, 1896, p. 689; paper No. 2, *ibid.*, 1896, p. 310.

² International Dental Journal, January, 1894.

³ April Cosmos, and International Dental Journal.

microscopy would take up and pursue the investigations to the end, but these seem not to have attracted attention. Among the points then made was that pyorrhea was on the increase, that a large majority of patients suffered more or less from it, and that modern dentistry had most to do with the cause; that it was of local origin.

I still hold these opinions, since clinical experience in the different asylums of this country and Europe, as well as close observation of my office patients has

a destruction of an inflammatory character, of chronic progress, proceeding from the neck to the end of the root, and leading without fail to the loss of the tooth. This special feature, its mode of origin, and the precise seat of the lesions, seem to justify the name alveolo-dental periostitis. But notwithstanding its primary origin in the periosteum and its complications with the gum and bony alveolar wall, the study of the successive morbid phenomena does not allow us to admit, as various authors have claimed,

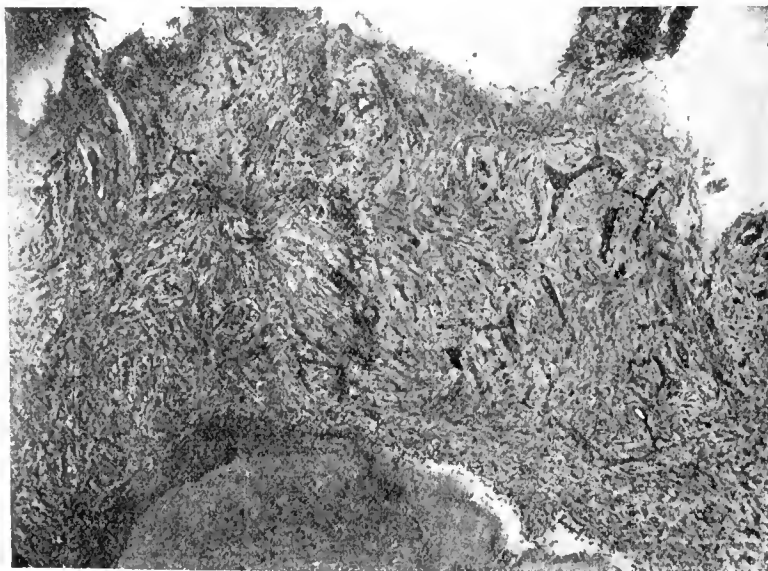


Figure 1.

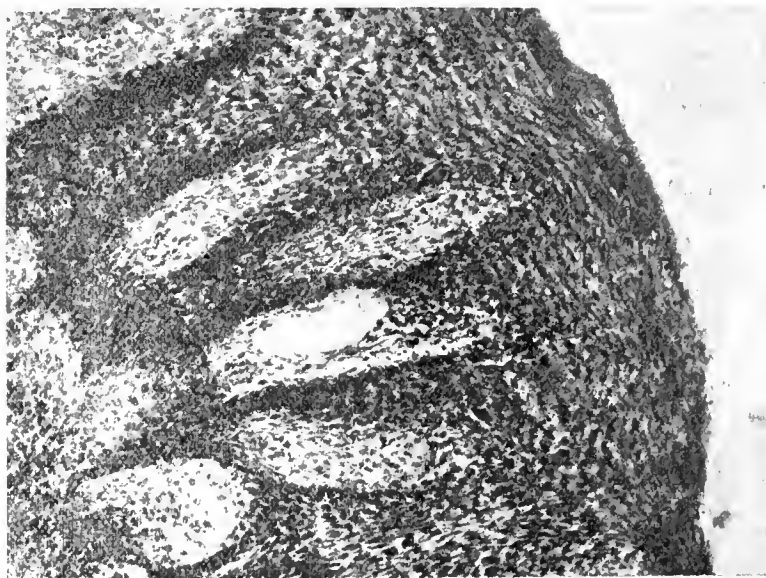


Figure 2.

given me a broad range to study the etiology of this disease.

Dr. E. Magitot, in 1867, published the most complete paper upon this subject, describing the disease in its progress to the end, but says that the gum being in all cases attacked subsequently only, is not the real seat of the lesion. The disease with which we are occupied, he says, "seems essentially characterized from an anatomic point of view by a slow and progressive destruction of the periosteal membrane,"

that these parts are originally the seat of the disease. Dr. Peirce takes the same view.

I hold just the opposite: that the gum is the first tissue attacked, and these parts are originally the seat of the disease.⁵

Clinical observation shows that in the incipient stages of pyorrhea active and chronic gum inflammation and calcic deposit may attack one, two, three or even four teeth at once. General invasion of all the teeth *never occurs* at the same time, which would

⁴ Dental Cosmos, 1886, vol. xxv, p. 689.

⁵ See original paper.

be the case if it were of constitutional origin. The calcium salts being in solution in the blood, are deposited. Only local conditions favor such deposits, which militates strongly against the uric-acid theory. As Ziegler⁶ remarks, "the cause of calcification is for the most part to be found in local changes of the tissues, since the deposits of lime-salts usually occur in localities in which the tissue has already died or is in process of degeneration and necrobiosis. It looks as if dying tissue which has undergone more or less modification possesses a kind of attraction for the lime-salts in solution in the body, and enters into intimate combination with them. Among the degenerating or dead tissues which are particularly prone to undergo calcification, we may mention in particular connective tissue which has undergone hyaline degeneration, such connective tissue being quite often encountered in the walls of the blood vessels, in the endocardium, in an enlarged and degenerated thyroid, or in the thickenings of the pleura or pericardium. It is common also in degenerative areas in the walls of blood vessels, or in tumors, or in any other portion of the body in which hyaline and fatty degeneration are in progress, in degenerating cartilage, in dead cell bodies, as for example in dead ganglion cells or kidney epithelium (especially in corrosive sublimate, aloin, or bismuth poisoning), or in circumscribed cheesy areas of considerable size."

When a tooth associated with pyorrhea has been extracted, clinical observation shows that the margin of the peridental membrane has changed its locality. Instead of being in its normal position at the neck of the tooth, it has receded in a more or less irregular line toward the apex of the root. The extent of this recession depends upon the duration and power of resistance of the disease.

The membrane, instead of being thin and of a pink color, is quite thick and of a deep red. The inflamed membrane may extend through the entire length of the root, or in circumscribed localities. The space upon the root made vacant by the destruction and loss of the peridental membrane may be made clear and smooth, or it may possess calcic deposits. These deposits may consist of a uniform ring extending around the entire tooth, or circumscribed masses of deposits may be located at different points about the root. As the membrane recedes, the deposits follow after it upon the roots.

Between the border of the calcic deposits and the peridental membrane, is a space, one or two lines in width, where the roots of the tooth are perfectly smooth. This is the pus-line of clear, smooth tooth-structure, and is nearly always situated between the calcic deposits of the peridental membrane, showing that the calcic deposits are not always found in the membrane, as Dr. Peirce claims. The space upon the root of the tooth between the peridental membrane and the neck of the tooth, including the calcic deposits, is bathed in pus. This disease, which first makes its appearance as an inflammation of the gums, is due to irritation from constitutional and local causes.

Constitutional causes are tartar, mercurial salivation, potash iodid and other drugs, syphilis, loss of vitality, locomotor ataxia, parietic dementia, and the menstrual nisis. In neurotic and degenerate classes, as a whole, pyorrhea exists to a greater extent than in the more healthy classes. In any and all of these dis-

eases in which systemic disturbances produce trophic changes, this disease is present.

LOCAL CAUSES.

As has already been shown, modern dentistry is producing more pyorrhea than any other one cause. Some cases result from infection, from microorganisms, application of the rubber-dam, clamps, wedging the teeth, correcting irregularities, sharp edges of decayed or filled teeth, protruded fillings, spaces between teeth, crown and bridge work, overstimulation in the use of a tooth-pick, artificial teeth, more particularly ill-fitting plates, injuries, tartar, accumulation and decomposition of food and collections around the necks of teeth, tobacco and everything of a foreign nature, as observed in the mouths of idiots, imbeciles, epileptics and all individuals who do not take care of the teeth. The result of irritation from constitutional and local causes is inflammation. The constitutional factors merely produce inflammation of the gum-margins and trophic changes.

Light is thrown upon this subject by a careful study of the anatomy and physiology of the parts involved. We have the roots of a tooth on the one hand, and the bony structure of the alveolar process on the other, and between the two resisting walls we have the peridental membrane, composed of fibrous elastic connective tissue, which gives nourishment to both the tooth and the alveolar process. The alveolar process is a transient, bony structure simply for the purpose of holding the teeth in place after they have been erupted. The gum or mucous membrane which covers the alveolar process, and which is united with the mucous membrane throughout the mouth, connects with the peridental membrane at the margin of the process. That the lymphatic system is richly developed in young people at this locality is demonstrated by the fact that when the temporary and permanent teeth are lost, the alveolar process absorbs. No structure of the body is similarly situated as the peridental membrane. The structure of the tooth not changing its former size, sends very little nourishment into the cementum.

The peridental membrane obtains its blood-supply from the arteries at the apex of each root, just before they enter the foramen, and through the alveolar process but the largest amount passes through the gingival border of the gum.

According to Black⁷ (and I have since verified this statement), "these capillaries run longitudinally from either end of the root toward the center, giving off branches which enter the alveolar process, but not the cementum, because of the peculiar locality of the membrane." May not the anatomic position and a physiologic action on this membrane have something to do with the disease?

The changes which take place in structure are excellently described by Richard Thoma.⁸ "The occurrence of atheromatous degeneration is not limited to epithelial structures, however. It is also found in connective tissue. The pathological new formations of connective tissue, which so frequently develop in the intima of the large arteries, are especially liable to atheromatous degeneration. In the description of the simple hyaline degenerations, it was mentioned that many general disturbances of nutrition lead to a weakening of the middle coat of the vessel. The vessel wall is stretched by the blood pressure,

⁷ American System of Dentistry.

⁸ General Pathology, and Pathological Anatomy, p. 398, 1896.

the lumen of the vessel dilates, and connective tissue thickening of the intima takes place, so that the lumen of the vessel becomes again adapted to the blood-strain. Not infrequently this stretching of the middle coat of the vessel becomes very excessive at some parts of the circumference of the vessel, and accordingly the new formation of connective tissue is very considerable. The newly formed connective tissue has now to support the great part of the tension of the walls. For this, however, it is not quite competent. The increasing dilatation of the lumen of the vessel

sel, or sometimes extend to the media. Atheromatous degeneration, like simple hyaline degeneration, is associated with increase in volume and swelling of the degenerating parts, so that the atheromatous foci project somewhat into the lumen of the blood-channel."

Substitute the peridental membrane for the middle coat of the aorta, and this describes the changes which take place in this locality to a more marked degree, owing to the location of the membrane between the bony walls, and contain more connective tissue.

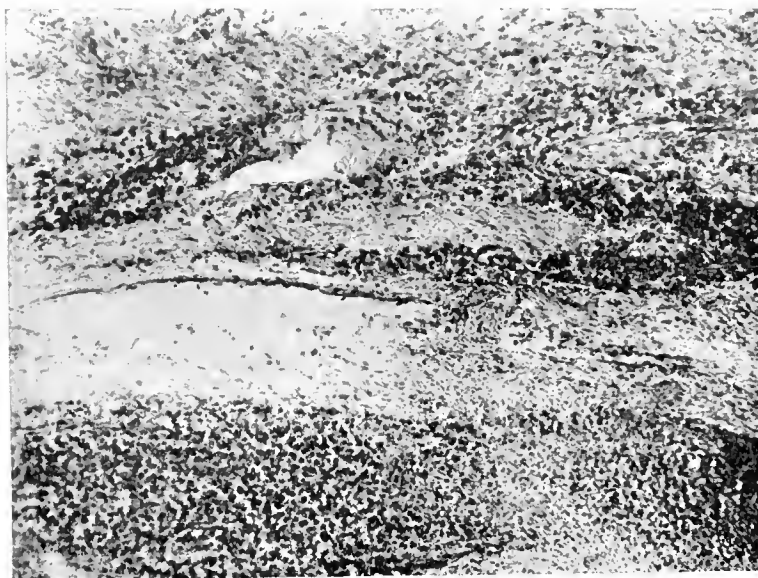


Figure 3.

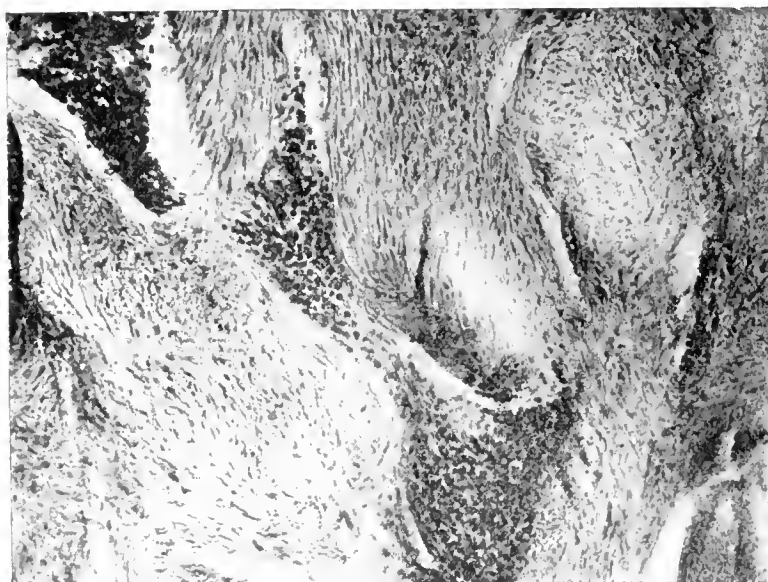


Figure 4.

continues to stretch the wall, until at last the nutrition of the newly formed connective tissue is impaired, some portions of it die, and undergo simple hyaline degeneration. In the hyaline portions a finely granular disintegration, with softening and liquefaction, develops under certain circumstances. This softening is atheromatous degeneration. These areas of softening occur, as a rule, in the deeper, oldest connective tissue layers of the intima, nearer the media. They may, however, break into the lumen of the ves-

The gums are rarely found in a healthy condition. They may become inflamed from either constitutional or local causes mentioned above. If the cause is removed early and antiseptic and astringent washes used, together with the stimulating effect of the tooth-brush, the gums will return to a healthy condition. The peridental membrane is never invaded by pus-germs so long as it is in a perfectly normal state. If, on the other hand, inflammation of the gums, due to either constitutional or local causes, persists, it will

extend to the capillaries of the peridental membrane, causing inflammation and stasis of blood in that direction. The peridental membrane has not lost all of its source of nourishment, although the greater part is cut off; its vitality is thus impaired.

When inflammation of the peridental membrane takes place, a proliferation of small round cells produces a new connective tissue. This tissue causes inflammation and thickening of the peridental membrane, which is subject to necrosis, first, from its position between the two bony walls, causing pressure, and second from deficient blood-supply.

Atheromatous patches composed of granular debris, and granular debris and fatty detritus, in which are deposited lime-salts liberated from the tissue-cells and from the blood or lymph, are then formed. These patches soon become infected with pus-germs, or infection of the tissue in the primary stage of the inflammation may take place.

These pus germs, according to Miller, are found in nearly every mouth, but more especially around the necks of teeth. Infection means degeneration and liquefaction, not only of the immediate tissue, but also of the more healthy peridental membrane, but in a less marked degree.

Pus infection producing pockets are formed first by circumscribed inflammation at a particular point of the gum or peridental membrane at the neck of the tooth. The inflammatory process extends into the peridental membrane along a blood vessel or lymph-stream. This may extend part of the entire length of the root of the tooth, the tissue degeneration taking place in precisely the same manner as before, only in a circumscribed way. In phthisical patients and those with low vitality, and patients who have been ill for any length of time, a low form of inflammation of the gums, extending to the peridental membrane, with pus infection, takes place and, degeneration of tissue ensues with or without granular patches and calcic deposits.

The granular debris or calcic deposits in all cases are a secondary consideration in this breaking down of tissue, the inflammatory exudate and pus formation being primary.

Sometimes the degeneration of tissue will extend the entire length of the root. The atheromatous patch of degeneration is always located in that part of tissue farthest from the blood-supply or at the point of least vitality, hence the reason of the breaking down of membrane and deposit upon the root of the tooth.

Believing that the disease is due to local atheromatous degeneration, I have continued my investigations with the aid of Dr. Vida Latham, of the Northwestern University Woman's Medical School. Loose teeth, the result of pyorrhea, were extracted and placed in 50 per cent. alcohol, and given to her for preparation for the microscope. The illustrations here presented are some of many she has prepared, and are magnified 480 diameters. These illustrations, other than the first which is normal, are pathologic conditions of the peridental membrane in different stages of inflammation and degeneration.

Fig. 2. Longitudinal section of cervical portion of the mucous and peridental membrane in connection with a central incisor. Man, 54 years of age. *aa*, epithelium; *b*, coarse fibrous tissue of the gum connecting the mucous and peridental membrane, the lymph-stream passing through from one tissue to the other;

the tissues are in a state of chronic inflammation; *c*, deeper connective tissue.

Fig. 3. Cross-section of peridental membrane of the anterior buccal root of a right superior first permanent molar. Man, 59 years of age. The dark lines show round cell inflammation extending along the lymph-channel; the lighter lines less inflamed, membrane center; *a*, blood vessel.

Fig. 4. Cross-section of peridental membrane of left superior lateral incisor. Woman, 32 years of age. This tooth became loose on account of pressure from plate. The white spaces show the fibers of the connective tissue. The dark spaces are round cells of inflammation extending into the lymph-streams, showing how pus-pockets are produced.

Fig. 5. Cross-section of peridental membrane of left inferior central incisor of a lady 29 years of age, who has been under my care for fourteen years. By treatment I was able to preserve the tooth that length of time, but finally had to remove it. The disease first started by accumulation of tartar between the two incisors. She was in the habit of biting her thread with this tooth. I could not prevent her from occasionally doing so until it became loose.

The black center shows active inflammation extending along the mesial surface, with cross-section of two blood vessels, with violent small-cell inflammation, having for its starting point the perivascular lymph space.

Fig. 6. Cross-section of central incisor with the peridental membrane. *a*, dentine; *b*, cementum; *c*, cementoblast; *d*, peridental membrane highly inflamed; *e* and *f*, blood vessels cut longitudinally.

The following four illustrations show different stages of inflammation and degeneration of the peridental membrane of a right superior first molar. A lady, 40 years of age. She has had pyorrhea for the last twenty years and is now losing teeth very rapidly.

Fig. 7. Cross-section of palatal root near apex, showing connective tissue with active inflammation.

Fig. 8. Cross-section farther down showing further stage of inflammation of peridental membrane, with all sizes and kinds of connective-tissue cells.

Fig. 9. Cross-section still further down on same root, showing further stage of inflammation.

Fig. 10. Cross-section lower down and of lower magnifying power; shows degeneration and liquefaction of tissue. *aa*, two pus-pockets with violent inflammation around them; *bbb*, violent inflammatory areas about to break down; *c*, blood-vessel.

The following cases are here given to show that uric acid and the gouty diathesis are not the cause of pyorrhea.

A woman, 58 years old, has been a patient for sixteen years and has all the symptoms of gouty diathesis. The enlarged joints of her fingers and toes indicate this, together with neuralgic and rheumatic pains in limbs and body. All these years she has come to my office as often as once in every three months, and frequently as often as twice a week to have her mouth kept in order. I removed two loose teeth when she first came to me in 1880, and the remainder are firm in the jaw today. I have been able to keep them in a fairly good condition ever since. I have had the greatest trouble with the inferior and the palatine surface of the superior incisors. I have kept the gums in a fairly healthy condition without calcic deposits, and have neglected the buccal surfaces of the molars. The patient has done the same. This

was her weak point, therefore I encouraged it. The result is that where the gums are kept healthy there is no deposit, and where they had become diseased the deposit was excessive. When the deposits were removed they were examined chemically without uric acid results. This case has already been reported in second paper.

B, man 49 years old, came to me eleven years ago with a very bad case of pyorrhea. The right inferior first molar was loose, and I informed him that I could

C, woman, 22 years old, had her anterior superior teeth regulated owing to a protrusion. This required four months' time. After they had been restored to their proper position they were anchored to the first bicuspids. She was dismissed and after a year had passed I removed the retaining band, and found chronic inflammation of the gum along the palatine surfaces of the incisors and cuspids, with thick calcic deposits when she did not reach them with her tooth brush.



Figure 5.

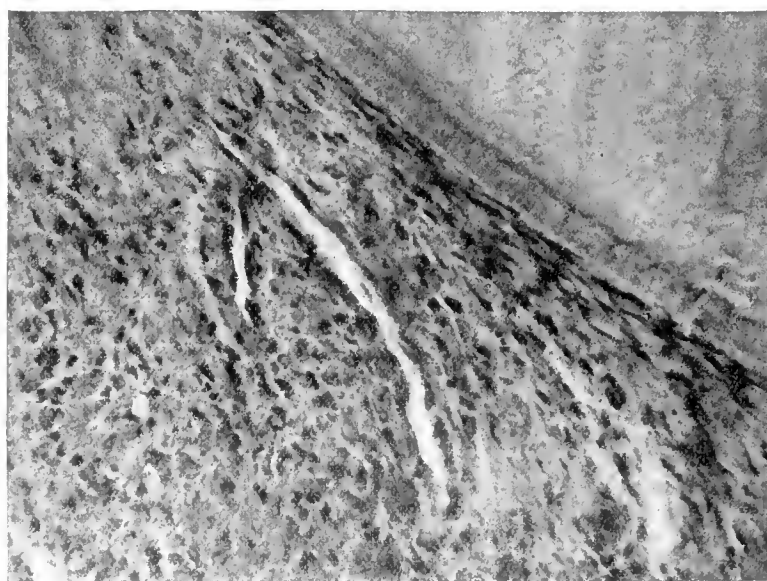


Figure 6.

do nothing with his mouth as long as it remained. He reluctantly had it removed, and in less than two months I had his mouth in a healthy condition. For six months I watched it to see that he followed my instructions, which he did faithfully. He had very powerful muscles, and soon after the time mentioned he neglected to get the brush back by the right upper second and third molars. In a short time inflammation of the gum commenced and deposits took place, while the remainder of the mouth was in a comparatively healthy condition.

D, girl, 14 years old, had the upper dental arch expanded, and the anterior teeth rotated and carried back into place. This required two years time. After the appliances were removed calcic deposits were found in connection with all the teeth banded on the upper jaw, while no deposits were observed on the lower. It will be observed that had the gum been kept in a healthy condition no deposit would have occurred.

The glandular structure in the peridental membrane decreases with age. Black says, "in young subjects

glands are found in great profusion lying along the fibers close to the cementum. Their number is so great that I have counted from 100 to 200 of them cut across in the cross-section of the root and alveolus of an incisor tooth of ordinary size." They seem to diminish in numbers as age advances, though this point has not been studied sufficiently. I have examined 120 healthy and diseased peridental membranes, and have succeeded in finding only a few glands. This, no doubt, is due to the fact that all patients examined were over 30 years of age. There can be no

margin. In such cases, whether due to constitutional or local causes, acute inflammation occurs which, if not cured, becomes chronic, and extends to the peridental membrane, and the small round cells of inflammation follow the blood and lymph streams, which may affect the membrane as a whole or only in circumscribed masses. When this is the case pus infection takes place and total destruction of the peridental membrane results, or pockets are found. In anemic cases the vitality of the membrane is greatly impaired, and inflammation and atheromatous degeneration occurs.

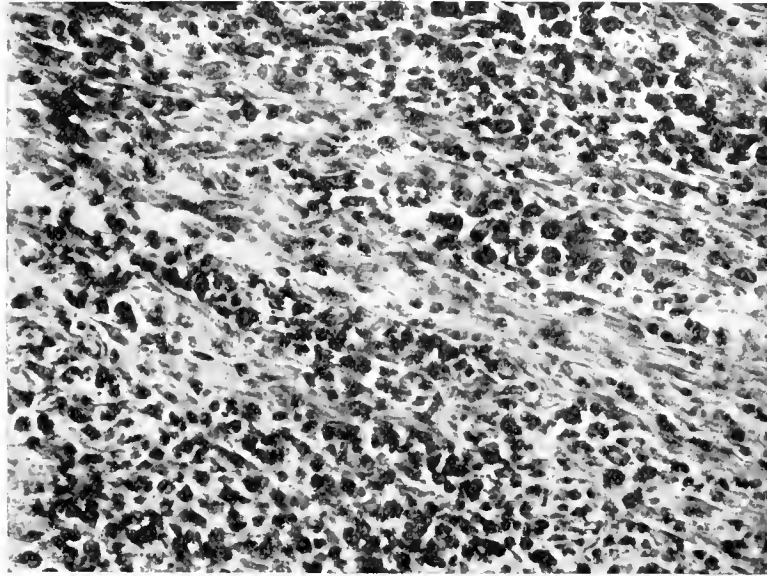


Figure 7.

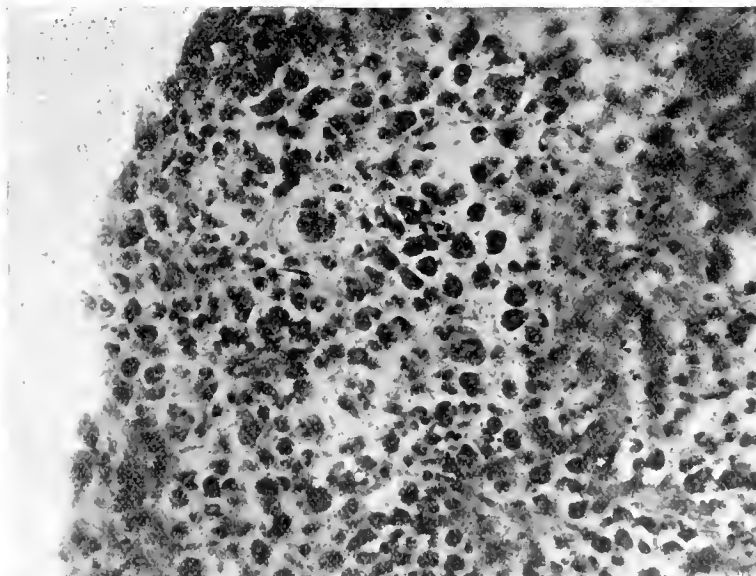


Figure 8.

question but that the number of glands in the peridental membrane greatly diminishes in numbers as life advances. There are, however, a set of glands located at the gingival margin of the gum, which remain so long as the tissues are in a healthy state. When, however, chronic inflammation takes place, these, to a certain extent, are destroyed. The glands invariably become involved in scurvy, mercurial and iodine salivation, and in many cases of syphilis and other constitutional conditions which affect the gum-

I can not understand why Dr. Peirce and his disciples advocate the uric acid and gouty theory when the only evidence in even the 3 or 4 per cent. of cases, the only link in harmony with the two conditions, is the name calcic deposits.

The clinical features of the beginning and progress of the two diseases are wholly unlike; we never see in pyorrhea deposits taking place and accumulating in large quantities within the peridental membrane not exposed to the air. In gouty deposits in the joints,

we never find the primary deposits starting from the external surfaces intermingled with pus. The advocates of the uric-acid theory are quite content to prescribe for their patients suffering with pyorrhea, a glass of hot water three or four times a day, in which a tablet of from 3 to 5 grains of lithia has been dissolved. What effect does that have upon the 95 per cent. of patients who do not have uric acid? What dentist will know when he has one of the 5 per cent. cases to treat, since they all resemble one another. Why use the lithia? It is wholly unnecessary. Chemists

same manner. But for the sake of argument let us use lithia water for one of the cases in which we have found uric acid and also crystals by the murexid test. The deposits are located upon the root of the tooth from one-fourth to one-half the extent, with inflammation of the peridental membrane (which is always present) and generally pus. Do the advocates of this theory believe that by removing the calcium salts in the blood it will have any effect upon those lymph and blood streams, which have become invaded by cells of inflammation and infection, far beyond the

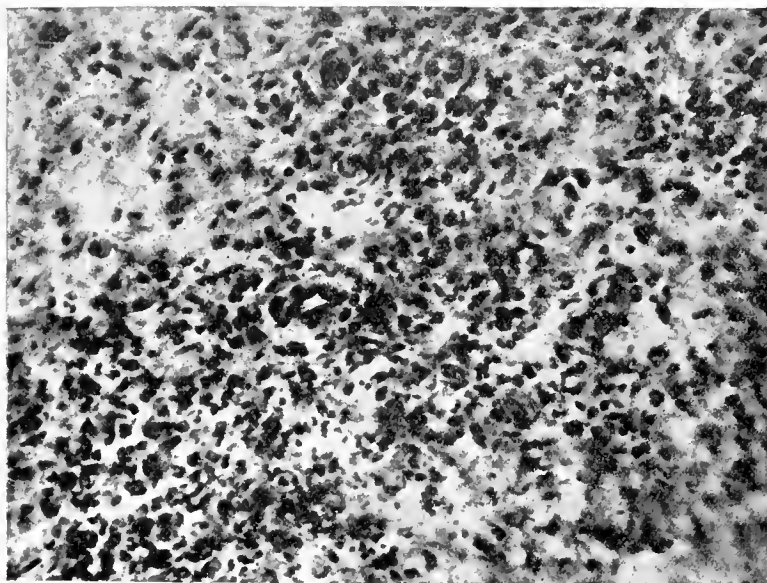


Figure 9.



Figure 10.

will tell us to flood the system of gouty patients with good, pure water, which will carry away all the insoluble substances in the blood.

There are physicians in this country with international reputation who are treating and curing patients of typhoid fever, pneumonia, syphilis, constipation, smallpox, acute Bright's disease, cystitis, and other allied diseases by the simple use of water alone. The blood of a gouty patient can be cleansed by flooding the system with distilled water in precisely the

pus line as illustrated in Figs. 3, 4 and 5? It would seem to me to be folly to think of such results.

In this enlightened age random treatment will not do; we must ascertain the cause, and relief is easy when taken in time. Dr. Riggs and hundreds of other dentists are treating the disease locally with perfect success in those cases where the disease is not too far advanced. Admitting that the first symptoms of pyorrhea are simple inflammation of the gums, recognized by their bleeding, after removing all foreign

substances, the use of a medium stiff brush and an astringent mouth-wash stimulates the gums, continue this treatment until they are hard and do not bleed, and keep them so. The longer we wait, and the longer the disease progresses from one stage to another, the more difficult the treatment and the less assurance of success. If chronic inflammation of the gum has extended to the peridental membrane and pus-infection has ensued, scarify or mutilate the gums in removing the deposits so as to remove as much blood as possible, afterward saturate the gum with the official tincture of iodine. This treatment should be continued two or three times per week until the gums are hard and tight about the teeth. Care should be taken to remove all foreign matter and accumulation. In cases where calcic deposits have taken place, we must not forget that inflammation of the membrane and pus-infection has preceded it. The deposit being the result, we must therefore be careful not to injure the membrane in removing it. We must not carry the instrument toward the apex of the root, thus wounding the membrane, but very gently carry the instrument beyond the deposits, and draw it away from the raw edge of the membrane. By removing the deposit we must not consider that we have removed the cause. There is beyond this deposit and even beyond the parts of degeneration and liquefaction of the membrane a diseased connective tissue which can not be reached by local treatment, and in such cases we must disinfect the parts with germicides and antiseptics. Constitutional treatment in the form of tonics is here indicated to restore the membrane to a healthy condition. In most cases it is useless to expect to cure a peridental membrane after the tooth has become loose in the socket, and should be extracted. The inflammatory cells have penetrated the lymph and blood-streams throughout the entire length of the root, hence the difficulty in reaching them. The margin of the alveolar process should not be cut away except to reach the edges of the peridental membrane with the drugs. The main points to consider in such cases are to disinfect the space between the root and alveolar process, including the edges of the peridental membrane, and contract the gum tightly about the necks of the teeth to prevent the accumulation of foreign matter and pus-infection. I have used the official preparation of tincture of iodine with success. I know nothing better. Pyorrhea due to trophic changes, as observed in locomotor ataxia, parietic dementia, spinal injuries, and all defects in neuroties, must be treated constitutionally as the case may require.

MEDICAL MUNICH AND BERLIN.

NOTES FROM MY SKETCH BOOK.

BY L. HARRISON METTLER, A.M., M.D.
CHICAGO, ILL.

Roll together the ancient cities of Athens and Constantinople; sprinkle them with a few mediæval palaces and renaissance churches; populate them with an art-loving, beer-drinking, easy-going race of Bavarians, and you have modern Munich. And the strangest part of it is that all this curious and quaint antiquity has had its growth within the last fifty years. For extravagant extremes, for sudden changes of hot and cold weather, for much art, good and bad, for startling effects in color, for genuine industry and much dilettantism, for abundance of strong beer and for not

much else beside, the city of the Little Monk remains unique among European capitals. It is decidedly a modern hybrid, a creation of a monarch's imagination, an attempt to out-Florence Florence and to set the rest of the world agog with open-faced astonishment at its kaleidoscopic splendor and sumptuous gorgeousness. Above all things it lacks originality, and yet its counterpart is nowhere to be found. It is a copy of everything ancient and modern, and while individually the reproductions are exquisite, regarded en masse, they form a queer conglomeration that is at least interesting, if not beautiful. In Munich the eastern idea and the western are inextricably jumbled together. The color, frivolity, airiness, fantasy and flimsicality of the orient are thrust, without the remotest thought of harmony, upon the stateliness, grandeur, dignity and repose of the occident. Is this to be wondered at when it is remembered that a certain King Ludwig, with certain innumerable millions of good thalers, gathered all this architectural frenzy about him in the short space of a half century! Babylon, Rome, Paris, Madrid, Moscow, London and Edinburgh needed years and centuries to acquire their peculiar characteristics, their grace and beauty, their wealth and dignity. One city is as unlike the other as the rose is unlike the lily: but Munich, gay Munich, like Jonah's gourd, sprang up in a night. It hadn't time to develop. It borrowed from all its neighbors and from every age in history. It is a pretty child, bedecked in the flaring bonnet and ridiculous court-train of its grandmother. It is wayward and winsome, laughably attractive, and so we tourists always love our München.

So great is the reputation of Munich in the world of art, that one wonders how students from other lands ever thought of going there to study medicine, or anything else beside art. And yet the city is richly endowed with all kinds of scientific, literary and benevolent institutions. The arrangement and government of these are usually in advance of those of other places. The university is one of the most noted in the German Empire. It is housed in a chaste, stately edifice, forming with the Georgianum and the Erziehungsinstitut a large closed square, through which passes the famous Ludwigstrasse, one of the most artistic streets in the world. The foundation of the university took place in 1472, at Ingolstadt. In 1800 it was removed to Landshut. The two schools of Landshut and Munich were amalgamated in 1826, and in the same year established in the latter city under the name of the Ludwig-Maximilian University. The government and methods of instruction are the same as those of the other German universities. In addition, however, to the usual four faculties, there is a fifth one for political economy. They comprise a staff of about 121 professors and instructors. The medical department has become famous under the care of such men as Liebig, Ludwig, Voit, Pettenkofer, Ziemssen, Kupffer, Grashey, Ranke, Amann, Oestel, Bezold and others. Liebig occupied the chair of chemistry from 1852. In 1859 the jubilee of the school was celebrated with royal pomp and in 1891 it had upon its rolls no less than 3,622 matriculates.

As Munich itself is of such recent development, so are its asylums and hospitals quite modern, both in regard to the structure of their buildings and in regard to their management. Even the prison is a model of its kind. The principal institutions for the care of

the sick are the General Hospital, the St. Elizabeth Hospital, the Maternity, the St. Joseph Hospital and the Insane Asylum. These with a few minor retreats furnish about 1,371 beds, or about 5.04 beds to every 1,000 of the population. The General Hospital, on the right bank of the Isar in the outskirts of the city, is a magnificent specimen of architecture, surrounded by large and well cultivated grounds. It contains about 237 beds and its wards are models of their kind. The Insane Asylum, I found still farther beyond the limits of the city, on the opposite side of the river from the General Hospital. In no one particular has Munich shown its progressiveness more than in its treatment of the feeble-minded. The non-restraint and humane methods were in vogue here long before they were adopted in most of the other asylums. In fact, neither jacket nor stool was ever generally used here for the control of maniacs, and the popularity of the treatment is evidenced in the fact that the asylums were always crowded, though the authorities had from time to time enlarged them and increased their facilities. Though originally built for 280 patients, the main asylum now has room for nearly 700 beds. The present building is a commodious and artistic structure, having been opened in 1859 and extensively reconstructed and enlarged some fifteen years later. Munich is an excellent field for the study of medicine, and in some departments, as for instance obstetrics, it can claim to be second to none. Its distractions are many, however, and it is so overshadowed by its own great reputation as an art center and by the medical renown of its neighbor, Vienna, that comparatively few students from abroad are found walking the wards of its hospitals. With this brief passing notice of the capital of Bavaria, I will hasten on to sketch medical Berlin and its university.

BERLIN.

Voltaire used to insist that Berlin was a grand city, and one better laid out than Paris; but Voltaire was a mercurial individual and an adept at shifting in accordance with the direction of the wind. When Frederick was gracious and took his lessons condescendingly and the French atheist in turn listened to the King's poetry and flute tooting, pleasant indeed was it to bask in the royal smiles. Sans Souci was a veritable paradise and Berlin the finest city under the sun. But when recriminations took the place of mutual compliments, when royal mandates began to fly around, when angry edicts appeared instead of bad poems, when rivals arose and captured the monarch's ear, in fact, when Frederick presumed to be the master in place of the caustic Frenchman, things took on a different hue; San Souci was not such a delightful place and Berlin was only a miserable Dutch hamlet somewhere on the banks of the Spree.

Berlin impressed me as a very modern city and its people as tremendously in earnest. It has a few artistic features about it in the way of ornamentation, but its essence is solidity, somberness and invincible power itself. If Munich suggests a child bedecked in the gaudy raiments of an ancestor, Berlin makes one think of a mighty giant clad in the small clothes of a child. The art is there and the architecture is manifest, but the former is overlooked in the presence of so much somber militarism, and the latter fails to attract because of the rigidity of its style and the dullness of its uniform coloration. From Munich to Berlin is like going from Vanity Fair into a fortified

castle. It contains a population of over a million and a half in addition to a large military garrison. It is subject to extreme heat in summer and intense cold in winter, largely on account of its situation in the midst of a broad sandy plain. As an evidence of the general flatness of the city and surrounding country, it is curious to note that the famous Friedrichstrasse, more than two miles in length, has not a single descent of a foot from end to end. Most of the buildings are constructed of brick and plastered with stucco. This quickly fades in color and gives the city a worn, heavy, unattractive appearance. The newer tenements are being made taller, which of course darkens the narrow streets. On account of the rapid growth and development of the population, rent and real estate values have increased enormously, and so produced a gloomy side to the picture of life in the German capital. It is almost a fact that as the tenements advance skyward so *pari passu* do the poorer inhabitants descend into the earth. It is calculated that more than one-tenth of the population live in underground cellars, which of course is not conducive to good health and pure morals. Though the city has nearly 100 churches not more than 2 per cent. of its people attend them. The cost of living in Berlin is greater than in many other university towns of Germany, a fact which has had its influence upon the growth of the Berlin University.

As everybody knows the system of university education in Germany is peculiar and differs more widely from that of America than probably from that of any other country. The German university is a government institution, under the control of the crown and supported by the state. The emperor is the nominal head and it is with the approval of his representatives that the appointments are made in the faculties. This insures a uniformity of government and method throughout the various faculties. There are about twenty-one universities scattered throughout the empire and though they vary in popularity one is actually no better than another. Students are not required to pass their whole course before taking their degrees at one university, but may go from year to year to this or that school until the required amount of study has been completed. In this way a poor pupil may go to Rostock in preference to Berlin because living expenses are less in the former place; or another of ample means may attend a certain eminent professor's lectures at Heidelberg one year and another professor's at Göttingen the following year. Oftentimes universities in the smaller towns are preferred by distinguished men when called to a chair in one of the faculties because of the lessened cost of living and the more favorable opportunity for quiet study and research. The four faculties of theology, law, medicine and philosophy constitute a university. There are three sets of instructors, the *ordinary* or regular professors, the *extraordinary* or assistant professors, and the *privat-docenten*. The ordinary professors are usually men who have distinguished themselves by unusual scholarship or some special line of research and who are given full liberty to lecture upon their chosen theme in whatever way they desire. The extraordinary professors are men who have distinguished themselves as *privat-docents* and are also given considerable license but are expected to follow more or less the teachings of the professors whom they assist. The *Privat-docenten* belong peculiarly to the German system and are not represented in any way by the instructors in either the English or American universities.

They are usually men who have shown special talent or done some original work during their student days. They are intimately associated with the university but look for their remuneration entirely to their fees from the students. They are allowed to teach whatever they like and in any way that they desire. Sometimes it will happen that a privat-docent of considerable eminence will teach conflicting views in the very same department of the professor with whom he is associated. Of course this is liable to lead and has more than once led to bad feeling, but as the professors are usually selected from the ranks of the privat-docents, a wholesome rivalry is thus maintained greatly to the credit of the school and the benefit of the pupils. The communal life of the German university resembles in some respects that of the middle ages. The university is a kind of community separate and apart from the rest of the world. Its life from studentship to professorship, is looked upon as a career in which a man who adopts it expects to pass his entire existence. Its teaching staff is always selected

technical schools and the polytechnicums. A *Zweck* is implied in the German idea of a university as an object of study. The object is *Wissenschaft*. Two conditions or *Bedingungen* are also involved, namely, *Lehrfreiheit* and *Lernfreiheit*. *Wissenschaft* means knowledge in the highest sense, it is the search of the truth irrespective of its utilitarian value. By *Lehrfreiheit* is understood the absolute freedom of the professor or privat-docent to teach whatever he chooses in whatever way he prefers. *Lernfreiheit* is the freedom of the student from *Schulzwang* or compulsory drill by recitation. In a word, the *theory* rather than the *practice* of knowledge is the ideal of a German university and in the attainment of that ideal both teacher and student are granted the largest liberty. Of the four departments medicine is the only one in which anything like a practical knowledge, a knowledge capable of being put into actual practice in every-day life, is imparted. The exception is, however, more apparent than real, for medicine is largely a theoretical science and the art of medicine is obviously



UNIVERSITY OF BERLIN.

from its own students and we never hear of a German professor who was at one time a tradesman, a clerk or a village schoolmaster. A university career is a profession to be decided upon in early life, to be prepared for in youth and to be persistently and consistently followed ever after. When a student leaves his university and passes out into the every-day life of the practical world, or into Philistia as he calls it, he rarely if ever, returns to his alma mater except as a pilgrim returns to his early home to taste once more the joys of his merry boyhood days. It is this isolation as it were of the university from the outside practical world that makes the student life in Germany so unique and keeps alive in the memory of its pupils their tender fondness for their alma mater.

It is often said that the Germans are great theorizers. This is shown largely in their system of university education. The fundamental idea of the German university is the study of the *theory* of knowledge, the teaching of men how to think. Practical science and practical information must be acquired at the

dependent upon the practitioner's powers of observation as much as upon the mere application of a number of memorized facts.

The chief medical schools in Germany associated with universities are those of Berlin, Leipzig, Heidelberg, Göttingen, Greifswald, Erlangen, Bonn, Jena, Rostock and Tübingen. While the size and importance of the towns in which they are situated vary, the teaching is the same in all. Sometimes one or more professors of special eminence, as Virchow in Berlin, Erb in Heidelberg, Thiersch in Leipzig, will cause the school with which they are associated to enjoy unusual popularity. Sometimes the student will wander from one university to another before taking his degree, so as to avail himself of the instruction of the various eminent men. In all of the German medical schools very great attention is given to the laboratories of anatomy, physiology, chemistry and pathology. For clinical teaching all of them have hospitals officially connected with the universities of which they are a part. Certificates from these

special hospitals only are accepted as qualification for the degree. Before matriculating in any one of these schools, the student must present evidence of having passed the *Abiturienten-examen*. This is a severe preliminary test and requires considerable knowledge of Latin, Greek, English and French, and an elementary knowledge of the sciences in general. Two years after beginning his medical studies, the first examination—the *Testamen Philosophicum*—is undergone. This examination is upon the subjects of chemistry, physics, botany and zoölogy. At the end of five years the student comes up for the *Examen Rigorosum*, after which he receives his degree of M.D. Before he can practice, however, he must pass the state examination. The last is purely a practical examination and like all the others is conducted by the professors of the universities. The medical curriculum of the five years includes the usual medical subjects and is comprised in lectures and hospital clinics. In the hospitals a large class usually accompanies the professor, and a discussion of the cases is held after the manner of a consultation. The fees are charged for each separate course of lectures, so that a student may take a few courses at one university one year, and other courses at other universities other years. Every university accepts the credentials of every other university, for they are all government institutions under one head and the teaching is the same in all. The professors of the medical schools are all well paid by the government and are expected to give a large part of their time to the work of the school.

It was but a few years ago that Leipzig held the honor of being the greatest of the German universities. Today, however, that of Berlin stands second to none. The history of this great school is full of interest and when I first saw it, it seemed to me that I could almost read in the severe, dignified appearance of its exterior the singular conditions under which it had its origin. In 1809, when it was decided to establish the university, Berlin was under the domination of Napoleon and French patrols were marching through the streets of the city. So oppressed was Germany at this time that certain of its universities were closed by the conqueror, and to undertake in that troublous period to assemble a band of independent outspoken scientists in a new university was attended with no little risk. But though conquered by arms for the time, the German spirit and the German love of learning remained indomitable. With the assistance of the Minister, Von Stein, and upon the earnest suggestion of Fichte, who had been expelled for his peculiar ideas from Jena, the university was founded and opened in 1810 and some of the most eminent scholars and scientists of the day were invited to occupy its chairs. Schleiermacher, who had lost his position through Napoleon's suppression of the University of Halle, took charge of the department of theology. Savigny, the famous jurist, lectured upon law; Wolff gave Fichte his most valuable support. Wilhelm von Humboldt brought renown as well as strength in those early days of the school. Above all was the scientific and moral support of Hufeland, physician-in-ordinary to the king, whose position gave him an unusual opportunity to bring to the assistance of the school the approval and favor of the crown. From such a splendid beginning the university grew and flourished in spite of the depressing influence of the French occupation of Berlin. The

fortunes of war changed ere long and victory led the Prussian banners to the gates of Paris. Under the favor of Emperor William and especially of Prince Bismarck, who felt a peculiar regard for the school, it quickly developed a reputation which surpassed that of its rivals. Being young and full of enthusiasm it worked out a career of success for itself. Being independent it invited men of eminence whose views may have been too radical for some of the older institutions, and gave them the widest liberty for the promulgation of their ideas. It could not fail to have become renowned, independent as it was and fondled in the arms, as it were, of the growing capital of a victorious nation. The Emperor was its guardian, the prime minister its friend and a palace its home. The university building was formerly the residence of Prince Henry, brother of Frederick II, and was erected in the years 1754 to 1764. It is a stately edifice, consisting of a central portion with two wings partially surrounding an ample courtyard. Its simple, massive architecture, which, by the way, is illustrative of the general architecture of Berlin, is suggestive of the repose and dignity of learning. Situated at one end of the elegant avenue known as Unter den Linden and in the midst of some of the city's finest public buildings, a student who approaches the university, as I did, for the first time, would be dull, indeed, if his enthusiasm were not kindled and his impatience to enter the halls of learning were not increased. Something like 3,500 students are now in attendance at the university and of these about 350 are taking the medical course. The teaching staff comprises the usual four faculties. There are twelve ordinary professors, seventeen extraordinary and nineteen privat-docents. Two of the most noted men of the faculty of late years are Helmholtz and Virchow. I wish I had space to refer more in detail to the lives and characteristics of these eminent scientists. But I can not refrain from indicating the spirit of the university and the splendid independence of science by reminding the reader of Virchow's radical politics, which, though often in conflict with the government, even to the point of provoking a challenge to a duel from Bismarck, nevertheless did not interfere with his position as a professor in the university, the protégé of the throne. The study of the lives of Helmholtz and Virchow is an incentive to struggling ambition. Among the men who have been and are associated with the medical faculty of the Berlin school are Bardeleben, Du Bois Reymond, Gerhardt, Olshausen, Leyden Waldeyer, Bergmann, Schweigger, Jolly, Rose, Koch, Henoch, Munk, Salkowski, Fritsch, Senator, Hirschberg, Ewald, Baginsky, Martin, Fränkel, Remak, von Noorden, Langerhans, Posner and Westphal. What other university can show a more brilliant galaxy of names?

Now just a word in regard to practical medicine in Berlin. When the old Hospital of the Holy Spirit for Lepers was founded (1208) and St. George's for the same class of patients (1258 to 1278), both of which are now united in the Neubau, Berlin was scarcely more than a couple of Wendish fishing hamlets, whither the courts of Brandenburg had led some German colonists. About this time the city first began to figure in history under the name of *Koeln* and *Berlin*. Some time between 1405 and 1408 the St. Gertrude Hospital and Church were erected in the Spittelmarkt, for twelve patients of noble birth. St. Jacob's Hospital was opened for cases in 1605,

when the city was threatened with the plague. The Jerusalem Hospital (1671) and the Cathedral Hospital (1753) were more in the nature of almshouses and retreats than actual places for the cure of the sick. Today Berlin is abundantly—perhaps over-abundantly—supplied with hospital accommodation. With its population something like a million and a half, it averages 3.85 hospital beds per 1,000. It can boast of eleven large general hospitals, six special hospitals and about twenty-six private hospitals and no less than fifty private maternities, beside an innumerable number of private clinics and dispensaries. And yet it was only a little over a hundred years ago that Formey, surgeon to the King of Prussia, wrote: "It must be acknowledged that in our public institutions for the sick reform is urgently called for, and that in these respects Frenchmen, Englishmen, Swedes and Danes—in a word, most nations—have far surpassed us. Every foreigner who visits our lazarettos, after seeing those of other lands, leaves them full of painful astonishment at their deficiency." Even as late as 1841 to 1850 and 1851 to 1860 the reports upon the government of the Township of Berlin say absolutely nothing about any hospital belonging to the municipality. At that time the capital possessed only state and private institutions. There are now two fine municipal hospitals, both of which are perfect models of their kind. The experience of the American war hospital system and the adoption of the pavilion and barrack plans instead of the ancient ones, have enabled Berlin to claim the finest hospital system in the world. Not far from the famous Brandenburg Gate at the western terminus of the avenue Unter der Linden stands the chief hospital of the city, the Charity. It was erected by Frederick the First in 1710, when a plague was threatening Berlin. It consisted of four pavilions three stories high, and was constructed after the most approved plans of that day. The plague did not reach Berlin and the building was transformed into a workhouse, and later on into a garrison lazaretto. For these purposes it was totally inadequate and so was made into a hospital in 1725, to be used for the benefit of the poor under the care of the municipality. It continued, however, to be a state institution. By a royal decree a surgical training school was established in connection with it and a wing added for the use of civilians. This was in 1727. A horticulure, a dairy and a brewery were operated at this time in connection with the hospital. It was supported by the crown, by the state (not the city) and by private gift. It has steadily grown until now its departments number sixteen, under the supervision of twelve superintendents. Most of the departments serve as clinics for the University lectures. In close connection with the Charity, which contains nearly seventeen hundred and fifty beds, is an excellent Midwives' school for Berlin and Potsdam.

The finest hospital in Berlin, the large and elegant Friedrichshain, was opened in 1874. After the Charity, medical visitors will not fail to see this model institution. It represents the ideas of the leading German surgeons, particularly Esmarch and Esse. It consists of a group of isolated buildings, spread over a large area of ground and having no covered ways or corridors of intercommunication. There are twelve ward pavilions and they all extend north and south. Four of these pavilions are for surgical cases and are made only one story in height. Six pavilions are set apart for medical cases and extend to two

stories in height. The remaining pavilions are for infectious diseases. Between the surgical apartments are the operating room and general offices. In each ward there are about twenty-eight beds and at the end of the ward is the so-called "dayroom," having a commodious covered balcony attached to it. In connection with every ward are lavatories, closets, bath rooms, small operating room, a couple of small separation wards with one bed in each, a duty room and nurses' room. The ward's offices, receiving rooms, general baths, heating apparatuses, etc., are in the basement. Hot water is used for heating purposes and free ventilation is obtained by gratings just behind each pair of beds. Two open fireplaces are also constructed in each ward. The floors are all made of tiling. The capacity of this fine, modern hospital is about seven hundred beds.

The Urban Hospital, completed in 1890, with its 600 beds (75 beds for children) is another admirable institution. It is unfortunate, however, that its closets and lavatories are not separated from the associated wards by means of corridors or some form of ventilating shaft. It is lighted throughout by electricity and its bath room contains in addition to the ordinary baths, a frigidarium, a sudatorium, a tepidarium, a lavarium and a Russian steam bath.

Among the other great hospitals of Berlin, more than a passing notice ought to be given to the Moabit, with its 750 odd beds; the St. Hedwig, founded in 1844, having 470 beds; the Bethany, with its 354 beds; the Lazarus, Augusta, Elizabeth, Jews', and the Elizabeth Children's Hospitals, each with less than 200 beds, but nearly all modern and complete in their appointments. A feature in connection with the Bethany is its broad ample balconies attached to each ward and closed in at the ends with glass screens. Ofttimes patients remain day and night continuously in these balconies, and the ventilation and sunlight thus obtained afford most favorable results. In connection with the Augusta as well as the Victoria Home is a fine training school for nurses, and their clinics are especially used by the teachers of the university.

I presume no city in the world has so many *private* hospitals as Berlin. It would almost seem that every assistant, every privat-docent—in fact everybody who pretends to do something more than attend to a private practice—must have his own hospital. Surgery, ophthalmology, obstetrics and the diseases of women and children are all represented among the private hospitals, clinics and dispensaries. I sympathize with the practitioner of Berlin and since my return from that city I have been less surprised at the penchant shown by some of our German confrères when they come to this country to at once open a corner dispensary or announce a private clinic. Berlin is undoubtedly a great center for medical education, but for general practice I fancy it must be a place for the harrowing of one's soul and the utter depletion of one's pocket-book!

In regard to the insane, Berlin took no systematic care of them until about the 18th century. Then they were first confined to the workhouse in the Waisenbrücke, called the Friedrich's Hospital. They were sheltered along with the orphans and aged paupers. When this became overcrowded, they were again removed to another workhouse near the Dorothea Hospital. Later on, the famous Faber Institution was constructed and occupied. The history of this is full

of interest but space forbids my doing more than merely naming it here. Ultimately it was destroyed by fire in 1798. After this date the Charity Hospital received the insane, and even at the present time it takes charge of some of them until room is found for them at the Dalldorf Asylum. As the hospitals of Berlin are models of their kind, so this famous asylum is notable for its modern construction and perfect equipment. Dalldorf is a suburb lying a short distance to the northwest of the capital. The asylum contains 600 beds for curable cases and 600 more for the incurables and the infirm. Both sets of patients are in the same establishment, but under the control of different superintendents and in different buildings.

Having now brought these sketches to a close, I am almost tempted to say a word or two from personal observation in regard to medical education abroad. In many respects the advantages of a medical training in Europe preponderate over those in America. In some things I am convinced America can teach Europe. But comparisons are odious and usually unnecessary; so in conclusion I will merely say that I hope these brief and imperfect sketches may have been of some use in awakening pleasant reminiscences for those who have visited Europe either as tourist or student, and in pointing out some items, not found in any guidebook, to those of my confrères who are still looking forward to the pleasure and profit of a trip abroad.

4544 Lake Avenue.

SOCIETY PROCEEDINGS.

Chicago Academy of Medicine.

Stated Meeting, November 10, 1896.

CASEY A. WOOD, M.D., in the Chair.

DERMATITIS FOLLOWING THE ROENTGEN RAY.

Dr. E. H. LEE—What I wish to say this evening will have reference more to the significance of skiagraphs in the diagnosis of fractures and the condition of the fracture after treatment, than to dermatitis following the X rays. As far as the latter is concerned, I expected to present this evening a patient suffering from severe dermatitis following prolonged exposure to the X rays, but he is so sick that he was unable to be here. The dermatitis which is produced by the X rays has been frequently observed. I have seen but one or two cases of it. Dr. E. E. King of Toronto, in the *Canadian Practitioner* for November, 1896, reports the case of a patient who was submitted to the X rays for demonstration. The patient submitted himself to exposures for two and three hours a day for several months, and later for six hours for several months. It was not until the second or third month that changes in the derma were noticed, and then a dermatitis was produced similar to that which follows heat. The skin became blistered and the hair bulbs were entirely destroyed and all the nails of the hand were lost.

My case was one of bullet wound of the head which was followed by a cerebral abscess. I saw the patient four days after he was shot; the physician with whom I consulted supposed that the bullet would be imbedded in the bony tissue beneath the skin. The patient had no elevation of temperature, the only indication for the exploration of the wound being a slight inflammatory edema around the small opening which the bullet had produced. In operating I found the bullet had penetrated the cranium, and removed several splinters of bone around the entrance of the bullet. There was no pus present. I, however, inserted a gauze drain. The patient did well for ten days, then suddenly developed chills and fever. His temperature arose to 103 degrees, so that it was plainly evident that infection had taken place. The question arose as to the source of the infection. Did it come from without, or was it from the bullet which had penetrated the brain and was lodged in the opposite side of the head? I removed the gauze drainage and a large quantity of pus escaped, after which the temperature disap-

peared and the patient did nicely for two or three days; on the fourth day he again got a chill with elevation of temperature. I established efficient drainage by removing a large piece of bone and flushing the abscess cavity as much as possible. After two ounces of pus had escaped we had no means of determining the further direction of the abscess. It was after this second operation that he was submitted to the X rays. For over a week he underwent three or four exposures a day, each exposure being from three-quarters of an hour to one hour's duration. The results were not satisfactory. The bullet had entered the right temporal region, the skiagraph showed a large shadow in the posterior occipital region on the left side. On the strength of these skiagraphs I trephined on the other side, but failed to locate the bullet. I exhibit a skiagraph which shows the shape of the head, and here you can see a spot which is supposed to be the bullet. The patient after the second operation did well, and it would have been really unnecessary to have submitted him to the X rays, but it was still my opinion that the bullet was the source of infection, and that recovery would not take place until the foreign body was removed.

The dermatitis developed after the third or fourth exposure, beginning with edema and redness of the skin. After the fifth or sixth exposure the edema was quite marked and the skin red and tender. It was three or four days after the last exposure that dermatitis developed to a marked extent, and then a severe blistering of the skin took place. The eyebrows and eyelashes were destroyed, and the hair over the left side of the face. At the present time the dermatitis is very severe. He has a very large granulating surface over the whole left side of his head, with complete loss of the hair. There is complete destruction of the hair bulbs.

It would be interesting to determine how this dermatitis is produced. No heat is present in the application of the present X rays, but the dermatitis acts very similar to one produced by heat. Then, too, the condition of the patient's eyelids is quite interesting, although the eye itself was not affected. He always had his eye closed during the application of the rays, but at the present time he has an extensive edema of both eyelids of the left side, and a most complete ectropion of both lids. The conjunctiva at this portion (indicating) is a granulating surface. In this case we made every effort to locate the bullet, and it is for this reason that the patient was exposed for such a length of time.

The removal of foreign bodies by means of skiagraphs has opened up a great field of observation in this line. I have in this connection an interesting case, which was that of a policeman who, in pursuing a burglar, shot himself in the heel. The skiagraphs show the bullet imbedded in the upper portion of the os calcis. I located the bullet before removing it by Girdner's bullet probe. By the skiagraph it is seen that the bullet is not located in the joint. This is a point which was of the greatest importance, for the joint was not opened during the operation. It was supposed that we could not remove the bullet without opening the joint, and it would hardly have been avoided had we not had such accurate knowledge of the location.

It is my desire this evening to say a few words on the application of skiagraphs in the treatment of acute fractures. In a recent article which appears in *Medicine* this month, I have reported experiments which consisted in producing Colles' fracture on the cadaver. This fracture we know is a most frequent one and therefore of great importance. It is usually produced by falling on the hand when the arm is in full extension and the hand in dorsal flexion.

In my first experiment the cadaver was laid flat upon a table, the forearm placed at a right angle to the upper arm and vertically to the surface of the table. The hand was now placed in exaggerated dorsal flexion, so that it formed a right angle with the forearm. A large block was placed on the palmar surface of the right hand, and with a heavy piece of wood considerable force was exerted by blows on the block resting on the palmar surface of the hand. The first two blows did not produce the fracture, but the third blow was followed by a snap which could be distinctly heard. Examination revealed a fracture of the radius, apparently about one inch above the joint, giving the typical deformity. The muscular contraction being absent, the deformity was not as pronounced as it would have been in the living subject, and its reduction was very easy. A careful dissection of the elbow joint was now made to determine if a fracture or dislocation had taken place in this region, as the force had been directly transmitted to the elbow joint. No fracture or dislocation was present, the only injury being that of the radius.

In experiment 2, in a similar manner a fracture of the radius of the other arm was produced, this time as a result of the first blow. The section of the elbow again showed that no

fracture or dislocation had been produced in this region. I now amputated both arms at the elbow joint and brought the specimens to Dr. Otto Schmidt, who had the kindness to make skiagraphs of them.

I first placed both arms over the plate, volar surface downward, allowing the deformity (silver-fork position) to remain as pronounced as possible. A comparison of the skiagraphs shows that in both specimens we have:

1. A typical fracture of the radius about one to one and a half inches above the joint.
2. A displacement and overriding at the point of fracture.
3. The ulna is not fractured at any point.
4. There is not a dislocation of the wrist present. A careful inspection of the carpal bones shows that they are in position.

Both arms were then placed over the plate with the dorsal surface downward, a wad of paper being placed above the line of fracture to maintain the deformity. The result is very similar to the former one, showing the fracture of the radius and the displacement of the epiphyseal fragment.

Later the deformities were reduced, and the skiagraphs showed them in perfect position. The line of fracture was with difficulty determined.

In three cases I have produced typical Colles fracture with no other injury associated with it, one and a half inch above the joint, producing a silver-fork deformity and a typical dislocation. The muscular contraction being absent, which would be in the living subject, the deformity was not as well marked as it would have been, and the reduction would have been comparatively easy. Afterward I had a skiagraph of the arm which I amputated, and I showed excellent skiagraphs of typical Colles fracture. The lateral views do not show as well.

The next skiagraph I show you is one of a baby's arm, four days after the injury, in which both ulna and radius were fractured. We can not see the point of fracture, but we notice the parts are in very good position.

The next skiagraph is a fracture of the elbow joint which shows distinctly the line of fracture. The next skiagraph is one of a patella fractured in three places. It is an old fracture. I show you now an old fracture of the femur. You will notice the callous formation and the faulty position of the bone.

I wish now to speak of a case that I am at present treating. It is an old man, 72 years old, who was injured about five weeks ago. After treating him for two weeks I had a skiagraph taken of the leg. At the time of the injury he was anesthetized, but acted poorly under the anesthetic, consequently we only partially succeeded in anesthetizing him. The skiagraph shows a subluxation of the knee with complete laceration of the patellar ligament and a comminuted fracture just above the knee joint, although at the time we could not determine that it was comminuted. It is now five weeks since the fracture occurred. There is no attempt at union whatever. For what reason? The reason is very easily explained by this skiagraph, which was taken two weeks after the accident. It shows that we have here a displacement of the lower portion of the femur down into the muscular tissue, and that we undoubtedly have between the upper portion of the femur and the lower portion either connective tissue or unaltered muscular tissue. I feel that the lower portion of the femur has embedded itself in muscular tissue, and that reduction apparently had taken place, because we had the leg in full extension and apparently in perfect condition; but the skiagraph shows that we have considerable displacement yet.

Here we have another fracture which goes upward, and a third small fracture, showing that we have a severe comminuted fracture in the lower third of the femur. After seeing the condition which is present in this case, at the end of two weeks we would have been justified in operating and wiring the fragments in a younger subject. As it is, this patient is so old and feeble that I have hesitated as yet to resort to operative interference. I have the patient at present walking around in an ambulatory splint.

I think the use of skiagraphs will undoubtedly be of importance in the treatment of fractures. We will be enabled by them to make an accurate diagnosis in the beginning. We will be able to see exactly the nature of the fracture and of the condition present, particularly if there are any associated dislocations or displacements. Furthermore, after we have subjected the fracture to the X rays we are able to see if our reduction is perfect, and later, say after a week or ten days or two weeks, or as often as necessary, we can take further skiagraphs and see that our fracture is retained in perfect position.

Dr. WM. L. BAUM—If the patient of Dr. Lee should die, it would be interesting to have an autopsy made with especial reference to the condition of the skin and of all those nerves which supply this region. I have frequently noticed that firemen who are exposed to a high degree of heat in the boiler

rooms of steamboats, and then afterward exposed to the sun's rays become sunburnt. It is not alone the high degree of heat which is responsible for the dermatitis that we see, but there must be something else in the light rays of various kinds; that is, there must be a chemical condition present to account largely for the dermatitis. The question arises, when a patient has been exposed to the action of the X ray for a long time and there is no pain experienced, what is the action upon the nerve itself? There certainly can not be any effect upon the sensory nerve filaments; it must be entirely a motor disturbance, whatever that may be. The dermatitis is frequently merely a secondary condition to something else preëxisting in the skin. The destruction of the hair follicles I would like to see demonstrated in the skin itself. It would be interesting if a small portion of the skin of Dr. Lee's patient were excised and carefully examined. There is an excellent description of what we know of dermatitis as given by Heitzmann in the *Archives of Dermatology* in 1890 or 1891. There are other forms of dermatitis, which are due to the action of heat and direct burns, and are markedly different, pathologically speaking from those which we find here described.

As far as the application of skiagraphs is concerned and as to patients having immunity from the action of the X rays, it is easily explained on the assumption that some patients have a predisposition to dermatitis, and the long continued use of the rays would naturally result in some alteration of the skin.

Dr. JAMES G. KIERNAN asked Dr. Baum whether he had seen any cases of dermatitis following the use of the electric current, to which Dr. Baum replied he had not. Dr. K. had found one or two isolated cases in the literature away back in 1883 or 1885.

Dr. LUDVIG HEKTOEN—Inasmuch as all explanations concerning dermatitis following the X ray at the present time must be theoretical, it may not be out of place to suggest still another pathogenesis, namely, that the X ray might in some obscure manner so lower the resistance, to use a broad term, of the tissues of the skin that the pathogenic microorganisms constantly present in the skin might be permitted to induce the long continued inflammation characteristic of these cases.

Dr. CASEY A. WOOD—So far as the diagnostic value of the X rays in ocular diagnosis is concerned, the subject may be dismissed in a few words. When the Roentgen rays were first suggested as a means of diagnosis, it was thought by many ophthalmologists that they might be of great use in determining the exact position of foreign bodies within the eye. As far as my recollection goes these experiments were first made in France, and in most instances the patient was suffering from penetrating wound of the globe. But it was found that, inasmuch as the eyeball is surrounded by a bony casing, and thus furnished an obstacle not to be overcome by the penetration of the rays, the experiments proved to be of very little value. Here in the laboratory of Drs. Harnisch and Schmidt, quite a large number of similar experiments were also made, some of them coincidentally with those of the French laboratories. The results were practically the same; the X ray was found to be of little or no value. At my request a paper was written by Dr. Harnisch embodying these experiments and published in the *Annals of Ophthalmology*, in which it was further acknowledged that after a good many trials the X ray was impotent, so far as the localization of foreign bodies within the eye is concerned. In my reading of these experiments I do not recall any case of acute inflammation of the eye, either of the external membrane or of the interior of the eye, set up by the use of the Roentgen ray. I have just asked Dr. Lee as to the sequence of the acute purulent conjunctivitis set up in his case. It followed a general dermatitis of the scalp and ocular region. That being the case, I think the acute conjunctival disease has in all probability resulted from secondary infection of the conjunctiva itself. I should judge it as an infection by continuity from the skin. There is, on the other hand, no essential difference so far as the effect of the rays is concerned, between the conjunctiva and the skin itself. If a dermatitis can be produced by the action of the rays, I see no reason why it might not also induce an inflammation of the conjunctiva directly exposed to them.

I much regret that we can not make use of the Roentgen ray apparatus in cases where a piece of metal or other body has penetrated the eyeball. In those instances where the ocular media are or have become cloudy, we are, at present, at a loss when we try to localize the missile, and yet the fate of the eye largely depends upon the situation of the foreign substance whether it has lodged within the eye, or has passed directly through the eyeball and has lodged in the orbit behind. I hope, later on, when this apparatus has been further perfected, that we shall be able to make use of the Roentgen ray for purposes of this sort.

(To be continued.)

PRACTICAL NOTES.

Fistulas Cured by Painting with Cocain.—A salivary fistula cured by painting with cocain is reported in the *Bulletin Méd.* of November 25, and the issue of December 2 describes a similar success obtained with it in the case of a fistula of the parotid gland, treated previously with nitrate of silver and chlorid of zinc without effect. The solution of cocain used was 5 to 50 grams each of water and glycerin. The skin alone was painted, over quite a large surface, twice a week. No result was perceptible at first, but by the end of the second week the improvement was evident and the cure progressed to completion.

New Method of Staining Bacteria.—Pick and Jacobsohn describe a new stain which they state is much more effective than those usually employed. The bacteria show deep blue, the cell nuclei light blue, the protoplasm, mucus and necrosed cell elements bright fuchsin color and the body of the epithelial cells a brilliant red. The contrasts are usually marked and the bacteria, especially the gonococcus, show up finely, the intracellular as well as the intranuclear microorganisms. The pus is first spread on the cover glass and dried, then passed three times through a flame. It is then placed eight to ten seconds in a solution of aq. dest. 20, carbol-fuchsin, gtt. 15; conc. alcohol solution of methylene blue, gtt. 8; then rinsed off in water and dried. Canada balsam for cover glass preparations.—*Cbl. f. Chir.*, December 12.

Partial Resection of the Lower Jaw and Natural Prothesis.—Bardenheuer recently extirpated a carcinoma on a 73 year old patient which required the removal of a triangular piece of the inferior maxillary bone at the angle of the body and ramus, leaving a space 3.5 cm. in width below and about 1 cm. on top. To hold the parts of the jaw left in place, he cut out a lengthwise portion of the adjoining body, parallel with and including the lower edge, extending forward of and just below the mental foramen. The muscles, etc., were not detached and by stretching them the cut-out piece was slipped along into the vacant space, where it was fastened with one wire stitch at each end. As the piece slipped along was still growing, the wound rapidly healed and the jaw retained its original shape. The mucous membrane inside the mouth was not disturbed in the operation, which is illustrated and described in full in the *Cbl. f. Chir.* of December 12. No external appliances were required.

Effect of Intravenous Injections on the Renal Excretion.—Various tests with rabbits enable Roger to state that intravenous injections of saline solution following injections of toxins, cause the toxins to be eliminated one hour sooner than in the control animals. Two c. cm. of potassium ferrocyanid were given to a rabbit and the toxin was found in the urine in thirteen minutes, while the same amount given to another rabbit and followed by an intravenous injection, showed its presence in the urine in six minutes. The entire elimination of the toxin was accomplished in three hours and a half in the animals that had received the intravenous injections, while it required four hours and a half in the control animals. Tests with sodium sulpho-indigotate produced similar results: the renal mucosa showed the blue stain for seven hours after the intravenous injections, while it persisted very much longer in the control animals.—*Bulletin Médical*, December 2.

Comparison of Thyroid and Iodin Medication.—A French army surgeon has been studying the comparative effects of thyroid and iodine medication in the treatment of goitre in sixty cases that have come under his observation in the last few years. The average duration of treatment was twenty-one days; seven to forty-five the extremes. He states that he found the thyroid the best treatment in recent cases of acute goitre, simple hyperplasia of the gland. In chronic indurated goitre no bene-

fit is derived from iodine and not much more from the thyroid. He notes the coincidence of rheumatism with the goitre; he found personal or hereditary rheumatic antecedents in nearly every case. The fresh gland was more effective than the tablets, and the accidents from its use not so frequent. In some cases persons having taken only one gram in a tablet showed evidences of intoxication, while others could take twenty grams of the fresh gland without inconvenience. The accidents were weakness, cephalalgia, vertigo and nausea; the severer cases had profuse sweats, with elevation of temperature to 39 and 40 degrees C., palpitations, tendency to syncope, cramps and muscular contractions.—*Bulletin Médical*, December 2.

Treatment of Alopecia Areata.—Dr. Brocq recommends the following prescriptions: Resorcin, $1\frac{1}{2}$ grains (.09); hydrochlorate of quinin, 3 grains (.18); and pure vaselin, 1 ounce (32). This is to be applied to that part of the scalp from which hair is falling, but only a limited area is to be covered at one application. If the hair still falls off, from 15 to 20 minims of tincture of cantharides may be added, or in other cases sulphur may be introduced into the ointment as: Resorcin, 3 grains (.18); hydrochlorate of quinin, 5 grains (.30); precipitated sulphur, 30 grains (1.80); and pure vaselin, 1 ounce (32). If these ointments produce too much irritation of the scalp, after their removal a simple ointment consisting of 20 grains (1.20) of borax to 100 (6) of vaselin may be used. If the loss of hair be associated with seborrheic eczema it is often well to apply a mercurial ointment.—*London Lancet*, August 22.

Melancholia Treated by Subcutaneous Injections of Ether.—Dr. R. J. Shepherd of Pau, France, writes to the *London Lancet* as follows: "Some remarks by Professor Renault of Lyons on the protective action of the subcutaneous injection of ether in uremia led me to try its effects in a case of brain trouble from uric acid. Twice before a similar attack had been accompanied and followed by deep melancholia. I did not, indeed, think of the melancholia in giving the drug (10 minims injected deep into the buttock) but was surprised and pleased to find that it at once disappeared. I gave about six injections in as many weeks and always with the same effect; it did not need to be repeated for the time. I feel sure that the method deserves a systematic trial, and need hardly say that if it should turn out to be a discovery it will prove an enormous benefit to suffering humanity, more especially in commencing stages of melancholia, which so often leads to suicide; while superintendents of insane asylums may hope to increase their percentage of cures. We need not be surprised that such a remedy should produce such a result, seeing that melancholia seems to be, *per se*, purely a functional condition of the nerve cells, coming and going no one knows how and leaving no appreciable trace of its presence. The utter harmlessness of the drug in such doses is largely in its favor."

Inoculation for Cholera.—Some interesting information regarding the effects of inoculation for cholera is to be found, according to the *Pioneer Mail*, in the report on the railway reconnaissance from Assam to Burmah via the Hukong Valley. Mr. Way, the engineer-in-chief, had to engage coolie transport, and 357 Khasias were collected at Margherita. Cholera was raging in the neighborhood at the time, and, in spite of all precautions, the coolies were attacked. Fortunately, Surgeon-Captain Hare was at Dibrugarh, engaged in the special duty of inoculating laborers on the tea gardens, a work which had been begun by Dr. Haffkine some time before. He willingly agreed to deal with the Khasias, and the majority of them submitted to inoculation. The effect was very marked; the deaths among the inoculated were only 2.55 per cent., while among the uninoculated they came to nearly 19 per cent. The disease made such ravages among the latter that the coolies themselves became thoroughly convinced of the efficacy of

inoculation, and finally all agreed to undergo the treatment. From that time onward no fresh cases of cholera occurred. Here, then, we have the strongest evidence of the good done by Dr. Haffkine's treatment, and Dr. Hare's report should be widely studied by the medical profession. The coolies were, it is stated, all living in the same camp and under like conditions, so that the experiment was really a most practical one. We need give only one illustration to prove this. Dr. Hare states that the fifty-two men first dealt with formed a separate group messing together in the same sheds. Of these, thirty were inoculated and sixteen left; of the sixteen uninoculated eleven developed cholera and died; among the thirty-six there was only one case, but this terminated fatally. There seems to be no room for doubt that if all the coolies had been inoculated at the outset the disease would have ceased in a few days.—*British Medical Journal*, December 5.

Potassium Permanganate as an Antidote to Morphia.—Potassium permanganate of potassium was first recommended by Barker Smith in 1877 as an antidote to morphia, experiments having shown that when taken after a large dose of either morphia or opium it may entirely neutralize the effect of these drugs, and it is also an efficient antidote against any vegetable poisons. Numerous cases have been reported in which morphia poisoning in children had been successfully treated by internal or hypodermic administration of potassium permanganate. In a recent number of the *Klinische Wochenschrift* Dr. Vucetic has published the case of a child aged 3 years who accidentally had taken about thirty drops of tincture of opium, and showed typical symptoms, viz., somnolence, cyanosis, contracted pupil and slow pulse. A 1 per cent solution of potassium permanganate was prescribed, and in the first place was injected with a Pravaz syringe into the right hypochondrium, in addition to which the child was given some teaspoonfuls of the solution. After some hours the toxic symptoms disappeared and the child eventually recovered, although it remained anemic and showed some mental impairment. If it be considered that children up to the 5th year of age are extremely susceptible to morphia and opium, that those under four months sometimes show signs of poisoning after from two to four drops of laudanum, and that the legitimate dose of laudanum for children of from 2 to 4 years of age amounts to three and a half drops a day, it is clear that in the above case the recovery was due to the potassium permanganate. The way in which the potassium permanganate acts has not yet been cleared up, but experiments have shown that in a mixture of solutions of morphia and of potassium permanganate the characteristic reactions of morphia are not obtainable. Only one case of poisoning with potassium permanganate has been described; in this case, after a dose of about four ounces death occurred from paralysis of the heart. In these cases Dr. Vucetic proposed morphia as an antidote. In morphia poisoning potassium permanganate may be administered first hypodermically and then internally. —*London Lancet*, October 31.

Peritoneal Tuberculosis.—Naumann of Helsingborg reports twenty cases of peritoneal tuberculosis in the *Nordiskt Med. Arkiv*, No. 5. All but one were operated, as he considers surgical intervention the most effectual means of cure, and the sole contra indication is the presence of advanced tuberculous lesions elsewhere. The difficulty is to form a correct diagnosis, and in several cases his only ground for the assumption of the tuberculosis was the exudation in the abdominal cavity. He states that the parietal peritoneum is frequently thickened, as much as 2 cm. in some cases, and that what is known as "nodular peritonitis" is in fact an old cured tuberculous peritonitis. According to Pic the proportion of recoveries with medical treatment is 34 per cent. in children and 18 per cent. in adults. But 70 per cent. recover completely after laparotomy. In two

cases of congenital hernia, Naumann withdrew the effusion through the hernial opening. The laparotomy seems to favor a cure as the traumatism from it draws the blood to the spot, and the bacilli are destroyed by its bactericidal action in such large quantities. This factor in the cure of local tuberculosis has not been emphasized until recently. The afflux of sanguine serum imparts the first impulse toward cure. Then comes the inflammatory reaction with the migration of the white corpuscles and a new formation of tissue, with the absorption of the cells of which the tubercles are composed. In this inflammation the antitoxins generated as also the phagocytosis, are the chief factors in the destruction of the bacilli. He reviews the important experimental researches of Nanotti and Baciocchi and Osler and Jordan's observation of the transformation of the tubercles into lamellar tissue five months after laparotomy, concluding that the results of the latest investigations of the progress and processes of cure after laparotomy, all tend to increase our confidence in this most rational method of treating peritoneal tuberculosis. At the recent Congress at Rome, 253 cases of tuberculous peritonitis operated by the members were reported, with 85.4 per cent. of recoveries. Of the thirty-seven fatal terminations seven occurred at the time of the operation, eight from immediate complications, and the remaining twenty-two only after considerable time had elapsed. Several of the cures have continued three to six years. Margarucci emphasized the necessity of simplifying the operation as much as possible, avoiding extensive irrigation and only draining or tamponing when there are intestinal tumors requiring local treatment. Ruggi diagnoses all cases according as fever is present or absent. In the latter cases surgical intervention is always successful, but when there is fever, the prognosis is less favorable. Seganti has been very successful with the "apneumatic lavage," which he performs with a couple of trocars introduced into the hypochondriac regions.—*Cbl. f. Chir.*, December 5.

Attenuated Test Cultures as a Safeguard Against Pseudo-reactions in Serum Diagnosis of Typhoid Fever by the Dried Blood Process.—Dr. Wyatt Johnston of Montreal has issued a circular, dated January 7, regarding the progress of his work in the new diagnosis of typhoid fever: "In my work in serum diagnosis done jointly with Dr. D. D. MacTaggart, we recently met with a series of peculiar partial reactions in which the dried blood solution from many perfectly healthy persons gave a very decided agglutination. The blood serum from the same persons was found much less liable to give these pseudo-reactions. This made it less easy to exclude other febrile diseases, and as with this test, accuracy in the negative diagnosis is of great practical importance; others who may meet with similar pseudo-reactions will be interested in learning how they may be avoided. These pseudo-reactions were not encountered in our earlier cases when attenuated cultures were used. They began to appear when we employed a short time virulent cultures and disappeared again on resuming the use of attenuated ones. Active, virulent cultures, intensified by daily transplantation and growth at the body temperature were therefore not suitable for the dried blood test. Where only active cultures are employed, we do not think that the dried blood method can be considered to have had a fair trial. The explanation of this difference appears to be that the serum contains relatively less of the substances causing agglutination than solution of the entire blood. Hence solutions of the entire blood react more intensely to the test than solutions of the blood serum alone. This was the reverse of what we had anticipated. It is found that the old laboratory stock cultures kept at room temperature and transplanted at intervals of about one month, give us the best result. Bouillon test cultures grown from this stock for twelve to twenty-four hours at body temperature are found to react decisively with solutions of typhoid blood

or typhoid serum, the reaction being as a rule well marked within fifteen minutes. With non-typhoid blood or serum solutions, the same test cultures give no reaction even after twenty-four or forty-eight hours contact. Intraperitoneal injection of 1 c.c. of such living bouillon culture produces in guinea pigs a marked blood reaction and immunity without much disturbance of health. We find that the best results in cases of dried blood are obtained with cultures where the motion as seen under the microscope is of a rapid gliding character, but free from darting movements. If the movement is sluggish, owing to great attenuation of the culture, a few daily transplantations at body temperature will make it more active. Exact estimation of the degree of dilution has not been found necessary for ordinary diagnostic work when attenuated cultures are used. A very faint tint in the drop examined usually indicates sufficient strength. The solution should not be thick and viscid. All the results which I have reported (*New York Medical Journal*, Oct. 31, 1896, and *British Medical Journal*, Dec. 5, 1896) were obtained with attenuated cultures. A report giving some additional technical details has been prepared and can be sent to any who desire further information."

The Ultimate Results of Removal of the Adnexa.—Prof. Richelot of Paris has performed 300 vaginal hysterectomies and 300 laparotomies for lesions of the adnexa. His interne analyzes these operations in an able article in the *Bulletin Médical* of December 9, and reports the after-results in 257 cases which he was able to follow to date. He finds that absolute cure is the rule; 94 per cent. after vaginal hysterectomy and 64.5 per cent. after laparotomy. The patients have resumed their work or their social life as in the past, and almost all state that their health never was better. The exceptions to this rule are the women of a nervo-arthritic tendency, who complain still of pains and discomforts, and although their general and local health is now perfect, still they are not satisfied. This point Richelot considers an important indication in deciding to operate. Patients with this tendency will never be completely cured in their own opinion, and hysterectomy only adds to their troubles the inconveniences of sterility and the annoyances of the menopause. He styles them the "*noli me tangeres*" of gynecology and advises against operating for comparatively slight lesions, even although the patients may complain of great functional distress from them. (See Jonas' vigorous article in the *JOURNAL*, page 10). Leaving one or both of the ovaries does not seem to modify the congestive and nervous troubles produced by the artificial menopause, but they are favorably influenced by rational hydrotherapy and the ingestion of ovarian tissue (Jayle's ovarin, made by dessicating the ovaries at the temperature of the animal's body, one powder, 125 milligrams, fifteen minutes before eating. To be continued several months). Two singers operated upon assert that their voice has grown lower. Obesity has appeared in some, but this is ascribed to a predisposition, which would have manifested itself sooner or later, probably, and is merely hastened by the artificial menopause. (Glycosuria was similarly noted in two cases. Richelot's mortality is 5 per cent. At one time recently, he had an unbroken series of 130 successful cases. He is very careful to protect the peritoneum from irruption of pus, and when it is hazardous to attempt to decorticate the appendages, he merely opens and drains the pockets. Many surgeons pay no attention to the slight oozing of blood that persists sometimes after vaginal hysterectomy, and yet it may lead to post-operative hemorrhage or the formation of a few clots which may favor the infection of the pelvic peritoneum, and thus the continuance of the pains. Richelot never proceeds to the dressing of the wound until the vagina is absolutely dry, and if the oozing persists, no matter how slight it may be, he always seeks the cause and remedies it. He also always accomplishes the hemostasis of the posterior vaginal cut sur-

face, by bringing the edges of the serosa and the mucosa together and holding them with three or four hemostatic forceps. He is very particular about his dressings, which are tampons of absorbent cotton, the size of a nut, impregnated with iodoform and each with a string attached. One is placed at the level of the vaginal incision, without pushing it into the pelvis. Others are placed around the lateral forceps, and in contact with the vaginal walls. The forceps are removed at the end of forty-eight hours, but the tampons are left in place eight days. Injections of boiled water are made with extreme care and gentleness after the eighth or ninth day. If hemorrhage occurs when the forceps are being removed, the patient is placed in the dorso-sacral position and after disinfecting his hands the surgeon removes the tampons and places a couple of valves; finds the bleeding point; applies a pair of forceps to it, and then dresses the wound again as at first. The failures after laparotomy are due in almost every case to the fact that the uterus was left in place after the appendages were removed. Fifty-three have had to undergo a consecutive vaginal hysterectomy for the removal of the uterus, and several of the recent cases will probably require it also. Pains continue and the uterus is often hypertrophied with a large and fungous cervix, or again small and sclerotic, leucorrhœic and painful. Metrorrhagia is frequent, usually irregular, but sometimes accompanying the menses. After laparotomy the external surface of the uterus is often infected and raw, ready to contract adhesions with neighboring organs or the omentum. The remains of the tubes are difficult to disinfect entirely and the ligature of the pedicle is not always successful in obliterating entirely their mucous surface. From this cause inflammatory accidents may supervene, or fistulas may be produced, directly or by inoculation of the ligature of the pedicle. The uterus is liable to be infected or become infected secondarily, causing metritis or perimetritis. The fistulas are one of the great inconveniences after laparotomy. No fistulas were found in any of Richelot's cases that proceeded from the stitches of the sutures, as his septic precautions prevent their occurrence. Deep fistulas are avoided, the article states, if the ovarian pedicle is tied separately at the level of its vessels, and the stump of the tube is profoundly excised into the very wall of the uterus. A small suture of the serosa of the uterus will then isolate the uterine from the abdominal cavity. The danger of eventration will always render vaginal hysterectomy superior to laparotomy, everything else being equal, as the inconveniences from this are so severe and necessitate a second operation with possibility of relapses. Its sole cause is suppuration, and this does not seem to depend upon the kind of thread nor the method of suturing. Extreme care in asepsis and drainage by a posterior vaginal incision instead of a subpubic, are the only means to prevent it. The troubles after vaginal hysterectomy have only been those connected with the menopause, in most cases. A few women still have leucorrhœa, but it proceeds from the vagina, and in some cases there has been previous gonorrheal infection. There has been a very slight cystocele in three cases. In some cases the wound remained sensitive for a few months—all nervous cases. Ten cases out of 300 were followed by fistulas that lasted from a few weeks to eighteen months, and healed spontaneously. There were five cases of vesical fistulas. One recovered spontaneously and three were treated surgically. Richelot has injured the ureter once in the course of 600 vaginal hysterectomies. The ultimate results are the same in these cases in which the appendages were left after the removal of the uterus. They have become atrophied, absorbed, "volatilized." No pain, no fistulas, but the same phenomena of the premature menopause. The article concludes by stating that all the ultimate results seem to affirm the superiority of the vaginal route, as the chief troubles are due to the retention of the uterus, and if this is to be removed, the vaginal route is to be preferred, as it is less of a shock to the patient; there is less danger of contaminating the peritoneum; there is no danger of the annoying eventrations, and above all because it allows the appendages to be left in place if they are adherent, and there would be danger in detaching them. In the cases in which the abdominal route is especially indicated, the operation should include the removal of the uterus.

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INFORMATION WANTED.

It would greatly facilitate the prompt delivery of the JOURNAL to those members of the Association living in large cities, if they would kindly furnish this office with their street address in those cases where it is omitted from the wrapper of their JOURNAL, as we have been notified by the postmasters of the larger cities that second-class mail matter not having street address, would be placed in the general delivery to await call.

SATURDAY, JANUARY 16, 1897.

THE REVIEWING OF MEDICAL PUBLICATIONS.

The mode of criticism in the medical journals of today is unsatisfactory. In many respects it is unprofessional and unjust to both author and reader. There are not so many meritable medical publications that each can not be thoroughly, but concisely, and intelligently and dispassionately reviewed. A glance at the current review columns shows that this is not the present status of affairs.

Many good books are inadequately noticed and many inferior works are given undue prominence by reasons of personal influence or publisher's advertisement. Much available space is wasted by the reviewers in the exposition of personal knowledge and judgment. MATTHEW ARNOLD says that to be of real service to his readers a critic should be entirely disinterested and should shun eccentricity of taste and violence of speech. There should be no misstatements or misconstruction of the author's object. A compend should not be viewed as a text-book, nor a practice as an encyclopedia. Every author declares the exact object and particular sphere of his book, either on his title-page or in his preface. It is the reviewer's duty to reiterate this, and then to briefly and honestly tell whether and why the volume in question does or does not adequately fulfill its mission. In addition to this a candid personal judgment on the innovations or leading features of the work is always desirable; but this does not mean that severe terms of condemnation are necessary. There should be no phraseology calcu-

lated to ridicule a serious and honest man, thereby injuring the sale of his book and preventing full dissemination of medical thought. It should be remembered that some of the most important medical truths were at first rejected by the most learned critics. It is a flagrant abuse of power and a manifestly unfair procedure to attempt to influence a reader against purchasing a work because it is personally distasteful to the reviewer.

The persistent notice of minor discrepancies and typographical errors is entirely unnecessary. Broad criticism has little regard for detail. This is the business of a proofreader. Authors can be benefited and readers satisfied to a far greater extent in the limited space for review in many other ways. Such criticism is usually prompted by a desire to convey the impression of great personal erudition, or is born of an omnipresent desire to be "smart," and to be maliciously on the alert for errors. Criticism does not imply fault-finding. Some of the most valuable medical works are full of small mistakes. Erudite men are most prone to carelessness.

Fortunately medical books are beyond the reach of the general newspaper critics, who to a great extent unfortunately do not attempt a candid and intelligent review, but aim at entertainment and amusement. Medical books are solely works of instruction and reference, and should be viewed as such. They should never be spoken of jocularly or discussed with levity.

The review columns of a journal should be the *sanctum sanctorum* of editorial purity. Of all departments, that of review should be unsullied by personal animosities. Sad to relate, there have been very recent instances in which the review column has been plainly used to satisfy personal dislikes and to pay off old grudges. This is absolutely so narrow minded and suicidal that a feeling of disgust prevents any thought of sympathy or desire to advise the miserable offender. The serious and conscientious critic is as incapable of willfully misrepresenting the merit of the book of a rival or even an enemy, as he is of doing him personal violence or picking his pocket. To the critic who realizes his trust there is no moral difference in the crimes.

At the present time large publishing houses generally have their own medical journals, and unfortunately there is a mercenary tendency to convert their review columns into masked advertisements for their own publications. Particularly is this true of the so-called distribution numbers. This is both unjust and impolitic. By such a policy intelligent and unbiased criticism will eventually be suppressed and the healthful influence and really beneficial advertisement of general honest review lost. When the reader is compelled to read a criticism which has become mere laudation and advertisement, all the value of the criticism is gone. There can be no compromise in this

matter. Readers can not be deceived for any length of time. To be of any value to either party criticism must be absolutely free and liberal.

A difficulty from the editorial standpoint is the necessity of committing volumes consigned to the large journals for review to other hands. Although editorially responsible for the review columns of his journal, for many obvious reasons the editor can not personally inspect the books sent to him. Generally the volume is presented to the reviewer, and when a severely critical or objectionable review is returned the editor is often compelled to expurgate or publish in full the passages in question without being able to consult a duplicate. This is manifestly unfair to both author and reader, and is an injustice to the honest labor of the reviewer. It would be better for all concerned if the publishers would adopt the French custom of sending two copies of the volumes for review to the larger journals; one copy to be used for critical inspection and one for editorial reference.

SUICIDE AND ITS MEANS.

A recent case of attempted suicide in Chicago which has created a great deal of amusement, was that of a German tailor who, while actually engaged in drowning himself, was forced to cease by a policeman who threatened to shoot him. It has been assumed, though wrongly, that this suicide was a sham one. The fact is however, that suicide is often the result of an obsession (imperative conception) which may seize on any mind when the unity of the will is destroyed by conditions of depression resulting from mental stress, or from any of the ordinary somatic diseases, and may pass into an imperative act or not in proportion as the unity of the will is involved.

The obsession may involve simply the question of suicide, or the question of suicide and its method. In the first case the method will be determined by its ease of accomplishment, or by surrounding circumstances. This choice, as MORSELLI ("Suicide") points out, has often considerable regularity. If, as he remarks, there be a human act which seems in apparent relation with free choice, it is the preference given to an instrument for self-destruction; yet statistics do not leave a doubt that in an aggregate of men in whom the physiologic and moral conditions are constantly equal, the nature and number of means of death are always the same, their choice belonging to the general stability of social phenomena.

GUERRY (the first to demonstrate the regularity of this choice out of a considerable number of cases) justly compared it with the annual distribution of births, marriages and crimes. First, should be taken into consideration the fact that the choice always falls by preference on the same means of destruction, so that, amidst such a variety of disposition, they remain limited to the following, principally: drowning, hang-

ing, fire-arms, wounds, poisoning, falls from a height, and asphyxia. Suicide by other means, such as starvation, crushing, bruising, purposely induced diseases and infection, striking the head, through crucifixion, by falling into the fire, setting fire to one's clothes, splitting the skull with dynamite, swallowing hard or pungent bodies, or boiling water or oil, or great quantities of brandy, are exceptional and scarcely ever registered in statistics. Each country certainly has its particular predilections, but in the aggregate of the people by whom suicide is practiced, the rope appears to be chosen before every other instrument, and immediately after that water, fire-arms follow, then those arms which cut or stab; falling from a height is preferred to charcoal and poison and lastly come all the other means. From this, it may be inferred that, in the choice of the means of death, man is generally guided by two motives, the certainty of the event and the absence or shortness of suffering. When suicide is accomplished by very painful means or at the cost of prolonged agony, in ninety cases out of a hundred it is the act of a mind disordered by fanaticism, by insanity or by morbid excitement. The terrible wholesale suicides of the Oriental population suggested always by exaggeration of the religious feeling, are as WAGNER notices, the opposite to those accomplished with indifference, sometimes with coquetry by the cultured European. It is true that the habits and civilization of a people cause the choice of means to vary by exercising a kind of fatal coercion on the individual, so that, for example, in Russia where carrying arms is subject to severe laws and where the cold climate obliges one living within doors for almost the whole year the suicide hangs himself by preference, while in Italy the hurtful facility for possessing arms, perpetual serenity of the sky, and the high temperature give opportunity for the most frequent suicide by means of the pistol or by drowning. Taking into consideration all the means chosen the constant dependence of man on the nature of his surroundings is seen even in the death which he procures for himself by violence.

In Chicago, a suicide dropping into "poetry," left the following couplet:

"Here's a receipt for a popular suicide,
Take twenty grains of potassium cyanide."

He was a photographer and sought a painless death. German maidens often soak matches in beer and leave the world with a libation to Gambrinus. "Rough on rats" and strychnin are astonishingly popular, considering the painful death produced by them and the ease with which morphin and laudanum can be procured. Suicides by poison and drowning are most frequent among women, since they disfigure least. Revolutionists, miners and quarrymen often use dynamite. A Chicago lunatic convicted of the murder of a policeman at an anarchist meeting blew his face off with a dynamite cartridge and

thereby insured what in a sane man would have been horrible suffering.

Dr. BRAINERD of Los Angeles, California, points out (*JOURNAL AMERICAN MEDICAL ASSOCIATION*, Vol. xxi) a peculiarity of suicides which explains their seeming immunity for a long time from the impulse. Most of them have an impulse to accomplish it by some special method and are quite likely not to attempt to take their own lives though numerous opportunities may offer unless the one method to which their minds constantly revert presents itself. The man who has an impulse to hang himself is quite unlikely to cut his throat or poison himself, though he may have ample opportunity to do so. He reports the case of a patient who had made numerous attempts to hang or strangle himself, but was as much frightened as anyone at the prospect of being killed by a tornado. This was singularly well illustrated in the case of the German tailor, and still more so in the case of an Italian paranoiac who, with other less painful means of suicide at hand, determined to crucify himself for the sins of the world. He deliberately set about the manufacture of a cross and all the adjuncts necessary for crucifixion. Perceiving it would be difficult to nail himself firmly to the cross, he made a net which he fastened over it, securing it at the bottom of the upper beam, a little below the bracket he had placed for his feet and at the ends of the two arms. The whole apparatus was tied by two ropes, one from the net and the other from the place where the beams intersected each other. The ropes fastened to the bar above the window, were just long enough to permit the cross to lie horizontally on the floor of the room. These preparations finished he put on his crown of thorns, some of which entered his forehead. Stripping himself naked he girded his loins with a white handkerchief. Then he introduced himself into the net and seating himself on the cross drove a nail into his right palm by striking its head on the floor until the point appeared on the other side. He placed his feet on the bracket and with a mallet drove a nail through them both, entering a hole he had previously made to receive it and thus fastening them to the wood. He then tied himself to the cross by a piece of cord around his waist, after which he wounded himself with his shoemaker's knife in the left side, but failed to injure any important organ. He had made several scratches on his breast to determine the place of least resistance. This knife represented the spear of the crucifixion. This was done in his room. In order to show himself to the people he placed the foot of the cross upon the window sill, which was very low, and by pressing his fingers against the floor, he gradually drew himself forward until the foot of the cross overbalancing the head the whole machine tilted out of the window and hung by two ropes fastened to the beam. He then nailed his right hand to the arm of

the cross but could not succeed in fixing the left although the nail by which it was to be fixed was driven through until half of it came out on the other side. After hanging thus an hour he was noticed, detached from the cross and put to bed. He recovered from the wound but remained morose, taciturn and solitary.

The same fact is shown in imitative suicide. Here the imitator follows his predecessor so closely as to adopt identical or very similar means (*STRAHAN'S "Suicide and Insanity"*) of terminating his life. Thus the women of Miletus committed suicide by drowning in large numbers because their husbands and lovers were detained by war. The epidemic was put an end to by carrying the bodies of all suicides naked through the streets. In the seventeenth century an epidemic of suicide by hanging broke out among the women of Lyons, France. There was no known cause for the outbreak. In this case the epidemic was checked by decreeing that the bodies of suicides should be exposed naked in the market place. No suicide had occurred in the Hotel des Invalides for some years, when a man was found one morning hanging from the lintel of a doorway. Within fourteen days thereafter five men suspended themselves from the same beam. The Governor had the passage closed and so soon as the identical method of suicide was rendered impossible the epidemic disappeared as suddenly as it began. Religious suicide in India under the wheels of the car of Juggernaut have been prevented more than once by English soldiers threatening to shoot the fanatics.

THE CRAIG COLONY FOR EPILEPTICS.

The successful results of the efforts of Dr. FREDERICK PETERSON and his associates in the establishment and maintenance of the Craig Colony, New York, should be a stimulus to the development of similar organizations for the rational and economic care and treatment of epileptics in other States. The model settlement at Bielefeld, Germany, has furnished indisputable proof of the benefits of the colony or village system over any hospital or house of refuge for persons afflicted with nervous and mental disorders, and the Craig Colony has further substantiated this fact in this country.

Although only at intervals incapacitated for labor and social intercourse, the epileptic is unfortunately debarred by his malady from the usual avenues of self-sustenance and mental and moral development. Relegated to charity hospitals and almshouses he becomes an easy prey to all degenerative tendencies, and either drifts into insanity or is soon a hopeless invalid and a life-long dependent on the charity of the community at large. On the other hand, taken from the deleterious confinement of an almshouse to the healthful, industrious life in a colony, the epileptic

feels that he is on an equality with his fellows, and no longer a semi-outcast of society. He is bound to his associates by a common affliction, and has a common purpose with them. New hopes and new ambitions arise. From his former apathy he is stimulated to follow his bent in both education and occupation. All the feelings so intimately connected with social dependence disappear. The exercise, the life out of doors, the manual and industrial training, and the mental occupations, bring about the bodily and psychic conditions which conduce to improvement and recovery. Indeed, in the last report on the effect of colony life on the patients at Craig Colony it is stated that nearly every individual of the 145 patients admitted since the informal opening, Feb. 1, 1896, has been markedly improved physically and has gained weight. Their epileptic seizures have diminished in frequency to a noteworthy degree, and in a few instances there has been a complete cessation of attacks for months at a time. One of the most striking changes has been in the expression of the patients. Almost every beneficiary loses his dull, apathetic look, born of idleness and neglect of years, when he enters upon the regular life of the colony, and begins to understand and appreciate the opportunities for occupation, education, treatment and general physical and mental development which it offers. A strong evidence of the appreciation of the colony by the patients is afforded by the fact that, although held here by no legal form of commitment, and having perfect liberty of the premises, they rarely manifest the least desire to leave.

Besides the manifest moral advantages there are the scientific advances that are furthered and fostered by such an institution. Necessarily ordinary treatment must be better under such circumstances. At Craig Colony chemico-physiologic and pathologic laboratories are in the course of construction, and when completed will doubtless open new fields of discovery in the pathology and treatment of psychic and neurotic disorders.

From an economic standpoint the Craig Colony promises to be a success unparalleled among similar charitable organizations. Eliminated from political jurisdiction it bids fair to become self-sustaining. The dietary for patients afflicted with epilepsy is simpler than that needed for other classes of patients, so that almost everything in the way of foodstuffs required by a large population can be produced from the land itself by the labor of the colonists. During the year previous to the opening of the colony, the managers by renting out tracts of land in shares cleared \$7,000 or \$8,000, which is evidence of the productiveness of the land and of what may be expected when each acre is made to yield its treasures to the unremitting care and attention of the colonists. There is already a large flock of sheep, a goodly herd of cows,

and other stock of various kinds under the care of the patients.

But in addition to these features which characterize it to a great degree as an agricultural and stock-raising settlement, numerous other trades and callings will need to be summoned into being with the gradual evolution of a self-supporting and independent colony.

From the date of the opening, Feb. 1, 1896, to Oct. 1, 1896, the colony produced about 50 per cent. of the cost of maintenance. This percentage should increase each year as the agricultural plant is enlarged and the industrial facilities are added to. The importance of encouraging the industrial features of the colony is thus emphasized. It is with this end in view that most of the appropriations asked for from the Legislature of the coming year, aside from those buildings needed to increase capacity, relate to the economic development of the colony.

In this day of extravagant hospital abuse and philanthropic profligacy (in themselves inductive to pauperism and social debauchery) it is delightful to learn of such a deserving and truly charitable organization. Such administrative methods as those of the Craig Colony must be appreciated by the student of social economy as well as the physician. It is hoped that the New York Legislature will have the wisdom and forethought to endow Craig Colony sufficiently to enable Dr. PETERSON and his co-workers to include under their care all the dependent epileptics in the almshouses and hospitals of New York State. After the capacity has thus become enlarged, and the primary object of the colony accomplished, arrangements can be made to receive persons of other communities who are able to pay for the colony life and treatment. Thus the indigent epileptics may be cared for and educated to become useful citizens, and sufferers of this unfortunate affliction of all classes may be ultimately benefited, either directly by actual residence in the colony, or indirectly by the scientific study in the pathology and treatment of epilepsy pursued at the colony.

MEDICAL EDUCATION IN THE UNITED STATES.

The advance sheets of the Annual Report of the Commissioner of Education are always noteworthy. In those now at hand (for the Report of 1894-95), there are to be found some interesting remarks and deductions as regards medical education and requirements for practice in the United States. These latter are graphically represented by different degrees of shading in a map, which gives, as it were, a bird's eye view of the present situation. As last year, there is only one State, New Hampshire, that has absolutely no medical law, but in several of the others the restrictions and conditions have been made more rigid, so that on the whole the safeguards against quackery are increased. The District of Columbia is the latest of

the political divisions of our country to adopt a stringent medical practice act, which was approved only last June, and as it is under the direct control of Congress the enactment is in its way a National one, though the territory in which it is enforced is small. In nine States and Territories, however, there are no medical boards, and the medical practice laws can hardly be said to have much effect.

On the whole the outlook is more promising each year as regards the regulation of medical practice in the interest of the public and the profession. The movement is fairly under way and it will not be many years, in all probability, before efficient medical practice acts will exist in all or nearly all the political divisions of our Union. The question will then arise as to the unification of the standards so as to do away with certain inconveniences that must follow from the existence of so many separate laws varying more or less from each other. This however is a matter that need not trouble us at the present time; the living question, and it is that in more than one sense to the individual practitioner, is that of raising the local or State standard of professional qualifications.

When we turn to the Commissioner's report to see what is being done in other ways to bring this about we find some further encouraging facts. In the Eastern medical centers the increase of medical students is not in proportion to the increase in the total number of students, and while it has increased in Chicago, it would probably be shown, were the figures published, that it is there caused by the multiplication of minor schools whose existence is due to the raising of the requirements of the larger and well established ones. This is clearly enough an evil, serious at the present time, but, it is to be hoped only a temporary one. As State examinations, as a requirement, become more universal the conditions that permit these mushroom growths to exist will be done away with and students will find it necessary to go where the means and appliances for a thorough medical education can be found. This statement applies still more to the many small medical colleges in minor towns, where clinical advantages can hardly be said to exist to any extent. The time may soon come when any medical school outside of the great cities will be a rare exception.

Another significant sign of the times, shown in the report, is the increasing cost of medical education. It appears that the richest and best endowed schools charge the highest fees, and the tendency seems to be to increase rather than to diminish the cost of medical education. This might not appear, at first sight, an unmixed benefit, but considering the crowded state of the profession it can hardly be seriously objected to if it is in any way efficient in preventing the excessive production of doctors. It is to be presumed, moreover, that the quality of the medical education given corresponds with the price it costs, and that being

true, no one ought to complain. There are, and probably always will be, some State-endowed colleges where the fees are moderate, and scholarships and other endowments for poor but meritorious students will also increase in time.

One of the most hopeful features of the report is the evidence it gives, that endowed medical professorships and colleges are beginning to make their appearance. As yet it is only a beginning and a small one, but it will increase, and the time when a medical professorship will necessarily mean something more than the possession of a certain amount of stock in a speculative enterprise or a device for "legitimate" medical advertising, may be said to be in sight. When it comes, and it is to be hoped it may come quickly, the status of a physician will be higher socially and financially, and one might perhaps even say morally, than it is, sometimes at least, at the present day.

CORRESPONDENCE.

Ether and Chloroform.

BOSTON, MASS., Jan. 6, 1897.

To the Editor:—Considerable has been written on the comparative use and danger of ether and chloroform. Only a few weeks ago I saw an article in which was the statement that a number of deaths by chloroform had occurred in women in confinement. Not many months ago I also saw it stated that no such case is on record. Now, which of these writers is correct? Has chloroform killed any woman under such circumstances? I, for one, have no remembrance of seeing such an instance reported. If both ether and chloroform cause death in such cases we must then select accordingly. There are several points, however, we may properly consider as between the two.

1. *Help:* An etherized patient, unless thoroughly under its influence, must be regarded as drunk or crazy, requiring considerable assistance to control and take care of her. It is not so with chloroform. The patient rather likes it and will call for it when not given to full anesthesia, and is able to think and talk and help the physician, quite different from ether. So that the assistance of the nurse and one other woman is all the help really required. I put the chloroform on the handkerchief and keep watch on the patient. The whole apparatus required is a lady's pocket-handkerchief, folded as it comes to me, and a small phial having a small neck for the chloroform. Then by placing the kerchief firmly over the mouth of the phial, the bottle is inverted so that only a few drops escape on to the kerchief. This bottle I keep within my reach and handle myself, using my left hand and removing and inserting the cork with my teeth. Thus any woman can hold the chloroform to the patient, returning the kerchief to me for renewal of the chloroform just preceding the next pain and keeping the more or less exhausted kerchief to the nose in the intervals of the pains. Thus more or less of the anesthetic can be used as the exigency requires to keep the pains bearable. If more chloroform has to be given during the last few pains that does not seriously affect the child. And even in instrumental cases, it is rare to need any extra skilled help: for by the time this is reached the woman giving the chloroform has become quite competent to follow the directions of the physician and take full charge of giving the anesthetic herself.

2. In heart cases chloroform has the advantage over ether.

3. Chloroform is not so dangerous to the child, since the

mother takes less of it to make her confinement comfortable, so that the child is rarely but slightly anesthetized as compared with ether, and speedily, in most cases, responds to changed circumstances and begins to breathe. Even in the heavier cases of anesthesia of instrumental cases, the time being short, there is usually little difficulty in bringing about respiration in the child, if the chloroform is laid aside and the cord is not cut. I remember but one child over which I worked many minutes before respiration was established. This mother was a particularly nervous woman and required considerable anesthesia and it was continued a much longer time than usual. When I hear of a stillbirth, the child being alive before, I always inquire if the mother did not take ether at the confinement, and this is generally answered in the affirmative.

4. Ether, by its greater stimulation of the circulation, I believe, is much more liable than chloroform to be followed by hemorrhage.

Without trying to exhaust the subject, I think these four points are greatly on the side of chloroform. And then if it is true that it is safer for the mother it becomes almost imperative that the accoucheur should give it, and give it instead of ether in confinement cases; for, if judiciously administered it is a most glorious blessing to this feature of suffering humanity. To be sure, etherization is a home invention, and the writer entered Harvard only a few years after its first application, and has witnessed the continuous prejudice in its favor ever since. Yet, from my own judgment and experience, I am strongly in favor of chloroform instead of ether in confinement cases, and from its easy application I believe no woman should be left to suffer much without it, and certainly we can not hesitate to use it when we would be slow to begin with ether.

E. CHENERY, M.D.

NEW INSTRUMENTS.

NEW AND COMPACT CASE FOR A COMPLETE SET OF OPHTHALMIC INSTRUMENTS WITH STERILIZING TRAY.

BY S. D. RISLEY, M.D.

Attending Surgeon Wills Eye Hospital Philadelphia; Professor Diseases of the Eye in the Philadelphia Polyclinic and College for graduates in medicine.

Much annoyance is frequently experienced in transporting either a broad and unwieldy instrument case which will not fit into any convenient sized bag, or by the necessity of carrying about numerous smaller boxes containing instruments. I have avoided this for a long time by a number of smaller boxes containing a complete set of instruments for any of the more usual operations.

One of these contained a cataract set, another the instruments required for iridectomy, while a third contained a complete set for tenotomy, advancement, etc. Miscellaneous instruments were mingled in a fourth.

This plan requires an unnecessary multiplication of many instruments, *e.g.*, specula, lid elevators, forceps, scissors, etc., needed in almost all operations upon the eye. Then too it is not always possible to anticipate every requirement, so that in operating away from the office, it became necessary to carry a large bag, containing numerous instruments, boxes, a sterilizing tray, dressings, etc. To avoid these several inconveniences and annoyances, I have had constructed by Wall & Ochs, a small sterilizing apparatus, and a series of small trays, into which all the necessary instruments for any ophthalmic operation are carefully fitted with ample room for a considerable additional supply of knives, keratomes, etc. Each of the trays is readily withdrawn and replaced like the drawers of a desk, or bureau. The instruments are held firmly in place in each tray, by a readily adjusted binder. The entire case is so compact, that it will fit in a small sized hand bag, and still leave

room for necessary dressings. With it the surgeon goes to his patient, confident that he has at hand every possible instrumental requirement.

The accompanying cut illustrates the general appearance of the case when open. The drawers or trays are represented as partially open. When pressed home and the front closed, and clasped under the flat leather handle at the top, the outside dimensions of the case are, $4\frac{1}{2}$ inches wide, $6\frac{1}{2}$ inches long and 6 inches high. The case may be purchased of the manufacturers, with or without these instruments, or orders for any portion of them will be received.

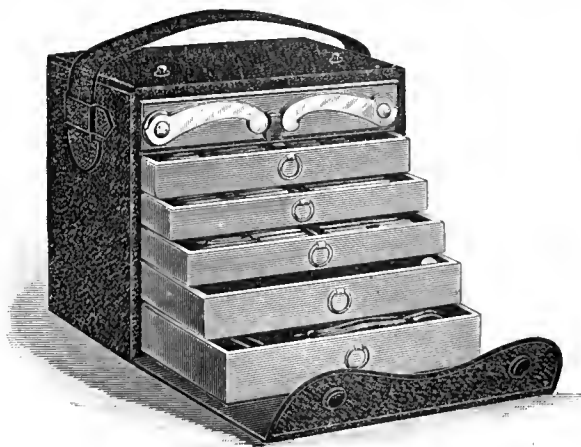
The following is a list of the instruments which have been carefully selected for filling the trays:

Speculum: Knapp's aseptic; lid elevator.

Forceps: Fixation, broad serrated grip; Stevens' fixation; tenotomy, fine rat tooth; iris; Knapp's capsule; Prince's advancement; cilia; Snyder's needle forceps; Knapp's roller forceps for trachoma.

Scissors: Spring, McClure's very small for operations in the anterior chamber, iridectomy, etc.; Knapp's iris; Stevens' tenotomy; angular; enucleation, curved on the flat; straight, one probe point.

Knives: 3 cataract, hollow ground; 1 Weber's canaliculus, probe point; 1 Beer's; 1 bistoury; 1 scalpel, small; 3 angular keratomes; 2 capsule knives, Risley's, secondary cataract, dissection, etc.; 1 paracentesis; 1 cystotome and spoon.



Miscellaneous: aluminum spatula; needles, assorted in case; Desmarre's clamps; set of Bowman's probe silver Nos. 1 to 8; Risley's special lachrymal syringe, 2 canulas; Risley's canaliculus dilator; 2 fine silver lachrymal probes; 2 strabismus hooks; Stevens' strabismus hooks; Stevens' divulsor; Stevens' advancement hook; iris hooks, sharp and blunt; Knapp's silver spatula and probe; tortoise-shell spatula; tortoise-shell spoon; fine grooved director; foreign body spud; double hook; wire cataract loop.

These instruments have all been selected with special care, and are so constructed as to meet the writer's views of desirability in form and size.

Attention is called especially to the cataract knives, which are hollow-ground, the radius of curvature being 32 mm. Particular attention has been given to securing a suitably shaped point. A serious practical defect in many of the Graefe knives, as found in the market is the finely drawn long point. While this favors the easy puncturing of the cornea at the commencement of the incision, it often embarrasses the surgeon in making the counter puncture. Since the fine, almost needle point can not be readily followed in its course across the anterior chamber and at the corneal limbus, the counter puncture is almost certainly made further back than is intended. The large Annel's syringe I have found extremely cumbersome and unnecessarily large. The one included in the case is smaller,

has a circular flange at the upper part of the barrel, and a thumb ring for the control of the piston, so that the syringe can be filled and emptied readily with one hand. Another special feature is the small sterilizing tray with lamp constructed after the Andrew's model. This can be omitted if so desired, and an additional tray for larger miscellaneous instruments substituted.

This case has now been in use for almost two years, and has proved a great convenience. The instrument trays are constructed of white mahogany, and are very light though strong and durable. The outer box of the sterilizing tray is of nickel plated copper, while the inner tray and instrument rack are of aluminium. The knives have metal handles, and all the instruments are so constructed as to secure as far as possible ready sterilization. Special instruments have in each case been procured from the manufacturers selected by the surgeon who devised them. The others have been manufactured by J. H. Gemrig & Son, of Philadelphia, to whom and to Messrs. Wall & Ochs, opticians of Philadelphia, I am indebted for many courtesies in meeting my many demands in order to secure the instruments in exactly the form desired, and a neat, compact and convenient case for their suitable care.

PUBLIC HEALTH.

New York State Board of Health.—At the January meeting of this board there was some discussion over a novel question referred to the board in the matter of compelling the discharge of a popular principal in one of the public schools of Cazenovia on account of his being a consumptive and likely to inoculate the scholars with the disease. The local board of health was ordered to make a thorough investigation as to whether the health of the children was endangered, and to report to the State board.

The New York City Board of Health.—The following is a New Year's sentiment supplied to the *Herald* by the stock-broker president, C. G. Wilson, of that board. But, as usual, medical men have done all the important work. It may be taken as another argument why a medical man should be eligible to that presidency. If he actually believes what he says below, there are a host of his fellow citizens who can not follow him:

"The closing year has seen the lowest death rate New York has ever had. The year has been remarkable for a decrease in contagious diseases. We hope to attain the same degree of efficiency under Greater New York as in the New York of the year 1896. Every year has seen some little improvement; the coming year will see more. *In this department politics have never had a place*, and will not have in Greater New York. With the increase in population and territory there will be an expansion of organization. It is just as easy for the Health Department to care for three millions of people as for one and a half millions. Our methods will be the same in the future as in the year just ended." Whatever else is false in the above, it is certainly true that the last quarter of the year has had a very low rate of mortality. Twice during the quarter the rate fell below 15.2 per mille, and the average rate for the quarter should not exceed 16.75, which is a phenomenal showing for that section.

Death Rate by Sexes in New York.—In 1894 the tables of the Bureau of Vital Statistics recorded among men 56.91 per cent. of deaths from pneumonia, as against 43.09 per cent. among women, and in the following year 57.57 per cent. of men and 42.43 per cent. among women. Another year shows 2,759 deaths among males from pneumonia and 2,230 deaths among females. A similar proportion also exists in the deaths from consumption. During the past year there were 1,750 deaths from nervous diseases among men and but 1,460 deaths among women. Another popular notion which these statistics discredit is that

women are more likely to become insane than men. Last year there were some 162 deaths from insanity among men and only 90 deaths among women. There is also a similar proportion in the case of deaths from suicide, which may be classed as the result of acute nervous disorders. There were 190 deaths from suicide among men last year, and but 49 deaths among women. Among the stronger, sturdier sex there were 1,023 deaths from heart failure last year, as against 955 among women. Women are also freer from diseases of contagion than men, although they are exposed to such dangers in about an equal degree with men. In the case of typhoid fever, for example, there were last year 201 deaths males, and 51 deaths females, and about the same proportion occurs in similar diseases. The contrast in the death rate among men and women is especially noticeable in the diseases which are for the most part self-inflicted by over-eating and drinking. The popular notion that most women suffer from eating too much candy and all the jokes based upon this theory, are quite without foundation. There is, for example, little or no gout among New York women. The vital statistics do not record this, because gout is seldom fatal. The very rare cases which have occurred for several years have been in almost every instance inherited from fathers. The immense contrast in the suffering from over-indulgence in alcohol between men and women is familiar to all. The statistics show that during 1895, 276 deaths occurred in New York from alcoholism, of which 219 were men and 57 women. Indigestion with all its accompanying ills is also much less common among women. There is also a very marked difference in the number of deaths from apoplexy, which may be classed as a result of this form of over-indulgence.

Disposal of Excreta in Rural Communities—The Dry Earth System.—In the *Dietetic and Hygienic Gazette*, December, Dr. Bashmore points out that no danger to health exists in rural sections that can for a moment compare with that which inheres in the dirty privy-excavation and the foul cesspool. These nuisances contaminate the ground-water, which is about the only drinking-water that is available. For the reason that the changes that take place in the ground water are *out of sight*, the conjectures of our sanitarians may at times be overdrawn while the rural dweller may ignore the perils that await himself and family simply because they are not visible. The earth-closet for excreta and the deep driving of wells are points of vast importance, but it is safe to say that in the country not one person in a hundred knows what the words mean. If we could get village dwellers to understand the sanitary value of this method of excreta disposal, it would be a great step in progress. Some of the State Boards of Health are working in the right direction and issue circulars containing instructions for the making of earth-closets. The material to be used in the receptacle may be either ashes or dry earth. In summer dry earth can be taken directly from a garden bed and for use in winter may be stored in barrels. Ashes are perhaps better if the closet is in the house, for the ashes are lighter and more absorbent. Experience has shown that an ash closet if properly used, is absolutely inodorous; hard coal ashes are the right kind to use and should be sifted through a fine sieve; there is no better way than this to dispose of the winter's ashes. The disposal of the contents of the closet is perhaps the stumbling block to many. This material, whether ashes or earth has been used, may be placed on a corner of the garden bed and covered with a little earth or it may be buried a few inches under the soil; or lastly, it may be kept in a dry place, covered with earth and carted away at some suitable time by the farmer for use as fertilizer; of course the agent of disposal in all cases is the nitrifying bacteria. To be sure, if too much ash is used, nitrification is delayed, but with the mixture of a little earth the results are all that one could desire. Another way of using the earth closet, especially for schools or large dwellings, is to have the privy constructed with what Prof. Coore calls a dry catch,

which is a large, dry and cemented vault underneath. The seat is very much like the hopper of an ordinary water-closet with a movable pan at the lower end to prevent draught. The excreta fall to the vault beneath and every evening they should be covered with dry earth through an opening on the outside. Every week or so the contents are taken away for fertilizer. This is the ideal method for disposal in country schools but it will likely be many years before country school boards adopt it. It seems to me, that small incorporated towns might be able to do something on the line of the dry earth privy, by having a scavenger clean all privies every week; individuals can not be depended to take care of earth privies, at least just at the present state of progress.

Advance in Teaching Methods in Hygiene.—The *Montreal Medical Journal*, November, points out some of the improvements about to be made at the McGill University, saying:

The scope of hygiene is enormous; almost co equal with that of medicine itself. Even as ordinarily taught there are three highly important subdivisions of the subject, namely, 1, preventive medicine; 2, environmental hygiene as we may term it, namely, hygiene of the surroundings of the individuals, *i. e.*, ventilation, water supply and disposal of sewage, and 3, hygiene of food, pure food and its adulterations and departures from standard. To treat properly the first of these, the hygienist should be a fully equipped bacteriologist and pathologist; to deal authoritatively with the second, he should be a professional engineer and sanitarian; to enter into details of the third, it is imperative that he be an organic chemist of the first order. When we knew relatively little and the subject was in its infancy, it was possible for one man to deal comfortably with all these subjects; but this is no longer possible, and the teaching of hygiene in every university has, in consequence, suffered. In Great Britain the difficulty is often disposed of by making the professorship or lectureship in hygiene one of the stepping stones to professorships in other subjects, and as a consequence the teaching is poor and perfunctory. In Germany, the professors in hygiene are now almost entirely trained bacteriologists, and but a few of the disciples of Pettenkofer have attempted, with partial success, to cover the whole ground. In America, again, it would seem, judging from the department of hygiene in University of Pennsylvania, that following the German system, the bacteriologic aspect of the subject is being regarded as the most important. For more than two years the medical faculty of the McGill University has been debating as to how, under the circumstances, to make the best use of Sir Donald A. Smith's endowment of \$50,000 toward the establishment of a department for hygiene, and as Dr. Craik points out in his introductory address in this number, the solution reached is, that it is impossible to appoint one man to teach the whole subject. Dr. Craik himself is appointed head of the department, but the teaching in the three main branches is given over to those members of other departments who are presumably most competent to deal authoritatively with each special branch of this subject. In this way it is hoped that the subject will be treated in a manner commensurate with its importance in the medical curriculum.

ASSOCIATION NEWS.

Members of Special Committee on a Department of Public Health, American Medical Association.

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Alabama, W. H. Saunders, Mobile (vice Jerome Cochran, deceased).
Arkansas, Jas. T. Jelks, Hot Springs.
California, C. A. Ruggles, Stockton.
Colorado, *Charles Denison, Denver.
Connecticut, T. D. Crothers, Hartford.
N. Dakota, I. N. Wear, Fargo.
Delaware, L. A. Bishop, Dover.
District of Columbia, H. L. E. Johnson, Washington.
Florida, J. Y. Porter, Key West.
Georgia, William F. Holt, Macon.
Idaho, W. W. Watkins, Moscow.
Illinois, *N. S. Davis and *L. H. Montgomery, Chicago.
Indiana, J. F. Hibberd, Richmond.
Iowa, James T. Priestley, Des Moines.
Kansas, N. I. Taylor, Berryton.

* Names thus marked were members of the original committee appointed at San Francisco.

Kentucky, William E. Bailey, Louisville.
Louisiana, F. Formento, New Orleans.
Maine, A. Garcelon, Lewiston.
Maryland, G. H. Rohé, Catonsville.
Massachusetts, H. P. Walcott, Cambridge.
Michigan, D. Maclean, Detroit.
Minnesota, C. N. Hewitt, St. Paul.
Mississippi, Paul T. Jones, Corinth.
Missouri, E. R. Lewis, Kansas City.
Montana, A. H. Mitchell, Deer Lodge.
Nebraska, B. F. Crummer, Omaha.
New Hampshire, I. A. Watson, Concord.
New Jersey, I. N. Quimby, Jersey City.
New Mexico, F. H. Atkins, East Las Vegas.
New York, E. D. Ferguson, Troy.
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Oregon, O. M. Dodson, Baker City.
Pennsylvania, *W. B. Atkinson, Philadelphia.
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South Carolina, T. J. Croft, Aiken.
Tennessee, J. B. Lindsley, Nashville.
Texas, W. L. Barker, San Antonio.
Utah, Frederic Clift, St. George.
Vermont, *H. D. Holton, Brattleboro.
Virginia, Hunter McGuire, Richmond.
Washington, J. B. Eagleson, Seattle.
West Virginia, J. R. Cook, Montana Mines.
Wisconsin, *U. O. B. Wingate, Milwaukee.
Wyoming, E. Stuver, Rawlins.

American Pharmaceutical Association.—The following subjects have been referred by the American Pharmaceutical Association to the AMERICAN MEDICAL ASSOCIATION, to be considered at the next meeting of the latter in Philadelphia, hoping that some action may be taken expressing the sense of physicians in convention assembled in relation to the important points requiring coöperation between the physicians and pharmacists of the United States for decision.

That these points may be taken up for joint debate, the following mentioned gentlemen, representing the National organization of pharmacists, State associations and educational institutions, have been appointed by the President of the American Pharmaceutical Association as a delegation to attend the meeting of the National association of physicians. This delegation will report back to the American Pharmaceutical Association when it meets in convention at its next annual convocation at Lake Minnetonka, Minn., August 23 to September 6, 1897:

A. E. Ebert, Chicago, Ill.; John U. Lloyd, Cincinnati, Ohio; H. H. Rusby, M.D., New York, N. Y.; E. L. Patch, Boston, Mass.; Joseph P. Remington, Philadelphia, Pa.; A. B. Prescott, Ann Arbor, Mich.; H. M. Whelpley, M.D., St. Louis, Mo.; S. P. Sadtler, Philadelphia, Pa.; Lucius E. Sayre, Lawrence, Kan.; Chas. Caspari, Jr., Baltimore, Md.; Wm. S. Thompson, Washington, D. C.; D. M. R. Culbreth, M.D., Baltimore, Md.; Henry Trimble, Philadelphia, Pa.; C. Lewis Diehl, Louisville, Ky.; Wm. M. Searby, San Francisco, Cal.; H. R. Slack, M.D., La Grange, Ga.; J. N. Hurty, Indianapolis, Ind.; L. F. Chalin, New Orleans, La.; T. D. Reed, M.D., Montreal, Canada; C. S. N. Hallberg, Chicago, Ill.; Jas. H. Beal, Seio, Ohio; Louis C. Hopp, Cleveland, Ohio; Joseph Jacobs, Atlanta, Ga.; A. R. L. Dohme, Baltimore, Md.; O. Oldberg, Chicago, Ill.; C. R. J. Kellam, M.D., Heron Lake, Minn.; R. W. Williams, Three Rivers, Canada; R. G. Eccles, M.D., Brooklyn, N. Y.; Chas. Rice, New York, N. Y.; Virgil Coblentz, New York, N. Y.; W. C. Alpers, New York, N. Y.; Edw. Kremers, Madison, Wis.

The subjects referred are as follows:

1. Liquor Selling in the Drug Stores. This was the subject of a paper read before the American Pharmaceutical Association at its last annual meeting, held in Montreal in August, 1896, by Mr. H. M. Whitney, of Massachusetts. It is to be hoped the paper will receive that attention that its merits and the importance of the subject demands, and that physicians may come to the next meeting of the AMERICAN MEDICAL ASSOCIATION prepared to discuss the points that have been raised, both pro and con.

2. The following Sections from the Report of the Committee on Revision of the United States Pharmacopeia of the AMER-

ICAN MEDICAL ASSOCIATION: 15. Dismiss spiritus frumenti and spiritus vini gallici from the United States Pharmacopeia. 16. Dismiss vinum album and vinum rubrum, and all medicated wines, from the United States Pharmacopeia. 17. Dismiss all tinctures having a fluid extract of the same drug official, and all fluid extracts having a tincture of same drug official, and substitute for such tinctures and fluid extracts, 50 per cent. tinctures under a distinctive title. 22. Return to potassium sulphate as a diluent in making Dover's powder, in place of sugar of milk, used since 1880.

In addition to the above points referred by the American Pharmaceutical Association, the Special Committee on National Legislation of the American Pharmaceutical Association will bring up for joint debate the question: Would it be advisable to advocate legislation in each State making it obligatory for the manufacturers of medicine, whether advertised to the laity, or to the medical profession, or put up in packages for sale to the public, or for physicians dispensing, to publish the exact working formulas and methods of manufacturing all such medicines, in some well-known periodical, or other publication of ready reference, or in some bulletin devised for the purpose, or, when practicable, on the labels of such medicines, so that all may be able to ascertain their exact composition? The object of this proposition is to protect the public from imposition by designing persons who make it a business to delude the public by promising cures for serious diseases by the administration of remedies that have been long ago tested for such affections and proved valueless, or offering alleged new remedies for similar purposes which may or may not be valuable, but whose true merits it is impossible to understand without a careful study of the claims made for them, which is impossible under the present system of secrecy, or semi-secrecy, with which they are enveloped by those who manufacture and market them.

F. E. STEWART, M.D.

Chairman of the Delegation, and Chairman of the Special Committee on National Legislation of the American Pharmaceutical Association.

SOCIETY NEWS.

The Twelfth International Medical Congress.

EXECUTIVE COMMITTEE AND COMMITTEES OF SECTIONS.

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SECTION 9, A.—DISEASES OF THE TEETH.

President, T. A. Rein, prosector, Moscou. Members of Committee, same as for Section on Surgery.

SECTION 10.—MILITARY MEDICINE.

President, Prof. L. L. Levchine, Moscou. Members of Committee, A. J. Bieliaew, M.D., associate inspector-in-chief of military medical service, St. Petersburg; L. A. Zaoustinsky, inspector of the military service, district of Moscou; W. S. Koudrine, inspector-in-chief of the medical service of the navy, St. Petersburg; B. B. Pachoutine, chief of the military medical academy, St. Petersburg; J. T. Raptchewsky, agrégé, St. Petersburg; A. A. Remmert, inspector-in-chief medical military service, St. Petersburg. Secretary, S. E. Beresowsky, agrégé, assistant, surgical clinic, Moscou University.

SECTION 11.—DISEASES OF THE EYE.

Presidents, Profs. A. A. Krukow, T. O. Evetsky, Moscou.

Members of Committee, Prof. E. W. Adamuck, Kazan; Prof. P. N. Barabaschew, Kharkow; Prof. L. C. Belliarminow, St. Petersburg; W. T. Wagner, M.D., Odessa; Prof. W. von Wahlfors, Helsingfors; Prof. L. L. Hirschmann, Kharkow; Prof. G. A. Donberg, St. Petersburg; S. N. Lojetchnikow, M.D., Moscou; Count J. Ch. Magavly, physician-in-chief Ophthalmologic hospital, St. Petersburg; Prof. E. P. Raehlmann, Iouriew; Prof. A. W. Khodine, Kiew. Secretary, S. S. Golovine, agrégé, assistant in ophthalmologic clinic, University of Moscou.

SECTION 11, A.—DISEASES OF THE EAR.

President, S. T. von Stein, agrégé, Moscou. Members of Committee, W. R. Beyer, M.D., Moscou; Th. Heiman, M.D., Varsovie; M. S. Jirmounsky, M.D., Moscou; E. N. Malutine, M.D., Moscou; W. N. Okounew, M.D., St. Petersburg; S. S. Prébobrajensky, agrégé, Moscou; Fr. Voss, M.D., Riga; A. Chr. von Schwanebach, M.D., St. Petersburg. Secretary, K. J. Kaspariantz, M.D., Moscou.

SECTION 12, B.—DISEASES OF THE LARYNX AND NOSE.

President, E. M. Stépanow, agrégé, Moscou. Members of Committee, G. N. Boëw, M.D., Moscou; A. T. Biélaew, M.D., Moscou; B. W. Werkhovsky, agrégé, Moscou; N. M. Wolko-vitch, agrégé, Kiew; A. E. Gaudring, M.D., Moscou; T. Ed. Hering, M.D., Varsovie; Prof. M. M. Lomikovsky, Kharkow; Prof. W. N. Nikitine, St. Petersburg; K. A. Raukhfuss, physician-in-chief infants' hospital of Prince of Oldenburg, St. Petersburg; Prof. N. P. Simanowsky, St. Petersburg; A. J. Sokolowsky, M.D., Varsovie; M. A. Fronchtein, M.D., Moscou; N. J. Skott, M.D., Moscou; A. W. Jakobson, M.D., St. Petersburg. Secretary, A. T. Biélaew, M.D., Moscou.

SECTION 13.—OBSTETRICS AND GYNECOLOGY.

Presidents, Profs. Makéyew and Snéguirew, Moscou. Members of Committee, Prof. A. P. Goubarew, Iouriew; Prof. A. J. Krassovsky, director obstetric hospital, St. Petersburg; Prof. J. P. Lazarévitch, St. Petersburg; Prof. A. J. Lébédew, St. Petersburg; J. M. Lwow, agrégé, Kazan; Prof. D. O. Ott, director obstetric institute, St. Petersburg; Prof. G. E. Rein, Kiew; B. B. Soutouguine, inspector medical service, St. Petersburg; Prof. J. T. Tolotchinnow, Kharkow; Prof. N. N. Fénomenow, Kazan; Prof. P. A. Yassinsky, Kharkow; Prof. N. B. Yastrébow, Varsovie. Secretaries, W. F. Bobrow, agrégé, assistant in the gynecologic clinic, University of Moscou; N. J. Pobiédinsky, agrégé, assistant in the gynecologic clinic, University of Moscou; G. T. Matvéiew, assistant in the obstetric clinic, University of Moscou; J. J. Eichmeyer, M.D., Moscou; G. D. Hume, Moscou.

SECTION 14.—HYGIENE, ETC.

Not yet published.

SECTION 15.—LEGAL MEDICINE.

President, Prof. J. J. Neyding, Moscou. Members of Committee, E. F. Belline, agrégé, Kharkow; A. J. Bogoslovsky, member of medical directory, Moscou; P. J. Zarine, member medical directory, Moscou; Prof. N. P. Iwanowsky, St. Petersburg; J. A. Krasnowsky, member of medical directory, Moscou; Prof. V. A. Légonine, Moscou; P. A. Minakow, prosector, University of Moscou; Prof. N. A. Obolonsky, Kiew; B. M. Ostrogilazow, chief of medical directory, Moscou; Prof. T. A. Patenko, Kharkow; J. J. Souslow, member of medical directory, Moscou. Secretaries, P. A. Minakow, prosector, University of Moscou; A. J. Zaborowsky, assistant prosector, University of Moscou.

Medico-Legal Society.—At the election held on Wednesday, Dec. 16, in New York City, the following officers were elected:

President, Hon. Jacob F. Miller, New York City; First Vice-President, Geo. L. Porter, Conn.; Second Vice-President, Albert Bach, Esq., N. Y. Vice-Presidents for the States, Territories and Provinces: Alabama, Judge Thos. W. Coleman, Montgomery, Ala.; Clarence Thwing, Sitka, Arizona, George Goodfellow, M.D., Tucson. Arkansas, H. C. Dunavant, M.D., Osceola. Austria, Prof. R. Krafft Ebing, Vienna. Belgium, Dr. Jules Morel, Ghent. Brazil, Prof. Nina Rodrigues, M.D., Bahia. California, A. E. Osborne, M.D., Glen Ellen. Colorado, Prof. J. T. Eskridge, Denver. Connecticut, Judge A. M. Talmadge, Bridgeport, China, Harold Browett, Esq., Shanghai. Cuba, Dr. Venancio Zorilla, Havana. Dakota, N., O. W. Archibald, M.D., Jamestown. Dakota, S., John M. Harcourt, Steele. Delaware, Judge Ignatius C. Grubb, Wilmington. Denmark, Prof. Godeken, Copenhagen. District of Columbia, W. W. Godding, M.D., Washington. Dominion of Canada, Hon. A. G. Blair, Ottawa. England, William L. Orange, M.D., London. Ecuador, Senor J. M. P. Cammano, Washington, D.C. Florida, Dewitt Webb, M.D., St. Augustine. France, Victor Parent, M.D., Toulouse. Georgia, Richard J. Nunn, M.D.,

Savannah, Germany, Dr. H. Laehr, Berlin. Gautemala, Senor Rafael Montufar. Holland, Dr. P. A. H. Sweens, Vucht. Hungary, Staatsanwalt Em. V. Havas, Buda Pesth. Illinois, J. E. Owens, M.D., Chicago. Indiana, W. B. Fletcher, M.D., Indianapolis. Indian Territory, I. H. Bailey, M.D., Dexter. Iowa, Jennie M. Cowen, M.D., Davenport. Ireland, Conolly, Norman, M.D., Dublin. Italy, Enrico Ferri, M.D., Rome. Japan, Dr. J. Hashimoto, Tokio. Kansas, Judge Albert H. Horton, Topeka. Kentucky, Dr. D. W. Yandell, Louisville. Louisiana, I. J. Scott, M.D., Shreveport. Maine, Judge L. A. Emery, Ellsworth. Manitoba, D. Young, M.D., Selkirk. Maryland, Wm. Lee Howard, M.D., Baltimore. Massachusetts, Theo. H. Tyndale, Boston. Michigan, Prof. Victor C. Vaughan, Ann Arbor. Minnesota, T. Gold Frost, Esq., Minneapolis. Missouri, W. B. Outten, M.D., St. Louis. Mississippi, Dr. C. A. Rice, Greenville. Montana, Judge Wm. H. Francis, Missoula. Nebraska, Hon. John M. Thurston, Omaha. Nevada, S. M. Bishop, M.D., Reno. New Brunswick, Judge A. L. Palmer, St. John. Newfoundland, Dr. K. D. McKenzie, St. Johns. New Hampshire, Gran. P. Conn, M.D., Concord. New Jersey, Judge C. G. Garrison, Camden. New Mexico, Gov. Bradford L. Prince, Santa Fe. New South Wales, George A. Tucker, M.D., New York, Mrs. M. Louise Thomas, New York City. New Zealand, Prof. Frank G. Ogston, Dunedin. North Carolina, E. C. Smith, Esq., Raleigh. Norway, Dr. Harold Smedal, Christiania. Nova Scotia, Hon. Wm. S. Fielding, Ottawa. Ohio, R. Harvey Reed, M.D., Columbus. Oklahoma Territory, A. H. Simonton, M.D., Oklahoma City. Ontario, Daniel Clark, M.D., Toronto. Oregon, Ex-Chief Justice, Hon. Wm. P. Lord, Salem. Pennsylvania, J. B. Murdock, Pittsburgh. Peru, Senor F. C. C. Zegarro, Washington. D. C. Portugal, Bettincourt Rodriguez, M.D., Lisbon. Quebec, Wyatt Johnson, M.D., Montreal. Rhode Island, Henry R. Turner, M.D., Newport. Russia, Prof. Dr. Mierzejewski, St. Petersburg. Saxony, Judge de Alinge, Oberkotzow Hof. Scotland, W. W. Ireland, Preston Pans, Edinburgh. Servia, Hon. Paul Savitch, Belgrade. Sicily, Prof. Dr. Fernando Puglia, Messina. Silesia, H. Kornfeld, M.D., Grotkau. South Carolina, J. W. Babcock, M.D., Columbus. Spain, Sig. A. M. Alv. Taladriz, M.D., Valladolid. Sweden, Prof. Dr. A. Winroth, Lund. Switzerland, Prof. Dr. L. Wille, Basle. Tennessee, Michael Campbell, M.D., Nashville. Texas, Dr. D. R. Wallace, Terrell. Utah, Frederick Clift, M.D., St. George. Vermont, Prof. A. P. Grinnell, Burlington. Virginia, William F. Drewry, Petersburg. Washington, J. W. Waughoo, M.D., Ft. Steilacoom. West Virginia, F. M. Hood, M.D., Weston. Wisconsin, Dr. U. O. B. Wingate, Milwaukee. Secretary, Clark Bell, Esq., New York. Corresponding Secretary, Moritz Ellinger, Esq., New York. Assistant Secretary, Caroline J. Taylor, Connecticut. Pathologist, Paul Gibier, M.D., New York. Treasurer, Hon. Rastus S. Ransom, New York. Chemist, Geo. B. Miller, M.D., Philadelphia. Pa. Curator, F. R. Downs, M.D., Bridgeport, Conn. Toxicologist, Prof. W. B. McVey, Boston. Librarian, Margherita Arlina Hamm. Assistant Librarian, Judge Lewis J. Conlon, New York. Bacteriologist, G. Bettini di Moise, M.D., New York. Microscopist, Prof. Moses C. White, M.D., Connecticut. Trustees: Legal, for three years Ida Trafford Bell, to fill vacancy Jas. L. Bennett, Esq.; Medical, J. C. Maguire, M.D., New York. Counsellors, for three years, Rosalie Loew, Judge A. M. Tallmadge, Connecticut. Permanent Commission: Legal, Clark Bell, Esq., New York; Medical, Geo. L. Porter, M.D., Connecticut.

The Northern Tri-State Medical Association will meet in Fort Wayne, Ind., Jan. 19, 1897. The following papers will be read: Report of surgical cases, by Dr. W. D. Hamilton, Columbus, Ohio; The chromoscope, a new instrument useful as a ready test of color perception, by Dr. L. E. Maire, Detroit, Mich.; Some of the diseases of the lachrymal apparatus, by Dr. A. E. Bulson, Jackson, Mich.; Ocular manifestations of syphilis, by Dr. Kent. K. Wheelock, Fort Wayne, Ind.; Diagnosis of syphilis, by Dr. Carl Proegler, Fort Wayne, Ind.; Ectopic gestation with retained fetus, by Dr. L. H. Dunning, Indianapolis, Ind.; Errors of refraction as an etiologic factor in the production of blepharitis marginalis, by Dr. A. E. Bulson, Jr., Fort Wayne, Ind.; Posterior deviations of the uterus, by Dr. J. H. Carstens, Detroit, Mich.; Some thoughts on the treatment of incipient phthisis, by Dr. Budd Van Sweringen, Fort Wayne, Ind.; A year's acquaintance with appendicitis, by Dr. H. O. Walker, Detroit, Mich.; The radical cure of hernia, an improved method, by Dr. Hal. C. Wyman, Detroit, Mich.; The doctor as a witness, by Dr. D. C. Chapman, Toledo, Ohio; Surgical

treatment of senile gangrene, by Dr. E. B. Harrison, Napoleon, Ohio; Some suggestions on the treatment of the heart, by Dr. W. E. Dickey, Tiffin, Ohio; Bacteriology of the vaginal secretions, by Dr. C. U. Smith, Toledo, Ohio. Papers will be read by Drs. W. H. Myers, Fort Wayne, Ind.; D. W. Fenton, Reading, Mich.; Hausencamp, Toledo, Ohio, and Curran Pope, Louisville, Ky.

NECROLOGY.

JOHN C. HALL, M.D., of Medical Lake, Wash., died Nov. 29, aged 76 years. Dr. Hall was a native of Vermont. He graduated from the medical department of Harvard University and afterward located at Monroe, Wis. At the commencement of the civil war he entered the army as assistant surgeon of the Sixth Wisconsin Infantry, and at the close of the war was chief surgeon of Gen. Bragg's famous "Iron Brigade." He then returned to Wisconsin and engaged in general practice. He served one term in the Wisconsin State Senate and also served for many years as a member of the Board of United States Pension Examiners. In 1891 Dr. Hall and his family moved to Medical Lake, Wash., where he lived a retired life. At the time of his death he was president of the Board of United States Pension Examiners at Spokane, Wash.

WILLIAM NEWMAN, M.D., of Brooklyn, died Dec. 31, 1896, aged 76 years. He was a native of England, came to this country about 1846 and one year later received an honorary M.D. from the State Medical Society of New York. He practiced in New York city during the greater part of his professional life, going to Brooklyn, about 1890. He was a member of the New York County Medical Society. The cause of his illness was valvular lesion of the heart.

Prof. EMIL DuBOIS-REYMOND, the distinguished psychologist of Berlin, died December 26. He was born in that city in 1818. He began studying theology, but abandoned this for natural science. After a sojourn at Bonn he returned to Berlin and studied anatomy and physiology under Jean Muller, and on his advice undertook his researches in animal electricity, on which subject he published several works. In 1868 he replaced his master as professor of physiology at the University of Berlin, and was named in 1869, Perpetual Secretary of the Berlin Academy of Sciences.

CHARLES HEITZMANN, M.D., Vienna, 1859, died in Rome, Italy, Dec. 6, 1896, aged 60 years. He was a native of Hungary and a practitioner of New York City, where he was a neurologist of note, and for three years president of the German Medical Society.

LOUIS LEON DESAULNIERS, M.D., a prominent character in Canadian public life, is the subject of a brief memorial note in the *Montreal Medical Journal*. "We regret to have to record the death of Dr. Desaulniers, which occurred on October 31 last, after a few days' illness. He was born at Yamachiche, P. Q., in 1823, and graduated in medicine from Harvard University in 1846. He was inspector of prisons and asylums for twenty-eight years and for many years chairman of that board. He was well known in political circles, having been elected member of the Canadian House of Assembly in 1851, and member of the House of Commons in 1867 and again in 1878. He was a Justice of Peace and also a Lieut.-Colonel of Militia."

JAMES HEDDEN TRUMBULL, M.D., died in Iquique, Chili, South America, November 12. He was a graduate of Yale, 1848, and of the College of Physicians and Surgeons, N. Y., 1852. He immediately went to Chili after graduation and almost from the first became prominent in his profession.

JAMES S. SERRIN, M.D., Medical College of Indiana, 1881, died in Indianapolis, December 13, aged 65.

SELDON W. JONES, M.D., Bowdoin, Me., 1853. A native of Boston, Mass., died December 16, in Leavenworth, Kan., where he had long resided.

FREDERICK ARNOLD MANNING, M.D., born in Eddyville, Ind., May 4, 1859, died in Denver, Colo., of tuberculosis, Dec. 3, 1896. He was a graduate of Yale College in 1881 and of the College of Physicians and Surgeons, N. Y., 1884. After serving on the surgical house staff of the N. Y. Hospital he practiced a while in New York City and served on the visiting staff of several hospitals but was obliged in 1895 to seek recuperation of his health in Colorado. He was a member of the N. Y. County Medical Association. His remains were interred in South Coventry, Conn.

GEORGE URQUHART, M.D., Jefferson Medical College, 1850, died at his residence in Wilkesbarre, Pa., Dec. 19, 1896, aged 68 years.

JAMES W. COLE, M.D., Jefferson Medical College, 1881, died of pneumonia Dec. 15, 1896, aged 35 years.

JAMES W. ROBINSON, M.D., Jefferson Medical College 1889, died in Philadelphia, Pa., Dec. 13, 1896, aged 51 years. For a number of years he was pastor in a Presbyterian church.

MISCELLANY.

R. M. Eames, M.D., of Seattle, has been appointed a member of the Washington State Board of Health and Bureau of Vital Statistics.

The "General Practitioner."—The *General Practitioner* of St. Louis has been sold to Dr. James Moore Ball, who will publish it in connection with the *Tri-State Medical Journal*. The consolidated publication will bear the name of *Tri-State Medical Journal and Practitioner*.

A Basis for Expert Opinions.—In an action to recover damages for maltreatment alleged to have resulted in a miscarriage, the supreme court of Wisconsin says, Nov. 24, 1896, *McKeon v. C., M. & St. P. Ry. Co.*, that it perceives no error in allowing the experts, who had heard the plaintiff give part of her testimony in court, and then heard the balance of her testimony read to them by the court reporter, to testify what, in their opinions, was the cause of the miscarriage, assuming the testimony of the plaintiff to be true.

The Scotograph.—This is a desk so arranged that a couple of rods cross the writing table from side to side. It is designed for the use of the blind, who write between the rods while the paper is held and moved along by an ingenious device. It is much simpler than the typewriter for those unaccustomed to it, who have learned to write before they became blind. In some recent experiments with it at the Blind Asylum at Amsterdam, children of 6 learned very rapidly to write with the assistance of the scotograph, which is the invention of Dr. Nord, but it is especially designed for the use of scholars, etc., who have become blind late in life and still wish to continue their literary activity.—*Annales de la Soc. Med.-Chir. de Liège*, November.

Dr. Squibb's Misfortune.—It is with great regret we learn that Dr. Edward R. Squibb of Brooklyn, to whom the medical profession has in the past owed so much, was recently obliged to submit to amputation of his left hand in consequence of an affection which threatened blood poisoning. The anesthetic was administered by his own hand. Dr. Squibb seven years since passed the allotted limit of three-score and ten, but is yet active and interested in all that pertains to medicine and medical science and it is to be hoped that he will be spared to us for many years to come. It is with profound sorrow that we hear of his affliction, which is really a sequel to severe injuries received thirty years ago from the explosion of a vessel of ether.—*Medical Age*.

Not Insurer of Quality of Food.—A restaurant keeper, according to the decision of the supreme court of Illinois, handed down Nov. 9, 1896, in the case of *Sheffer v. Willoughby*, is not an insurer of the quality of the food which he serves. If he

fails to exercise ordinary care in the furnishing of food to his patrons, or conducts his business in a careless or negligent manner, and damage results, he is liable therefor. But as to food served at a restaurant, such as oysters, ice cream and the like, the court says that it is not aware that there ever existed a rule establishing liability similar to the one which makes innkeepers presumptively liable for losses which happen to the goods of their guests.

Shorthand for Medical Men.—Mr. William Thomson, F.R.S.I., President of the Royal College of Surgeons in Ireland, in a recent address gave his estimate of the value of stenography to professional men as follows: "I can not leave this part of my address without telling you of another advantage which you ought to acquire. I allude to shorthand. Last year we held in London the first meeting of the Society of Medical Phonographers, under the presidency of the distinguished physician, Dr. Gowers. That society now numbers nearly three hundred members. We have a monthly medical journal, printed altogether in shorthand, and full of admirable information. I can not now enter as fully as I should wish into the great benefits which a knowledge of this art will confer upon you. I am glad to know that there are many in this school who have acquired it, and I urge others to set about learning it. Do not be frightened by its apparent difficulty. I assure you that it is simplicity itself if you set about it properly. It will save you in the end three-fourths of your time in note-taking, and you will soon find out what that means. I have written it since I was a lad, and it has enabled me to do with ease duties which I could not have accepted in an otherwise laborious life."—*The Scalpel*, December.

Admissibility of Expert Evidence.—Who is entitled to be considered as an expert in regard to any question of science or skill, the court of errors and appeals of New Jersey holds, Nov. 16, 1896, in *New Jersey Zinc and Iron Co. v. Lehigh Zinc and Iron Co.*, can not be determined by any precise rule, but from the nature of the case, must be left very much to the discretion of the trial judge; and his decision is conclusive unless clearly shown to be erroneous in matter of law. The interest of an expert witness affects the weight, not the legality, of his testimony. Books of science are generally inadmissible in evidence to prove the opinions contained in them; but, if a witness refers to them as an authority for his own opinions, they may be received for the purpose of contradicting him. The admission of almanacs, mortuary tables and perhaps some other scientific publications of undisputed accuracy, seems to form an exception to the rule.

Nervous Functions of the Suprarenal Capsules.—Dominicis has already published various studies of the functions of the suprarenal capsules, and a recent article by him in the *Gazzetta d. Osp. e d. Clin.* of November 22, throws new light upon their connection with the nervous system. The experiments he describes on dogs and rabbits consisted in the transplantation of one capsule, after ligating its pedicle, to the internal and anterior surface of the kidney, leaving its point of attachment intact. The animal remained in the same health as before. Ten to fourteen days later, he removed the other capsule, and in every case the animal died in three hours with the same symptoms as when both capsules are removed at once. The transplanted capsule showed no traces of degeneration, anatomically nor histologically, and seemed to be perfectly normal. Its function, however, was evidently suspended, and it was unable to take the place of the other capsule when it was removed, as occurs in the case of glandular organs with an internal secretion, when they are transplanted or ingrafted, the thyroid gland for instance. He adds his experience that section of the spinal cord below the level of the capsules invariably retards death for eighteen to twenty-six hours when both capsules are removed at once. These facts demonstrate that we must look elsewhere than to an exclusively glandular function in ascribing a rôle to the suprarenal capsules.

Cruelties Toward Deformed Children.—The lame, the halt and the blind have little consideration in this world; how they will come off in the next is a matter for conjecture. Great riches are subscribed in England for charitable purposes, but it is beyond understanding why an institution could not readily be found for the poor little daughter of Annie Sheldon, who is now doing her three months for sending the child out to beg. It was stated that she "had deformed hands and feet like lobster claws." Nothing is more revolting than the exposure of wounds and deformities, especially when they serve for begging purposes. So thought Mr. De Rutzen, who was horrified by the fact that no institution could be found to take her without money; he thought that such a society as the National Society for the Prevention of Cruelty to Children might stretch a point in this case. To the surprise of all, Mr. Moreton Phillips stated the society was not rich, but was £13,000 in debt; this seems remarkable after so much has been done for it, and such a society can hardly commend itself to those who always contrive to live within their means. If we all worked on the same principle what would become of us. A private society with an income of £60,000 derived from the charitable, should keep out of debt and set an example to smaller ones. Perhaps the N. S. P. C. C. is doing too much and is like the little pig who tried to grunt before it could squeak.—*The Scalpel*, December.

Why Morton Failed.—It is the feeling of many medical men that the failures of Morton and of Jackson to score a greater success in the introduction of ether-anesthetization were due to the intrusion of the mercenary element in the matter. A letter just published in the *Boston Medical and Surgical Journal*, from the pen of Dr. Wm. Henry Thayer, formerly of Brooklyn and still earlier of the old Berkshire Medical School, brings out this feature in an unmistakable light, as follows: "In 1846 I was admitting physician to the Massachusetts General Hospital, saw the first administration of ether there and have a vivid recollection of the professional interest in the successful experiment. If Wm. T. G. Morton had presented the subject to the medical profession in the manner in which scientific men and physicians are accustomed to publish a discovery or an invention—as something that belongs to science—making no concealment or false pretence, the credit of his discovery would have been unanimously awarded to him. But his experiments were purely in mercantile interest. He wished to conceal the nature of the substance he was using. He came to the hospital surgeons with a false statement. He had colored the ether and stated that it was a composition whose ingredients were his own secret. He called it 'letheon.' He wished to secure the endorsement of the medical profession, but reserve for himself control over its use. Medical men surmised that it was simply sulphuric ether, which he was soon obliged to allow. There is no question that the use of sulphuric ether as an anesthetic at that time was due to the enterprise of Morton; and he would never have found it necessary to make any claim for the credit of it, if he had conducted himself honorably in relation to it."

An Accident of Tubal Pregnancy.—According to the *Scalpel* for December, at the last meeting of the West London Medico-Chirurgical Society, Mr. Mansell Moullin read a paper on "Intraperitoneal Hemorrhage in Connection with Tubal Pregnancy." Arrest of the fertilized ovum in the Fallopian tube was of much more frequent occurrence than was generally supposed, and was the most common cause of hemorrhage in the peritoneal cavity. Hemorrhage was not necessarily due to rupture of the tube. More frequently a more or less gradual loss of blood took place from the "ostium abdominale," and thus slowly effused, coagulated with the formation of a tumor. In some instances the tumor was limited by the neighboring organs, bound together by adhesive peritonitis. In other

instances the outer layer of the clot became organized, constituting a limiting membrane, as pointed out by Mr. Taylor of Birmingham. These conditions might be combined. As a rule the hemorrhage occurred at a very early date, within from ten to fourteen days from the arrest of the ovum in the tube. The ovum almost invariably perished at the same time. Dr. Mansell Moullin then drew attention to the leading symptoms of this condition, illustrating them by reference to cases which had been under his care in the West London Hospital, and urged the advantages of early operation in all cases where a considerable hemorrhagic tumor was present.

Accident Insurance in Relation to Physicians.—A recent *Bulletin* of the Fidelity and Casualty Company of New York refers to the fact that two other accident insurance companies have followed the course taken by it in raising the rate on physicians and surgeons. The company years ago became satisfied that these useful men do not properly belong in the preferred class, and rated them accordingly; they are exposed to septic poisoning from slight scratches or cuts, harmless in themselves, and "a doctor can not well do without transportation and he becomes the victim of that most productive instrument of disabling injuries, the horse, which, by runaway or collision, is responsible for more claims upon accident companies than any other single cause we know of." The insurance editor of the *Independent*, in this relation, treats of the hazards of the bicycle, a means of locomotion so largely used by our profession, as a question that is still undetermined among the companies. It says the possibilities of injuries are always against the cyclist. Necessarily one assumes exposure to a special class of hazards when he mounts the wheel, but he escapes some others; thus, he can not then be injured by being a passenger on any public conveyance, nor can the ceiling fall on him. Mutual accident companies have been somewhat disturbed about the assumed additional risk and are disposed to either put an extra upon general policies, or make a deduction in case the injury occurs while wheeling; but the stock companies have taken no united action, and the Fidelity Company has not found it necessary to take any action, saving that racing, on track or on road, is not covered. As yet the hazard, while real, has not assumed such relative proportions as to make any action seem needful.

Etiology of Cancer.—The articles presented and the discussions at the recent Italian Surgical Congress agree that up to the present our knowledge of the cause of cancer is limited to the fact that certain bodies are found in malignant neoplasms and nowhere else, which produce general inflammation when inoculated into rabbits, guinea pigs and mice, and neoplastic formations in the larger animals. They resemble the blastomycetes morphologically, and show the cellulose reaction like them when inoculated into animal tissues, which demonstrates that they are not evolved from the degeneration of the tissues. They are always found also accumulated around the edges of the neoplasm, where the vital growth is most prolific and never in the degenerated elements of the center. They stain by certain methods and taken either from man or animals are readily cultivated. The blastomycetes produce in man and animals septicemia, suppurations and chronic inflammatory neoplasms of the granuloma type, but so far, neither cancer nor sarcoma has been produced by them experimentally, and until we are able to produce the same neoplasm experimentally in animals, we are not justified in assuming that these bodies are the actual cause of the neoplasm, and this has not been accomplished to date. Roncali stated that the blastomycetes can not be regarded, however, as casual accompaniments of neoplasms, as they are always found in the younger peripheral parts, associated with karyokinetic formations and that their distribution in the cells and connective tissue tends to prove their genetic connection with the neoplasm. He also asserted that certain

kind of ferments have produced experimentally in dogs chronic tumors with the same characteristics as in man. He is inclined to deny the existence of a nucleus in the ferment cell, but others stated that this has only a botanical significance, and may vary with different kinds of ferments. It was generally conceded, however, that the almost invariable presence of these bodies in malignant neoplasms, their frequency in the latest growing parts and their excessive numbers in neoplasms of especially rapid evolution are facts of great etiologic significance.—*Chl. f. Chir.*, December 12.

Construction of an Exemption Law.—The fifth section of the New Jersey law of 1894, found on page 354 of Laws of 1894, exempts "all colleges, academies seminaries of learning, . . . buildings used as asylums or schools for the care, cure, nurture, maintenance and education of feeble-minded or idiotic persons and children, provided such institutions are duly incorporated under the laws of this State, and the land whereon the same are situate, necessary to the fair use and employment thereof, not exceeding five acres for each one, the furniture thereof and the personal property used therein," etc. Under this law, the supreme court of New Jersey holds, in the case prosecuted by the Home for the Education and Care of Feeble-minded Children against the Collector of the Township of Landis, Nov. 5, 1896, that the foregoing institution is entitled to exemption from taxation for every building used for the purposes of its creation, and also for so much of the land upon which each building is erected as is necessary to its fair use and enjoyment, not in any case exceeding five acres to the building. The assessor had considered that all that he ought to exempt under the law was five acres and the buildings thereon, though it did not appear that five acres could be so set off as to contain all the buildings on the 120-acre tract owned by the institution.

Cincinnati.

THE STATE BOARD OF MEDICAL REGISTRATION has secured an important decision relating to their discretionary powers and their right to compel a physician to register after having practiced ten years or more. The supreme court decided that the board had the right to pass on the issuing of certificates to this class of practitioners, and the courts could only interfere when this discretionary power, was being abused. This decision firmly upholds the constitutionality of the law, and active prosecutions against those who have not been duly qualified will be at once instituted.

THE ANNUAL REPORT of the Health Department shows the death rate to be 16.90 per 1,000, which is a decrease of 1.39 over the previous year.

THE MORTALITY REPORT for first week in January: Zymotic diseases 15, phthisis pulmonalis 17, other constitutional 9, local 61, developmental 11, violence 4, total 117; corresponding week in 1895, 117; 1894, 125; 1893, 134. Under 5 years 33.

THE FORTIETH ANNUAL REPORT of the Ohio Institution for Feeble-minded Youth shows that the balance on hand at the opening of the past fiscal year, together with the appropriation amounted to \$187,214.82, amount disbursed \$124,623.05, leaving a total balance Nov. 15, 1896, of \$62,591.77. The number of pupils during the year was 1,031. Twenty boys and nineteen girls have been discharged. Dr. Doren emphasizes the necessity of the establishment of a custodial department for the weak-minded, and calls attention to the fact that many of them marry and raise children, who inherit their parents' weakness. He says that a custodial department would not only prevent this, but would render its inmates self-supporting.

THE ANNUAL REPORT of the Toledo Insane Asylum shows that there were under treatment during the year 1,635 persons, of whom 87 were discharged cured, 92 as improved, 30 as unimproved and 5 discharged as not insane, a remarkable reflection on the authorities who committed them; remaining at the end of the year 1,308. Total per capita cost of inmates, \$127.35.

Washington.

WEEKLY REPORT OF THE HEALTH DEPARTMENT.—The report of the Health Officer shows that the city's death rate during the last week ending Jan. 2, was 18.2 per 1,000 inhabitants. The average rate for the last month was 17.5. This is 6 per 1,000 below the annual average of the city, which is 23.5. The deaths reported to the Health Department numbered 98, of which 70 were white and 28 colored. Of the total mortality acute lung cases numbered 17 and 11 cases of consumption, compose 28.5 per cent. There were 3 deaths from diphtheria, and the new cases reported fell from 25 in the previous week to 20; houses released from quarantine 18, against 32 the week previous, and premises still isolated were reduced from 56 to 48. New cases of scarlet fever reported numbered 5; cards removed, 6; premises remaining placarded, 15. Of heart-maladies there were 9 deaths, an increase of 2 over last week, and those from affections of the kidneys rose from 2 to 8.

THE X RAY IN THE PENSION OFFICE.—In a doubtful pension case an X-ray photograph was accepted as evidence by the department, showing an injury to the bones of the forearm which previously was not accurately determined.

CHEMICO-PATHOLOGICAL SOCIETY.—The annual meeting of this society, recently held, resulted in the election of Dr. A. A. Snyder, president; Drs. E. L. Tompkins and D. O. Leach, vice-presidents; Dr. R. T. Holden, secretary; Dr. T. Clarke, treasurer, and Dr. N. M. Ellison, corresponding secretary.

WASHINGTON JOURNAL CLUB.—The annual meeting of the Washington Journal Club resulted in the election of Dr. H. A. Robbins, president; Dr. F. P. Morgan, treasurer, and Dr. D. W. Prentiss as an honorary member. Dr. Prentiss was president ten years ago.

MEDICAL SUPERVISORS.—The board of medical supervisors held a meeting at the health office and decided to meet on the second Thursday in January for the examination of applicants who desire to practice surgery in the District of Columbia. The members of the board are: Drs. J. B. C. Custis, C. H. A. Klineschmidt and Thomas Robinson, and J. J. Darlington and John Ridout. Where the examinations will be held has not been determined. Under the law the examinations must be both written and oral.

HEALTH OFFICE RECORDS.—Upon the reassembling of Congress the Commissioners will report to that body a bill requiring all persons getting a transcript of the records of the health office to pay a fee of 50 cents. It is thought that a revenue of \$1,000 per annum will be realized through this tax.

MEDICAL APPOINTMENTS.—The Commissioners have appointed Drs. Jesse Shoup and A. W. Boswell as physicians to the poor, the appointments of each to date back to June 1, last. The resignation of Dr. George W. Wood as physician to the poor was accepted and Dr. Francis P. Morgan was appointed to succeed him.

THE GEORGETOWN COLLEGE ALUMNI SOCIETY, which has been organized since 1872, gave its first reception to the faculty of the college on the 29th ult. About two hundred members of the society gathered in the parlors of the college, with the members of the law, medical and academic faculties. Music was provided and a lunch served until 10 o'clock.

REVIEW OF THE HEALTH REPORTS FOR THE YEAR 1896.—The health of the city during the calendar year 1896 has been favorable, as compared with the several preceding years. There were 5,834 deaths, estimating the last days of December. This represents an annual death rate of 20.7 for the total population, while the average rate for the District of Columbia is 23.5. The first portion of the year embracing the last winter and early spring months passed with no marked outbreak of disease. Typhoid fever, which had expanded into dimensions approaching epidemic in the preceding fall months, suddenly declined to almost zero. During this time there were but few fatal cases, and this condition continued.

until the last autumn months. There was then a return of this malady, which caused about eighty deaths, again declining as before. The grip again paid its yearly visit, this time appearing in the spring months of April and May, coming suddenly and as suddenly departing, causing 53 fatal cases. The diseases of children under 5 years of age, embracing the summer maladies of cholera infantum, diarrhea and enterocolitis and kindred affections, were less in virulence than for a number of years. The deaths in this class were but 291, while in the previous year they numbered 468. During the last fiscal year 2,094 children under 5 years of age died out of a total mortality of all ages of 5,904. Of these, 1,524 were under 1 year old, mostly under six months of age. The figures show that about one third of all who died in the District of Columbia are young children under 5 years of age, and one-fourth are infants under a year old. Many of these die of marasmus and inanition and congenital debility. During the same time there were 705 deaths from consumption, of which 335 were white persons and 370 colored. The death rate for the whites from this malady was 1.79 and of the colored 4.21, and for the whole population 2.6, counting the inhabitants of the District of Columbia at 187,600 whites, 87,900 colored and 275,500 in all. These statistics show that about 12 per cent. of all who die are carried away by this dread disease. Diphtheria prevailed to some extent during the year, but in a comparatively mild form. According to the last reports there were 326 cases thereof, of whom 76 died. This shows a mortality of a fraction over 23 per cent. The average rate of mortality, heretofore, both in this city and elsewhere throughout the country, has been about 33 per cent. of all cases. There were 198 deaths from violence during the year, of which 40 were from suicide. Five of the suicides occurred in November. The principal methods by which people take their own lives are pistol shot, narcotic poison and corrosive poisons. One occurred by jumping from a third-story window. All were white with one or two exceptions. During the year the health department gave much attention to relief of the poor people who were sick. Nearly sixteen thousand patients were treated and 2,500 office consultations given, with an expenditure of nearly \$3,000 for medicine furnished free to this class. Over five thousand children were reported as having been born and 2,300 marriages were officially reported. The year closed with a very low death rate, thus indicating a favorable state of health at the beginning of the new year. Cases of diphtheria and typhoid fever were tending to the minimum. No new diseases indicate a tendency to spread, and an almost total absence of other contagious diseases or malarial troubles give cause for congratulation. Coroner Hammett has investigated more than six hundred deaths during the year. This number includes suicides, homicides and all accidental deaths and every death which occurred from violence and all sudden deaths where no physician was in attendance. There was one legal hanging in addition to several suicides in which hanging was the means employed to cause death. Then there were suicides committed by taking poison as well as by the use of the pistol. In all there were 39 cases of self-destruction, while the number of homicides was fourteen, an average of more than one a month. Sixty-eight of 95 stillbirths reported represented the daily finds of dead infants on ash piles, in sewers or on doorsteps. The other 27 cases were known. There were 81 accidental deaths, and in this number were included victims of railroad accidents. Other causes of death given were: Measles, 1; Bright's disease, 3; congestion of lungs, 7; cholera morbus, 1; sunstroke, 7; heart disease, 63; alcoholism, 14; consumption, 10; pneumonia, 28; senility, 13; drowning, 17; poisoned, accidental, 3; epilepsy, 1; meningitis, 4; and congestion of brain, 4.

CLASSIFICATION OF TUMORS.

COMPREHENDING MALIGNANT AND NON-MALIGNANT NEW GROWTHS, AND CYSTS.

We republish from the last Revised Nomenclature of the Royal College of Physicians (1896), their Classification of Tumors, as it differs materially from that of the previous revision in common use among English speaking physicians. Our own Association long ago adopted the Nomenclature, which, we suppose, carries with it the adoption of the subsequent revisions, unless otherwise ordered by the Association.

In deference to the needs of the various Registration author-

ities, a distinction has been made in the general and local tables between malignant and non-malignant new growths. The tumors are, however, here classified according to their structure and the type of normal tissue they most closely resemble. To facilitate returns under the general tables, the malignant growths are here marked by two asterisks. In certain cases malignant and non-malignant growths are unavoidably associated under one head, as for instance, under Sarcoma; the name is then marked with one asterisk.

Cysts are placed in a separate class, and may be returned severally among the local affections of organs; or among new growths (if connected therewith); or as malformations (if congenital); or as parasites (if parasitic).

CLASSES.

- I. Tumors composed of one of the modifications of fully developed connective tissue.
- II. Tumors resembling in structure, more or less closely, one of the more complex tissues or organs of the body.
- III. Tumors composed of cells of an embryonic type sometimes tending to develop into one of the forms of connective tissue—Sarcoma.
- IV. Tumors composed of epithelial cells arranged in the spaces of a stroma of more or less perfectly developed and vascular connective tissue—Carcinoma.
- V. Cysts.

Class I.—Tumors composed of one of the modifications of fully developed connective tissue.

(The name of the typical normal tissue is printed first in each case, that of the tumor second.)

1. ADIPOSE TISSUE. Lipoma. Fatty Tumor.
 - a. Circumscribed.
 - b. Diffuse. *Synonym*, Fatty out-growth.
 - c. Multiple.
 - d. Nævo-lipoma.
 - e. Fibro-lipoma.
2. FIBROUS TISSUE. Fibroma.
 - a. Firm or hard fibroma, Desmoid tumor. Fibrous epulis. Fibrous polypus of nose. Fibroma of nerves. *Synonym*, False neuroma. Keloid.
 - b. Soft or areolar fibroma. Molluscum fibrosum.
3. CARTILAGE. Chondroma.
 - a. Ossifying. *Synonym*, Spongy or cancellous exostosis.
 - b. Non-ossifying.
 - *Enchondroma (when growing in bone).
 - Ecchondrosis (when growing from cartilage).
 - c. Myxo-chondroma (when undergoing mucous softening).
4. BONE. Osteoma.
 - a. Developing from cartilage. Cancellous, or spongy exostosis.
 - b. Developing from membrane. Compact or ivory exostosis.
 - c. Of teeth.
 - (1.) Growing from the cement. Dental exostosis. Hypertrophy of cement.
 - (2.) Growing from the dentine. Odontoma.
5. MUCOUS TISSUE. *Myxoma. Mucous polypus.
6. NEUROGLIA. *Glioma.

Class II.—Tumors resembling in structure, more or less closely, one of the more complex tissues or organs of the body.

(The name of the typical tissue or organ is placed first, that of the tumor second.)

1. MUSCLE. Myoma.
 - a. Unstriped. Leiomyoma. Fibromyoma. Uterine fibroid. Fibroid tumor of prostate.
 - b. Striped. Rhabdomyoma. *Myosarcoma.
2. NERVES. Neuroma or True neuroma.
 - a. Medullated. Plexiform neuroma (in part). Bulbous nerves. *Synonym*, Amputation-neuroma.
 - b. Non medullated.
3. BLOOD VESSELS. Hæmangioma, Angioma, or Nævus.
 - a. Capillary. *Synonyms*, Port-wine stain, Mother's mark, Telangiectasis.
 - b. Venous. *Synonym*, Erectile tumor, Cavernous nævus.
 - c. With adipose tissue. Nævo-lipoma.

4. LYMPHATIC VESSELS. Lymphangioma, Lymphatic nævus. Congenital cystic hygroma of neck. Macroglossia.
5. LYMPHATIC GLANDS. Lymphadenoma. Hodgkin's disease.
6. PAPILLÆ OF SKIN OR MUCOUS MEMBRANE. Papilloma.
 - a. Squamous papilloma, Wart.
 - b. Columnar papilloma, Villous growth: Of rectum. Of bladder.
7. SECRETING GLANDS. Adenoma.
 - a. Racemose adenoma (spaces lined with glandular or spheroidal epithelium).
 - (1.) Resembling normal gland tissue. True adenoma.
 - (2.) With excess of firm fibrous stroma Adenofibroma, Adenoid tumor.
 - (3.) With stroma of imperfectly developed fibrous tissue. Adeno-sarcoma.
 - (4.) With stroma containing mucous tissue, Adenomyxoma.
 - (5.) With large cysts throughout the tumor. Adenocysto-sarcoma, Cysto-sarcoma.
 - b. Tubular adenoma (spaces in tumor lined with columnar or cubical epithelium).
 - c. Adenoma of ductless glands, Thyroid adenoma.
 - d. Ovarian Adenoma.

Class III.—Tumors composed of cells of an embryonic type sometimes tending to develop into one of the forms of connective tissue.

***SARCOMA:**

1. Composed of small round cells.
 - a. With homogeneous intercellular substance. Granulation sarcoma. Encephaloid sarcoma.
 - b. With reticulate stroma. Lympho sarcoma.
 - c. Ossifying sarcoma, Osteoid sarcoma (Osteoid cancer).
 - d. Chondro-sarcoma (Malignant chondroma).
 - e. Glio-sarcoma.
2. Composed of large round cells. With alveolar stroma. Alveolar sarcoma.
3. Composed of oval cells. With mucous intercellular substance. Myxosarcoma.
4. Composed of large spindle-cells (Fibro-plastic tumor).
 - a. Ossifying.
 - b. Chondrifying.
5. Composed of small spindle-cells.
 - a. Developing into fibrous tissue. Recurrent fibroid tumor.
 - b. Ossifying.
6. Composed of round and spindle-cells.
7. Containing giant cells. Myeloid sarcoma.
8. Melanotic sarcoma, Pigmented sarcoma.
9. Plexiform sarcoma, Cylindroma.
10. Psammoma, Brain-sand tumor.

Class IV.—Tumors composed of epithelial cells arranged in the spaces of a stroma of more or less perfectly developed and vascular connective tissue.

****CARCINOMA OR TRUE CANCER.**

1. Glandular or Spheroidal Carcinoma.
 - a. With little stroma and abundant vessels. Encephaloid cancer.
 - b. With dense fibrous stroma. Scirrhus or hard cancer. Variety: Atrophic cicatricial scirrhus.
 - c. With colloid degeneration of cells. Colloid cancer (Reticular or alveolar cancer) in part.
 - d. With myxomatous stroma. Carcinoma myxomatodes.
2. Squamous Carcinoma. *Synonyms*, Epithelioma, Squamous epithelioma.

Note.—Chimney-sweeper's cancer is to be returned under Squamous Carcinoma.
3. Rodent cancer or Rodent ulcer.
4. Columnar Carcinoma. *Synonyms*, Columnar epithelioma, Adenoid cancer.
 - a. With colloid degeneration of cells. Colloid cancer in part.
 - b. Arising in ducts. Duct cancer.
5. Thyroid Carcinoma. Resembling in structure the Thyroid gland.

Class V.—Cysts.

1. CYSTS ARISING FROM THE DISTENSION OF PRE-EXISTING SPACES.
 - a. Spaces lined with secreting epithelium, Retention cysts.
 - (1.) Acinous or glandular cyst of breast, pancreas, and other glands.

- (2.) Duct cyst of the breast, pancreas, testicle and other glands.
- (3.) Galactoceles.
- (4.) Spermatocoele.
- (5.) Mucous cyst. Ranula. Labial cyst.
- (6.) Sebaceous or atheromatous cyst, Wen.
- (7.) Ovarian cyst from Graafian follicles.
- b. Spaces lined with flattened endothelium. Distension or exudation cysts, Lymphatic cysts.
 - a. Bursal cysts.
 - b. Ganglion.
 - c. Serous cysts.
2. CYSTS IN WHICH THE FLUID IS CONTAINED IN A SPACE OF NEW FORMATION.
 - a. Blood cyst. Apoplectic cyst in brain.
 - b. Degeneration cyst. In brain. In tumors.
3. CYSTS OF CONGENITAL ORIGIN.
 - a. Inclusion-cyst. Dermoid cyst.
 - b. Cysts arising in the remains of foetal structures.
 - a. Unobliterated branchial clefts. Deep cysts of neck.
 - b. Unobliterated canal of His. Sub-lingual cysts in part. Sub-hyoid cyst in part. Cysts in front of larynx.
 - c. Remains of Wolffian body. Encysted hydrocele in male (in part). Cysts of the broad ligament in female (in part).
 - d. Partially unobliterated processus vaginalis testis, Encysted hydrocele of cord.
 - e. Partially unobliterated canal of Nuck. Hydrocele of canal of Nuck.
 - f. Cysts of post-anal gut.
4. PARASITIC CYSTS.

Change of Address.

Berry, H. A., from Oswego to Herrin, Ill.
 Blanchard, A. C., from Mineral Point to Linden, Wis.
 Gould, J. B., from Minneapolis to Anoka, Minn.
 Gores, F. C., from Hewitt and Hackberry Sts. to 938 E. McMillan St., Cincinnati, Ohio.
 Maxey, S. B., from Sherman to Velasco, Texas.
 Orth, D. A., from Chicago to 255 Wisconsin St., Milwaukee, Wis.
 Turner, B. S., from 3906 State St. to 3859 State St., Chicago.
 Tipton, John S., from care of Crozer Iron Co. to 214 Third ave. N.E., Roanoke, Va.
 Toron, M., from North and Ashland Aves. to 812 Milwaukee Ave., Chicago.
 Wyman, Hugh S., from Olympia, Wash., to Juneau, Alaska.
 Würdemann, H. V., from 805 Grand Ave. to Pierce Bldg., Suites 40 and 41, Milwaukee, Wis.

LETTERS RECEIVED.

Allan, W. C., Chicago; Angell, Katharine, Chicago.
 Bigelow, J. S., Dubuque, Iowa; Barry, P. J., Auburn, Iowa; Bowers, W. C., La Place, Ill.; Brown, E. J., Minneapolis, Minn.; Benerman, L. C., Philadelphia, Pa.; Beeson, S. J., Chicago.
 Greshaw, J. W., Cadiz, Ky.; Clarke, Augustus P., Cambridge, Mass.; Curtis, W. K., Midland, Texas.
 Duffield, H. T., Pittsfield, Ill.; Davis, C. G., Chicago; Dewar, T. A. (2), Detroit, Mich.; Dewey, C. R., Mattawan, Mich.
 Elliott, E. N. (2), Chicago; Edenharter, Geo. F., Indianapolis, Ind.; Eskridge, J. H., Chicago; Edmonson, G. S., Moroa, Ill.; Eagan, J. A., Chicago.
 Fanning, Geo. J., Lame Deer, Mont.; Ferguson, Clara, Dunning, Ill.; Fassett, C. W., St. Louis, Mo.; Fletcher, M. H., Cincinnati, Ohio.
 Griffin, N. A., Chicago; Grinker, Julius, Chicago.
 Huizinga, T. G., Zealand, Mich.; Harrison, C. F., Perry, Ill.; Hollister, Thos. C., Louisville, Neb.; Howle, W. P., Oran, Mo.; Hardy, N., Massillon, Ohio; Hilborn, Allen, Benton Harbor, Mich.; Harriman, W. E., Ames, Iowa; Hummel, A. L. (2), Advertising Agency, New York, N. Y.
 Imperial Granum Co., The, New Haven, Conn.
 Judkins, Wm., Cincinnati, Ohio; Johnson, H. L. E., Washington, D. C.; Lucas, W., New Holstein, Wis.; Lewis, E. St. Elmo, Philadelphia, Pa.; Lake, A. D., Gowanda, N. Y.; Letter, Frances W. (Mrs.), Mansfield, Ohio; Laughlin, E. J., Andover, N. Y.; Laughlin, E. D., Orleans, La.; Long, F. A., Madison, Neb.
 Merkel, Dr., Saginaw, Mich.; Merrick, M. B., Passaic, N. J.; McCassy, J. H., Dayton, Ohio; Moore, W. H., Brockport, N. Y.; Menefee, E. L. (2), Granbury, Texas; Monash, D. F., Des Moines, Iowa; MacMillan Company, The, New York, N. Y.
 Open Court Publishing Co., Chicago.
 Poling, J. A., Freeport, Ill.; Proctor & Collier Co., Cincinnati, Ohio; Prencel, J. F., Chicago; Pratt, Lester C., Bellefontaine, Ohio; Publishers' Collective Agency, St. Paul, Minn.
 Quesada, Gonzalo de, Washington, D. C.; Quinlan, W. W., Chicago.
 Reed, R. Harvey, Columbus, Ohio; Register & Montgomery, Charlotte, N. C.; Ransom, J. B., Dannemora, N. Y.; Riley, W. H., Boulder, Colo.; Rose, D., Chicago; Richards, A. S., Chicago; Rogers, C. C., Chicago.
 Steiger, E. & Co., New York, N. Y.; Stearns, F. & Co., Detroit, Mich.; Schering & Glatz, New York, N. Y.; Spencer, E. R., Doylestown, Ohio; Sullivan, G. M., Labelle, Mo.; Sharp & Smith, Chicago; Schwab, L. W., Chicago.
 Tobey Furniture Co., Chicago; Treat, E. B., New York, N. Y.
 Visser, J., Chicago.
 Wyman, Hal C., Detroit, Mich.; Woodbury, Frank, Philadelphia, Pa.; Wilbur, Cressy L., Lansing, Mich.; Wingate, U. O. B., Milwaukee, Wis.; Wood, H. D., Angola, Ind.; Williams, W. W., Quincy, Ill.
 Zook, E. W., Dunlap, Ill.

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ORIGINAL ARTICLES.

A RÉSUMÉ OF MEDICAL HYPNOTISM.

Read before the Louisiana State Medical Association, May 18, 1896.

BY RANDELL HUNT, M.D.

SHREVEPORT, LA.

The wonderful and marvelous facts that have been evolved within the last twenty years through hypnotism, are such as to attract the attention of the most skeptical, and fill those who believe in and practice the science with veritable awe. Science, with its brilliant light of logic and truth, is rapidly dispelling the darkness of mystery and doubt, and men are no longer looking helplessly to the supernatural for the solution of a problem above their individual ken. They realize that all in nature is natural and subject to natural laws, and when a phenomenon can not be explained, readily admit that it is through their failure to comprehend those universal principles that govern the cosmos.

Educated people demand a little more of the scientist than mere arbitrary statement. They wish to know the reason of the faith that is in him, and rightly, for the scientist should meet the issue squarely, face to face, and in such manner that any sound mind can grasp the solution he offers. Finite mind needs finite reasoning and in this practical age the world wants demonstration, for it has the courage of its convictions and inductively refuses to accept anything upon revelation alone. Hypnotism, to be acceptable to the thinking world of today, must be brought from the realm of mystery, charlatany and empiricism, and standing unflinchingly in the light of scientific investigation, in no particular be found wanting. Its history is almost connate with the history of the world, for we find evidences of spiritualism in Babylon; while in Israel the Witch of Endor conjured the shadows of the dead.

In the eighth book, chapter 2, of the "Antiquities of the Jews," Josephus says: "God enabled Solomon to learn that skill which expels demons, which is a science useful and sanative to men. He composed such incantations also by which distempers are alleviated. And he left behind him the manner of using exorcisms, by which they drive away demons so that they never return, and this method of cure is of great force unto this day, for I have seen a certain man of my own country whose name was Eleazar, releasing people that were demoniacal in the presence of Vespasian and his sons and his captains and the whole multitude of his soldiers. The manner of the cure was this: He put a ring that had a root of one of those sorts mentioned by Solomon to the nostrils of the demoniac, after which he drew out the demon through his nostrils; and when the man fell down immediately, he abjured him to return into him no more, making still mention of Solomon and reciting the incantations which he composed."

In the temple of Ceres there was a well at the bottom of which there was a mirror: in this the priests saw the faces of those who came to be cured.

For forty centuries hypnotism has been practiced in Egypt by taking a porcelain plate and drawing two triangles in it crossing each other, in the center writing a cabalistic word, which when gazed at steadily for some minutes produces trance. The Eber papyrus, in the history of Egyptian medicine 1552 years before Christ, gives the laying on of hands as part of the treatment of disease, and we see the same thing later in the cures of the Emperor Vespasian.

Hypnosis from fixation has been practiced for thousands of years by the Persian magi, the fakirs and yogis of India, and also in certain convents of the Greek church, notably the Omphalopsychics of Mount Athos, by gazing at the umbilicus.

The next revival of hypnotism, under the name of animal magnetism, was by Mesmer, who believed in a universal magnetic fluid, and gathered many patients about him in Paris. Greatrakes, in 1662, claimed to have had divine revelations to the effect that by the laying on of hands he could cure many diseases. This he succeeded in accomplishing and soon his fame became so great that people came to him from all directions. Gasner, an ex-monk, 100 years later, performed many miracles and at last settled in Regensburg where, by the aid of exorcism, he gained fame and at one time had as many as 10,000 patients. Abbot Faria spent many years in India and in 1815 taught that the cause of trance and somnambulism was due to forces in the subject, not in the magnetizer, and that sleep could not be produced against the subject's will.

To James Braid of Manchester, belongs the honor of not only doing much to clear hypnotism of its mysticism and of naming the science, but of hinting at its most important factor, suggestion.

In the hospital of La Salpêtrière in 1878, Charcot and his pupils began to demonstrate hypnotism, but neither he nor his pupils have as yet any very satisfactory theory to advance. In 1866 Liebault, the real and true father of the therapeutics of suggestion, wrote a book on the subject, but it remained little known and the author was laughed at by his confrères. Professor Bernheim of Nancy, adopted Liebault's views and a great rivalry took place between him and Charcot and to this day the rivalry continues, though Nancy is gaining ground.

It was not until 1893 that a working hypothesis was formulated for the scientific demonstration of hypnotism. Like the flash of a meteor the brilliant genius of Hudson burst forth and gave to the world light in the logical presentation of one of its fundamental laws. His theory of the duality of mind is so clear that I shall employ it in this paper, and for the sake of explanation call, as he does, one phase of mind objective, with its seat in the upper brain and the other sub-

jective and located in the lower brain. The objective mind from its post of observation in the cerebrum, takes cognizance of the objective world through the media of the five physical senses, is under the control of reason, and develops what we know as common sense. This is the mind we are using at this moment, the mind we instruct at school, inform and polish by travel and in a thousand ways teach, the mind of the scientist and scholar. In normal man it is not controlled against reason by the suggestions of another, for it reasons both inductively and deductively and refuses to accept anything in opposition to achieved results.

The subjective mind, that of the lower brain (pons, medulla and cord) perceives, not through the physical senses, but by intuition, is the seat of the imagination, of memory, and, as is proven through the phenomena of hypnotism, controls the functions of the body. This is the mind whose ascendancy gives us the musician, the poet, the artist in any line, and when "exquisitely balanced" with the objective mind, as Mr. Hudson so beautifully shows us, a Shakespeare. That the subjective mind is always amenable to suggestion is the law that Mr. Hudson demonstrated to us so clearly.

To make the difference between the two minds plain I will give this illustration: Blind Tom had no objective force, but if Von Bulow or any other great musician played in his presence a most intricate and difficult composition, Tom could sit down and without trouble reproduce the whole. From this we see that perfect memory is a factor in the grand aggregate of the subjective faculties, while mere recollection and not true memory it is that belongs to the objective faculties.

The charge so commonly made by the uninformed that crime and immorality may result from improper suggestion from evil-minded operators, is met by the statement, fully proved through satisfactory experiment, that strongest of all suggestions is auto-suggestion. The suggestion of a crime is rendered abortive by the instinct of self-preservation acting through auto-suggestion, while the suggestion of immoral or indecent action is met by the counter auto-suggestion arising from strong convictions of right and the habits of a lifetime. To a really pure hearted, modest woman virtue and honor are more than mere existence, aye, they are divine glory and constitute her greatest ideality to man, and the insistence of an operator upon a suggestion opposed by auto-suggestion would result in hysterical distress and a speedy restoration to consciousness.

Anatomy and physiology prove the duality of mind, for Surgeon-General Hammond in a paper entitled, "The Brain not the Sole Organ of Mind," relates how he removed the brain of a frog and after waiting for the shock to pass, put it in water, when it immediately began to swim. He placed his hand so as to stop it and its efforts ceased; taking away his hand, it again commenced to swim. Pflüger removed the entire brain of a frog and applied acetic acid to the thigh over the inner condyle. The animal immediately rubbed the spot with the foot of the same side, making a voluntary movement and showing his appreciation of the locality of the irritation. The foot was then amputated and the acid was again applied, when the frog made an ineffectual effort with the amputated member and failing after a few movements, rubbed the irritation with the other foot. This experiment,

with its demonstration of sensation and volition, is certified to by Prof. Austin Flint, who says he has often successfully produced the same phenomenon.

"In certain monsters born without a brain, or with important parts of this organ absent, we have interesting examples of the persistence of instinct." "Syme describes one of these beings which lived for six months. Though very feeble it had the faculty of sucking and the several functions of the body appeared to be well performed. Its eyes clearly perceived the light and during the night it cried if the candle was allowed to go out. After death the cranium was opened and there was found to be an entire absence of the cerebrum, the place of which was occupied by a quantity of serous fluid contained in the arachnoid." "Ollivier d'Angers describes a monster of the female sex which lived twenty hours. It cried and could suck and swallow. There was no brain, but the spinal cord and medulla oblongata were well developed." "Saviard relates the particulars of a case in which there was no cerebrum, cerebellum, or any other intracranial ganglion. Yet this being opened and shut its eyes, cried, sucked and even ate broth. It lived four days. Some of these movements were reflex, but others were clearly instinctive and adapted to the preservation of life." "But all these instances as well as experiments referred to as having been performed on lower animals, show that instinct does not reside in the brain."

Methods employed to produce hypnosis vary with each individual hypnotizer, though all use fixation with or without suggestion.

Mesmer generally sat opposite his patient, stared him in the eyes and held his hands for ten minutes, then made fourteen or fifteen gentle passes over his head, chest and body; but later on in the height of his triumph, when all fashionable Paris came to him, he lessened his labors by using magnetized tables and the baquet.

Braid fixed the attention on a bright object situated about three inches above the root of the nose, which caused the eyes to converge and the muscles to soon tire.

Charcot has modified Braid's method by placing the piece of glass gazed at near the bridge of the nose and suddenly striking a loud gong which causes catalepsy. But as Dr. Tuckey remarks, "Such sleep is analogous to that shock produced in waking moments by sudden fright, which paralyzes and transfixes with terror."

Suggestion, as employed at Nancy, acts as a sedative to the brain and softly woos a condition analogous to natural slumber. The person hypnotized is placed on a bed or in a large chair, told to think only of going to sleep, to be passive, not to move, and to look the hypnotizer steadily in the eyes, while the following formula is repeated: "Your eyelids are growing heavy, your eyes begin to wink, you can not see distinctly, you are growing so sleepy your eyelids are almost stuck together, a torpor steals all over your body, your eyes are closed, you are sound asleep, you can not feel anything, you can not move your arms or legs, you are sound asleep. Sleep, sleep, sleep." By this time the patient is generally hypnotized; but in case he is not, continue to vary the suggestion and success will usually follow.

As passivity is an indispensable factor to successful hypnotization, it follows that an unwilling subject is an impossibility. Advise hypnotism when indicated

and wait the patient's full and eager consent. By taking this course success will invariably follow and the practitioner will avoid the delay, worry and failure that will inevitably result from the perversity of an ignorant and stubborn patient.

Classification of the stages or degrees of hypnotism vary, but for the sake of convenience and brevity four shall be employed, viz.: Suggestion without sleep, light sleep, profound sleep and somnambulism.

Suggestion without sleep is a wonderful illustration of the power of the mind over the body and shows that through imagination and mental concentration every action and sensation can be controlled. A few rapid passes for psychic effect will sometimes, in the most susceptible, produce loss of sensation in the arm, hand or face and, in like manner, a catalepsy of any limb. There is no loss of individuality and though the patient may be unable to open the eyes, he will say that he can not understand his inability to do so.

In the second degree there is light sleep and general muscular relaxation; the eyes remain closed and the patient not only hears the voice of the hypnotizer, but any conversation within his hearing and, as a rule, remembers all.

Profound sleep is characterized by catalepsy. If the arm is lifted it remains in the position in which it is placed and while the voice of the operator is heard and remembered, conscious relationship with others is only obtained by verbal suggestion.

Somnambulism is marked by complete loss of consciousness of the outside world and, though suggestion is obeyed, there is no recollection of anything that happens during sleep. Some curious physiologic phenomena have been observed by those who practice medical hypnotism, such as increased circulation, respiration and muscular rigidity, though the two former disappear in a short time and therefore may be ascribed to excitement. Through suggestion circulation can be signally affected and by a mere word of command the cardiac function so influenced as to notably increase or decrease its pulsations. Suggestion also affects the temperature and the vasomotor system. In certain cases red spots and even blisters can be made to appear on the arm, chest, or any part of the body, by using a magnet, piece of paper, or a coin, and intimating the result desired.

Hypnotism will materially increase our knowledge of the functions of the brain, for the condition is entirely psychic and can not as yet be explained by physiology. Tuckey quotes Brown-Sequard as saying that when one cerebral center or function is used to excess the others become, for the time being, paralyzed or inhibited and this is particularly true in the induction of hypnotic sleep, for the mind is then engrossed with one idea, and the eyes being fixed on a bright object soon cease to perceive it and the brain is consequently left in a state of vacuity. Dr. Barwise considers the condition brought about by mental and visual tumult and by cerebral anemia, the throwing back of the head interfering with circulation and producing a condition analogous to natural sleep.

Bernheim's views are more in accord with my limited experience. He thinks it due to the fixation of vision and the power of suggestion, particularly the latter; for many persons are easily hypnotized without assuming an unnatural posture, or even a fixation of gaze. In fact, it is nothing but a certain mental

state in which the patient is susceptible to suggestion.

To obtain success in hypnotic treatment it is most important to impress the mind of the patient with its great and lasting power to produce effects. Dr. Moll assures us that any patient who goes to Lourdes with the faith of a good Roman Catholic meets a far different result than he who goes without faith. Under ordinary circumstances it is impossible for the practitioner to engender such belief, but it becomes easy with the aid of hypnotism to place the subjective entity in a condition of receptivity and faith.

The diseases that yield most readily to therapeutic suggestion are the following: Chronic alcoholism, tobacco habit, morbid delusions, hypochondriasis, bad habits, neurasthenia, insomnia, megrim, epilepsy, functional paralysis, hystero-epilepsy, writer's cramp, stammering, chorea and menstrual irregularities. "Dr. Björnström of Stockholm asserts that from 1850 to 1860 hypnotism was used on a large scale by Dr. Esdaile, head surgeon at the hospital at Calcutta. In six years he performed 600 operations on hypnotized Hindoos and a committee of surgeons and physicians, appointed by the Indian government, testified to his great success, which was chiefly derived from the fact that the most difficult operations could usually be made without a sign of pain from the patients."

Many interesting cases treated and cured by hypnotism could be related, but as the scope of this paper will not permit it, I shall have to be satisfied with calling your attention to such names as Dr. Gerald Yeo the physiologist, Professor Bernheim of Nancy, Professor Charcot of La Salpêtrière, Voisin, Wetterstrand, Björnström, Velpeau, Dumontpallier of Hotel Dieu, Richet of Paris, Tuckey of London and Albert Moll of Berlin.

In October, 1895, Dr. T. E. Schumpert, surgeon of the Charity Hospital of Shreveport, in the presence of Dr. J. F. Griffin of the same city, operated upon Allen Coates, age 53, suffering from chronic ulcer of the leg. The ulcer was curetted and skin-grafted under hypnosis without pain to the patient. He also performed circumcision on John S. and George Fields under hypnosis without causing pain and without memory, when they awakened, of what had been done.

The following is an extract from some notes handed me by Dr. T. G. Ford of Shreveport: "My experience with hypnotism, although limited, has been a happy one, using it upon one case of nausea from pregnancy with success, three cases of sick headache with relief, and one aggravated case of hysteria. In the latter I used almost every anodyne without benefit and at last resorted to suggestion, which acted most satisfactorily, and I now consider the condition of my patient much improved under its use."

The following recital of some of my own experience with hypnotism is presented to you with hesitancy, owing to its very limited scope, and only in the hope that in the event of any among you being without personal experience, it may serve to encourage you to try this most powerful and beautiful therapeutic agent. Some time ago a lady suffering from an attack of megrim sent for me and being afraid of contracting the morphine habit, she implored me not to give her an opiate, a request I respected. I then stated the benefits to be derived from hypnotism and as she was eager and willing, catalepsy was soon induced and suggesting that the pain was gone and

would not return, in a few minutes I had the pleasure of arousing her free from all pain. On another occasion a young lady came to my home office suffering from acute ovarian neuralgia and in the presence of my wife I hypnotized her and in four minutes she left smiling and well.

George Anderson, negro, aged 35 years, had facial neuralgia and had undergone agony for three weeks, in spite of medical treatment administered by one of our best physicians. Knowing the excellent ability of his former doctor and feeling that the treatment could not be improved upon, I urged him to let me produce hypnosis and, at last consenting, in a few minutes he was entirely cured.

In September I was called in consultation to see a woman who had been sick in bed for three months with hystero-epilepsy, and the week preceding my visit she had had nine seizures. After a careful examination the ovaries were found painful to touch and very much congested, so much so that the examination induced an attack, during which I succeeded in hypnotizing her and affirmed in a loud tone that all pain had passed away and that she would have no more trouble, but in the morning would be sitting up and would assure her physician of her great improvement and her certainty of soon being entirely well. A few weeks later I met the doctor and he told me that all had happened as I suggested and that she had an uninterrupted and extraordinarily rapid recovery.

In January of this present year there came to me a young woman addicted to the morphin habit, taking, according to her own statement which I afterward verified, eight grains daily. I at once placed her upon a mixture containing strychnia, caffeine and cinchona, giving it every four hours and decreasing the morphia so as to have her off the drug in two weeks. For the next four weeks I continued the mixture, giving an occasional dose of phosphate of codein, and whenever great depression occurred, or any nervous pain, I would hypnotize her and obtain instant amelioration. One interesting feature of this case was that the diarrhea which always follows the withdrawal of the drug, and often proves so troublesome, was absolutely and entirely controlled by therapeutic suggestion. I have also the gratification of informing the Association that the patient is now well and in excellent spirits.

I have also found hypnotism successful in the following diseases: Intercostal neuralgia of eight years' standing, abolishing pain, increasing menstrual flow, filling and crowning teeth, dipsomania and chorea.

Before I close I should like to recall to the minds of my brother physicians the struggle that vaccination had to undergo before it was admitted as a reliable prophylactic agent; that it has not been long since electricity was taken from the hands of empirics and charlatans and that massage was ridiculed and laughed at, but at last, in spite of conservatism and inexperience, behold their triumph.

Nearly every village in Germany has one regular practitioner who, in addition to regular practice, employs the science of suggestion. Only a few months ago the Illinois Medical College appointed a chair of psychiatry and hypnotism in its curriculum, and less than three weeks ago an arm was amputated under hypnosis in the largest hospital in Baltimore.

The following preamble and resolutions were agreed to at the first First International Congress of Physicians and Jurists on Hypnotism held in Paris, 1889:

WHEREAS, This Congress recognizes the danger of public exhibitions of magnetism and hypnotism, and deeming that the therapeutic application of hypnotism has become a branch of the science of medicine, that its official teaching is the province of psychiatry, votes the following resolutions:

Resolved, Public exhibitions of hypnotism and magnetism should be forbidden by the administrative authorities in the interest of public hygiene and public morals.

Resolved, The employment of hypnotism as a curative agent should be subject to the laws and restrictions which regulate medical practice generally.

Resolved, It is desirable that the study of hypnotism and of its therapeutic application be introduced into the curriculum of medical sciences.

The advice of this Congress is not to be disregarded, for while the morally pure are safe from error, there is a large mass of humanity whose ethical nature is an unknown quantity and with a moral equilibrium that might easily be disturbed by adverse or criminal suggestion. Such being the case, it at once becomes imperative that proper legislation be enacted for the protection of such people and that this powerful agent be taken out of the hands of charlatans and empirics. Hypnotism used as a therapeutic measure is commendable, but care should be taken that no suggestion be made except relating to the cure desired, for inadvertent and unscientific suggestion when repeated daily for a great length of time, results not only in auto-hypnosis, but also in lasting hallucinations. These dangers, however, are easily avoided by judicious and quieting assertions and by never giving to the hypnotized subject any suggestion other than one necessary for his cure. If this advice be followed, Professor Bernheim and Prof. R. Von Kraft-Ebing assure us that no mental or physical detriment can result and that only good can come from medical hypnotism and therapeutic suggestion.

HOW THE ESTABLISHMENT OF A PERMANENT CENSUS BUREAU WILL IMPROVE THE VITAL STATISTICS OF THE UNITED STATES.

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The establishment of a permanent census bureau has long been advocated by those most familiar with the numerous practical defects of our antiquated census system, both on grounds of greater economy and of improved results. Under a joint resolution of the first session of the present Congress, Hon. Carroll D. Wright, United States Commissioner of Labor, was directed to make a report on the advisability of placing the preparations for the census of 1900 upon a permanent basis, and the results of his labor are now before Congress in the form of a "Bill to provide for a permanent census service."

The bill contains provision for an enumeration of the population at the quinquennial periods intermediate between the present decennial enumerations, thus making general the means of verifying our knowledge of the population of the country every five years. It is unnecessary to point out how indispensable such frequent censuses are for the computation of accurate vital rates. All rates for intercensal years are based upon estimated populations, and when the estimation is continued for seven, or eight, or nine years after an official census, deductions based thereon may become entirely misleading. Indeed, so evident had the too infrequent character of our National cen-

suses become, that many of the States have already established censuses of their own in order to obtain data at quinquennial periods.

It was not my intention, however, to dwell upon the commendable features in the general census bill proper, but rather to call attention to the special provisions relating to the very important subject of vital statistics. The text of the bill as originally reported to Congress¹ is as follows:

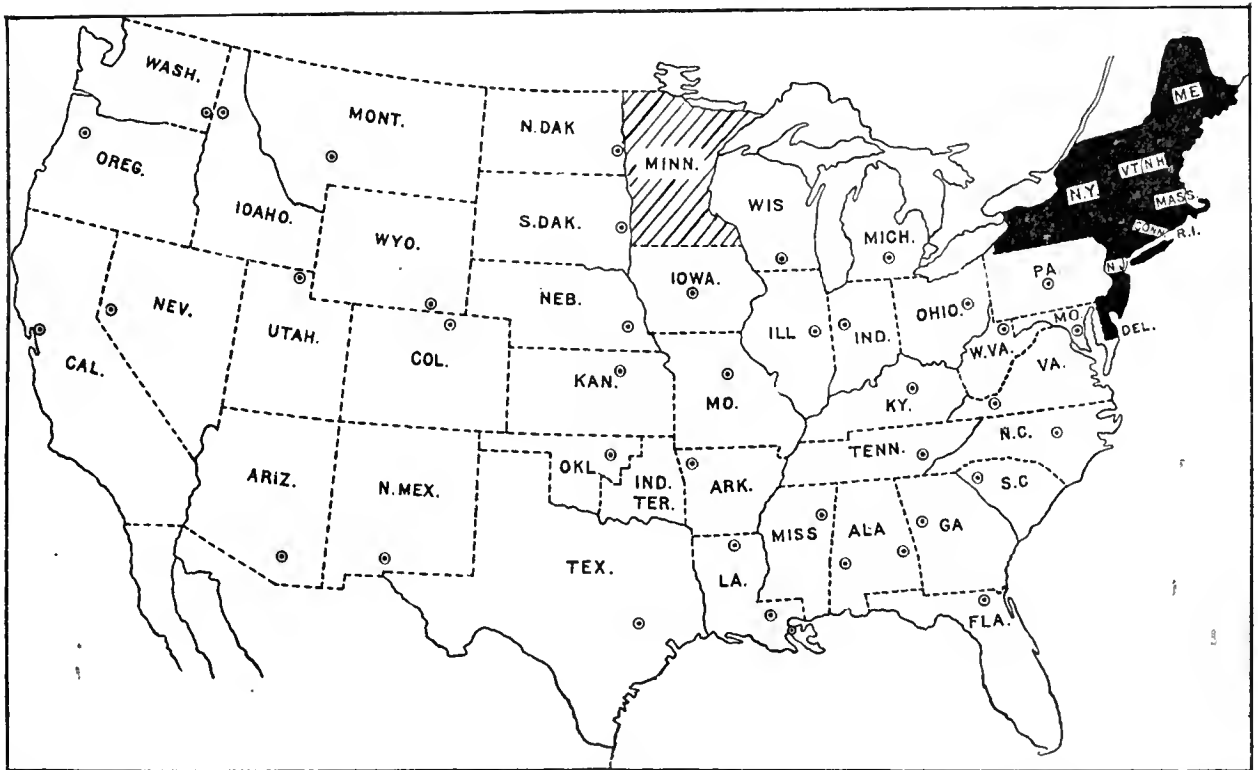
"There shall be a collection of statistics of deaths and of births for the year 1900, and annually thereafter, the data for which shall be obtained from the registration records of those States and municipalities possessing such records. At the time of the decennial enumeration of the population such data may be obtained from representative localities not having such records, at the discretion of the Director of the Census."

Upon this Col. Wright comments as follows:

"The collection of vital statistics every ten years, as now carried on, does not furnish material of value commensurate with the cost. The reliance of the decennial censuses has been upon the data collected from those States and municipalities

country not having a registration system. Ultimately under this provision the whole country would come into line with the States already having their registration provided for."

The United States may be conveniently divided for purposes of vital statistics, as under the last census, into registration and non-registration States. The assured registration States, comprising all of the New England States, New York, New Jersey and Delaware, occupy a comparatively small portion of the territory of the Republic (about 4 per cent.), although nearly one-fifth of the entire population of the country is contained in them. All of the other States of the Union are included in the non-registration class, although several of them have had systems of vital statistics in operation for many years. Their results, however, are not sufficiently accurate to determine their true death rates, with possibly a single exception. Minnesota has had a system of mortality statistics based upon certificates of death since the year 1887, and the results obtained under it are claimed to



having a registration system—that is, a compulsory system—under which physicians and others must make returns of births and deaths, and clergymen of marriages, the municipal authorities in States having a registration system making returns to the State. These are the only valuable vital statistics in the Federal census. All others, gathered from the people themselves by means of questions on the population schedules, are of no particular value for scientific purposes. When it is understood that the most accurate statistics we have in this country are from 5 to 10 per cent. away from the truth, it seems a useless expenditure of money and a needless irritation of the people to tax the enumerators with questions relating to births, deaths and marriages. Again, the value of vital statistics is increased more than tenfold by having them collected annually. It would be comparatively an inexpensive matter to collate the vital statistics of the United States, so far as registration States and municipalities are concerned, from the reports of such States and municipalities. By the adoption of such a system those States not having a registration system would gradually adopt something of the kind; so the bill under consideration authorizes the Director of the Census to collect vital statistics from representative localities in parts of the

be reliable. In the chart showing the registration area in black and the non-registration area unshaded,² Minnesota is partially shaded and should, perhaps, be included among the full registration States.

1. The registration States will be benefited by the annual compilation of their data, which is an important feature of the proposed law, and which will undoubtedly bring out many valuable comparisons. Something similar has already been undertaken by the registrars of the six New England States in the quinquennial "Summary of the Vital Statistics of the New England States." In the case of Michigan, which I trust may become a registration State by act of the present legislature, we shall be very glad to devolve the higher statistical treatment of our vital statistics upon the bureau of the general government, which alone can handle them to the best advantage;

² The division is made on the basis of mortality statistics alone. New York has imperfect returns of births and marriages. Several of the so-called non-registration States have excellent systems of marriage statistics.

¹ Senate Executive Document No. 5, Fifty-fourth Congress, Second Session.

sufficient for the State registration bureau will remain in the thorough administration of the law for the collection of data, the primary compilations, and the issuing of timely information in the shape of bulletins or otherwise for the benefit of the public health service. What is true of the State systems of registration is even more true of the municipal systems, especially those situated in non-registration States. There are few if any satisfactory compilations of their vital data, and a central bureau competent to act as a general clearing-house for municipal systems of registration is greatly needed. It is not enough to accept and publish the mere statements of city authorities. The accuracy of registration must be examined and standardized, population must be properly estimated, and such a general supervision be exercised over the conduct of registration that the results, when published by the government bureau, shall be known to be reliable.

2. Even greater advantages will accrue to the so-called non-registration States, which include about 96 per cent. of the area and four-fifths of the total population of the country. It is not feasible to institute a general system of registration in these States, but the bill provides that "data may be obtained from representative localities not having such records, at the discretion of the Director of the Census." The bill at present limits such collection of vital data from the non-registration States to "the time of the decennial census;" this, however, is an oversight which will be amended before passage. The reasons for a continuous registration of vital data in non-registration States are as strong as those for an annual collection of data from the registration States, or even stronger, since the data from the latter are accessible at present, while the proposed representative data will depend for a time entirely upon the census bureau.

In the chart certain circles with central dots represent the locations of agricultural experiment stations in the United States. It is planned, under the power intrusted to the Director of the Census, to establish vital statistics observation stations, or rather districts, in much the same way. Selected counties from each State, carefully chosen with reference to geographical situation and representative character of population, will give reliable information in regard to the vital movement of each State. Reliable representative birth rates and death rates will at last be obtainable. For years the sanitary workers in the great central West have been handicapped by the absence of reliable mortality data. When the way is shown, and the people shall actually see the benefits resulting from accurate registration among them, undoubtedly an increase in the number of State systems will result. Of course it may be necessary to have several registration districts in the same State, if a large one, or having great diversity of population: perhaps three or four districts will be sufficient on the average.

It will be very necessary to select districts having an average distribution of urban and rural population. One of the chief objections to the vital statistics of the cities of the non-registration States at present is their failure to represent the average degree of density of population. Statistics obtained from the country as well as from the city would be less objectionable in this respect.

Taken altogether, the provisions of the proposed bill relating to vital statistics seem well adapted to introduce a system of partial but thoroughly repre-

sentative registration, whose results will be vastly superior to anything we have previously derived from the census investigations. All of the details of collection of data and the specific limits of the inquiry are, of course, not yet worked out. Enough of promise appears, however, in the draft of the organic census law to enlist the interest and assistance of physicians, sanitarians and sociologists in behalf of the measure, and I sincerely trust that active efforts will be made to assist its passage by all who desire better vital statistics for the United States.

THE EFFECT OF THE EXTRINSIC POISONS ON THE EYE.

Read before the New York Academy of Medicine, General Meeting, Oct. 15, 1896.

BY J. HERBERT CLAIBORNE, M.D.

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In presenting this subject I recognize fully the difficulties I encounter. The list of agents which when taken into the system produce disturbances of vision is a long one. I do not hope, therefore, to present them all. I shall select those that are most frequent and interesting and show in fact only the skeleton of the subject, leaving to you the task of clothing it with beauty and with flesh.

In the beginning I desire to express my indebtedness to Dr. G. de Schweinitz¹ and Dr. Casey M. Wood² for the assistance I have received in preparing this paper from their works entitled "The Toxic Amblyopias."

By the term toxic amblyopia I understand an interference in vision produced by certain drugs or substances that have been absorbed by the human system. Following Dr. Wood I divide them into two great classes: 1, those that directly affect the optic nerves; 2, those whose symptoms are unattended by retinal or optic nerve lesions.

The first class should be divided into two divisions: (a) those that produce a retrobulbar neuritis; among these tobacco, alcohol, tobacco-alcohol, carbon bisulphid, hashish, iodoform and arsenic are chief; (b) those that produce other forms of optic nerve and retinal disease, such as lead, quinin, salicylic acid or the salicylate of soda, venom of poisonous reptiles, silver, mercury, ergot, nitrite of amyl, the oxid of nitrogen gas, male fern and pomegranite. We will first take up the study of those agents that produce either retrobulbar optic neuritis or neuroretinal disease.

Among the agents that produce retrobulbar optic neuritis, alcohol and tobacco occupy first and second place respectively. It has been held, and at the first blush it appears not without reason, that these agents separately produce no toxic effect on the optic nerve. But upon careful examination of the literature that bears on this subject it is now obvious that there is an amblyopia dependent upon each of these. There can be no doubt that they are more frequently combined than separate in their action on the optic nerve, but I repeat it has been sufficiently proven that each one alone produces in toxic doses amblyopia dependent upon retrobulbar optic neuritis.

As far back as 1777 Plenck³ recognized alcohol alone as a cause of amblyopia. Doebblin⁴ has argued this in a thesis published in 1850.

It is highly probable that dilute alcoholic drinks in the form of beer and wine taken in moderation pro-

duce no effect on the function of vision. It has been claimed by Hutchinson⁵ that the adulteration of alcohol by amyl alcohol, empyreumatic oils or the essences of the liqueurs such as wormwood in absinthe, hydrocyanic acid in maraschino, etc., are peculiarly apt to produce amblyopia. This point has not been by any means established. To any one who has made any observations on this subject it must be clear that the habit of taking many small drinks during the day and particularly before meals, is conducive to the causation of amblyopia. In fact it is the "nipper" and not the "spreer" whom we find the subject of amblyopia from the abuse of alcohol.

I myself have found it frequently among bar-keepers who are accustomed to take a large number of small drinks during the hours of duty.

In alcohol as in all forms of poisoning the greatest difference exists in persons as to susceptibility. There are those who have drunk strong undiluted drinks constantly from youth all the days of their lives who have never shown signs of amblyopia, and there are others who show the signs after a very limited indulgence for a small number of years. Idiosyncrasy is a factor beyond any doubt. Nevertheless one rarely finds a case of amblyopia from either tobacco or alcohol or both combined under 40 years. Unthoff has shown by a compilation that by far the greatest number of amblyopics from tobacco and alcohol are found between the ages of 40 and 50 years. There can be no doubt that the male sex has a decided monopoly of amblyopic symptoms from these two agents. Men are more given to smoke and drink in excess than women. In Unthoff's compilation of 135 cases all were men. If women used tobacco and alcohol as much and as frequently as men there is no doubt that amblyopia would be found as frequent among them as among men. I have under my care at present a woman of 26, who for years has been addicted to tobacco and alcohol in great quantities and whose vision is reduced to 3—200 from retrobulbar neuritis. I should say that women would be more subject to amblyopia from tobacco and alcohol than men, all things being equal, owing to their more delicate nervous system. I have seen one case of tobacco amblyopia in a Portuguese man between 30 and 35 years. One case of amblyopia from dipping snuff has been reported by Blitz⁶. I can not altogether agree with those who think that occupation is a predisposing factor except in the case of bartenders. It has been said that workmen and especially farm hands are predisposed, owing to their rising very early and the temptation which this habit brings of drinking and smoking on an empty stomach. My experience does not confirm the accuracy of this opinion. The strength and amount of the tobacco smoked and the strength and "neatness" of the liquor drunk certainly have a bearing on the subject. Those who drink neat whisky and brandy on an empty stomach and those who smoke short-stemmed pipes, strong tobacco and strong cigars are more liable to amblyopia than those who do not. It has been my fortune to see but two cases of amblyopia in which cigarettes had been smoked. One was the case of the woman referred to, whose case was complicated by alcohol, and the other was that of the Portuguese under 35. He did not drink to excess and smoked only cigarettes. One of the worst and most rapidly developing cases of amblyopia I ever saw was that of an Englishman of powerful frame, who told me that for twenty years he

never was without a pipe in his mouth and frequently drank more than a quart of brandy in a day. He was a ranchman in Australia. It would be interesting to know the experience of those present in regard to amblyopia from cigarette smoking.

I am not at one with those who claim that it is possible to make a difference between the signs and symptoms of the amblyopia from tobacco and that from alcohol. Since I hold this view I shall refer to their symptoms and signs together. Patients are apt to tell you as the first symptom that their vision is misty. A mist, they say, seems to hang over the print and it always apparently affects both eyes. They are apt to come to you and demand a stronger pair of glasses.

It is worthy of note that they rarely suspect the cause of their trouble. Perhaps the most distinctly characteristic symptom is the inability to recognize the colors red and green at the macula lutea. This is called central color scotoma. This is not always present in the beginning but is certain to be present later. The color perception outside of the region of the macula is normal. Hence the patients are never conscious of this defect till it is shown to them. In severe cases there is absolute scotoma at the macula, *i. e.*, there is no recognition of any object in the small area in the field corresponding to the macula. The field of vision as a rule is unimpaired in uncomplicated cases. In the beginning the ophthalmoscope reveals a congested optic nerve. As the neuritis goes on the optic nerve as a rule assumes a pallid appearance to the outer side where the fibers destined for the macula lutea lie. This sometimes has a triangular shape. Unthoff found this sign in 63 out of 100 cases. For my part I have never failed to find it when the central scotoma for red and green was marked and certainly always when the central scotoma was absolute.

It is a question whether this form of optic neuritis alone ever goes on to complete blindness. It is always well to look to syphilis as a complication, since tobacco, alcohol and syphilis are a frequent trigeminal combination. Recovery is apt to occur only when the disease is recognized in its incipency and the patient has the character to jugulate the habit.

I have no faith in the word of chronic smokers and drinkers. Their mental inhibition seems to be diminished. I think it may be said that as a rule these cases do not recover but retain enough vision to go about with difficulty, although not able to read or engage in any useful pursuit.

Quite a large number of cases of amblyopia from the effect of carbon bisulphid have been reported. This agent is a colorless, highly refracting liquid of a peculiarly disagreeable odor. It is very volatile in the arts and is chiefly used in the manufacture of vulcanized rubber goods. In this manufacture it is always associated with the monochlorid of sulphur. It has been thought that this latter agent has some influence on the development of amblyopia but this point has not been proved. The Committee of the British Ophthalmological Society appointed to investigate this subject came to the conclusion that it was the inhalation of the vapor and not the contact of the hands with it that produced the poisonous effects. The earliest symptoms are frontal and temporal pain as if the head was being squeezed. There are numerous other symptoms such as vertigo, loquacity and intoxication followed by depression. At first vision is misty as in the tobacco and alcohol amblyopia, then

vision is greatly impaired, there is central ring-shaped scotoma for colors and at times an absolute central scotoma. The optic nerve often becomes pallid. The prognosis as far as sight is concerned is good if the occupation is given up. Of twenty-four cases reported upon to the above-mentioned society about one-third recovered perfect vision, one-third improved a good deal and the remainder continued as they had been. Delpech⁷ first described this amblyopia in 1856.

In addition to its well-known effects, haschisch or Indian hemp produces inconstant symptoms of amblyopia. The drug is taken by the natives of India in the form of leaves which are smoked, a conserve which is eaten or an oily mess made with melted butter which is sipped. Ali⁸ has reported a number of cases as occurring in Persia. James Oliver⁹ noticed dimness of vision and weakness of accommodation. Cassicia's¹⁰ case developed mydriasis with hallucinations of vision. Werner¹¹ reports a case of cloudy violet vision in a small, nervous woman. The various reports hardly entitle cannabis indica to a place among the amblyopia-producing intoxicants.

Hirschberg¹² seems to be the first to publish a case of iodoform poisoning with this symptom. His patient was a young girl whose hip joint had been dressed with iodoform. There was intoxication and the vision was lowered to 1-20 and 1-30 in the right and left eye respectively. There was also a decided central scotoma for form. In eight days recovery was complete. E. Hutchinson¹³ and Priestley Smith¹⁴ have reported two more cases. In both of these cases iodoform was given internally. In Smith's case there was absolute central scotoma with greatly diminished vision, but in Hutchinson's case there was greatly diminished vision without any scotoma. Both cases recovered in a few months.

It is well known that those who work in arsenic, such as painters and paperhangers, as well as those who take arsenic medicinally and habitually, suffer from eczema, edema and pigmentation of the external ocular appendages. In addition to this, however, it is well established that arsenic in poisonous doses produces well-defined effects on the optic nerve. Liebrecht¹⁵ reports a case in which a man who took arsenic for psoriasis to the point of vomiting and headache evinced great deterioration of vision, *e. g.*, in the counting of figures at eight feet. There was also well-marked paracentral scotoma for red and green together with temporal pallor of the optic disc. Dana¹⁶ reports a case of an American who took increasing doses of Fowler's solution till he developed sensory and motor paresis and a well-defined optic neuritis. He recovered on discontinuance of the medicine. Derby¹⁷ reports a case of a man who had severe arsenical poison from the fumes of the wallpaper in his library. He found double optic neuritis with a hemorrhage in one eye.

I shall now leave the poisons that produce chronic retrobulbar optic neuritis and shall take up the consideration of those that produce other forms of optic nerve and retinal disease.

Among these agents lead and quinin stand preëminent. Plumbism does not always affect the eyes in the same manner. The commonest sign is said to be optic nerve atrophy, which comes on slowly. The disc is pale or grayish with contracted arteries and dilated veins. It commonly goes on to total blindness, and when that is not the case there are defects

in the center and periphery of the field with much diminished visual acuity. Uhthoff describes the case of a color-mixer who had retrobulbar optic neuritis with absolute central scotoma and vision reduced to 8-200 in one eye and 7-200 in the other. De Wecker¹⁸ and Massalon say that retrobulbar optic neuritis is common in lead poisoning and that if the poisoning continues there will always be absolute central scotoma. Gowers¹⁹ shows that optic neuritis with retinal hemorrhages, in fact the picture of neuroretinitis hemorrhagica, occurred in his case. Finally a condition of amblyopia fugax has been observed without fundus changes.

In chronic lead poisoning the other well-known systemic symptoms persist as a rule for a long time before amblyopia is observed, although Samelsohn has shown that sometimes ocular symptoms are observed first and in such cases the prognosis seems to be good. The prognosis is favorable when vision is but slightly reduced and the fundus lesions are slight or recent. Other ocular symptoms have been observed in lead poisoning, especially paralysis of one or more of the extrinsic muscles. Landesberg,²⁰ Von Schroeder²¹ and Wadsworth²² report such cases. Dr. Pooley has recently called my attention to a case reported by Lagleyze²³ of Buenos Ayres, which is, I believe, unparalleled. A man of 45 shot himself in the palm of the right hand with a fowling piece. (*La Clinique Ophthalmologique*, August, 1896.) Several shot were taken away, a few came away by suppuration, but seventeen remained encysted. Without going further into the details of this case, suffice it to say three years afterward there was a paresis of the internal rectus of the right eye which after several months became a paralysis. During these three years he was subject to symptoms of colic and spasms of the abdominal muscles.

I regret very much I have not more time and space at my disposal to discuss more fully quinin amaurosis. The subject is certainly interesting and important. In consideration of the great amount of quinin that is yearly prescribed, particularly in malarial countries, it is curious that not more than fifty-five or sixty cases of amaurosis are on record. In referring to the toxic effect of this drug on the vision, we always use the word amaurosis and not amblyopia, because it produces blindness.

Giacomini²⁴ reported the first case. The amount necessary to produce amaurosis varies greatly. I myself have cited a case in which 15 grains produced total blindness lasting a number of hours, and it is recorded by Vorhees²⁵ that one person took 1,300 grains before blindness set in. I am inclined to believe that idiosyncrasy is a factor when small doses produce blindness, and that any one may become blind from excessive use of the drug. Atkinson²⁶ has made a masterly review of the subject and I would refer you to his work for details as to the literature and symptoms of quinin blindness.

Dr. Knapp,²⁷ in 1881, thus describes the signs and symptoms of quinin amaurosis: "Marked pallor, general weakness, twitching of the mouth and extremities, total blindness and deafness associated with loud tinnitus aurium. The pupils are widely dilated and do not react to light, but do to accommodation. The patient often loses consciousness to a greater or less degree. The ophthalmoscope shows an absolute anemia of the optic nerve and retina. The papilla is chalky white and no trace of a blood vessel in that or

the retina is to be seen. This²⁸ state of things is seen in every case." Over against this statement I desire to place a case I have reported. After a large but undetermined dose of quinin a man of 45 became delirious and finally exhibited total blindness. He recovered to the extent of seeing white objects in a dimly lighted rooms. Two years afterward his optic nerves were dead white, but the arteries and veins could be distinctly traced on the disc and into the retina. I can not refer to this subject without bringing before your notice the monumental work of Dr. G. de Schweinitz,²⁹ who has shown by feeding quinin to dogs that the same signs and symptoms as occur in man can be produced in them. Microscopic examination of the optic nerves after death showed the characteristics of true atrophy. The prognosis is said to be good, as a rule. The blindness persists from a few hours to years. The central vision returns to normal after some days, weeks or months according to Gruening,³⁰ but the peripheric blindness remains. My case is the only one on record in which the blindness remained for as long a period as two years. I hope I will be pardoned for presenting the conclusions I drew in 1894 from a study of this subject:²⁸

1. Quinin in toxic doses may produce blindness.
2. The dose is distinctly indeterminate.
3. The duration of the amaurosis varies largely.
4. The field of vision remains contracted.
5. Central vision usually returns.
6. There is color blindness at first; the color perception is ultimately within the central field.
7. The ophthalmoscopic picture is that of white atrophy.
8. Experiments on dogs show that there is atrophy of the entire optic tract.

9. The same experiments show that the cells of the cuneus are probably not affected.

The only remaining statistics in this class that I shall discuss are the venom of reptiles, mercury, ergot, and the anthelmintics, male fern and pomegranate. It seems certain that in several instances blindness has resulted from the bite of venomous reptiles. Amaral states that this frequently occurs in South America. De Magalhaes³¹ of Rio reports the case of a negro who became totally blind after a snake bite. The poisonous agent is an albuminoid in the secretion of the venom sac. It is said that the poison of the cobra is a cycloplegic when applied to the eyes of fowls.

Staderini³² and Addario found that a 2 per cent. collyrium of toad poison produced anesthesia of the cornea that lasted four of five hours. In this connection I can not refrain from mentioning what is to me very interesting: Dr. Lambert, an American missionary to China, stated in a letter, that when cocain first came out he removed a foreign body from the cornea of a Chinese lady painlessly in the presence of a Chinese physician. The latter expressed no wonder at the result and said that his people had known that agent for 1,000 years, and that it was made from the eye of the toad.

I think mercury can be dismissed in a few words. Amblyopia from the absorption of mercury is beyond a doubt very rare. The only two cases that seem to me to be worthy of consideration are those of Galezowski, who reported an example of optic atrophy, and Square,³³ who reported one of optic neuritis due to the poisoning from this drug.

Ergot presents a much more interesting field. Transitory amblyopia has been attributed to poisoning

from this drug, but the most important rôle that ergot plays in affections of the eye is that of causing cataract. The interest centers in South Germany and Russia, where a great deal of rye bread is eaten. Ignaz Meier,³⁴ in 1857, saw twenty-three cases of cataract in the epidemic of rye poisoning in South Germany. A wet summer produced disease of the rye and the peasants ate bread made from the diseased rye in spite of warnings. Two hundred and eighty-three cases were affected by ergotism. Meyer saw twenty-three cases of cataract the following year among these people, of which fifteen were women and eight men. The form of cataract was the senile form and it progressed slowly. The remaining structures of the eye were healthy. Kortnew³⁵ saw a number of cases in Russia during the epidemic of 1889-90. Two thousand people were affected with ergotism. About two months after the beginning of the epidemic the eye symptoms were noticed. He divides the symptoms into two groups, the intermittent fugacious amblyopia and cataract. It affects both young and old. The cataracts formed slowly, growing from the center toward the periphery. The operation of extraction was successful, except that there was an unusual loss of vitreous.

Male fern has produced amaurosis and amblyopia in several well authenticated cases. One case reported by Eich³⁶ died. In several cases in which the patient survived, optic nerve atrophy resulted with total blindness. Zimmerman³⁷ publishes a case of bilateral optic nerve atrophy from a dose of 10 grams and Fritz³⁸ one of unilateral atrophy with sudden blindness. His case was that of a servant girl of 18, affected with tenia, who took 6 grams of the extract in as many hours. She fell in convulsions and coma and when she recovered was blind in both eyes. After several months her right eye recovered normal vision, but the left remained amaurotic with atrophy of the optic nerve.

Pomegranate can be dismissed with a line. Jacobson records a case in which there was paresis of accommodation and amblyopia from the development of latent hypermetropia.

We come now to Class 2—Those poisons whose amblyopic symptoms are unattended by any retinal or optic nerve lesions. With Wood, I divide these into three subdivisions:

1. Those agents that produce mydriasis as their chief symptom. Among these the most important are the solanaceæ, belladonna, hyoscyamin, daturin, duboisin, etc. Their effect on the pupil is well known; they produce mydriasis and paralysis of the accommodation. I am inclined to place cocain among them, for it certainly dilates the pupil and slightly affects the accommodation. These agents have their most marked effects when introduced as solutions in the conjunctival sac, but they may likewise produce them when introduced in toxic doses into the system. It is to be remembered that atropia is apt to produce glaucoma when used in adults, and that severe toxic general symptoms have frequently been observed to follow the instillation of a solution of duboisin in the eye. I do not believe that cocain has any tendency to produce glaucoma. On the contrary, my experience has taught me that it reduces the tension of the eyeball.

The ptomaines and leucomaines to be found in decomposed or "high" food, affect the eye as the mydriatics, namely, by producing dilatation of the pupil and paresis of the accommodation. Among such

foods may be mentioned uncooked tainted meat, rotten sausage, rotten fish, poisonous fungi and shell fish, mussels in particular. In mussels the poison is found in the liver and is similar to curare in action.

An American physician, says Wood, observed a case of mydriasis and paresis of the accommodation from eating turkey. He assumed that the bird had eaten the berries of the deadly nightshade. It is far more reasonable to assume that the turkey was "high" and the poisoning was due to tyrotoxin. The extrinsic muscles have likewise been paralyzed and ptosis, or drooping of the lid, has been frequently observed. Griensouw³⁹ recites the case of several members of a family who ate raw ham; all had mydriasis and cycloplegia. The ham was fed to mice, which it killed in twenty-four hours.

2. Agents that produce myosis or a contracted pupil. Among these are opium and its preparations, chloral and its hydrate, eserine, pilocarpin, strychnin and nicotine. The effect of opium upon the pupil is well known and is a strong diagnostic sign in poisoning by this drug. Physostigma venenosum or calabar bean with its preparations, and jaborandi and its preparations, which are decided myotics when applied directly to the eye, generally cause mydriasis in systemic intoxication. Eserine and pilocarpin have the effect of decreasing intraocular pressure when applied to the eye, and hence are used in the treatment of glaucoma. By some delicate subjects eserine is not borne, as in such cases it congests the eye, gives supraorbital pain and produces vomiting. For such cases pilocarpin is better, though its effects are more transient and less powerful.

3. Poisons that produce irregular eye symptoms: This list is a long one. Those that are most worthy of notice, it seems to me, are santalin, the anilin dyes, emanation from pitch and coal, naphthalin and the bromid of potash. Santalin, picric acid and amyl nitrite may be grouped as triplets, producing colored vision, generally xanthopsia or yellow vision. There are several theories to account for these visual disturbances. Helmholtz has thought that it is due to the direct action of the drugs on the nervous elements of the retina. Others think it is due to a tingling of the media of the eye, as the urine is colored in such cases. This phenomenon was first observed by Hufeland in 1806. De Martigny⁴⁰ has made some interesting observations on this subject. He found in some cases that the yellow passed into other colors. A dose of .3 grams was followed by xanthopsia, .6 grams caused red vision, which turned into orange and then into yellow. Another patient saw green and still another blue. It seems quite certain that anilin, which is the base of the beautiful dyes of commerce, produces amblyopia, photophobia, muscæ volitantes and headache. The workmen in dye factories often complain of these symptoms. Akin to this is the effect produced upon workmen by the emanations from pitch and coal. The fine powder from these substances fill the pores of the skin, choking the sweat ducts and pass into every cavity of the body. The poisonous emanations are mainly phenol and anilin and the result of their being absorbed into the system is analogous to those of anilin. Naphthalin likewise is a product of coal distillation, and the chief interest that centers round its absorption into the system is the probability of its causing cataract in the human being. Experiments have proved that it produces cataract when fed to rabbits. I refer you to a

paper by H. Magnus⁴¹ for information on this point. Notwithstanding the large doses of bromid of potash taken by epileptics it is significant that but few instances have been recorded in which this drug has produced visual disturbances. Rubel reports a case of a patient who took 235 grains daily. One day he became suddenly blind. Examination showed pallor of both discs and contracted retinal arteries. The bromid was stopped and vision returned.

It is difficult to draw any other than general conclusions on such a broad subject as this. I think, however, the following are permissible:

1. There are certain poisons which when introduced into the human system produce characteristic toxic symptoms in the eye.

2. These poisons are divided into two grand divisions: *a*, those that produce organic changes in the optic nerve and retina; *b*, those that produce no organic change in the optic nerve and retina, in short, those whose effect on the eye is a functional one.

3. The majority of these poisons are found in the list of medicinal remedies.

4. In view of these facts it is obviously important that practitioners of medicine should be intimately acquainted with the toxic effect of these poisons on the eye.

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Experimental Investigations of the Effect of Certain Purgatives in Acolia.—Stadelmann tied and resected part of the ductus choledochus and made a biliary fistula in dogs, thus preventing the passage of any bile into the intestines. Certain purgatives administered then failed to produce any effect, among them podophyllin, podophyllintoxin and scammonium, while others, including calomel, aloes, aloin, gamboge and jalap produced the usual effect.—*Nouv. Remèdes*, December 8.

GONORRHEAL OPHTHALMIA—REPORT OF CASE.

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T. F. S., a strong, robust young man, contracted a typical case of gonorrhea. As he did not regard it with much anxiety, and as it was no unusual thing with him, he began treating himself. On the eighth day of its progress his left eye became inflamed and in three hours, at which time I saw him, his eye was violently inflamed, discharging profusely and very much swollen. He told me his story and I saw that I had a serious case to handle. I decided that heroic treatment was demanded at once. I lost no time, after cleansing the eye, in applying a nitrate of silver solution, 40 grs. to the ounce of water, thoroughly to both upper and lower lids; after allowing it to rest a few moments, cleared off the excess with solution of acid boric 4 per cent. and common salt. I then put him in a recumbent position and applied to closed lids hot solution of mercuric chlorid, 1-2,000, continuously for one hour. I then cleansed eye again with solution boric acid, bandaged it well and ordered him to return at 6 o'clock P. M., it then being 3 P. M. When he returned, to my great surprise, I found very much less discharge, swelling considerably reduced and very little pain. My first thought then was that it was not a case of gonorrheal ophthalmia; but without taking any chances, I continued my treatment as outlined—anti-gonorrheal. I flooded the eye with bichlorid of mercury solution, 1-5,000, instilled a 6 per cent. of cocain, bandaged the eye and ordered him if pain returned or discharge became profuse during the night, to send for me at once. I ordered hot fomentations before bedtime for one hour, consisting of Pond's extract, boric acid and water, and told him to return at 8 o'clock next morning. He showed up on time, greatly improved, with bandage off. He reported following my directions to the letter and said that he went to sleep at 10 o'clock and slept all night. He did not open his eyes until 5:30, when he got up and bathed the eye in the solution used before retiring, the eye having glued together during the night. I applied a solution of zinc, 5 grs. to the ounce, after profusely flooding it with boric acid solution. I saw no further need of silver. He returned at noon when I repeated the morning treatment and at night I did the same thing. At this time there was some ecchymosis in lower lid and considerable in conjunctival membrane. I ordered hot fomentations of salt water and a weak solution to be allowed to enter between the lids. He again showed up at 8 o'clock the next morning, after having had a good night's rest. The eyelids did not adhere the night previous and only a moderate quantity of pus remained in the corners. I continued the previous day's treatment, morning, noon and night. He returned the next day very much improved, with only a slight discoloration about the lids and conjunctiva, and I considered the eye well. He came for a few days for inspection rather than treatment. I had made up my mind by this time that the inflammation was non-gonorrheal and that the urethritis was not of gonorrheal origin. The young man assured me that he knew what he was talking about and pointed to the very moment when he

inoculated his eye. He bathed his eyes as a precautionary measure, but evidently failed to dislodge the virus, as results show. To satisfy myself I had Dr. J. B. Shel mire make a microscopic examination of the urethral discharge, which revealed gonococci in the pus cells in great numbers. I then became convinced that I had dealt with a true case of gonorrheal ophthalmia. Had I had presence of mind I could have had the discharge from the eye examined microscopically, as I afterward did the urethral discharge, and verified my diagnosis; but in my great anxiety my only thought was that of saving the eye. It was not till after danger had passed that I thought of the microscopic examination.

I report this case for three reasons: 1, because of its rapid and most violent onset; 2, for its complete and rapid recovery; 3, because it required only one application, 40 grs. to the ounce, of nitrate of silver to eliminate its characteristic symptoms.

It is not necessary to go into detail and give all the different oculists' treatment; but I think I am safe in saying that the general drift of opinion is in favor of less heroic treatment.

The less heroic treatment does well in children under 3 years and for infants, but in adults and older children we need something heroic—something which by its severity more nearly counteracts the disease. In one case of a little girl, 3 years old, after having used milder treatment for several days with no appreciable good, I applied nitrate of silver, 40 grs. to the ounce at one time which completely put the disease under control. The ulcer on the cornea began to heal at once.

Every oculist who has been so unfortunate as to have a case of gonorrheal ophthalmia to treat, knows what it means; and if I could by the report of this case arm him with more effective means of combating this dreadful disease, I shall feel that I have done good.

There were no bad results in this case, not even the least infiltration of the cornea.

North Texas Building.

INTRACRANIAL ABSCESS.

A paper read before the Wayne County Medical Society, Oct. 15, 1896.

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Recent improvements in surgical technique enable surgeons to open the cranial cavity with much less danger than formerly attended operations of this class. Anesthesia, antisepsis, better instruments and more knowledge of surgical history and news, make the foundation on which this improvement rests. The art of diagnosis keeps pace with the advance in surgical methods. The general forward movement along the whole line of medicine has helped to crowd the cranial cavity with industrious investigators. The bony envelope of the brain is no longer a Chinese wall against research and discovery concerning the function and aberrations of the organs of the mind.

The common cause of abscess, infection, operates on the same principle in the cranial cavity, but under different conditions from those which obtain in other parts of the body. For example, the swelling incident to an infection of the knee-joint occurs in consequence of the yielding character of the joint tissues under the pressure of inflammatory processes. In the

skull, however, infection can not show itself by swelling and tumefaction because of the unyielding character of the skull wall. The different anatomic conditions under which infection and abscess occur, will therefore yield symptom phenomena of divers and varying kinds, but their significance and interpretation will not be the less unvarying and constant. Thus, swelling in the skull will yield the symptom phenomena of brain compression, with an aberration, impairment and loss of function in the part of the brain compressed. Infections commonly proceed along certain channels, for which they seem to manifest a well-defined preference. The lacerated and bruised finger when infected will, in most instances, show that infection by pain, redness and swelling of the lymph channels of the forearm and arm. If abscess results, it will generally be found in the connective tissue lymph spaces of the forearm or arm. If an infection follows an injury to the Eustachian tube or middle ear, it will be quite certain to travel, with pain and swelling, along the lymph spaces adjacent to the lateral or sigmoid sinuses. If abscess succeeds, it accumulates in the mastoid, cranial or aural cavity. The symptoms of this infection will be, 1, a history of injury to some part of the auditory track; 2, pain in the region of the ear or side of the head; 3, impairment or loss of function of some part or parts of the brain, delirium, convulsions, paresis, coma, paralysis. There may or may not be a record of abnormal temperature, but there will surely be found the constitutional symptom of inflammation and of abscess, although the chill, classical in the history of abscess, may not be clearly defined. The degree of primary inflammation may not afford an accurate index of the amount of the brain function impaired. It may not be sufficient to cause much pain, loss of sleep and appetite, and yet produce when choked within the bony walls of the skull, delirium, convulsions, paralysis, coma, death.

Intracranial abscess, in so far as its primary symptoms are concerned, may give rise to the same phenomena as intracranial hemorrhage, effusion or depressed fracture. Certain drugs may also produce those symptoms. They are whisky, opium, gelsemium and other narcotics including those derived from coal tar. The differential diagnosis can generally be made by a careful study of the history of the case. The character of the onset. The certain finding of the infectious entrance in some part of the face, head or neck, with the symptoms of impairment of brain function and the persistence of the symptoms after time has been allowed for the elimination of drugs, will make a quite safe foundation for a diagnosis. I do not mean to dispute the unusual fact that an infection entrance, in brain abscess, in parts of the body remote from the head and neck, may be found. I have found, postmortem, a large abscess of the right frontal lobe of the brain in which the symptoms leading to it followed an injury of the foot, but such remote sources of intracranial infection are not the rule. The particular part of the intracranial contents which is the seat of abscess may vary, and I know of no external sign that is infallible of the location of an intracranial abscess. Abscesses having their origin in throat or ear inflammations may be looked for in the region adjacent to the lateral and sigmoid sinuses, and obstruction of the blood current in those vessels should be looked for. Sometimes it is found as a hard, cord-like mass extending into the internal jugular vein, which can be felt

deep in the neck below the angle of the lower jaw, but this is only sometimes. In other cases the obstruction will cause the blood to dam back and choke the vessels of the conjunctiva and eyelids on the affected side. The ophthalmoscope may reveal the presence of obstructed venous circulation under the circumstances. Other times the abscess may be deeply seated in the brain tissue and not affect directly the membranes or their vessels. Then its presence may be recognized by the impairment of function which follows destruction of brain cells and fibers, but so little is known of the local functions of the brain that no great accuracy can be expected from this source. A patient may have a paralysis or paresis limited to certain sets of muscles of face, arm or leg and in consequence the abscess be looked for in some part of the fissure of Rolando. The motor areas of the cerebral cortex are quite well defined and peripheral feebleness or paralysis can be located with reasonable precision. Likewise, certain sensory areas can be limited. Paths of white fibers leading to these areas may be the seat of inflammation and abscess and then this loss of function will have the same diagnostic and localizing significance common to all neurotic symptoms, which are stated rather crudely as follows: Loss of function or nerve energy in the parts supplied by a nerve indicates that a lesion exists in some one or all of the parts known as the ending, trunk or center of the nerve. Now, when by exclusion we have traced a lesion to the cavity of the skull, we may still be in doubt as to whether it is located in the cortex or white substance. Of course, we know that the wider the field of loss of function, the greater the probability of the inflammation or abscess being located in some of the narrow paths where large numbers of communicating fibers are associated, for example, the internal capsule. And when there is a loss of function in parts supplied by well known cortical areas, we have little trouble in making a differential localizing diagnosis. But suppose, as often occurs, the well known cortical areas and sensory and motor paths are not specifically affected, that the loss of nerve energy as shown by paralysis and coma, is general, where will we look for the products of inflammation? Bearing on the solution of this question which, I think, must be settled by a careful and discriminating interpretation of the history of all the phenomena as they have developed from hour to hour, we must not forget that a small inflammatory lesion in the cortex or any part of the brain may impair the function of the whole brain or of limited areas of it, much more extensive than the anatomic boundaries of the lesion. Particularly is this true when the lesion involves the blood supply to parts of the brain. The physiologic relation of blood and brain to nerve energy can be compared to a sponge and water. Compress or otherwise obstruct the flow of blood through the brain or any of its parts, and you drive the nerve energy out of the brain as the water is driven from a wet sponge when it is squeezed in the hand. We have already spoken of inflammatory lesions involving the cerebral sinuses. The obstructive phenomena which we would naturally expect to follow the development of a large inflammatory thrombus in the lateral and sigmoid sinus, does not commonly occur for the reason that the outlet for blood through the jugular foramen on the opposite side of the skull is competent to empty the skull of venous blood as fast as it is produced, but usually, however, it is slow in adapting itself to the increased

work, and in consequence the quality of nerve energy developed from the brain cells is more or less impaired. Hence the varying degrees of delirium, mania, paresis, convulsions, coma, which sometimes accompany a case of intracranial abscess, and a few of the difficulties in bringing it within reasonable reach of a surgical operation. I think it a sound surgical procedure to open the skull when we are satisfied that pus or other inflammatory products are pent up in its cavity, and no one would think of disputing it if I could with precision say where those products could be found, so that an operation would surely be followed by an immediate discharge of them. This, however, in the nature of things can not be. But the opening in the skull can be used to search for the abscess or other products of inflammation. Often abscesses are located between the dura mater and the brain; then the trephine, if applied directly over the place where these morbid fluids are located, will permit their immediate evacuation.

Trephining is an exploratory operation generally, although the simple removal of a piece of the skull wall may give vent to pent-up fluids and change the character of blood and lymph circulation so that curative process may commence. Sometimes in the search for the inflammatory nidus after opening the skull, a probe pushed beneath the bone in the direction of the supposed location of the inflammation, will find it and establish a channel for the discharge. Healing of the wound and the cure of the patient, however, will generally be better accomplished by removing a strip of bone over the inflamed and suppurating area, sufficient to secure good drainage. For this the trephine should be supplemented by the use of some of the bone-cutting forceps or rongeurs. One devised by Dr. De Vilbiss of Toledo, Ohio, is well adapted for the purpose. Chisel and mallet and drills are often used, but I do not like the idea of pounding the skull with a mallet, consequently always use a small trephine, which removes a button of bone three-fourths of an inch in diameter. Through the opening made with it, the point of the finger can be introduced and the membranes palpated. The same valuable information as regards pulsation, density, resistance and temperature can be learned about the brain in this way that can be learned by the sense of touch applied to other parts of the body. If the membranes bulge into the opening we know there is excess of pressure; if there is absence of pulsation we know that circulation has, in part at least, ceased beneath our finger. The dura mater should be incised when there is abnormal pressure beneath it, and always with great caution against infection. If epidural inflammatory areas are discovered, the dura mater should not be opened lest the arachnoid space be exposed to infection. At first the opening in the dura mater should be made with a fine needle, preferably a hypodermic needle, which can be used to exhaust some of the fluid for examination. If found purulent, it should be at once evacuated through an opening in the dura mater large enough to hold a short drainage tube about the size of a lead pencil. One end of the tube should be inserted beneath the dura and the bone far enough to hold, in the direction from which the pus appears to come. The other end of the tube should barely project from the scalp so that it can be easily covered and protected by the dressings. Unless the cavity is large, the writer does not find it necessary to resort to irrigation. In his

experience, as a rule, a daily change of gauze absorbent dressings has sufficed to keep the wound clean and promote healing. In a case of abscess of the frontal left lobe following a compound fracture, and in which the abscess was recognized and located by the occurrence of convulsions followed by coma, I operated at the Emergency Hospital; used the trephine at the lower angle of the fracture, broke through the inflamed and lymph-covered membranes with point of scissors and penetrated and evacuated an abscess which was apparently in the white substance, a full half ounce of pus discharged; a gauze drain was used and removed daily, all untoward symptoms gradually disappeared and the patient was cured well and sound. A man aged 24, whom I trephined for epilepsy of almost daily occurrence, was doing well in the Emergency Hospital on the tenth day after the operation. The scalp had healed. Because of hemianopsia preceding the epilepsy in the aura, I trephined on the left of the torcular Herophili and removed a strip of bone three-fourths of an inch wide and two inches long, upward obliquely at an angle of 45 degrees to the left lateral sinus. I also opened the dura and discharged some fluid. A few days after reaching his home the patient became stupid; when roused said his head ached, lost his appetite, rolled his eyes up, became very restless and muttered in delirium. His temperature rose to 104 degrees F. His pulse and breathing were very irregular, alternately fast and slow. I suspected abscess. Without anesthetic I reopened the wound, scooped out the new tissue in the bone and penetrated the membranes. The cortex did not pulsate. It felt hot and resistant. An exploring needle was pushed in the direction of greatest resistance and penetrated an abscess cavity at the depth of one-half inch. Two ounces, approximately, of pus discharged, after pushing a dressing forceps through the cortex alongside of the exploring needle. A drainage tube one and one-half inches long was introduced. The outer end of it was sutured in the scalp when the flap was replaced. A sterilized gauze dressing was applied daily. The patient recovered. His epilepsy did not recur until four months after this operation and then in much milder form. No water or other fluid was used to irrigate the abscess cavity.

I have mentioned these cases because they illustrate the existence of abscess of the white substance. In neither case was there any paralysis nor paresis of a localizing character. I found the abscess by exploring for it. The intracranial abscesses which follow nose, throat or ear infection is much more frequent and is almost always meningeal. It should be operated early to avoid general meningitis. The opening for the purpose should be made through the skull near the base of the mastoid. Care should be taken when operating early, to not saw into the lateral sinus. I have never known serious hemorrhage from the sinus when wounded in the course of an operation for inflammation of the parts adjacent to it, but I believe in taking every precaution compatible with removal of a button of bone from contact with the sinus. With ordinary skill in operating and selection of cases in which general infection of the subarachnoid space has not occurred, one may reasonably expect most of the cases of intracranial abscess to recover.

Let us have a Department of Public Health!

SOCIOLOGIC REFORMS.

Opening address, read before the State Conference of Charities and Corrections at Springfield, Nov., 12, 1896.

BY ARTHUR R. REYNOLDS, M.D.

PRESIDENT OF THE BOARD OF STATE COMMISSIONERS OF PUBLIC CHARITIES OF ILLINOIS.

The Board of State Commissioners of Public Charities were moved to call this conference, feeling that there was a growing demand for knowledge of our institutions, and an increasing interest in the care of dependent persons. There seems, also, to be an awakening among charitably inclined people, as to how best to help those who can not help themselves. It is true, that our board publishes every two years a report of their doings, so also do the larger institutions, but they are read by comparatively few persons.

The amount of money paid out directly by the State, to support persons unfitted by nature or disease to support themselves, is very large, but when we come to consider the amount expended by the several counties and municipalities, and the sums subscribed, through churches and other public bodies of organized charity, together with the amount expended in private work, of the same kind, the total amounts to enormous figures.

It is to the credit of the tax-payers that there is never any complaint against paying a liberal allowance for the care of the sick and needy, and however heavy the total burden of taxes may be, there is no one that would have it lightened, if the retrenchment would bear upon the scanty portion of the poor.

Notwithstanding all the treasure that has been lavished upon the unfortunate, there seems to be an increasing demand that it should go on and on. There are many indications to warrant the belief that the increase of dependents is in greater proportion than the increase of population. In spite of the efforts made toward relief, the increase of those who need care grows faster than the increase of the means to care for them. Some even go so far as to say the race is in danger of being overwhelmed, and fear for the future of the State and society.

As we ponder on the subject, the conviction grows that there is something wrong in our methods of dealing with the question. We ask ourselves whether or not it be wise to continue forever harvesting this crop of human tares; if it would not be wiser to follow the example of the prudent husbandman, and prevent the unprofitable seed from taking root; if it would not be wiser still to expend more time and toil preparing the soil for the sowing, that there may be economy in the gleaning.

We can not escape the fact that a large number of criminals and those with a susceptibility to mental and physical disease, and even the paupers, are foredoomed to their fate before they are born, and should not have been born at all.

It may not be practicable for an officer of the State to sit in judgment upon those who would marry, and properly foretell the exact physical and mental mold of the progeny. The State, however, can and should be able to do as much for the breeding of men and women as is done for the breeding of the beasts of the field. The passage of a just law for the regulation of marriage, with skilled officers to enforce it, would call the attention of the public to the question most forcibly. Once it becomes a matter of serious thought and study, by the people, the cure will be near at hand. There are none but would recoil from the thought of

begetting offspring that would be lacking in any respect, if the question were brought home by a law that required them to pass muster before competent authority. While I firmly believe in proper selection for marriage I do not think this is the whole evil. More criminals, paupers and dependents generally are made after they are born than before. The children of vicious parents can be trained in the ways of righteousness if the training begin at the cradle, and the child of the good and wise can be spoiled if trained by vicious and indolent hands. We need more kindergartens and social settlements for the babies in the congested tenement districts of cities, before we add more universities for adults. If we can for one generation give to all children the proper environment and judicious training, we will have less need for penitentiaries, jails, bridewells, police stations and criminal courts. Indeed, such training is even a most rational cure for the withering blight of inebriety, and the endless train of degenerating evils, that follows in its wake.

If the proper training of children is of such moment, the greatest protection must be thrown around the sanctity of the home, for it is in the home and only in the home that the very best training can be had. The home, to be sacred, must be segregated, for indiscriminate crowding and association develops the evil propensities of a child rather than the good. Nowhere can the homes of the poorer people be segregated so well as in the country. Orphan asylums may be necessary and the right thing in their way for the present, but they are at best but a makeshift for the real remedy. The children of today will be the home builders of tomorrow. A child raised in a public institution learns nothing of this art, and will not take kindly to it after leaving the institution.

If the money spent in the support of orphan asylums were used to find individual permanent homes among the farmers for dependent children, in the great majority of cases a robust and normal adult would be the result. The direct saving of money, if this were the rule, must be great, and the gain to the State by improving the chances of the descendants is beyond estimate.

In our day the almighty dollar is the magnet that draws all mankind. To possess it is a passion with almost all kinds and conditions of men. It holds a despot's sway in the heart of every man, whether he be high or low in society's scale. It is a powerful entity that must be reckoned with in sociological science. So strongly developed is the desire for money, and the power it brings, and so keen is the struggle to obtain it, that rest, food, raiment, honor and even life itself are sacrificed on its altar.

Men crowd into a decade the labor that should be spread over the three score years and ten. Men and women suffering constantly from overwork and nervous strain can not reasonably be expected to beget children that are robust and normal, yet the world marvels that so few of the great have offspring that can fill the parent's sphere in the world. We are too apt to forget the fact that our men with the greatest minds and the strongest bodies have been reared almost wholly in the country.

The drift of population of late years has been toward the cities and away from the country. Efforts should be made to stop it, and transplant the surplus population of cities on the broad acres. But if we are to move the surplus out from the cities to the

country, our wise men must, if they can, make the dollar as easy to obtain in the country, as it is in the city, for the possession of money is the goal that all are striving to reach. Those economic features that best foster the profit of the farm, then, must play an important part in the welfare of the race, and should be carefully considered by our statesmen, as well as by students of sociology.

The State of Illinois has established, under supervision of the Board of State Commissioners of Public Charities, fourteen institutions, caring for more than 12,500 persons annually at a cost of about \$133 per year each. Four of these are hospitals for the insane, affording care and treatment to 4,600 males and 3,000 females. Two other hospitals for the insane are in course of construction, one at Rock Island to accommodate 600, and one at Peoria to accommodate 200.

There are still about 1,000 insane in poorhouses, and in jails of the various counties, while Cook County maintains an insane hospital for the accommodation of about 1,300; there is also an asylum for insane criminals with 125 inmates; the Eye and Ear Infirmary with about 150 patients; the Industrial Home for the Blind, with about 75 inmates, who are furnished an opportunity to earn a portion of their living at least, and are freed from the feeling of utter dependence. There is a home for feeble minded children, with over 600 inmates, and as many more on the outside who should have the care of a similar home. The Soldiers and Sailors Home with 1,300 inmates; the Soldiers' Orphans Home, with 400 and over; the Home for Soldiers' widows with 20 inmates; the school for the blind, with 150 pupils; the school for the deaf and dumb, with over 300 pupils; the home for juvenile female offenders, with 75 inmates.

The management of all the State's institutions in the humane, scientific and financial aspect, is well abreast of the times. In addition to the supervision of the State institutions mentioned, the Commissioners of Public Charities are commanded to visit "each of the poor houses, or other places where the insane may be confined at least once each year." There are 102 counties in the State, each of which has a poorhouse. To do all this work and do it well, requires almost the entire time of all five commissioners. The State asks that this service be rendered without salary, the State only paying the actual cash outlay made.

There is a pressing need for a Home for Epileptics, and this conference would do well to ask our Legislators to provide it. To my mind, the greatest need of all, is another well equipped home, capable of receiving all the feeble minded children in the State, where those capable of receiving instruction may be made in some degree useful, and where the others can have ample custodial care, and where all, as they grow older, can be so segregated that they will not leave any descendants to inherit the blight that makes them a reproach to our civilization.

I venture to suggest the propriety of so enlarging the scope of our State Board of Health, as will permit it to do at least as much for the development of man as is now being done for the development of dumb brutes. The Board of Health will not have reached its limit in sanitation till it will have prevented human beings from being born with a susceptibility that invites the attack of the deadly disease germs. The first necessity of human beings is good health. It is not enough that a State Board of Health should

point out the way to the individual, so he can avoid contact with a germ that may eat him up. It could, if it would, point out the way to develop a being so vigorous and so strong, that the dreadful germ will itself be destroyed in the contest. Perhaps, too, our higher educational institutions might enlarge their usefulness if they would add to their curriculum of study a year at the forge, the lathe, the work-bench, the loom, or even a year on a farm doing the routine duty of the hired man, and working from sun-up till the darkness drives him from the field. A thorough grounding in the duties of the farm is to learn the foundation of all industries. Indeed, I pity the man who knows nothing of rural life; he is seriously handicapped, no matter into what sphere his fate may lead him. It is on the farm that a young man can better than anywhere develop a strong body, and a robust and normal intellect. It is there that a ruggedness of character can best be developed, that will later on make him spurn an evening at the club over wine and tobacco, where ribald jest is mistaken for humor. It will make him shun such perverted pastimes that too often lead to a degeneracy of his descendants.

Perhaps, too, such institutions of learning might with profit teach in a more practical way the physiology of man, to the end that none of their graduates would ever append their signatures to a document certifying to the wonderful virtues of Dr. Balsam's liniment. It is but fair that they should learn enough on the subject to drive out of them any superstitious notions they may have upon the cause and treatment of disease, for, "the proper study of mankind is man."

In conclusion, I beg to suggest the need of this conference, making a permanent organization and meeting at least annually to study the great problems that are embraced in the broad field before us. I can not think that the philanthropic spirit—the practical logic of the students of social law—the public spirit of the great commonwealth of Illinois, will be behind other States in this respect. She will take her place in this, as she has in so many other things, having no competitors but leading all, in the fullness of her destiny.

WHO WAS THE FIRST TO ILLUMINATE THE SIGMOID CAVITY?

Read in the Section on Surgery and Anatomy, at the Forty-seventh Annual Meeting of the American Medical Association held at Atlanta, Ga., May 5-8, 1896.

BY J. G. CARPENTER, M.D.

STANFORD, KY.

At Winchester, Ky., June, 1886, the author read a paper before the Kentucky State Medical Society on ulceration of the sigmoid cavity—Inversion of Trunk, Electric and Reflected Light in Diagnosis and Treatment, which was published in the *American Practitioner and News*, Vol. 11. New Series, No. 17, August 21, 1886, at Louisville, Ky.

On November 30, 1885, the writer visited J— Mc, at Crab Orchard, Ky., who had had an attack of acute dysentery in August, 1885, and had made an incomplete recovery, and had been treated by his physician for chronic dysentery from September 18 to November of that year. Age of patient was 20 years, good family history, former health good, habits and morals good, and the following general and local conditions existed, viz.:

The patient was pale, weak and anemic; the tongue had a yellowish-white coat; the bowels were tympan-

itic and painful in the left iliac region, especially on pressure. Dysentery had been present since August, the stools averaging from three to six per day, and containing a little muco-pus with some blood. Each stool was preceded by pain in the tract of the sigmoid flexure. The pulse was ninety-six; temperature and respiration normal. Digital and ocular examination found the anus and rectum in a normal condition, though the latter contained an abundance of scybale, broken-down pus, epithelium and blood. A rectal injection of warm salt and water, as hot as could be borne, half a gallon in quantity, was given, the trunk being inverted at an angle of from seventy to eighty degrees with the bed. The object of this procedure was to wash out the descending colon, sigmoid flexure and rectum. The injection was retained for twenty minutes, when the patient resumed the sitting posture, and passed it. The bowel having been cleansed, the patient was placed on his left side and the trunk again inverted to an angle of seventy to eighty degrees, whereupon the abdominal and pelvic contents gravitated toward the diaphragm.

Sims' speculum was now inserted into the anus, which being dilated and the nates widely separated, the patient was directed to make prolonged expirations. Under these maneuvers the rectum became inflated, the distension being so great as to temporarily efface the folds of its mucous lining. An electric lamp was now introduced into the rectum, and an ulcer, one inch by two, was seen in the sigmoid flexure, ten inches by measurement from the anus. This was swabbed with absorbent cotton, and to it nitrate of silver, grs. xl to water 3j, was applied. During the next six days, injections of water, as hot as could be borne, were given night and morning, with the trunk inverted but inclined toward the left side. These were for cleansing and soothing effects. In each instance after the first injection had passed, another of tannin, grs. x, laudanum, gtt. xx, was administered for its astringent and anodyne effects, and to give rest to the ulcerated bowel. These injections were given invariably with the trunk inverted. Applications of nitrate of silver, grs. lx to water 3j, were made every six or eight days, the injections being continued during the intervals until restoration was complete.

All subsequent ocular examinations were made with reflected light from the head mirror of a laryngoscope, sometimes by the sun, sometimes by the coal-oil lamp, both of which illuminated the ulcerated surface and lining of sigmoid flexure and rectum sufficiently for all practical purposes.

The constitutional treatment consisted of liquid nutritious food, rest in a recumbent posture, and massage night and morning. Mr. Allingham speaks of making rectal examinations with the hips elevated, the trunk in the prone position, and by aid of reflected light from the head mirror of a laryngoscope; but neither Erichsen, Bryant, Holmes, Ashhurst, nor Ashton or any other writer mention inversion of the trunk at an angle of seventy or eighty degrees, and the use of the electric lamp for exploration of the rectum and sigmoid flexure; and an entirely different posture to Dr. Sims' and original with the writer, and should be called "Carpenter's Posture or Method." Mr. Bryant, however, states (Surgery, p. 566) that Mr. Allingham advises the prone position with the hips well elevated upon hard pillows to such an inclination that the intestines will

gravitate toward the diaphragm, so that when expiration takes place the rectum will become patulous, and the surgeon can see distinctly as far as the sigmoid flexure. This mode of examination, he informs us, was suggested by Dr. Marion Sims' "Diseases of the Rectum, 1882."

I was not aware of the fact that Dr. Sims had resorted to this mode of examination until my patient had recovered, when I found the above item in a search of a literature of the various methods of rectal examinations. But it should be noted that, in addition to reflected light, I used the electric light. I have employed this means of illumination in oral, throat, nasal, aural, and rectal examinations with such entire satisfaction as to convince me that no other light can surpass it. Sunlight reflected is to be accorded the second place in the order of excellence.

In obscure cases of diseases of the rectum and sigmoid flexure, inversion of the trunk seventy to eighty degrees, dilatation of the anus with Sims' speculum, inflation of the bowels and electric or reflected light (the former is preferable), are indispensable to a thorough ocular examination and diagnosis.

When the ulcer is situated in the descending colon, a rubber tube can be inserted into the bowel through the anus, to the distance of one or more feet, and a medicated injection passed through it to the diseased surface. In such cases I have used a rubber tube, eighteen inches long, with good results. By inversion of the trunk seventy or eighty degrees, the pelvic and abdominal contents gravitate toward the diaphragm; a vacuum is formed in the rectum and sigmoid which become inflated with air under forced expiration; the mucous folds are effaced, and the bowel has almost the appearance of a straight tube; on inspiration the bowel collapses and presents a curved tube, the mucous folds resuming their normal position.

The upper end of the rectum is much smaller than any other part of it, and presents a cavity closed from the sigmoid flexure by virtue of the fact that the circular muscular fibers of the latter act as a sphincter, except during forced expiration and defecation; at such time the rectal cavity and lower part of the cavity of the sigmoid flexure seem one.

Gray's Anatomy, page 806, states that the sigmoid flexure is the narrowest part of the colon. It is situated in the left iliac fossa, commencing at the termination of the descending colon opposite the crest of the ilium, and ending in the rectum opposite the left sacro-iliac symphysis; the distance from crest to the symphysis is three or four inches on the skeleton. The rectum is the terminal part of the large intestine, and extends from the sigmoid flexure to the anus; it varies in length from six to eight inches, and has received its name from being less flexuous than any other part of the intestinal canal. It commences opposite the left sacro-iliac symphysis, passes obliquely downward from left to right to the middle of the sacrum, forming a gentle curve to the right side; it then descends in front of the lower part of the sacrum and coccyx, presenting a curve with its concavity forward, and near the extremity of the latter bone inclines backward to terminate at the anus. The rectum is cylindrical, not sacculated like the rest of the large intestine; it is narrower at its upper part than the sigmoid flexure, gradually increases in size as it descends, and immediately above the anus presents considerable dilatation. It is capable of acquir-

ing enormous size; when distended it is funnel-shaped.

The bill of Sims' speculum is two to four inches long, convex on the outer, concave on the inner surface; the lower third of the rectum is one to one and a half inches long; after passing forward in the manner of the middle third, it passes backward to the anus; it is therefore easy to see if the sphincter ani is dilated or weak and dilatable, how with the speculum the anus and the lower part of the rectum can be re-traced posteriorly, making the posterior wall comparatively straight; then a blunt sound or applicator (the bladder being empty) may be passed along the anterior wall of the rectum, pressing it forward, or by inflation on expiration, thus removing the convexity of its posterior surface, which naturally, or during normal respiration, fits into the concavity of the anterior surface of the posterior rectal wall, and making the anterior or recto-vesical wall straight; still holding this wall forward, it being quite mobile, and, holding it also out of the way with the recto-vesical wall at the same time, light is readily reflected into the rectal and sigmoid cavities. "The sigmoid flexure has great mobility; with the hand introduced into the bowel a point above the umbilicus has been reached." In the discussion of the case of ulceration of the sigmoid flexure reported by me at Winchester, Ky., Dr. Pinckney Thompson "thought the claims of the reporter almost impossible," viz., that he could see the sigmoid flexure or pass a tube or bougie beyond this point. Dr. David Yandell thought it impossible, Drs. Wathen and Wm. Bailey thought it possible and the procedure feasible, and that Dr. Carpenter had illumined and seen into the sigmoid cavity. Mr. Wales, in *Gaillard's Medical Journal*, p. 385, Vol. xxxii, No. 4, April, 1884, states that O'Bierne, Rilliet, Cadge, and Simon, concluded that a bougie could not pass into the descending colon. Wachmuth, on the other hand, claims to have reached a depth of 166 to 195 centimeters, or five feet five inches, to six feet five inches. Storer reported cases in which he believed he had reached the cecum, after five feet (151 centimeters) of a bougie had passed into the anus.

Mr. Wales further states: "I have rarely failed to pass it through the sigmoid flexure to near the termination of the descending colon, and on the cadaver I have demonstrated the practicability of penetrating beyond this point; the difficulty arises from the meso-colon fastening the lower end of the descending colon almost immovably in the lumbar region, while the sigmoid flexure from this point curves sharply to the right before plunging into the pelvis. When the bougie attains a depth of forty centimeters its point can be felt in the neighborhood of the umbilicus, especially if the flexure, as sometimes happens, is unusually long and mobile, far away from the locality where the flexure merges into the descending colon. The bougie has, in fact, stretched the sigmoid curve upward and to the right, thus rendering the angle it makes with the colon altogether sharper and quite impassable. In order to arrive at this angle with the bougie, it is necessary to depress its point into the left lumbar region by one hand externally to the abdomen, while using the other hand to propel the instrument." Dr. George Hunn, of Junction City, Ky., had a patient, a boy, with intra-pelvic tumor. The latter pressed on the sigmoid flexure, making it impossible for the patient to pass a stool, or even gas,

without passing a hollow tube into the colon daily to give temporary relief. Injections were given through this tube, and all gases, liquids and feces escaped through it. The tube on its distal end, or head, had the form of a snake's head, was slightly flexible, and curved so as to readily take the direction of the descending, transverse and ascending colon, after passing the sigmoid flexure; it was three feet six inches long and half an inch in caliber.

Dr. Hunn continued this treatment daily for many weeks, the colon and sigmoid flexure were greatly distended, one or more times the normal caliber of each. The tube passed easily and could be felt in different parts of the colon, even to the cecum, by the hand on external palpation. The patient finally died of exhaustion. Ocular examination of the cavities of the rectum and sigmoid flexures, though one is expert in handling instruments and focusing reflected light on the parts to be seen, is no easy feat to accomplish. The subject to be examined should be slender and lean or emaciated, and willing to bear some slight pain and discomfort in the accomplishment of inspection; the sphincter ani should be previously dilated or relaxed and dilatable, as was the case with my patient. If sunlight is reflected into the rectum the head of the patient should be toward the sun, if gas or coal oil light be employed it should be to one side—the left is preferable. The trunk must be inclined to the left side and inverted to an angle of 70 or 80 degrees and the thighs flexed; both should be supported on hard pillows. The speculum (Sims') is introduced into the anus and rectum, retracting the former, the lower and about half of the middle third of the latter, with the coccyx. The nates must also be retracted. The anterior rectal wall, or retrovesical wall, and anterior wall of sigmoid flexure are to be pressed forward by the blunt-pointed sound or applicator, or by inflation of air, out of the way, the retraction of the anus and rectum pressing the anterior rectal wall and anterior wall of the sigmoid flexure forward. The reflection of light or use of the electric lamp introduced within the bowel must be done simultaneously with forced and prolonged expiration. Mr. Mc. was examined in all ten times by this method; the last examination was on April 1, 1886. After my return from Winchester, Ky. (Kentucky State Medical Society) the patient was again examined. Neither sunlight nor electric was available this time, and lamplight had to be reflected into the bowel. The afternoon was hot, and the room had to be darkened, which increased the heat. The patient was much stronger and fleshier than on previous examinations. The sphincter ani was also stronger and more difficult to retract. Mr. Mc. complained greatly of heat, pain in anus, difficulty in breathing, and had profuse epistaxis as well as free diaphoresis. This inverted position of trunk in persons who are old or have atheromatous blood vessels, diseased lungs or heart, might lead to disastrous consequences. The examination was not completed and no more will be made in this way during the hot weather. Frequent examinations of the above reported case justify the following statements: 1. The function of the sigmoid flexure is a receptacle for the feces as they pass from the descending colon, being closed at its lower end by circular muscular fibers separating the sigmoid cavity from the rectum. 2. The shape of the sigmoid flexure lessens or breaks the force of gravity in the feces downward; if the bowel at this point was a straight

tube the intestinal contents would descend at once to the anus and cause continual inclination to defecate in the sitting or erect position. 3. When the sigmoid flexure becomes filled normal reflex action by the spinal nerves is produced, causing contraction of the circular muscular fibers and retraction of the longitudinal muscular fibers, by which the length and lumen of the bowel are made less above; the circular muscular fibers of the lower end of the sigmoid flexure and those of the rectum, the sphincter ani included, relax, and with the volition of the patient defecation is accomplished, the lungs being inflated, and the diaphragm and abdominal muscles contracted, thus lessening the contents of the abdominal cavity. 4. Physiologically the rectum is a closed and empty cavity (except during forced expiration and defecation), and separated from the sigmoid cavity above by contraction of the circular muscular fibers of the latter at its lower end. 5. The rectum has the following mucous folds, viz.: The longitudinal fold at the lower part of the bowel, and Houston's folds, each being a half inch wide and semilunar in shape, generally three or four, sometimes only two. One is situated on the right side of rectum near its upper end; one on the left side lower down. The anterior and largest one on the anterior rectal wall, opposite the base of the bladder, the posterior fold on the back wall of the rectum an inch from the anus. 6. These folds, with the circular muscular fibers of which the sphincter ani is composed, together with the levator ani and coccygeus muscles, support or act as a pillar to the sigmoid flexure when it is filled with fecal matter. 7. When defecation is postponed, though the desire is present and urgent, and feces have passed into the rectum, the latter by contraction of its circular and longitudinal muscular fibers (the mucous folds acting as valves or elevators) returns the feces to the sigmoid cavity. 8. After the desire to defecate is passed, the rectum is found to be empty. 9. But, should defecation be habitually postponed from day to day, or two or three times a week, though demand is urgent, the bowel gets habitually distended after a time, fails to contract or retract, and the rectum then, instead of being physiologically empty, becomes pathologically distended and relaxed. 10. Constipation or diarrhea would then cause the same relaxation of the involuntary muscular fibers. 11. Distension of the bladder causes its posterior or recto-vesical wall to project far into the concavity of the sacrum and rectum. 12. When the suprapubic operation of lithotomy is done, the rectum is filled with sponges to push the floor of the bladder (recto-vesical wall) up, or raise the bladder upward and forward, thereby causing the distended viscus to rise high above the pelvis, drawing the peritoneum out of the way and increasing the space for the suprapubic incision. Both of the latter conditions prove the ease with which the anterior wall of the rectum can be moved and held out of the way in ocular inspection of the bowel.

We want to deal fairly and justly with Dr. Kelly, but are at a loss to know why he should have remained silent eleven years on the knee-chest posture (Sims) and never published anything, though claiming to have done work in this line eleven years ago. For sake of argument; allow that Dr. Kelly was using reflected light in the rectum, eleven years ago, still Dr. Sims has the priority of one or more years and is the originator of the knee chest posture, and rectal illumination with reflected light. The writer's or Carpenter's

position of examination and illumination of the rectum and sigmoid cavity is new and entirely original with him; worked out on a new and independent line of thought and originality, peculiar to himself, different in position of patient and different light used, viz.: electric and sunlight reflected from head mirror; Sims' nor Kelly mentions electric or sunlight, and in 1882-3-4 electric light was not used for diagnosis in medical and surgical practice.

From Nov. 30, 1885 to April 1, 1886, the rectum and sigmoid cavity were illumined and seen into ten times by the writer in —, 1896, the writer in consultation with Drs. Ramsey and Caldwell, of London, Ky., illumined the rectum and sigmoid cavity; patient Mr. Y. in the Carpenter posture with entire satisfaction to himself; Drs. Ramsey and Caldwell saw twelve inches and measured fourteen inches into sigmoid; instruments used every time in the Carpenter posture are Sims' speculum, a sponge holder with long handle and long wire applicator, head mirror and sunlight, electric light or coal-oil lamp, position easy and simple, no harness used, instruments few, plan original and feasible.

Prof. Howard Kelly states in *Annals of Surgery*, April 1895: "For the past eleven years I have been in the habit of examining the rectum by means of a speculum and reflected light with patient in the knee and chest posture." This same method was used by Dr. Sims in 1882, and confirmed by Messrs. Allingham and Bryant, and said position was original with Dr. J. Marion Sims and not Dr. Howard Kelly, for Dr. Kelly's first publication was a preliminary one, was in the Johns Hopkins Hospital *Bulletin*, December, 1894. We learned that Dr. Kelly did not publish anything until twelve years after Dr. Sims had published the knee-chest posture for rectal examination, and nothing is said by either gentlemen of having illumined and seen into the sigmoid cavity, but to the sigmoid cavity by Dr. Marion Sims; the writer wrote Prof. Howard Kelly for his first article on rectal illuminations, and in reply received his article published April, 1895, *Annals of Surgery*.

In the *Annals of Surgery*, 1895, Dr. Kelly titles his paper "A new method of examination and treatment of diseases of the rectum and sigmoid flexure," but really this was not a new method, for Dr. Simms suggested it in 1882, and the writer, Dr. Carpenter, demonstrated his method, and which was entirely new and original with himself, Nov. 30, 1885, read before the Kentucky State Medical Society in June, 1886, and published in the *American Practitioner and News* in August, 1886; nine and ten years respectively before Dr. Kelly recorded in print his or the Marion Sims posture.

LETTERS TO DR. J. G. CARPENTER:

BALTIMORE, May 22, 1895.

Dear Dr. Carpenter:—I have read your article with great pleasure, and wish I could meet you personally, and talk over the many things which interest us in common. I was particularly interested to see the way in which you diagnosed and treated your case of rectal ulcer. It fully bears out all you say about originality and genius of men who are thrown on their own resources.

Sincerely yours,

HOWARD A. KELLY.

Dr. Kelly has misquoted from my letter. I wrote him of "Ulcer in Sigmoid Cavity;" neither of my patients had "rectal ulcer." It is unfortunate for Dr. Kelly and myself both that he should have substituted "rectal ulcer" for sigmoid ulcer, as some reader might think I had written him of the former, instead

of the latter, and might think Dr. Kelly was first to see into the sigmoid cavity, instead of the writer.

BALTIMORE, June 13, 1895.

Dear Dr. Carpenter:—It will give me pleasure to refer to your original work in the field of rectal examination and treatment the next time I write about the subject. I think we will have to share the discovery together, as, if you will notice the first line in my article, I stated that I have been using the method of examination for eleven years past. It is clear that we, both of us, independently of each other and about the same time, arrived at a very important means of diagnosis and treatment in an obscure class of diseases.

Sincerely yours, HOWARD A. KELLY.

In Dr. Kelly's second letter, he again misquotes and refers to my "original work in the field of rectal examination and treatment," when he should have stated "original work in the field of sigmoid examination and treatment."

The writer can not see why Dr. Kelly should want to share the discovery with him (Dr. Carpenter), when the latter published his discovery more than eleven years ago, and Dr. Kelly claims to have done this about eleven years ago, but did not announce his until December, 1894, *Johns Hopkins Hospital Bulletin*, and April, 1895. Why he should have kept his light under a bushel for eleven years is certainly a mystery to the profession. Furthermore, what Dr. Kelly claims, belongs to J. Marion Sims of New York, 1882, who suggested examination of the rectum in the knee-chest posture, with reflected light. Only the guy-posts, the hobbing bandage, kicking straps are original with Dr. Kelly.

We are surprised that he has not added a surcingle with an over-check, or martingales, to complete the outfit of surgical harness, all of which are entirely unnecessary in the Sims or Carpenter posture.

It is very *clear* that Dr. J. Marion Sims suggested rectal illumination and the knee-chest posture in 1882. It is also *clear* that Dr. Carpenter made his discovery Nov. 30, 1885, independent of Drs. Sims and Kelly, before he had read Allingham's work on diseases of rectum, or Bryant's Surgery. Again, it is *clear* that Dr. Carpenter did not know that such a man lived by the name of Dr. Howard Kelly, until 1887 (June). But it is not *clear* that Dr. Howard Kelly was in the habit of examining the rectum by means of a speculum, with patient in the knee-chest posture with reflected light. This is Sims', not Kelly's originality, and it is clear that Dr. Carpenter did "arrive at a very important means of diagnosing and treatment in an obscure class of cases." If Dr. Kelly did, he has not proven it, and has only made an assertion which yet remains to be proven. Dr. Kelly graduated in 1882, and doubtless was not practicing rectal specialism before he graduated.

CERTIFICATES.

I, Joseph McClure, do hereby certify that on Nov. 30, 1885, I was inverted on my head and left shoulder, hips elevated, by Dr. J. G. Carpenter and his assistants of Stanford, Ky., who with the aid of the electric light and head mirror, was enabled to illuminate the bowel, and see an ulcer located in the sigmoid cavity ten inches from the anus, and treated the same; and that these examinations and illuminations of sigmoid cavity, ocular inspection, and applications were made to the ulcer with a long applicator, and that coal oil light and sun light were also used for illuminations at different times.

April 28, 1896.

JOSEPH MCCLURE.

Witness: J. H. Hutchings.

To Whom it May Concern:—This is to certify that I was present along with Dr. J. G. Carpenter of Stanford, Ky., examined Mr. Telfred Yaden: and that we were enabled to see into sigmoid cavity twelve inches, and with applicator to measure fourteen inches, by illumination of same with head mirror light from an oil lamp, the patient being inverted, resting upon

head and left shoulder, and nates suspended in air by elevation with pillows.

R. T. RAMSEY, M.D.
Sec'y Southeast Kentucky Medical Society.

DISCOVERIES.

From reading of Dr. W. Rubeska's Criticism on Prof. Howard Kelly and his discoveries in the Domain of Urinary Diseases:

It appears that Professor Kelly has appropriated to himself catheterization of the ureters, which was done by Pawlik at Prague in 1887, taught Professor Kelly there in 1888, and showed him (Kelly) his (Pawlik's) different metallic and elastic ureteral catheters, made by Leiter of Vienna. Pawlik also explained to Professor Kelly his (Pawlik's) new and then unpublished method of inspection of the female bladder. In the year 1889 Kelly was again a guest at Professor Pawlik's clinic and he then became acquainted with the endoscopy of the female bladder as practiced at that clinic. Kelly, after he had become acquainted with Pawlik's method, now also began to busy himself with this subject and published a series of papers in which he gradually appropriated Pawlik's urethral catheter and also endeavored to represent Pawlik's cystoscopy as his own invention. It is this which induces me to stand against Kelly and to defend the work of Pawlik as the property of *his* genius.

And in the *Annals of Surgery*, 1895, he has endeavored to represent J. Marion Sims' rectoscopy as his own invention. The writer has not added a slit, or handle, or changed the point; added a stopper, or chained it to any instrument, nor straightened or curved one and called it his own. All gentlemen should and can only stand on the truth. We are told the glass catheter and so-called Kelly pad are foreign inventions, only introduced into America by Professor Kelly; the strap on the pad may be his.

Since Dr. Kelly has appropriated Professor Pawlik's discoveries and inventions to himself, also Dr. Sims' rectoscopy, it is self-evident to the writer that he wants to claim Carpenter's sigmoidoscopy, and perhaps the earth. We pause in astonishment and ask, should Professor Kelly find Noah's ark and make a new window in it, would he not call the ark Professor Kelly's. Should he catch the *dove* that brought the olive leaf, and pluck a feather, would he not call it Professor Kelly's dove? We leave the reader to decide whether the Johns Hopkins professor or the Kentucky backwoodsman is the author of sigmoidoscopy.

Professor Kelly's sigmoidoscope are Fergusson's old uterine cylindrical speculums made with an obturator reduced in size and elongated, or the urethrasopes enlarged and lengthened, and handles placed on them, all of which are unnecessary to do sigmoidoscopy and rectoscopy.

Kelly's conical sphincter dilator and his sigmoidoscope are non-essentials, superfluities of instrumentation, and seem to be only a freak of Professor Kelly's imagination. The surgeon who knows how to do rectoscopy and sigmoidoscopy does not need Professor Kelly's modifications of other men's instruments; and he who can not do this line of work without these should not engage in this practice.

The great essentials in rectoscopy and sigmoidoscopy are: 1, the Carpenter posture, no anesthetic is required; 2, the J. Marion Sims' speculum or Harry Sims' speculum; 3, one long-handled sponge holder; one long wire applicator; 4, head mirror; 5, sun or artificial light; 6, dilated or dilatable sphincters.

ADDENDUM.—The writer thought Dr. Howard Kelly would have been present in the surgical Section of the AMERICAN MEDICAL ASSOCIATION and contended in debate for originality in sigmoidoscopy and rectoscopy had he been entitled to it. But Professor Kelly left Atlanta about twelve or twenty-four hours before the writer's paper was read. Here in the surgical Section was the place to settle the priority of claims and originality of sigmoidoscopy in the presence of surgeons and physicians who could see, think and hear for themselves, and must be our judges. We are reminded of the adage, "He who fights and runs away lives to fight another day." We are of one conclusion, that Professor Kelly did not have, nor has he, the facts to sustain him as the author of sigmoidoscopy and rectoscopy, and that rather than suffer defeat he folded his tent and silently went away.

BALTIMORE, Oct. 14, 1896.

Dear Dr. Carpenter:—I am just writing an article including some account of rectal examinations for the *Centralblatt f. Gynaekologie*, which has the widest distribution of any gynecological journal in the world. In it I shall make careful note of your original work published in the *Cincinnati Lancet-Clinic*, Feb. 23, 1895. I am sorry not to have been able to give the matter more prominence at an earlier date, but it is utterly impossible for me to get through the work which is driving me every hour of the day, and important matters sometimes do have to wait.

Remember that I shall always be glad to see you and show you any courtesy I can here in Baltimore, and when I treat the subject of rectal examinations before my classes your name will always occupy a prominent position as a pioneer.

Sincerely yours,

HOWARD A. KELLY.

Cincinnati Lancet-Clinic, Feb. 23, 1895, is the second publication of my sigmoidoscopy, the first publication being June, 1886, and August, 1886, before the Kentucky State Medical Society and in the *American Practitioner and News*.

A SYSTEM FOR THE RATIONAL TREATMENT OF INJURIES BY FOMENTATIONS.

BY CHARLES DEWEY CENTER, M.D.

LATE HOUSE SURGEON PRESBYTERIAN HOSPITAL, CHICAGO, ILL.
QUINCY, ILL.

The treatment of injuries by applications of either hot or cold moisture is not a new procedure. There has been, however, a revival of this practice in the past ten years. Listerism is largely responsible for the renewal, and the development of our bacteriologic knowledge combined with our clearer physiologic insight, has given it the impetus toward the position it now holds. These applications of moist heat or cold were formerly known as stupes, but this term is now confined more especially to applications of turpentine, etc., or perhaps a better way to express it, to medicated fomentations applied to strictly medical cases.

There is no doubt that wound treatment by moisture is sometimes overdone, that it is often used with plain empiricism; that hot moisture is used where cold is indicated and *vice versa*, for very little has been written to guide the practitioner, and a doctor does not collect knowledge of fomentations and their uses by intuitional inhibition any more readily than he does other information of a professional character. Hydrotherapy has much of value concealed among its masses of uselessness and harmfulness. All believe that a kidney well flushed each day is of more benefit to the individual than one clogged with urinary salts. We do not doubt that a clean, well bathed skin is

both more useful and more ornamental than a greasy, dirty one, whose pores are filled with disfiguring blackheads. So wound treatment by moisture is rational and has come to stay, since it is based on physiologic and therapeutic facts.

The healing and cleansing properties of water have long been known; so long, in fact, that animal instinct teaches our four-footed and two-footed friends its virtues. We have merely added the knowledge of the difference in action between the hot and the cold. Dogs have been often seen to resort to water in case of injuries. One instance, reported by a reputable doctor, is on record. His dog, belonging to the spotted coach variety, was run over one day by a wagon. The dog was pushed along in front of the wheel for some distance, lacerating the soft tissues of the legs and the hips, but owing to an unevenness of the pavement, had no bones broken. Howling with pain the animal ran to a stream near by, waded into the shallow water, lay down and could not be persuaded to leave it for about seventy hours. The record is made complete by the statement that no inflammation resulted from the wounds and that the dog made an extremely rapid recovery. Water in some form is being used more and more extensively in fevers. Where once the family doctor sternly and solemnly assured the anxious family that cold water, either internally or externally, meant death to the patient, in one case by driving the fever in and the other by driving it out, there is heard now the command to sponge, or cold pack, or ice pack, when the temperature passes a given point. Permission is given to drink as freely as desired. If water, either hot or cold, or both, are useful in systemic inflammations why not in local ones. In one the disease is general, in the other local, and if there is any virtue in the water one would certainly look for its greatest benefit in the local ailment.

There is one feature of this modern hydrotherapy to bring out more clearly: the difference in the action of hot and cold moisture, and a caution against using either indiscriminately. Moist heat acts on inflamed tissue the same way as the removal of a rubber band from the finger acts on the throbbing sensation present before the removal. It dilates the cutaneous vessels, softens the general mass of tissue, allowing the capillaries and arterioles clogged with red and white corpuscles, to free themselves, permitting the process of osmosis to be enacted backward this time, and causing the intercellular stasis of serum or lymph to disappear.

Either heat or cold at first touch, acts as a constrictor or constringer of tissue, causing momentary pain in the congested area. Either the moderate, continued, hot application or the cold one dilates cutaneous vessels. The intermitting, long continued form of either constricts them. Moist heat promotes activity of the leucocytes by increasing their ameboid movements, and hastens suppuration in this way. Then, too, in an inflammation the fixed tissue cells proliferate and accompany the leucocytes in their tissue infiltration. Pathogenic microbes find the artificially warmed atypical area a fruitful spot, consequently suppuration speedily and easily ensues. Of course, in some cases this tissue infiltration reaches such an extreme that a true avascular area is caused by the pressure, and a patch of necrosis results, a frequent condition in the pathologic condition known as furuncle. Here also moist heat is favorable to resolution, since it hastens the separation of the necrotic tissue.

The cold fomentation, while intrinsically perhaps more valuable than the hot one, will in the practice of many find a more restricted usefulness, since cold must be used when inflammations are young or before the inflammatory process has commenced. The matter of cold for local calor is not a serious one, although patients frequently mislead the doctor by insisting that there is so much heat in the inflamed part. Local temperature is rarely any higher and usually not so high as body heat. It is caused entirely by increased blood supply to the part, in all cases where the systemic temperature does not also rise, the latter being caused by the toxicity of ptomaines, or by the not understood physio-chemic product, fibrinogen.

Application of cold is dangerous in cases of extreme congestion, in strangulated hernia and in any instance where the blood supply is already diminished or shut off. The Thompsonian doctrine that, "heat is life," must be believed and practiced in these cases. Cold acts in much the same way as elevation of a part. It reduces the amount of blood in the deep vessels, assisting the return of this diminished amount by dilating the cutaneous ones. Cold decreases vitality and all the vital processes, a fact recognized in our using heat instead of cold in shock. Where heat hastens suppuration cold retards it by constricting tissue; also by delaying or inhibiting the action of pus microbes.

There is no absolute and undeviating rule for the use of hot and cold fomentations. Idiosyncrasy plays a large part; mental impressions or dislikes a smaller one. Some time ago a case of appendicitis came under my notice. He had been complaining of pain for three days; had a temperature of 102.4 degrees F., there was considerable rigidity of the abdominal muscles, dullness on percussion in the region of McBurney's point. An ice bag was ordered for this spot, absolute quiet enforced and to make him think something was being done for him, as much as for any other reason, he was given benzo-naphthol, 5 grains, three times a day. For six days he lay on his back with the ice bag over his affected locality, and he got well. Some time after, another patient with appendicitis came in. It was in the beginning of her attack also. The ice bag was ordered again, but this time the patient declared it increased the pain, increased the vomiting, and it had to be left off. The only explanation that can be given for these cases, is, that there are exceptions to the rules governing the effect of heat and cold on the vaso-constrictors and vaso-dilators, as well as to all other rules.

One proof of the constricting effect of cold upon deep blood vessels is the test of Brown-Sequard. Ice placed over the lumbar region and kept there, first checks and afterward stops the secretion of the kidneys. The laity know of this effect of cold without knowing how it is obtained. They say a warm bath opens the pores and that the bather will catch cold unless he follows with a cold plunge or sponge, which closes the pores. They also know that cold fomentations, or an ice bag, are good for incipient tonsillitis. On the other hand, the backache of many women is relieved by a hot bath along the spine, the ache being the result of cord anemia and the heat producing a physiologic congestion. The opposite condition and result obtain with the use of ice in cerebral congestion.

Concerning the value of medicated fomentations, and by this term is meant those of boric acid, acetate

of aluminum, sulphate of aluminum, bichlorid of mercury, sulphate of zinc, carbolic acid, lead and opium, or opium alone, this may be said: Theoretically they are all right. The boric acid more nearly fills the requirements of all cases than any other. It has the advantage of not being dangerous. Carbolic acid is decidedly untrustworthy under all circumstances as a fomentation. One case where it was used comes to mind. The patient was a man of ordinary intelligence. He had a boil at outer end of right eyebrow. It was opened, the compartments broken up with the end of finger and washed out with 2 per cent. carbolic solution. Then, having nothing else by me, I put on a hot wet dressing of the same solution, telling him to remove this when he reached home, only four blocks, and to apply fomentations of hot water until he went to bed. The carbolic acid made his aching face feel so good he decided no improvement could be made, so left the dressing on all night. Result, considerable superficial necrosis and sloughing. The acetate of aluminum enjoys a good but narrow reputation. Senn advocates it above all other fomentations, and it is at once non-toxic and seemingly has no effect on idiosyncrasy. Sulphate of aluminum had better be left alone. It has an insidious way of removing the body of skin down to the rete, giving no sign of doing so beyond a slight tingling sensation on the part of the patient. Bichlorid of mercury must be employed very cautiously and its use not continued. Sulphate of zinc, unless used in a very dilute solution, is extremely painful to the patient when used over broken skin. Lead and opium are not used so extensively as they were some years ago. The combination is an incompatible on its face. Whether they became unfashionable preparations or whether some untoward results were obtained we do not know. There is no literature on the subject. The employment of the lead and opium wash in hot fomentations gives this result: The lead acetate hinders the conversion of uric acid into urea and favors the deposit of sodium urate about the joints. If long continued about open joints or open bone injuries, there is an increase in the diameter of the bone, or in fractures an unusual amount of callous, which later becomes infiltrated with osseous material. The opium, on the other hand, gives local results that are very desirable, if it is used in small amounts moderately; it must be used early before any degree of inflammation has been reached, for like cold it raises arterial tension, helps to maintain the blood current and hinders the migration of the leucocytes.

Fomentations of one or another kind are frequently preferable to submersions, because of the greater convenience; because submersion, if long continued, tends by great absorption of the fluid to an edematous, spongy condition of the part, and because fomentations allow the patient greater freedom of position.

In conclusion, it may be said that it is just as necessary to make an accurate diagnosis of the existing condition, for the successful use of fomentations, as it is for the successful use of any drug or of an operative procedure.

527 Lind Street.

The number of medical students in France has materially decreased since the more stringent regulations went into effect this year, dropping from 8,996 to 8,485, a difference of 511. The new regulations were described in the JOURNAL August 22, page 450.

OBESITY AS A CAUSE OF STERILITY.

Read before the Second Pan-American Medical Congress at the City of Mexico, Nov. 17, 1896.

BY JOHN V. GAFF, M.D.

TUCSON, ARIZONA.

In all ranks of life there are two well marked forms of senile decay; and every one will at once, I think, recognize the truth of the following sketch by Paget:

"Some people, as they grow old, seem only to wither and dry up—sharp featured, shriveled, spinous old folks, yet withal wiry and tough, clinging to life and letting death have them, as it were, by small instalments slowly paid; such are the 'lean and slippered pantaloon' and their shrunk shanks declare the prevailing atrophy."

Others, women more often than men, as old and as ill nourished as these, make a far different appearance. With these the first sign of old age is that they grow fat, and this abides with them till, it may be, in a last illness sharper than old age, they are robbed of even their fat. These too, when old age sets in, become puffy, short winded, pot-bellied, pale and flabby; their skin hangs not in wrinkles, but in rolls and their voice instead of rising toward childish treble, becomes gruff and husky.

Now these classes of old people may represent the two forms of atrophy. Atrophy by decrease and that by degeneration of tissue, to which we shall find nearly every part of the body liable.

Given an obese woman, we will find an excessive accumulation of fat in the adipose tissue, hindering and finally rendering impossible the function of the various organs of the body.

The distribution of this accumulation of fat is seldom uniform, being sometimes in one part of the body and sometimes in another. Particular organs may be greatly encumbered, while others experience very little impediment.

But there is a close relationship between the condition of the internal cavities and that of the subcutaneous areolar tissue, so that an extensive accumulation of fat beneath the skin may be accepted as sufficient evidence of a similar internal burden.

Under normal physiologic conditions of nutrition, the adipose tissue of the body stores up only that amount of fat which is needed for the continuous supply of fatty matter to the tissues of the body. Adipose tissue is present or may be formed wherever there is connective tissue, except in the lungs, spleen, sheath of the penis and in the brain. In the normal condition, it forms about one-twentieth of the total weight of the body.

According to Lyman, the physiologic store of fat is normally recruited from the fats that enter the circulation, either in the form of an emulsion or in derivative combination, forming glycerophosphoric acid, fatty acids and soaps. A portion of the fat is held in solution by the soaps that are formed through the action of fatty acids upon alkaline bases in the small intestines.

Glycerin and the fatty acids are produced by the action of the pancreatic juice and bile upon fat. The liberated glycerin enters into combination with phosphoric acid that has been displaced from the alimentary phosphates by the hydrochloric acid and soap of the gastric juice. Thus formed the diffusible glycerophosphoric acid and soap pass readily into the general circulation, while the emulsified fats find their way through the lacteals and the thoracic ducts into the

venous current of the blood. Reaching the tissues, the glycerin and fatty acids are readily oxidized, while the stable emulsified fats are deposited in the adipose tissue for a more gradual disintegration.

If the fat be introduced into the system beyond the capacity of the soaps and other alkaline salts to hold it in solution, the surplus remains suspended in the form of minute oil globules, giving to the circulatory fluid an oily appearance. This excess constitutes what is termed lipoemia. Under such circumstances, at the ordinary rate of oxidation within the tissues, the surplus fat can not be oxidized and it accumulates in the cells, in and around the uterus, ovaries and other organs and adipose tissues.

When the supply of fat in the blood is too great to be disposed of by immediate oxidation or by deposit in the adipose tissue, it must find its way out of the body. The sebaceous glands of the skin excrete excessively, hence that disagreeable greasy appearance of the hair and skin and eruptions of eczema and acne in the anemic and victims of irregular menstruation.

Among the causes of obesity, Blanchard has noted excess of eating and drinking in about 40 per cent. of the cases; in about 37 per cent. there was a deficiency of exercise, but in 20 per cent the exercise was extraordinary, and in 10 per cent the quantity of food was less than the normal amount.

Hereditary influences play a very important part in the evolution of obesity, 50 per cent. of such cases being due to this cause. Hereditary influences that predispose to arteritic disease, retardation of nutrition due to rheumatism, gout, gravel, biliary lithiasis, asthma, acid dyspepsia and kindred diseases. Through many successive generations these diseases may be traced, either associated at the same time in the same subject or occurring in alternation with each other, leaving numerous obese and sterile women in their wake. The preponderance of opinion is with the idea that more frequently an excessive amount of adipose tissue is caused by the ingestion of saccharin and starchy food than by the consumption of fat; in many cases it can be traced to acid dyspepsia, since the action of the pancreatic juice is greatly impeded by excessive acidity in the small intestines; the fats are then absorbed in the form of an emulsion instead of being split up into glycerin and fatty acids. Emulsified fats have a great tendency to become more or less permanently stored up in the adipose tissues, and favored by sedentary habits, malt liquors, etc. Lyman says that the development of anemia and obesity is favored by small but frequent losses of blood; the diminished current of blood can not transport a sufficient amount of oxygen; the exchanges upon which nutrition is dependent are consequently retarded and obesity developed. In like manner the disease frequently accompanies pregnancy, excessive menstruation and lactation, especially if the patient leads a luxurious life and gratifies an appetite for alcoholic beverages and sweet articles of diet. An insufficient oxidation of that in the tissues has been made prominent as one of the causes of obesity. As a consequence of obesity, the internal organs like the uterus, tubes, ovaries, kidneys and pancreas may be completely buried in masses of fat. The liver is enlarged, its borders lose their sharpness, its color is pale and oil oozes from an incised surface; the hepatic cells are gorged with fat, but they are not in a condition of fatty degeneration, and the connective tissue by which they are surrounded is not invaded by fatty particles.

The secretion of bile is greatly diminished, and the gall bladder and large ducts are often found empty, or contain nothing but mucus. The diaphragm is forced upward by the immense masses of adipose tissue that crowd the abdominal cavity. The thoracic cavities are also diminished by the presence of fat in the mediastinal spaces and under the pericardium and pleura. A proper expansion of the lungs is thus prevented, lessening the amount of oxygen given to the blood and thereby increasing the existing condition. Owing to the minute particles of undissolved fat, the amount of oil in the blood may be four or five times greater than it should be, or five or six parts per thousand of the circulatory fluid. The amount of hemoglobin in the red blood corpuscles do not fall below the normal limit.

The blood can not take up and transport a sufficient supply of oxygen under such conditions, and consequently a sense of breathlessness, wheezing, etc., is often experienced.

I have thus given a pen picture of the general condition and have thus described the condition of the liver more closely, to show by comparison the condition of the ovaries which are in exactly the same state, except that the anatomic construction is somewhat different, yet the cause and the results are the same.

The uterus, tubes and ovaries will be found firmly packed into the pelvis and surrounded by layers of fat; the fat cells interspersed between the unstriped muscle fibers and connective tissue surrounding the follicles are so thick and cause so much pressure that it is impossible for the ovum to escape from the ovary; large masses of fat crowding down upon the cervix, bend the canal of the uterus forward, producing an aggravated condition of ante flexion and thereby effectually preventing the entrance of semen to the uterus.

During copulation, the uterine round and broad ligaments by their concerted action cause a suction from the vagina toward the ovaries, greatly facilitating the movement of the semen. When they become encumbered with large quantities of fat, they are then no longer able to perform that function, the semen is then retarded or is lost on its way toward the junction with the ovum in the tube or ovary.

Compression of the tubes by masses of fat obstructing the passage way through the ovarian tubes is another fruitful cause of sterility.

The menstrual blood from fat women is usually pale, scant, watery and poor in fibrin. Amenorrhea and scanty menstruation probably have their origin in the anemic condition of the blood found in obese women who have been afflicted for a long period. The sexual appetite rapidly fails and is often entirely extinguished. Among young girls who exhibit the disease, menstruation usually appears at a precocious age. It is generally irregular, and alternating conditions of amenorrhea are not uncommon, and an increase in the size of the abdomen often leads to an erroneous idea of conception.

The prospects for offspring will depend more upon the menses than upon the amount of fat, which in turn depends upon how great a fatty change exists in the blood, uterus and ovaries. The life of the poorer classes tends to leanness, which calls to mind the old adage "A poor man for children." Leanness only results in sterility when due to starvation or chronic disease.

An obese woman menstruates in varying degrees from a discharge which will soil three or four napkins

daily and continue from one to three days, to only the slightest stain of a serosanguinolent nature, which by its color would be difficult to distinguish as menses. It is nearly always less than normal and in most cases consists of a bloody serum containing a few epithelial scales.

Kish has enumerated over two hundred cases of obesity associated with amenorrhea and sterility. In many of the cases there was no other cause to which he could attribute the sterility, but to obesity. Philbert has described five cases wherein pregnancy occurred through adopting a thorough and vigorous system of hydropathic and dietetic treatment. Their ages ranged from 21 to 27 years. Abortions in obese women are frequent. Stoltz has cited a case of an obese woman who had five consecutive abortions to which he could attribute no other cause. Goubert cites the case of a very fleshy woman, having had eight consecutive abortions from the same cause. McKee sums up the subject in the following well chosen words. "Nutrition takes an abnormal direction and the nutritive elements destined to support the product of conception are directed to other points."

The most favorable cases for treatment are subjects under 30 years of age, and who have not been exhausted from frequent child-bearing. Bunson has shown that the offspring from fat women lack vitality, and many if carried to full term do not survive the teething period. The following description of a few cases may prove of interest:

Miss S., aged 16, began menstruating when 14 years old. After menstruating regularly for about one year she began to take on flesh and the flow of menses grew somewhat less, and just two years from the time they were first observed they suddenly stopped. During the last year she had been confined very closely at the bedside of a sick mother and had been eating largely of sweet confections, etc., until her weight had increased in one year from 120 pounds to 200 pounds; the abdomen was quite prominent; and becoming dyspeptic from the abuse of diet she was adjudged pregnant by her family, a nurse and the neighbors. Her step-brother was accused and confessed to having cohabited with her for the past year; they were duly married and in three months the menses again made their appearance, no pregnancy having occurred. Mrs. H., aged 27, married three times, four children by first husband; began to grow fleshy until she attained a weight of 260 pounds. The menses had lessened to half the quantity and from five days to two days duration. Exercise and dietetic treatments reduced her weight to 225 pounds. She then married for the third time. Treatment was continued until her weight was 190 pounds, when she was compelled to desist on account of the extreme weakness, loss of appetite, etc., together with the great annoyance caused from an eruption of pruritus about the genitals, which on account of the intolerable itching made life anything but pleasant, and which refused to yield to remedies until the diet had been changed. The menses increased both in quantity and duration but pregnancy did not occur.

Mrs. B., age 27, weight 215 pounds, married seven years, never been pregnant, began treatment one year ago. Moderately restricted diet, eating very little bread or starchy food, exercising in the open air both by walking and the use of the bicycle and the administration of Parke, Davis & Co's dessicated thyroids. The commencing dose was three-fourths of a grain and gradually increased to 6½ grains, three times daily; her weight was reduced to 147 pounds and she is now pregnant: is enjoying good health with the exception of a slight feeling of languor and weakness.

Mrs. R., age 26, weight 200 pounds; inclined to be fleshy from birth, weight 165 pounds when married at 17 years of age; she has gradually increased in weight until three months ago, or for about nine years. The menses at the time of marriage were regular and large in quantity, but have continued to grow less and less until at the present time she is often in doubt as to whether she has passed the monthly period or not, on account of the extreme scantiness and want of color in the menstrual fluid. The treatment was begun about three months ago, with dessicated thyroids, with the advice to eat little bread or food of a starchy nature and take regular exercise by

walking or the use of the bicycle or both. According to her own words she has eaten whatever she pleased and taken only moderate exercise by walking, but has taken the medicine very regularly; commencing dose was $\frac{3}{4}$ of a grain and was gradually increased until at the present time she is taking $5\frac{1}{2}$ grains of the thyroids three times daily, before meals. She has not experienced any discomfort and has lost ten pounds. There is no perceptible change, but she says she can take much more exercise without so much fatigue and shortness of breath as before the treatment was begun.

I could describe a number of other cases that have come under my observation, but think these four cases which I have described will be sufficient to demonstrate the theory that obesity is a frequent cause of amenorrhea and sterility owing to mechanical pressure and the physiologic changes resulting from an excess of fat in the blood tissues, and is amenable to treatment in well selected cases.

WHAT CAN BE DONE BY ELECTRICITY TO AVOID SURGICAL OPERATIONS IN GYNECOLOGY.

Read before the American Electro-Therapeutic Association at Boston,
Sept. 28, 1896.

BY G. BETTON MASSEY, M.D.

PHILADELPHIA.

This is a very extensive subject, even when it is narrowed down, as I have done, to the avoidance of surgical operations in the diseases of women; so extensive indeed as to be capable of only a general discussion in the time at my disposal, leaving the detailed proof of the greater comparative value of electricity to other occasions. A number of books have in fact been written on the subject since the publication of my own work and the only purpose that can be subserved in a single paper is to call renewed attention to the subject and to give additional reasons for a faith that needs the fervor of a missionary crusade among practitioners of medicine. That there is need for a pause and self-examination on the true relation of surgery to the diseases of women is the first point to be established, the second question being the claims of electricity as a superior remedy in the treatment of certain affections.

Surgery appeals to the human mind as a brilliant, spectacular and lucrative occupation; it appeals to the professional mind as a means of cutting out an otherwise incurable disease and remedying mechanical faults quickly and in the best manner. As to which of these motives has predominated in the production of the remarkable surgical furore now prevalent among gynecologists, must be decided by those who care to study motives. The evidence of overwhelming interest in surgery by those calling themselves gynecologists is evident on every hand. Beside numerous special institutions exclusively devoted to this work, many of the greatest general hospitals in this country are given over almost entirely to the performance of major operations on the pelvic organs of women, in some of them four or five such operations being done to one equally grave operation in the combined operative fields of men, children and the other parts of woman. Why is this so? It surely can not be that the pelvic organs of woman are so many times more dead, damnable and useless than all other organs of men, women and children.

Without pausing to consider the motives that have resulted in this remarkable activity, or even the insidious steps by which it has gradually grown to be considered by most of us as the legitimate work of prac-

titioners supposed to be engaged in curing the diseases of woman, but little thought is required to show that it is based on a regrettable misconception of the true nature of these affections and of duties as physicians in their remedy.

The uterus and ovaries of woman possess nerves, blood vessels and lymphatics like other organs of the body; are subject to the same vital activities; vulnerable to the same disturbing agencies, whether traumatic, microbic or reflected; and are blessed with the same defensive armament against depressing and morbid influences. Why then should they be treated as so much carpenter work in which the principles of mechanics alone are to be considered?

The stress laid upon displacements of the uterus as a primary lesion, for instance, not only violates the pathologic facts in omitting consideration of older intrinsic changes in the organ itself, which may better explain the symptoms, but is an anachronism in perpetuating a theory of the origin of engorgement or inflammation which has been superseded by the germ theory of disease.

For it is in the germ theory of tissue degradation, coincident with lowered vital resistance, that we have a key to more than half of the pelvic diseases of women, particularly those accompanied by engorgement and proliferation of the parenchyma of the organs and relaxation and fatty degeneration of their supports. The field of electro-therapy in such conditions is an extremely important one, for the true curative agency is one that stimulates the natural defences and rebuilders of tissue—the phagocytes and trophic nerves—to a renewed activity in removing lingering debris and consequences of the germ-phagocytic contest. It is not that electricity does this by virtue of proven germicidal powers at this stage, but rather by a stimulation of vital processes, and in so doing a vast number of otherwise refractory cases may be permanently remedied.

Per contra, it may be asked in what way are propping, stretching, cutting and sewing operations antidotal to the non-suppurative consequences of microbic invasion?

But if pessaries, slitting, stretching and sewing were the worst indignities that modern surgery inflicts upon these organs they would still be left to the curative efforts of the electro-therapist, and many such have finally been restored to health. Unfortunately the pessimism engendered by the failure of these purely mechanical theories of relief has at last produced its fruit in the shape of therapeutic nihilism, which blindly destroys the very organs themselves. Succeeding and accompanying the cyclonic wave of ovarian destruction and removal, we have another wave of uterine removal, the sacrificial operations of this nature attaining proportions at present that stamp Jack the Ripper as a novice in his work. But two criticisms need be made on this latest evidence of the dangers of specialism unaccompanied by judgment: The final conclusion of the surgical gynecologist to destroy an organ for mere enlargement and displacement is without a parallel in any other department of medical or surgical effort, and demands justification on the two-fold ground of the failure of non-destructive methods as well as its own success; secondly, since it has been found necessary to remove the uterus in the same class of cases for which removal of the uterine appendages has been vaunted as a cure-all, what organ or set of organs will next fall under

the ban when these cases return to the surgeon for a third operation, minus ovaries, tubes and uterus?

To us, wielding artificially a force strained from the circumambient ether, a force that is equally concerned in the chemical affinity of the minutest atoms, the metabolism of organized bodies and the world movements of the universe, such expedients are unspeakably gross. Our efforts may be equally crude and blunt in the eradication of cancer, though I will not even grant this, but when the trouble is a mere errant nutrition, a cellular hyperplasia, representing the disordered condition of a battle-devastated district, the purifying, stimulating and reconstructive effects of electricity are most interesting.

In a word, the advantages of electricity over surgery in all that class of cases due to more or less remote inflammatory conditions, lies in the fact that it is a far-reaching stimulus to tissue cleansing and reconstruction, by which alone a restoration of normal functions is attainable. And this group of cases is by no means small, including as it does endometritis, metritis, salpingitis, ovaritis, pelvic peritonitis and most of the conditions accompanied by displacements of the uterus and ovaries and relaxation of pelvic supports of non-traumatic origin.

On the other hand, surgery is indicated where a true abscess (not a mere collection of mucus in a Fallopian tube) has formed, and then the relaxation of the perineum or of the vaginal walls is due to puerperal lacerations.

Turning to neoplasms, it may be proven that the mortality from fibroid tumors is almost entirely due to surgical operations for their removal. It is impossible to give the exact statistics of this operation. One of the most recent and authoritative works on the subject, that of Pozzi, calculates the percentage of deaths as 28.2 per cent. for the intra-peritoneal method and 25 per cent. for the extra-peritoneal method, the list being made up from the reports of the most skillful operators only. Even if the lowest admitted figures be taken, they mean that one out of every four patients is sacrificed in an unnecessary attempt to remove a benign lump of flesh. This is surely as bad as the celebrated bean drawings of early Texas days when those who drew black beans were shot, the selection of the victims being probably as uncertain. And this three-to-one ordeal is offered as the only alternative when over nine to one, or about 85 per cent. of all such cases can be practically cured in the removal of the symptoms and reduction of the growth by electricity. And it may be added that the remaining 15 per cent. not favorably affected by the electric treatment are still capable of being treated by surgical method, if thought advisable, without the least disadvantage due to the application of electricity.

But this is not all. Referring again to the four cases in which the tumor is removed, one of which ends fatally and three recover, what is the subsequent condition of the three cases that recover from the immediate effects of the operation? In each case the remaining portions of the uterus and both ovaries have been removed, thus destroying the peculiarly feminine characteristics of the individual. They are necessarily neuters in the social economy. Each case is also liable to a rupture of the abdominal wall at the site of the incision, producing a tumor far more troublesome than the original growth, and each is liable to obstruction of the bowels from the operation,

and some suffer from pain, nervous disturbances and even insanity.

We look in vain for such after-effects of electric treatment, which almost invariably restores the patient to robust health, even if some portion of the harmless fibrous mass remains in its original situation.

The ultra-surgical enthusiasm should be halted also in the too prevalent method of treating dysmenorrhea, or as I prefer to call it, menorrhagia, by forcibly tearing apart the muscular and fibrous tissues of the cervix uteri. This treatment is also based on a discarded theory which attributed the pain to a mimic labor to expel accumulated fluid. It has been proven that no such accumulation exists, and the presumption now prevalent is that the pain or cramps is a neuralgic expression of nerves called upon to functionate in the presence of hyperesthetic, congested, inflamed or merely undeveloped organs. While this operation is not deadly, it gives trouble at times, and is far too violent and unscientific a procedure when the abnormal conditions are so easily curable by intra-uterine, or even at times vaginal, applications of electricity. If the pain is due to inflammatory conditions of either the uterus, tubes or ovaries, as it so often is, this operation will aggravate the patient's condition, a number of instances of this unfortunate result having been observed by me.

I shall mention but two other frequently performed operations as additional evidences of too much surgery in diseases of women, capable of simple cure by electricity. The repair of but moderately lacerated cervix receives but little mention in literature at present, but in practice is still too often performed; and the same may be said of the use of the sharp curette. The symptoms in the conditions for which both of these operations is oftenest performed are due to chronic hyperplasia of the uterus, with or without leucorrhea, and are easily curable by electricity if the habit of performing important and expensive operations were not so prevalent.

REPORT OF A CASE OF ACROMEGALY COMBINED WITH GIANTISM.

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Since 1886, when Dr. Pierre Marie first named and described this interesting pathologic condition, the literature of the subject has grown progressively larger each year, and the disease is no longer the rarity it was once believed to be, there being now over 130 authentic cases on record. The particular nature of the malady however, its etiology, pathology and clinical course are yet so imperfectly understood it is the duty of all observers to place on record an exhaustive history of each case with which they meet.

J. McL., male, age 16, was admitted to Cook County Hospital, Chicago, Ill., July 16, 1895, to the service of Dr. Jacob Rosenthal, who has kindly permitted me to report the case.

Family history is good. Father, mother, five sisters and three brothers are living, healthy and normal in appearance. All the patient's relatives are of full normal size, none are remarkably large.

Personal history. (This is supplemented by the statements of the mother and an elder brother.) He was born in Illinois of Irish-American parents, and at birth weighed thirteen pounds. The weight of his

brothers and sisters at birth varied between nine and ten pounds. The mother says that nothing remarkable was observed until the patient was 6 years old, when, after an attack of measles, he began to grow at an unusually rapid rate, the development of his hands and feet being especially noticeable. His appetite became ravenous and has continued so to the present time. When 8 years of age he began to suffer from asthenopia, which was progressive in the right eye, so that he was blind in that eye when 14 years old. He is a frequent sufferer from supraorbital neuralgia, and is also subject to attacks of urticaria. He is habitually constipated. During the past six months he has been passing an unusually large quantity of

able to clean clocks and watches and put the parts together, repair shoes, etc.

PHYSICAL EXAMINATION.

| | |
|--|--|
| Weight | 111.13 kilos (245 lbs.). |
| Height | 196.5 cm. (6 ft. 5 $\frac{1}{8}$ in.). |
| Girth of head at level of eyebrows | 62.5 " |
| " " " mento-parietal | 72 " |
| " " " occipito-bregmatic | 61 " |
| " " neck | 37 " |
| " " chest in expiration | 102 " |
| " " " inspiration | 116 " |
| " " abdomen | 112 " |
| Span of extended arms | 215.5 " |
| Length of hand | 26 " |
| " " middle finger | 14 " |
| Girth of index finger | 9.5 " |
| Length of foot | 36 " |
| Width " | 16 " |
| Girth of great toe | 12.5 " |



J. McL.—Acromegaly.

urine, having to urinate several times during the night. He says he has lost about thirty-five pounds in weight during the past twelve weeks. His physical strength has always been disproportionately small in comparison with his size and with that of boys of his age. He perspires profusely, especially at night. His appetite for sweet articles of food, and for candy, is marked. He has never used tobacco. He has not received any education, being now unable to read or write; nor has he had any regular industrial employment. He has some musical ability, playing a few instruments indifferently, but only by ear. This natural gift is possessed by two or three other members of the family. He has also some natural industrial dexterity, being



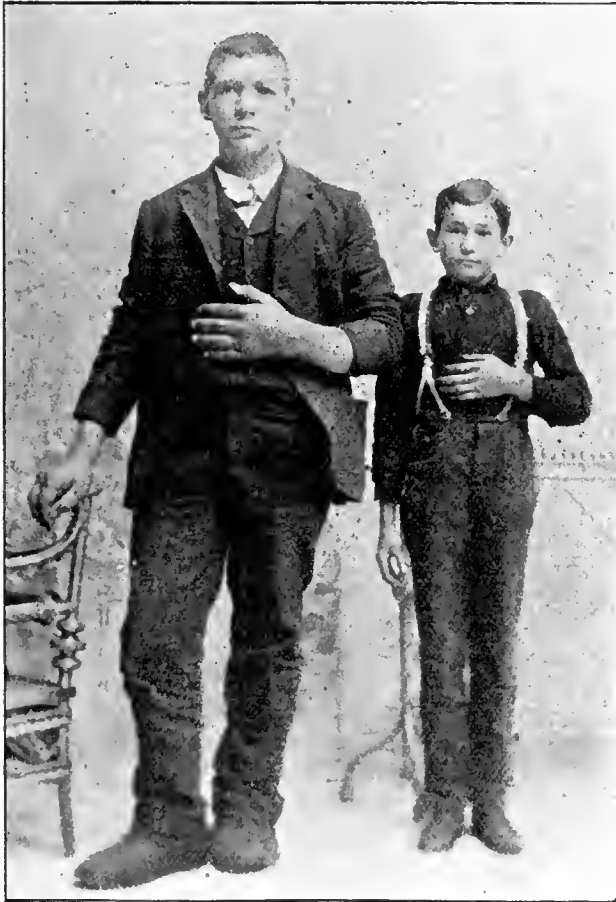
Acromegalic giant and dwarf, both 13 years old.

The general nourishment of the patient is good. The panniculus adiposus is of average amount. The face is more boyish in expression than the age warrants. The general impression given by the patient is that he is a simple, good-natured, overgrown boy. Intellectually he is behind his age by several years. There is nothing indicating imbecility; but his views, his interests and his delights betoken delayed mental development. Seeing him as he towers above those of average stature, with his puerile expression and irresponsible manner, he seems almost unhuman, and one is unconsciously reminded of the monster in Mrs. Shelley's *Frankenstein*. In temperament he is decidedly phlegmatic. He is docile, obliging and courteous in disposition. He sleeps about eight hours each night and an hour or two each afternoon. There is

no true incoördination in his gait, but he "rolls," in walking.

His forehead is well shaped. The predominating feature of it is the excessive prominence of the superciliary ridges, which gives a receding appearance to the forehead. The mastoid processes are unduly large; the cheek bones are slightly prominent, the lips a little full and the nose a trifle larger than the proportionate size. It is worthy of especial note that the lower jaw is perfectly proportionate in size to the head and is normal in shape. There are twenty-seven sound teeth, which are small; the incisors and canines are not in contact laterally; none of the wisdom teeth are erupted; the dental arch is markedly narrowed in front; the tongue is of normal size; the hair is brown and soft. Eyes blue; ophthalmoscopic examination

cially-made shoe of flexible leather, with thin, flexible soles. His physical strength is below normal as tested by the hand dynamometer and by lifting weights. The skin on the right side of the abdomen shows a brown discoloration like that of pityriasis versicolor, which is sharply limited by the median line. The lower part of the abdomen, which protrudes somewhat, is marked by lineæ albicantes; there are no other scars on the body; the body is devoid of hair except in the genital and axillary regions; over the anterior and posterior surfaces of the thighs are numerous reddish-brown macules about the size of a lentil; the veins of the legs are varicosed; there is no enlargement of the lymphatic glands. The genital organs are under-developed; the testes are almond-sized and are quickly retracted on manipulation; the penis is very small; the hair on the pubis is of the feminine type, being limited by a horizontal line above; sexual desire is not developed. The nervous system is normal; reflexes are present and there are no sensory disturbances. The amount of urine passed in twenty-four hours averages 12,600 c.c., or over eight times the normal amount for an adult; the specific gravity ranges between 1.036 and 1.040; color pale; reaction acid;



Acromegalic giant when 13 years old.

reveals an optic nerve atrophy in the right eye. The chest is well formed and is symmetric; auscultation and percussion fail to show anything abnormal; Erb's dullness is not present; there is a kyphosis in the cervico-dorsal region of the spine. The hands, as the measurements previously given show, are extremely large; they are very thick and broad; the bones and soft parts seem to be equally increased in bulk; the fingers taper slightly; the nails are long and filbert-shaped, not short and broad as is usual in acromegaly; the soft tissues have a peculiar softness and the normal lines are deepened. The feet are enormously large in every way; the toes are proportionate and not deformed in any way; the plantar surface is flat, the normal arch being absent. The patient wears a spe-



Feet of patient with Acromegaly, and the author's.

the fermentation test shows 6.25 per cent. of sugar; no albumin. An estimation of the number of red corpuscles per cubic mm. gives 3,865,200; white corpuscles in normal proportion; hemoglobin present in about 75 per cent. of the normal. On admission to the hospital he had an infected finger, which healed readily after incision and evacuation of pus.

The following will show graphically how the case under description compares favorably with Dr. Maximilian Sternberg's tabular list of symptoms given in *Zeitschrift für Klinische Medizin*, Berlin, 1895:

1. OBJECTIVE SYMPTOMS.

a. Constant.—Enlarged hands and feet, present; lengthening of face, absent; enlarged eyelids, absent; excessive enlargement of nose, slight; prominence of cheek bones, slight; enlarged lips, slight; enlarged chin, absent; prominent jaw, absent; kyphosis, present; thickening of bones of thorax, (?); abdominal respiration, present.

b. Inconstant.—Prominence of supraorbital arch, present; exophthalmos, absent; optic nerve atrophy, present; hemianopsia, absent; impaired hearing, absent; anosmia, absent; disordered taste, absent; enlarged larynx, absent; depth and roughness of voice, absent; Erb's dullness, absent; atrophy of testicles, present; enlargement of penis, absent; enlargement of abdomen, slight; atrophy of muscles, absent; reflexes, present; enlargement of heart, absent; increased rate of pulse, absent; varicose veins, present; enlarged lymphatic glands, absent; impotence, present; sweats, present; polyuria, present;

glycosuria, present; disordered sensibility, absent; pigmentation, present; warts and moles, absent.

2.—SUBJECTIVE SIGNS.

a. Constant.—Loss of sexual instinct, undeveloped; polyphagia, present; polydipsia, present.

b. Inconstant.—Headaches, present; palpitation, absent; dyspnea, absent; paresthesia, absent; vasomotor neuroses, present.

GENERAL AND PSYCHIC SYMPTOMS.

General weakness and ennui, present; melancholia, absent.

Of especial interest in the case is the combination of the two conditions, acromegaly and giantism. The exact relation these bear to each other, or the precise way in which they differ, is a subject yet under discussion; the weight of opinion, however, seems to be in favor of accepting them as distinct entities, giantism being regarded as physiologic and acromegaly as a disease. Virchow claims that there is a sharp distinction between them. Dana speaks of a case of giantism in which one side of the face alone was affected by acromegaly. Langer says that the findings about the heads of so-called giants require two classifications to be made, normal and pathologic. Individuals of unusual size with normal skulls are strong and healthy and usually live to be old, while those with abnormal skulls are weakly and die young. Klebs says that both conditions have the same causes, and are disturbances of the development. Sternberg says, in summing up this subject: "Giantism and acromegaly are two different things. Giantism is an anomaly of development which has no connection in itself with disease. Enlargement of hypophysis, enlarged jaws and the like do not occur in giantism, but in acromegaly, which is a disease with a sharp differentiation. Giantism, however, has with it a disposition to the occurrence of general dystrophy, and in particular acromegaly: This is shown by the fact that about half the cases of giantism are fatal from the development of acromegaly."

I have personally seen nine undoubted cases of acromegaly, all males. All of these have been of more than average body size, but the one under present notice is the only one over 183 cm. (6 feet). In the remaining eight, all of whom were adults, giantism does not come under consideration, but a boy of 16, measuring 196½ cm. and weighing 111.13 kilos, may, I think, be regarded as a giant. He furnishes me a statement of his height and weight at different periods during the last ten years, but as it is given from memory and has not been systematically kept, it is not sufficiently reliable for publication. It is, however, reasonably safe to assume that the development of the acromegaly and the giantism has been contemporaneous. Sternberg says that of the 130 authentic cases of acromegaly described in recent literature, only eighteen have been over 177 cm., of which number he gives a list. Only four have been taller than the subject of this paper, these being the case of Dana, 200 cm.; Haskorec, 200 cm.; Hutchinson, 204.2 cm., and Alibert, 205.7 cm.

It is also worthy of note that in this patient the lower jaw is not enlarged. Sternberg places this enlargement among the constant symptoms. It is the first case in which I have seen it lacking. Of its entire absence there is no room for doubt, as the profile photograph shows. On the other hand, the prominence of the supraorbital ridges, which he places among the inconstant symptoms, has been present in all of the nine cases I have examined.

SOCIETY PROCEEDINGS.

Chicago Academy of Medicine.

Stated Meeting, November 10, 1896.

CASEY A. WOOD, M.D., in the Chair.

(Continued from page 125.)

Dr. EMIL RIES read a paper on

NODULAR FORMS OF SALPINGITIS.

The conclusions at which he arrived are as follows:

1. Nodular enlargement of the tube can be caused by a number of different pathologic conditions.
 2. Clinical examination does not enable us to make a diagnosis of the pathologic conditions existing in an individual case of nodule of the tube.
 3. The diagnosis of the nature of a tubal nodule can only be made with the microscope.
 4. The conditions causing nodular enlargement of the tube are congenital or acquired, non-inflammatory or inflammatory.
 5. Each of these conditions can exist without the production of nodules.
 6. The nodules can be found in all parts of the tube and taking the peculiar anatomy of each part of the tube into account show the same structure.
 7. The enlargement can be caused by epithelial or epithelioid formations, connective or muscular tissue or round-cell infiltrations or combinations of two or more of these.
 8. The epithelial formations originate in the epithelium of *a*, the tubal mucous membrane (salpingitis pseudo-follicularis, adenomyoma originating in the tubal epithelium); *b*, the accessory tubes (intraparietal parasalpinx and hydroparasalpinx); *c*, remnants of the Wolffian body (adenomyoma).
 9. The epithelioid formations originate in the peritoneal epithelium (peritoneal growths under "relative heteropy").
 10. The excess of formation of connective tissue is a consequence of inflammatory conditions of the tubal wall (salpingitis interstitialis, Zweifel).
 11. The hypertrophy of the muscular tissue is *a*, non-inflammatory (adenomyoma); *b*, consequence of inflammation, Kaetenbach's case.
 12. The accumulations of round cells a direct evidence of inflammation: *a*, non-specific (salpingitis interstitialis disseminata, salpingitis abscedens) or, *b*, specific (salpingitis tuberculosa or salpingitis gonorrhoea).
 13. The epithelioid formations can occur whenever pseudo-membranes cover organs lined with a serous coat.
 14. Extrauterine pregnancy (abdominal or tubal) produces epithelioid formations by causing pseudo-membranes to form, not by any irritation peculiar to the pregnancy.
- Dr. T. J. WATKINS—I feel extremely fortunate in having had so thorough and scientific examination made of some of the nodular growths which I removed. It was a great surprise to me to learn the character of the growths because I had always considered them inflammatory. I believe the majority of operators consider these nodules inflammatory. Some authorities do not consider these growths adenomata, because the tubes do not contain glands. Dr. Ries believes some of the adenomata develop from the tube and not from the Wolffian body. I would like to be informed how an adenoma can develop from non-glandular tissue.

Some of the practical advantages which arise from a recognition of these nodules as adenomyomata are the possibility of saving the tube and the preservation of the functions of the organ. If these nodules are inflammatory it would be dangerous to leave the tube because points of infection might be left which would cause subsequent trouble; but if these nodules are recognized as non-inflammatory it is possibly safe to leave the tube.

The case referred to by Dr. Ries where I resected was one where a nodule had developed in the tubal wall near the horn of the uterus. About one inch of the tube was resected. The interstitial portion of the tube was excised and the end of the tube was stitched into the excavation which remained. The other tube contained pus and it was removed along with the ovary. The patient menstruated twice after the operation. Two or three months later she wrote me that she thought she was pregnant; that she had skipped two menstrual periods, and that she had symptoms of pregnancy, and wanted to know if there was any danger of allowing pregnancy to continue. I advised her there was not and requested her to report to me regularly. Unfortunately she has not reported and I have not her address.

In another case a nodule had developed in the tubal wall

about two inches from the uterus. I excised the nodule with the intention of reuniting the tube, but could not find the canal of the tube in the incision, and so passed a probe in from the abdominal ostium of the tube, and was very much surprised to find the tube still intact. So it would seem advisable, wherever we find these nodules, to enucleate them and to pass a probe in from the abdominal ostium to see whether we have injured the canal or not. If the nodule occurs near the uterus there is no objection to cutting the tube off and stitching it to the uterus as above mentioned. In cases where the abdominal ostium has become closed from accumulations of serum in the tube and resultant adhesions, it is possible to amputate the distal end of the tube. Quite an efficient abdominal ostium can be made by cutting the serous and muscular layers of the tube which will cause the mucous membrane to become everted.

I have been highly gratified in listening to Dr. Ries' paper, and heartily congratulate the doctor upon his scientific and practical production.

Dr. LUDVIG HEKTOEN—I can add nothing to what Dr. Ries has already brought out. I admit that I am not able to exactly understand the drawing nearest to me, assuming that the condition originates from proliferation of the tubal epithelium. I have been thinking of similar conditions in other parts of the body where proliferations from similar structures occur. The only somewhat similar condition I have thought of is in the bile ducts. In the bile ducts of rabbits, coccidia may produce similar proliferations of the epithelium, resulting in formations not unlike those shown in one of the drawings. It would seem to me that proliferation of the epithelium like we see here might give rise to carcinoma, supposing the study of early tubal carcinoma might throw light upon these apparently benign proliferations. Concerning the proliferations of the peritoneal endothelium described, I would mention the fact that in chronic leptomeningitis very marked proliferation of the endothelial cells of the lymphatic spaces occur that are not unlike some of the pictures we notice in one of these plates.

Dr. WM. H. RUMPF was called on. He said: I want to congratulate Dr. Ries on his excellent contribution. I know how much work it represents, because I had the privilege of seeing a great deal of it and to see several of the specimens. From seeing them I can perhaps form a better picture than a great many of the Fellows. I agree thoroughly with his conclusions. It is exceedingly difficult to say much about a comparatively new pathologic condition like this, because so little is known about it, and unless one has made investigations of his own concerning it, he can not discuss it or refute any of the facts that have been brought forth. As regards the practical outcome of these investigations, I think we have here a comparatively new field, and that Dr. Watkins' operation is a step in the right direction. I do not know that I could add anything that would be of benefit in the discussion of the subject. Whether the facts set forth by the essayist are established must be shown by future investigations.

Dr. T. J. WATKINS—I would ask Dr. Ries a question. Inasmuch as these nodules are usually associated with inflammatory conditions of the uterus or appendages, is the inflammation by irritation or infection an etiologic factor in the development or growth of adenomyoma of the tubes?

Dr. RIES (closing the discussion)—Many of the points brought out in the discussion I have answered in my paper. I could not discuss them in the short review that I gave of my paper. As regards Dr. Watkins' question regarding the origin of the adenomyoma in the tubal epithelium, I have tried to prove this from observations of direct communication between epithelial masses in the wall and the epithelium of the tube. I have further been able to prove this on a specimen which showed a nodule with a well developed tubal mucous membrane in the center and obliteration of the tubal cavity at both ends of the nodule. There were no epithelial formations in the walls at both ends, but where there was well developed tubal epithelium there were numerous epithelial formations in the wall. This is of interest to us because this origin has been considered impossible, because the tube contains no glands. I tried to refute this by showing that this communication was not a gland, but a diverticulum, properly speaking. It is not a thin process, but a great depression in the mucous membrane. The growing of the tumor I did not discuss in the brief review of my paper. Where the growth originates in epithelial masses belonging to the Wolffian body, it must be assumed that primarily the Wolffian body has not undergone the degree of atrophy which it generally undergoes, and that on account of its abnormally good preservation in extrauterine life these epithelial formations by their presence and activity have caused the irritation of the surrounding

tissue which gave rise to the hypertrophic growth and the formation of the tumor. As soon as this hypertrophic growth of muscular tissue begins the epithelial formations participate. That is the theory to which I have arrived as well as von Recklinghausen. With regard to Dr. Hektoen's remarks I believe it is very appropriate to mention a similar occurrence in other organs. I have searched high and low for them, because analogies have to serve instead of experiments. We can not experiment, but we can observe the experiments which nature has made, and in this light I should regard occurrences of such formations in other organs. A somewhat similar formation has been described as occurring in the ureter, the processes of the epithelium of the ureter sometimes entering into the wall of the ureter. There we have to assume that the epithelium in the wall has to be derived from the epithelium of the ureter, because there is no Wolffian body ready to take the responsibility of these growths.

Professor Klebs mentioned the question of the formation of carcinoma from epithelial masses which have become misplaced. Recklinghausen has observed two clear cases of formation of carcinoma in the wall of the uterus without connection with the epithelium of the uterine cavity and attributes these carcinomas to the Wolffian body. He also described a case of adenoma in the wall of the cervix which originated in Gartner's duct. The transportation of epithelial masses into distant localities is a subject which is of very great importance to the gynecologists at present. This transportation becomes important in the formation of a tumor originating in the epithelial investment of the chorionic villi. The first metastases of these tumors are found in the lungs, not in the neighborhood of the uterus or in the glands. The transportation goes along the blood vessels and epithelial cells belonging to the chorionic villi, resembling to all intents and purposes the epithelium of the chorionic villi, have been found in the liver, the lungs, the spleen, where there was not the slightest other sign of carcinoma. But as Professor Klebs has said, epithelium observed in a place where epithelium is not ordinarily found does not necessarily mean carcinoma.

Another point which Professor Klebs advanced was interesting to me because I discussed it in the paper, namely, the origin of the solid masses of "peritoneal growths" in the endothelium and eventually in the lymphatic vessels. I do not accept this theory because I did not find these masses arranged in the way in which endothelial growths are arranged; that is to say, I did not find the shape of rosary as we find it in carcinomatous infiltrations of lymphatic capillaries. It is not one bead arranged next to the other—dilatactions and constrictions. There are no bifurcations and I can follow them to the surface to the endothelial covering of the tube. Of course the endothelial covering of the tube is practically the lining of a large lymph sac. The peritoneum is a large lymph sac and if you wish you can call these growths endothelial. But these endothelial growths show an undoubted similarity to the germinative epithelium which, looked at from an embryonic standpoint, is comparatively easy to explain. The germinative epithelium and the endothelium covering the rest of the peritoneum are originally one and the same. The germinative epithelium has preserved the size and activity of the embryonic stage. We find in other tumors that cells reassume activity and functions which they possess only in embryonic life. We always speak of the reassumption of embryonic activity when we speak of the formation of carcinomas and of other tumors. Why not in this case?

A case of pachydermia of the larynx, as described by Professor Klebs, is very much like the cases of abnormal growth of epithelium of the chorionic villi in the uterus after myxomatous degeneration of the chorionic villi or retention of non-degenerated villi. I have some specimens where not the slightest sign of carcinoma existed in the uterus, yet I find distinct growths of epithelium belonging to the chorionic villi. The cases were those of endometritis post abortum and were cured on account of the hemorrhages. I examined them microscopically and found eventually chorionic villi and decidua masses. Sometimes the epithelium of the chorionic villi embedded in the decidua masses is not atrophied or degenerated, but has started to grow. That may be the first stage of deciduoma, but it is not necessarily that.

The malformation of the tubes in this case would not only be a double formation, but a fourfold or sixfold formation. This is theoretic. Double accessory tubes are comparatively frequent. If you pay attention to these conditions after operations you will find them much more frequently than you expect, especially if you resort to the precaution of observing your specimens when floating in water. Very frequently you do not see the accessory tubes if you do not use this precaution, because they are so small that they escape observation.

With regard to the frequency of the nodules, you will find them more frequently after your attention has been directed to them. Before I examined them microscopically I did not find them frequently. I believe that in my four years' work at the Strassburg University Woman's Hospital I did not see more than two or three cases, but since I have paid special attention to these nodules I have found them in a large number of cases. The nodules I described are not sacculated or occluded parts of the tube, occluded by inflammatory masses or inflammatory constrictions, but are real thickenings of the wall. Inflammatory sacculated nodules occur in the tube, but that is not what I designated as a nodule. It is a different condition.

SELECTIONS.

Experience with Behrling's "Heilserum."—Dr. Haass of Strassburg, in *Aerztliche Rundschau*, October, reports his experience with the curative serum of diphtheria in an unborken series of 291 cases. He had ten deaths, all advanced cases when first seen by him, or less than 4 per cent. "The inoculations included one of 3,000 units of immunization pro dosi, and another successful case was that of a child only two days old, into which I injected 1,000 units of immunization. In the latter case it is possible that either I or the nurse communicated the disease, but in spite of a very high fever and violent symptoms of stenosis at first, within twenty-four hours the well-known shriveling of the diphtheritic membrane on the ulterior pharyngeal wall and the tonsils commenced. The child was completely cured within six days. The injection was unaccompanied by any bye-effects. The child exhibits constant increase in weight, and is in good health. For the information of opponents to the serum therapy I would mention that in all doubtful cases diphtheritic investigation was undertaken, and on each occasion the presence of true diphtheria bacteria was demonstrated. The extremely favorable results which I have obtained undoubtedly do not depend entirely upon the use of serum, but concomitant circumstances have contributed thereto. For instance, a large majority of the cases were tonsillar diphtheria, and in consequence of the instructions given to the sisters and nurses it was nearly always possible to carry out injections in the first stages of the diphtheritic attack."

The Study of Medicine a Perennial Delight.—One of the pithiest of recent addresses is that of Dr. D. W. Cheever, given in the *Boston Medical and Surgical Journal*, December 24. He treats of the study of medicine, as contradistinguished from its practice, in a luminous way; also, one or two other points which we will quote below, with our thanks to the writer, and the thanks of our readers in advance.

"The study of medicine is one delight from beginning to end. You begin with anatomy, and what is more delightful than the study of that subject for a year or two, in which you can see almost every mechanical law and mechanical device demonstrated: then you pass on from that to physiology, and see all the most delicate functions; and when you go on still further and notice them in sickness, and can reason on the causes and conditions of disease far better than you could before, and then apply remedies that will regulate and give relief; what study is more delightful? The horizon of knowledge ever recedes. You are just as much a student when you are 80 years old as when you are 20. Surgery lately has advanced so far and so fast that it has distanced medicine, and is now, since the application of antiseptics, the most attractive thing; and this, of course, is limitless; but meanwhile, even now at this moment and henceforward, I am sure that medicine is going to resume its own place, and by and by maintain its supremacy, which it always should have over surgery. I have always said that the physician is superior to the surgeon; that he has a broader field to look over; that his knowledge must be more

extensive to make him a good physician than a good surgeon. Now the physician is coming back; and he is coming back through the great advances being made so rapidly through the discovery of the antitoxins and of bacteriology. In ten years, I will venture to say, that medicine will be on as high a plane as it ever was. The resources of our profession are endless in delight; and if you find in the beginning that you love it, you will never cease to be happy in its pursuit.

"No suit of malpractice should be condoned or settled in any way, but should be fought out. As a rule, however long it is fought, the doctor will win his case. It is rare in Massachusetts that the jury will go against the doctor, in the long run, unless he proves to be a man of disreputable character. As a rule, the law is lenient, the law is just; and the interpretation put on it by most of our judges is rather on the side of the physician. It reads somewhat in this way: 'The doctor is not obliged to be possessed of extraordinary skill; if it can be shown that he has ordinary skill, that he did his best to use the skill which he had, that the skill that he used on his patient was what is averaged by the medical profession in his vicinity; if it can be proved that he did not neglect his patient, that he did the best he could, he can not be cast in damages in a suit for malpractice.'" I have looked over the records very carefully, and the judges are uniformly fair, in their charges to the doctor. We are all liable to be sued on the slightest provocation, and we must defend it. We are not the only ones who suffer; if you look at the records for actions of tort, as they are called, you will see that the courts are loaded down with them. Corporations, municipalities, individuals, merchants, business men, contractors and employers, are constantly blackmailed in the most shameful way; many of these cases they settle without allowing them to go into court. So that our profession is not alone or peculiar in this respect; only it seems to us very hard, when we have done the best we could, that we should be for a long while kept in a state of uncertainty and forced to pay in the end, although we get a verdict triumphantly in our favor. Now here comes in sometimes the importance of consultation, because if the patient has been seen in the beginning by other doctors; if they all agree; if they are sure what was the matter with him, and that what ought to have been done for him was done, this would have great weight, and will possibly prevent a suit from being brought. That I have known to be so in some cases. But you can not allow these suits to go without attending to them, because if a person yields to blackmail, all the hungry throng of sharks will mark him out as a prey, and he will have suit after suit brought against him, and soon will be entirely ruined. Moreover, on account of his self-respect he must stand for his rights. I do not think that any suit for malpractice will hurt a young doctor; in fact, sometimes it is an advertisement. It is not altogether an unmitigated hardship.

"The doctor is a victim of the interviewer and reporter; they not only pursue the doctor, but haunt the house of the sick, and even the chamber of death. There is no privacy, no respect for the patient's feelings. If any person, in a public position, happens to be sick or dying, the papers want it all, and without regard to the feelings of the friends. Now, what course must the doctor take when pursued in this way? Reporters come from his own town, or from distant cities, and claim that the illness of this person, and whether he is to live or die, is of great importance to the public. Why? Because it may affect some political deal; because it may affect the stock market; certain changes may take place if he is about to die; and so on. To whom is this man's reputation and life so important as to his own family? How can the doctor presume to give away that knowledge which belongs to the family? It seems to me the only answer for a physician to make, is to say: 'If you will bring me a note from the nearest relatives requesting me to give you such knowledge as I can of this patient, you shall

have it; otherwise I shall say nothing; and you may place whatever interpretation you please on mysilence.' "

And in conclusion :

"Ours is the noblest profession that exists; it is, above all, the most humane; it can not be otherwise; we seek daily, and give our lives, to make people happier, to make them better, to alleviate their sufferings in every possible way. This reacts upon us; we share their joy; and we frequently also get more credit than we deserve for unexpected results; and although sometimes we have a great many anxieties in the event of unexpected deaths, yet these are evenly balanced by seeing others convalesce. In England a Medical Defence Union is in vigorous existence. It assumes the risks of suits for malpractice and defends them. It is a mutual insurance company of medical men. Here, an attempt was made in 1895 to secure the assent of the Massachusetts Legislature to the establishment of a Medical and Surgical Branch of the Employers' Liability Insurance Company. It failed, however. It is the opinion of some lawyers that the existence of such an association to defend the doctor would turn the jury against him. Exorbitant fees injure the standing of the profession. Liberal fees, in consultation, are a protection to the attending physician. Small fees to the poor—but some fee—are the true course for the young doctor. McClelland on Civil Malpractice (p. 15) says: 'Among practitioners of the different schools consultations can not be held, for the reason that there is a radical difference between them either as to the medicines to be used, or the manner of using them; hence, if the practitioners be honest in their several beliefs, no good can accrue to the patient, this being the sole object.' Now, when does a doctor want a consultation to protect himself? In doubtful injuries; with ill-minded people, contentious people, people who are likely to make trouble, people who are never satisfied with anything that is done for them. The doctor soon estimates that class of people; he sees a great many of them; he can select them and differentiate them in about five minutes after he is called—and that is the class against which he is very wary. The doctor is not obliged to go when called: the only law which binds him is the obligation of humanity. Thus, if in an isolated community and no other physician were to be found, he might feel obliged, while he would not in a city or town where there were other doctors. Fatigue, sickness, overwork, other engagements, are sufficient excuses. Were it otherwise, he would soon die of exhaustion. He may decline, day or night; he can select his patients as he chooses; but if he goes, he feels obliged to continue."

PRACTICAL NOTES.

Antifebrile and Analgesic Effect of Citrophén.—E. Homberger announces that the results of his experience with citrophén in tuberculosis have been that in doses of 0.5 gram, citrophén rapidly reduces the temperature in febrile tuberculosis, without producing any secondary inconveniences. The same dose repeated four times in twenty-four hours in cases of acute rheumatism and neuralgia has given good results. In a large number of cases the citrophén increased the appetite, and as the odor recalls that of citric acid, patients enjoy taking it. —*Nouveaux Remèdes*, December 8.

Thymic Asthma.—The diagnosis of this disease is usually made after the death of the patient. In the case of a child described recently, who suffered from intense dyspnea, tracheotomy was performed without result and it was decided that the cause must be some compression by a tumor or hypertrophied thymus gland. Extending the incision, the thymus gland was found extremely enlarged and was removed. At once the respiration became normal and the child was completely cured. Siegel, who reports the case, suggests that it would be more appropriate to designate this trouble as thymic stenosis of the trachea or bronchi. —*Province Méd.*, December 12.

Operative Treatment of Stones in the Ductus Choledochus.—W. Braun reviews the 124 cases on record in his Göttingen thesis, finding that the proportion of women to men affected is as 4 to 1. Thirty-five patients died, a mortality of 28 per cent. In about 10 per cent. it was found that the operation had not been radical and that stones still remained after it. In four cases patients with extravasation of bile recovered, while in

four other cases it was the cause of death. In eighteen of fifty-nine cases the suture held, and in nineteen it gave way. Thirty-nine cases have been seen recently and no relapses have occurred among them, showing that they are rare. —*Cbl. f. Chir.*, December 19.

Comparative Nutritive Value of Nutrose and Peptone.—Bornstein has been investigating the comparative values of these substances and finds that nutrose (Rhörmann and Liebrecht), is superior to peptone (Liebig) in every respect. It is agreeable to the taste while peptone is not; it is almost completely absorbed without producing any irritation in the alimentary canal, while the irritation caused by the continued use of peptone is so severe that it is impossible to take a large amount for any length of time. Nutrose also is completely utilized, even more than meat: peptone on the contrary is assimilated less perfectly than meat. The price of the nutrose is no higher than that of peptone. —*Nouveaux Remèdes*, December 8.

Dermatol as an Antidiarrheic.—N. Klimeneko announces as the conclusions from his observations in sixty cases of diarrhea which he has treated with dermatol that it deserves more attention than it has hitherto received as a remedy of great efficacy in diarrhea. Many cases yielded to it that had resisted all other treatment. It was equally effective whatever the cause of the diarrhea, and as it has no taste or odor, it is readily taken by the patients. No inconvenience of any kind followed its use, and some claimed that their colics were also cured by it. He administered it in powders of 0.25 to 1 gram at a time, from 2 to 8 grams in all during the twenty-four hours. When there was a severe cough beside he administered simultaneously morphin, opium or codein, but in other cases he gave the dermatol alone. The diarrhea was caused by existing tuberculosis in sixteen cases, by typhoid fever in six, including one case with fever and peritonitis from perforation; gripe in four, nephritis in four, chronic intestinal catarrh in twenty-seven and three infants. —*Nouv. Remèdes*, December 8.

Iodoform Solutions for Subcutaneous Injections.—Dinkler states that the solution of iodoform in almond oil (5 per cent.) is readily decomposed by the light and produces irritation owing to the crystallization of the iodoform under the skin. It is rapidly absorbed and easily gives rise to toxic phenomena. It is advisable to reduce by one-half the usual dose of 1-10 gram. Iodoform triturated with paraffin (5 per cent.) decomposes easily and only the fresh preparation should be used. No toxic phenomena were observed from its use. Iodoform triturated with glycerin (5 per cent.) is quite soluble. Absorption is slow; the iodoform is not distributed evenly under the skin and the injections are painful. Iodoform triturated with wheat starch finely pulverized (5 per cent.) is to be recommended. Protected from the light in air tight bottles, it keeps for five to eight days without alteration of any kind, the iodoform suspended throughout the mass. Injections of this do not produce irritation; absorption takes place slowly and uniformly and is complete in three days. —*Nouveaux Remèdes*, December 8.

Hemol.—Kobert's hemol is produced by mixing thoroughly pulverized zinc with blood and then removing the zinc just before it dries. It forms a brownish powder, with a slightly brackish odor. It is prescribed for chlorosis as a powder, with or without chocolate, 0.3 to 0.5 of a gram of each; in pills made with depurated licorice juice in compressed tablets of 0.25 gram; and in chocolate pastilles of 0.5 gram. It contains 0.2 per cent. of iron and dissolves gradually in the intestines, where it is slowly absorbed. J. Bartlett reports in the *Therap. Month.* of October thirty chlorotic patients treated with hemol (in powders of 0.25 to 0.6 gram, twice a day) with excellent results. Even when continued a long time it produced no secondary annoyance; the teeth were not blackened,

there was no constipation and the appetite remained the same or was improved. It is practically a blood extract, and contains so little iron that it is supported by the weakest stomachs. He recommends the combination of arsenic with the hemol whenever arsenic is indicated, 1 to 100. This combination seems to be free from the inconveniences that frequently attend the administration of arsenic alone.—*Nouv. Remèdes*, December 8.

On Removal of Foreign Bodies from the Esophagus.—Since the article on this subject was published October 17, in the *JOURNAL*, the cathode ray has been improved to such an extent that the location of coins, etc., in the esophagus, has become an easy matter, and then by opening down to the esophagus, the foreign body can be palpated and manipulated upward (without making an incision into the esophagus), until it can be reached through the mouth and withdrawn with a pair of Mathieu forceps with corrugated blades. Foreign bodies as large as 15 millimeters are easily swallowed by children; they are usually arrested at the narrowest portion of the esophagus, and if they stand upright it is difficult to recognize their presence by the usual methods, if the children continue to drink and swallow and do not complain of pain. In these cases radiography is of the greatest advantage, as it shows the exact location of the object. An incision down to the esophagus then will allow the object to be forced upward and extracted through the mouth, avoiding an incision into the organ and thus not interfering with alimentation afterward.—*Bulletin de l'Acad. de Méd.* December 8.

Lymphadenoma with Marked Pigmentation.—At the Medical Society of London, Dr. de Havilland Hall showed a case of lymphadenoma in a patient aged 21 years, who in January, 1894, complained of indisposition for exertion for eight or nine months and a "dreadful cough." There had been no expectoration, no hemoptysis and no night sweats, but he had lost nearly a stone in weight. Impaired resonance at the left apex anteriorly and posteriorly with respiration of a cogged-wheel type, was the only abnormal state found. In March, 1895, great granular enlargement in the cervical and supraclavicular regions of the right side was noted and there was a similar enlargement on the left side, but less marked, and an enlarged gland in the axilla. The left chest was dull to the third rib, and the breath sounds were absent over the dull area. In June, 1895, there was a diminution in the size of the glands and the patient had gained slightly in weight. In May, 1896, the patient had lost eight pounds in weight; there was a dullness at the base of the left chest with deficient entry of air; the glands were about the same size as before; there was a mass of enlarged glands over the upper part of the sternum and the spleen was palpable. The skin was much pigmented. On Nov. 7, 1896, there was dullness all over the left lung, with almost entire absence of respiratory murmur, and there was a great increase in the size of the glands. Dr. Hall commented on the difficulty of diagnosis in the first instance, on the slow progress of the disease while the patient was taking arsenic and on the marked pigmentation: and he raised the question whether the pigmentation was due to the arsenic or to the involvement of the solar plexus and adrenals in a mass of enlarged abdominal glands.—*The Scalpel*, December.

Pneumectomy.—F. Terrier in the *Progrès Méd.* of December 12, reviews the record of this operation to date, which has been performed on man for tuberculosis, cancer and pulmonary hernia. In tuberculosis the three successful operations reported were circumscribed lesions in otherwise sound lungs and bodies, and it is more than probable that they might have been cured without surgical intervention. Block's patient died under his hands and he committed suicide to escape criminal prosecution. Surgical intervention in neoplasms when due to cancerous infection elsewhere, has been unsuccessful,

owing to the presence of several foci which it was impossible to find and exterminate entirely. In two cases when a cancer in the thoracic wall had spread into the pleural cavity, Krönlein and W. Müller operated with success, although one patient relapsed four years later, when a second operation was required which was similarly successful. In these cases the surgeon must not hesitate to resect the number of ribs necessary to open up the intra-thoracic extension of the neoplasm. In cases of hernia from stabs, etc., when the lung simply protrudes to close mechanically the incision, all that is needed is to disinfect the wound as thoroughly as possible and suture the serosa. The reduction must be made as early as possible and the opening closed if the tissues are not already degenerated. If they are, resection of the gangrenous portion and reduction of the pedicle is the only procedure. It has secured two satisfactory recoveries. In case of actual hernia, Tuffier incises the tumor, reduces the herniated lung with resection of the sac and débridement of the orifice, detaching the wound all around, and suturing the ring. Experiments on animals have shown that the partial and even total resection of a lung is possible and even easy in many animals, but Milton of Georgia, he states, was the first to perform pneumectomy on man. The surgical operation on the lungs most frequently required is for traumatic hernia with pulmonary parenchymatous complications.

Application of the Schleich Method of Infiltration Anesthesia.—The results of 118 operations performed in the Breslau clinic are described in the *Cbl. f. Chir.* of December 12. It was found perfectly harmless; transient inconveniences were only observed in two cases, probably due to some individual intolerance of cocaine. In the first two cases treated with it, it was not successful, owing to lack of familiarity with the technique, but after that in thirteen cases it produced partially satisfactory results and in all the rest it was absolutely successful. It is delightful, the author states, to witness how insignificant an operation becomes with it—even what are called the great operations. Miculicz removed fifty-two tumors with it, from the size of an egg to that of a child's head. The operation of sectioning the vas deferens was performed eight times; ligating the vena saphena, exploratory laparotomy and for strangulated hernia, each twice; thoracotomy for empyema of the pleura once, and gastrotomy ten times. The method is especially advantageous in these last operations, as the patients are always in an enfeebled condition and general narcosis is hazardous. With this they can arise from the operating table and go about without inconveniences. Infiltration is especially valuable in incarcerated hernia, as it is only necessary to anesthetize the outer surface of the abdomen. There is no pain from cutting into the peritoneum and intestine and no anesthetic is required for them. Miculicz intends to use it in still more important operations, gastroenterostomy, resection of the pylorus, etc. He combines it with Esmarch's method of driving the blood out of the part (described in the *JOURNAL*, Vol. xxvii, page 89), but he finds it necessary to anesthetize first and expel the blood afterward. Otherwise the injection into the distended part is painful and the blood can not be driven out so easily as before. The actual time required for an operation is lengthened five to ten minutes, although Miculicz has recently been modifying Schleich's method somewhat, proceeding on the assumption that there is less danger of infecting the deeper layers when the anesthesia is produced by one instead of a number of injections. In other respects he follows Schleich's instructions to the letter. The *D. M. Woch.*, of December 10, also reports equally favorable results with this method in eighty-eight operations performed by Steinthal, especially in abdominal operations, chiefly as the danger of vomiting is avoided. The necessity of overcoming the psychic shock by encouraging words and demeanor is insisted upon, as also the extra care required if general narcosis is resorted to later in the course of the operation. The instructions in the Schleich book are all that is necessary to perform the anesthesia successfully. The solution No. II was used most frequently. (Cocain mur. 0.1; morph. mur. 0.0025; dissolved in 100 water.)

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It would greatly facilitate the prompt delivery of the JOURNAL to those members of the Association living in large cities, if they would kindly furnish this office with their street address in those cases where it is omitted from the wrapper of their JOURNAL, as we have been notified by the postmasters of the larger cities that second-class mail matter not having street address, would be placed in the general delivery to await call.

SATURDAY, JANUARY 23, 1897.

THE ANTIVIVISECTION BILL.

So many resolutions have been formulated and adopted by medical men as members of local, State and National associations, and so much has been printed in the lay as well as in the medical press, concerning the "Antivivisection Bill," now before the United States Senate, that it seems almost needless to refer in these columns to the arguments against it.

The bill, S. 1552, entitled "A bill for the further prevention of cruelty to animals in the District of Columbia," was favorably reported to the Senate by Mr. GALLINGER, May 26, 1896, from the Committee on the District, although the AMERICAN MEDICAL ASSOCIATION had entered an earnest protest against its passage "unless it shall first be shown by an impartial investigation that cruel and unnecessary experiments are being performed in the District of Columbia and that existing laws do not provide suitable punishment for cruelty to the domestic animals." From this it might be inferred that the investigation made by the Senate Committee had demonstrated the inadequacy of existing laws to cope with abuses. The medical profession of the District, together with the men in high Governmental positions more or less related to medicine, and the representatives of the educational institutions, took exception to the report of the Senate Committee and appointed a joint committee to present to the Senate and House of Representatives their views on the subject. On this committee the best men in their line of work were appointed

including among others, Dr. S. C. BUSEY, representing the Medical Society of the District; Surgeon General GEO. M. STERNBERG, U. S. Army, representing the Biological Society; Dr. D. E. SALMON, Chief of the Bureau of Animal Industry, representing the Agricultural Department, and Surgeon WALTER REED, representing the Medical Department of the Army. This Committee has presented a memorial to Congress protesting against the proposed legislation, and suggesting that the favorable report presented by Mr. GALLINGER was based on a misunderstanding of the facts relative to experimentation on animals, and without due consideration of the benefits to mankind and to animals which are derived from such experimentation.

The memorial claims that the scope or purpose of the bill is much more comprehensive, radical and destructive to scientific research than is admitted by its advocates. It states that the reasons of the joint committee for protesting against the proposed legislation, are briefly summarized in the resolutions adopted unanimously by the AMERICAN MEDICAL ASSOCIATION at its meeting in May 1896, and these resolutions are cited in full. As apposed to the statement in the Senate Committee's report that there is a sharp difference of opinion among medical men as to the value of vivisection, it invites attention to the resolutions adopted by sixty-eight National, State and prominent local medical and scientific associations, and cites the memorial of the Association of American Physicians and Surgeons as follows:

The voice of science and of medicine, so far as it receives authoritative utterance, is overwhelmingly opposed to legislation of any kind which would take in any measure the direction of experimental medicine and physiology out of the hands of those who, on account of their special fitness, have been chosen by the authorities of our higher institutions of learning and of research, to convey instruction and to conduct investigations in these departments.

The report of the Senate Committee advocating the bill, states that multitudes of educated, humane physicians have learned by patient research and large experience the value of other methods to secure the results that have been obtained by biologic experimentation. The memorialists of the District of Columbia profess themselves ignorant of these other methods; and we confess that withstanding our editorial acumen, we can not enlighten them. It is suggested that the other methods must involve experiments on the human subject, and that if there is a question of preventing cruelty to animals it might be well to inquire which animal had better be selected as the object of Congressional legislation, the man, the woman, the beloved child, or the dog, the cat, the rat, or the guinea pig, etc.

The advocates of the bill also deny that any real advance has been made in medical knowledge in the laboratory of the biologist. The reply to this is a

reference to the knowledge possessed by every educated physician of the great discoveries made by biologic methods during the past twenty-five years. A summary of these is presented, beginning with the identification of the bacillus of anthrax by DAVAINÉ in 1850, and PASTEUR'S subsequent discovery of the method of protecting animals by inoculations with attenuated virus. Advances in our knowledge are cited in relation to relapsing fever, typhoid fever, trichinosis, pneumonia, consumption, glanders, cholera, tetanus, diphtheria and the bubonic plague. The protection to human life by immunizing against infectious diseases is also stated, and citation is made of the many benefits to domestic animals that have been derived from biologic experiments conducted in the District of Columbia by the Bureau of Animal Industry.

We might say a great deal more on this subject, but editorial space is limited. In concluding, however, we must not forget to suggest that now is the time for action against this bill, which would so handicap the progress of scientific research as now conducted for the benefit of mankind. When this was written, Mr. GALLINGER was in New Hampshire looking to his reelection; but on his return to Washington, Senate Bill 1552, with its favorable report from the committee, will no doubt be promptly called up for passage. We would suggest that members of the AMERICAN MEDICAL ASSOCIATION who have influence with Senators or members of the House of Representatives, communicate their views on this subject to their friends in the National Legislature, that the advance of medical science may not be unnecessarily impeded.

Incidentally we venture to suggest that some of our New Hampshire brethren should have looked after Dr. GALLINGER.

RUSH—HAHNEMANN—PASTEUR.

The proposition which was made at the meeting of the AMERICAN MEDICAL ASSOCIATION in the city of Washington in the year 1884, that a monument should be erected by the physicians of America in the capital of the United States to some great medical hero of the Revolution, as typifying the part that the profession of medicine had taken in the establishment of the Republic, was enthusiastically received and unanimously indorsed from the venerable President, AUSTIN FLINT, Sr., to the youngest member of the body. It was admitted by every one that in a city where there were memorials of the eminent men of other callings, who had risked their lives in the struggle for National independence, it was but fit that the profession of medicine should have its representative among these heroic figures, and all agreed that there was one man justly entitled to the distinction of having his effigy handed down to posterity as that of a physician who had discharged all the duties of his vocation while fulfilling all the obligations of a citizen in the most

trying period of his country's existence. There are other names of medical men affixed to the Declaration of Independence, but Dr. BENJAMIN RUSH stands alone as an eminent physician in active practice, who without sacrificing his duties to his patients, took a conspicuous part in the political events of the day. It is superfluous to repeat here the long record of his meritorious works. Two years after his death it was stated by a historian of the times (in 1815): "Considered in relation to the entire composition of his character, as a practitioner, a teacher, a philosopher and a writer, Dr. RUSH must be acknowledged to have been the *most distinguished physician that America has produced*. In no quarter of the globe has it fallen to the lot of many individuals to occupy so extensive a sphere and to comply with duties so numerous and diversified"—and another declared that his conduct was such that all humanity should erect a statue to him.

Nevertheless the project, for reasons difficult to understand, has made slow progress. At every annual meeting it has been enthusiastically reindorsed and resolutions have been adopted, year after year, urging its speedy completion. Meantime, the little body of homeopaths have set out to erect a monument at Washington to their founder, and albeit a foreigner, in no way associated with the history of the country, they have succeeded in raising a very large fund for this purpose, and the model which has been adopted, after competition by the ablest sculptors, is evidence that it will be the most elaborate artistic work of the kind in this country. Perhaps a rivalry of this sort was to have been expected, since under no possibility can there be concert between the two parties.

But the present year has witnessed still another monumental enterprise for the erection of a statue of PASTEUR in the city of Paris, France. The State Board of Health of Pennsylvania has transmitted to the public press a series of resolutions, that "WHEREAS, this board has been applied to by the Supervising Surgeon-General of the United States Marine Hospital Service to secure its coöperation in aid of the international subscription for the erection at Paris of a monument to M. PASTEUR, *therefore*¹ Resolved: That the chairman of the executive committee be authorized to receive contributions for this purpose, and transmit them to the treasurer of the PASTEUR Monument Committee at Washington."

If ever charity should begin at home it should do so in this instance. After American physicians shall have honored at home the remarkable man, who did so much to elevate medicine by teaching and example, it may be well for them to aid in building monuments in foreign countries. If a single medical man, who has but a few dollars to contribute to one such project, is induced to give it for a monument in Paris, rather

¹ *Italic is ours.*

than for that to his own illustrious countryman in his own capital, just to that extent will injustice have been done to the commendable project initiated at Washington in 1884.

It is significant of the lapse of time that of the nine men first associated with the RUSH monument proposition, six, Dr. AUSTIN FLINT of New York, Dr. JOSEPH M. TONER of Washington, Dr. HENRY H. SMITH of Philadelphia, Dr. ROBERT A. KINLOCK of Charleston, South Carolina, Dr. JOHN H. MURPHY of St. Paul, Minnesota, and Dr. MORRIS H. HENRY of New York City, have died, only three surviving, Dr. GIBSON, the chairman, Dr. ROHÉ, the secretary, and Dr. S. C. GORDON of Portland, Maine.

If it were true in 1884 that BENJAMIN RUSH was "the greatest physician this country has ever produced," it is still true today, and the obligation to honor his memory is greater by the twelve years that have elapsed. Hence, the members of the profession in America are urged by every consideration of duty and justice, pride and patriotism, to give whatever they may be able to contribute to this monument at Washington, which shall commemorate not so much the individual, BENJAMIN RUSH, as the ideal patriot physician of the Revolution.

PROPOSED HEALTH DEPARTMENT FOR THE GREATER NEW YORK.

It is proposed in the new charter for New York City and vicinity to perpetuate the montrosity that at present exists under the name of a Board of Health. New York is about the only large city except Chicago in the civilized world that is so handicapped that a medical sanitarian can not rise to the head of its administration; a plumber, a ward "healer" or stock-broker can become the head of the Board, but all physicians however competent are excluded. To say that this results in a montrosity is to use a mild term, at least so it will seem to any medical audience. The chapter devoted to health preservation has eight principal subjects, namely; 1, the powers and duties of the department, its officers and administration; 2, marriages, births, deaths; 3, duties of physicians and others; 4, legal proceedings and punishment for disobedience of orders and ordinances; 5, reimbursement of expenses; 6, abatement by suit; 7, tenement and lodging houses; 8, pension fund.

Under the first head it is announced that there shall be a health department, of which the board of health shall be the head. The board will consist of the president of the board of police, the health officer of the port and two officers, to be called commissioners of health, one of whom shall have been a practicing physician for not less than ten years preceding his appointment. The president of the board is not to be a physician. The commissioners are to hold office for four years.

The authority of the board of health under the new

charter will stretch to the quarantine limits. The board will make an annual report of its operations to the mayor of the greater city. It may grant bills of health to masters of vessels and may order and enforce repairs to buildings where the public health demands it. Under the head of extraordinary expenditure the board is authorized to use a sum not exceeding \$80,000 in excess of the annual expenditure if any emergency should arise demanding it.

Two bureaus are provided for, the sanitary superintendent to be chief of one and the registrar of records of the other. Branch offices are to be established in all the boroughs with assistant sanitary superintendents and assistants registrars. Chief clerks are to be appointed in each borough with powers similar to those of the secretary of the board. There are to be fifty inspectors and possibly fifty-eight. The present sanitary inspectors are to be continued in office. A sanitary squad of police consisting of fifty men, who have been on the force for five years, is to be formed. Every officer must pass a civil service examination in the sanitary laws and ordinances.

Certain offensive trades are to be supervised by the department and such apparently trifling details as yards and cellars will also come under its notice. The board is given unlimited authority to take discretionary measures for the prevention of disease and it is stipulated in the charter that any person violating the rules in this direction may be fined a sum not exceeding \$150 or to be imprisoned for a period not exceeding six months or both. Any violation of the sanitary code is to be treated and punished as a misdemeanor.

The board is empowered to continue or organize a corps of vaccinators and of physicians in order to effectually prevent the spread of smallpox by the thorough and systematic vaccination of all unvaccinated persons and for the relief of persons residing in greater New York suffering with diphtheria and other infectious diseases.

The reporting of births, deaths and marriages promptly and systematically is provided for in the charter, and the duties of physicians and others working under the board are carefully pointed out.

A pension fund is established under the department. All money paid for searches and transcripts of records and all fines and penalties for violation of the sanitary code as well as those inflicted on officials of the department will go to make up this fund. Pensions are provided for physicians and other employees permanently disabled in the discharge of their duty at a rate not to exceed half the salary of the pensioner. A \$300 pension for widows of such employees is also provided and another for twenty years service.

AN UNFORTUNATE CREATURE MALTREATED.

During the past week the newspapers of the whole world have made the most of the sensational escapades of an evidently mentally unbalanced woman of Amer-

ican birth, married to a titled foreigner. The public, that is that part of it that enjoys social scandals and to which the scandal-mongers cater in their publication, does not probably read between the lines of the misled woman's interviews the evident symptoms of want of mental balance that are so clearly suggested to any one accustomed to the vagaries of those who are on or over the borderland of insanity. The scandal in itself is not such an unusual one so far as the immoral element is concerned in the class to which this particular delinquent has allied herself—according to a popular English novelist recently deceased, irregularities of a certain sort are the special privilege of the aristocracy—but in this particular case the fact that she is an American, that she has allowed herself to be generally interviewed and has otherwise exhibited a special desire for notoriety and has given utterance to wild and incoherent statements as regards her social and moral ideas and intentions, and the further fact as it appears, that very prominent personages are in fear of her revelations, have created more than a usual interest in the case. If her insanity is not generally suspected abroad it is perhaps due to extravagant notions held there as to the possibilities of American customs and manners; but to an impartial observer in this country with a knowledge of the published facts in the family history the evidences are sufficient to more than merely suggest mental aberration as a charitable supposition in the case. In this point of view it has a medical interest and the outcome will be worth noting in case the unfortunate woman continues to court publicity as at present.

THE EMPLOYMENT OF X RAYS FOR THE RELIEF OF SOME FORMS OF BLINDNESS.

It is not unreasonable to hope that many new uses will be found for the X rays, both in the arts and in the sciences. The possibilities of the range of application to which the recently discovered force is susceptible are yet beyond intelligent conception. Whether we have to do with a new force or with merely some modification of an already familiar force remains to be determined. In any event we have had placed in our hands by ROENTGEN'S discovery an agency capable of doing what has heretofore been considered impossible.

There has been exploited of late rather noisily in the newspapers the idea that the blind might be made to see by means of the X rays. It was not expected by intelligent minds that vision of any kind could be restored when atrophy or degeneration or other form of destruction of optic nerves, centers or tracts had taken place. An Austrian physician, EMIL BOCK (*Wiener medizinische Wochenschrift*, Dec. 19, 1896, p. 2269), however, has recently made an ingenious suggestion in this connection, which on its surface appears plausible and capable of practical application.

In a word, the proposition is made that it may be possible by means of the X rays to imprint visual images upon the retinae of persons possessing a healthy nervous optic apparatus, with preservation of the light-sense, in whom vision has been destroyed through irremediable opacities of the refractive media.

Experiments have already shown the idea to be theoretically correct and practically feasible. All that is necessary is to make an impression with some material impervious to the X rays upon substances through which the rays will pass. It is not to be hoped that any degree of permanent vision will thus be restored, but it is possible that the procedure may prove serviceable in the instruction of blind persons who have previously had the use of their eyes, in the recognition of legal documents, in the identification of individuals, etc.

ABOLITION OF REFLEX VOMITING AS A SYMPTOM OF HYSTERIA.

Cutaneous anesthesia has long been recognized as one of the stigmata of hysteria, and associated loss of sensibility has often been observed on the mucous surfaces. Anesthesia of the pharynx especially has been looked upon as a characteristic phenomenon and to this has been attributed the absence of reflex vomiting so commonly noted in hysteric subjects. In turn, when this reflex act is found to be wanting, the fact is usually accepted as evidence that the pharynx is anesthetic. With the object of determining whether this peculiarity is due really to sensory impairment, to motor impairment or to disturbance in the reflex arc, KATTWINKEL (*Deutsches Archiv für klinische Medizin*, B. lvii, H. 5, 6, p. 549) undertook the examination of 104 cases of hysteria at the medical clinic of the University of Munich, and found absence of the reflex act of vomiting following irritation of the pharynx in one hundred. In only a small proportion was the sensory function of the mucous membrane of the pharynx deranged in any way, and then in association with corresponding derangement of cutaneous sensibility. In not one were the motor functions of the pharynx at all interfered with. There is thus left only the conclusion that the absence of reflex vomiting in cases of hysteria is due to disturbance in the reflex arc and that such abolition may be viewed as an hysteric stigma.

THE DANGER OF EYE INFECTION BY SPECTACLES.

It has for some time been a growing custom for ophthalmologists and opticians to lend London smoked or other tinted coquille spectacles to patients under mydriasis. The spectacles are returned after the passing of the mydriasis and are again lent to other patients. It is a dangerous custom that should be stopped. The writer has known of cases of infection

not readily explainable except as due to wearing glasses that others have used. As these tinted coquille glasses cost the optician but a few cents, we advise oculists either to give patients outright the pair required, or suggest that they be bought. Doubtless the better class of opticians would be willing to give their regular patients such glasses free of charge. But in all cases the patients should be warned against the use of second-hand, possibly infection-smearred articles.

CORRESPONDENCE.

Antileprous Serum.

NEW YORK, Jan. 18, 1897.

To the Editor:—Will you kindly state in your paper that I am considering the propriety of starting a Carrasquilla Institute in New York city. I have received from Dr. Carrasquilla of Bogota, Colombia, six consignments of antileprous serum, seventy-two bottles in all. Further consignments will be forthcoming at short intervals. Of the above consignments, I have sent a portion, respectively, to Dr. Hansen, Norway; Dr. O. Petersen, Inspector General of Leprosy for Russia, St. Petersburg; and the President of the Hawaiian Board of Health, Honolulu. These gentlemen will experiment with the serum and make a report of results obtained at the first Leprosy Congress, to be held in Moscow, August 19 to 26, 1897.

Carrasquilla, in his latest letter to me, dated Dec. 13, 1896, says: "The efficacy of the antileprous serum tried for one year, on a large number of patients, leaves no doubt, as you will find out yourself. The process gives all kinds of securities, which makes me hope that you will recommend it to the attention of others and persuade them to study it."

The above-named countries, Norway, Russia and the Sandwich Islands, have had the following experiences with leprosy: In Norway, 1856, there were 2,877 lepers; from that to 1891 there were 4,758 additional cases, in all 7,635. In 1885, the mixed isolation law, that is, isolation in hospitals and in families, was passed. Under that law leprosy has decreased to 800 cases, which is the present number. Is it any wonder that the physicians of Norway believe in contagion?

In Russia, whose population is 124,000,000, during the period in which it was generally believed that the disease was not contagious, the leper hospitals were closed; leprosy increased apace. In 1879, Professor Münch of Kiev, and Professor Petersen, began to study the disease, and reached the conclusion that climate, situation and food have nothing to do with its spread. In 1894, a commission having been appointed by the government to study the question of leprosy, reported that they had come to the conclusion that leprosy is contagious; they consequently advised the segregation of *all* lepers. According to Dr. Petersen, there are 5,000 lepers in European Russia.

In the Sandwich Islands, leprosy was imported in 1848, or 1819 as some say. Before 1848, at any rate, the disease was very rare, or else it worked unknown to the inhabitants. Hildebrand, in 1853, was the first to report a case of leprosy. In 1861, there were six lepers in the neighborhood of this original case. From that time, the disease spread in an unheard of manner. In 1865, there were 230 lepers in a population of 45,000. In 1881 and 1882, there were 4,000 lepers. Thus in thirty-five years, one-twelfth of the population had become lepers. *Et nunc crudimini*, says Dr. Robelin, from whose work (*Es o no Contagiosa La Lepra*) I quote these figures as to Hawaii, strict isolation laws came at last, in 1865. Today there are only 1,250 lepers.

While the New York County Medical Society had these facts before them, or could, or ought to have had them before them,

yet they have approved a report of their committee on leprosy, composed of the Health Commissioner of New York, and several professors of dermatology, to the effect that leprosy is not a dangerous disease, and that isolation is not necessary.

In Colombia, while there was no isolation, leprosy increased in forty years from 400 to 27,000 cases. The government now is very much alive to the situation. The church has raised \$200,000 for a National Lazaretto. It is believed there generally that the solution of the problem is either the Carrasquilla serum cure, if it shall prove effective, or absolute isolation, and the question is taken very fearfully to heart; they can not afford there to declare jauntily that leprosy is not dangerous.

The lepers are, at the present time, crowding Bogota, to receive the possible benefits of Carrasquilla's treatment. Their crowding there has become a real nuisance.

According to the report of the Health Commissioner of New York, there is no danger of the spread of leprosy in New York climate. Therefore this is the place for starting a Carrasquilla Institute for the treatment of the lepers in the United States. The different States, Minnesota, Wisconsin, etc., will be very glad to unload their leper populations into this favorable climate, if a chance of cure by Carrasquilla's serum is offered to them here. I should be disposed to inoculate any patient who shall be sent to me by the State Boards of Health, free of charge.

As soon as the bars are down, and the three lepers of North Brother Island are discharged by our Health Commissioner, when every pretense of isolation shall have been given up, and leprosy officially recognized as *not being dangerous*, no one can have any objection to the coming to New York of all the lepers of this country.

ALBERT S. ASHMEAD, M.D.

Chlorid of Sodium.

BOSTON, Jan. 13, 1897.

To the Editor:—Salt in excess of what occurs in natural food appears to be necessary with the human family as it is with animals. Both a deprivation of it and a large excess of it, especially in the absence of vegetable food, works evil to the body, producing various sorts of disease both in body and in mind. Salt exists in all the fluids of the body. It appears to stimulate every tissue and have an influence over the metabolic changes in every part, and at all times. Yet how far these changes can be usefully modified by diminishing or increasing the ordinary amount of salt is not settled. Sure it is that some cases in practice have been improved by decreasing the salt supply, while others have gained on increasing the usual daily amount of it. Küss says it is indispensable to the formation of bile and the pancreatic and gastric juices. Animals grow better and fatten on it. They have more glossy and thicker hair, have a more healthy appearance and are more sprightly and active; while the potassium salts have the opposite effect and are more or less serious in their consequences. Salt stimulates the kidneys, and all the proteid qualities have a peculiar dependence on the presence of the various salts. Common salt promotes secretion, aids osmotic action, promotes fluid diffusion throughout the entire system. It stimulates nervous action as a whip stimulates a horse and clears and brightens the eyes.

Now, can it be that an agent which has so general influence throughout the body, in exciting the nerves and promoting secretions and the various metabolic physiology, should fail to have a more or less direct effect upon the organs and functions essential to procreation? This is a question which presented itself in the case of some friends of mine.

The two women concerned were well educated and of excellent character, but both were feeble and more or less invalids when married. Both married clergymen, were equally well and tenderly cared for. They both found plenty exercise, were were of studious habit and helpful to their husbands. The husband of one conceived the idea that his wife would be

stronger and better in health if she took more common salt than she was accustomed to take. More salt was put in her butter, on her meats and in the milk she used. Often he added to her regular proportion of salt in the water she drank. The result has been that she is a very well woman—a woman of great efficiency in the work as an aid to her husband, and she has increased the household by a daughter and a son. They are still young people. The other husband took contrary views in reference to salt and denied to his wife as much as he could, thinking it injurious to use much salt. The result in her case is that she has remained weakly, nervous, neuralgic, etc., and can not spare strength for the ordinary household duties. Her lungs have become weak and her throat so sensitive that he is obliged to take her to the South for the winters. She has never been pregnant and has passed the age when women are likely to conceive. For one I am sure he has made a mistake. They have greatly desired a child. I have mentioned the other case to him and jokingly told him that I believe he has not salted his wife enough.

E. CHENERY, M.D.

Stomach Movements.

PARIS, ILL., Jan. 14, 1897.

To the Editor:—Regarding the stomach's emptying itself (see JOURNAL, page 83) I wish to say that Professor Freer demonstrated the movements of the stomach by vivisections, and that the contractions proceeded from right to left along the lesser curvature, rounded the cardiac end and proceeded from left to right along the greater curvature, moving its contents in that direction. When it reached the pylorus the latter opened and allowed a small quantity of liquid food to pass into the intestine. After a short rest the contractions began and proceeded in the manner described. In one case there were three distinct revolutions. Respectfully,

W. H. TEN BROECK, M.D.

"Thoracoplasty in America."

PHILADELPHIA, Jan. 15, 1897.

To the Editor:—I see in your issue of January 9, an article by Dr. A. H. Ferguson on "Thoracoplasty in America," in which he states that the Bureau of American Medical Literature at Washington, D. C., informed him that they were unable to find any case of Schede's operation performed in America. I beg to state that in the *Annals of Surgery*, June 1895, p. 721, I published a case with successful result, which was done without any knowledge that Schede had preceded me.

Yours very truly,

W. W. KEEN, M.D.

SOCIETY NEWS.

The Twelfth International Medical Congress.

PRELIMINARY PROGRAMS OF THE SECTIONS.

[Translated for the JOURNAL.]

SECTION 1.—ANTHROPOLOGY, NORMAL ANATOMY AND HISTOLOGY.

1. *Anthropology*.—1. Measures to be taken to collect the largest possible number of exact data in regard to the anthropologic types among the Russians and the allogeneous population of Russia.

2. The most characteristic peculiarities of the Mongolian skull. Which Mongolian or other race presents these peculiarities most frequently and most pronounced?

3. How far does the cranial type of the present population of Russia differ from the ancient type of the Kourgan period? How can this modification be explained if found to exist?

4. Prof. Sergi's typical skulls. Their importance in the classification of the shapes of skulls.

5. Anomalies in the skeleton and external tissues. Have any of these anomalies a racial significance and can they be considered phenomena of atavism?

II. *Anatomy*.—1. Is the Latin nomenclature in anatomy elaborated by the German Anatomical Society to be adopted internationally?

2. By what means can uniformity of nomenclature in anatomy be introduced into Russian works on the subject?

3. Is polydactylia to be regarded as a division or a phenomenon of atavism?

4. Homology of the upper and lower members.

III. *Normal Histology*.—1. Comparison of the value of the various theories and hypotheses in regard to the structure of protoplasm in general.

2. Importance of the blastomeres in the segmentation of the ovum. Post-regeneration. Development of the interstitial and cuticular substances.

3. Importance of the centrosomes, spheres and supplementary nuclei. Importance of direct division (amitotic).

4. Genesis of the cell, *i. e.*, evolution of the constituent parts of the cellular organism.

5. Innervation of the glands.

6. Different modes of termination of the nerves depending upon certain mechanical conditions.

7. Development of the nerve fibers and cells; best methods of studying them.

8. Place and mode of the first development of the organs of the genito-urinary system.

9. Importance and genesis of the third constituent of the blood (Bizzozzer's plaques), and their connection with coagulation.

10. Is there a physiologic migration of the leucocytes? Where does it take place? In what proportions? What is the principal rôle of these elements in the body?

11. Secretory ducts of the salivary glands, pancreas and liver, especially the initial capillary tubes.

12. Is it not possible to create a better classification of the animal tissues than those that now exist, based as far as possible on the largest number of facts?

13. Genesis of the encephalon in the vertebrates, man included.

14. Mechanical principles of the development of organisms.

15. Structure of nerve cells and their reciprocal relations in the nerve centers.

16. Modifications in the structure of the cells of the glands during repose and during the activity of the corresponding cells or glandular formations.

17. Termination of the sensory nerves in the heart.

18. Termination of the nerves in the nerve cells of the spinal ganglia.

19. Sensory nerves of the muscles (smooth and striated muscular fibers).

20. Forms and extent of elastic tissue in the animal organism, and its importance.

21. Structure and presence of the basement membranes in the animal body, and their importance to it.

SECTION 2.—PHYSIOLOGY AND PHYSIOLOGIC CHEMISTRY.

1. Importance of physiologic psychology in medical education.

2. Rôle of nitrogenous alimentation in the transformation of substances and forces in the animal organism.

SECTION 3.—GENERAL PATHOLOGY AND PATHOLOGIC ANATOMY.

1. Genesis of the different forms of diabetes.

2. Pathologic physiology of thrombosis.

3. Pathologic physiology of myxedema.

4. Theories in regard to immunity. Production and influence of antitoxins in artificial immunity.

5. Rôle of the vessels and parenchyma in inflammation.

6. Constancy of the various species of pathogenic bacteria considered in regard to their botanic classification and the specification of diseases.

SECTION 4, A.—GENERAL THERAPEUTICS.

1. Serum therapeutics and prophylactic inoculations.

2. Organ therapeutics.

3. Appreciation of the present methods of alimentation (artificial alimentation, forced alimentation, koumyss cure, grape cure, substitutes for alimentation employed in therapeutics).

4. Methods of treating fever.

5. Present methods of antiphlogistic treatment (phlebotomy, etc.).

6. Hydrotherapeutics.

7. Climatotherapeutics (seashore climate, mountain climate, sea voyages, etc.).

8. General therapeutics of the different organs (for example, new methods of treating diseases of the heart).

9. Electrotherapeutics.

SECTION 4, B.—PHARMACOLOGY.

1. Rapid and certain local treatment of severe erysipelas (epidermic method).

2. Rapid and certain treatment of epidemic cerebro-spinal meningitis (hypodermic method).
3. Treatment of pneumonia with guaiacol, applied externally.
4. Calomel as a medicament for the heart.
5. Treatment of recurring erysipelas.
6. Treatment of typhoid fever.
7. Value of the methods of using water in hydrotherapeutics: frictions and ablutions, fan douches and sitz baths.
8. Climatotherapeutics of pulmonary phthisis.
9. Disintoxication.

SECTION 4, C.—PHARMACOGNOSY AND PHARMACY.

1. *Amanita phalloides*: its botanic varieties, geographic distribution, chemic composition and physiologic action.
2. Classification and histology of the simple drugs of practical importance. Study of new, already known drugs, the knowledge of which is yet insufficient.
3. Organic and inorganic pharmaceutical medicines deserving special attention on account of their practical importance.
4. Best methods of determining the medicines of heroic action, from a chemico-legal point of view: the alkaloids, glucosids, so-called bitter substances, etc.
5. Cultivation of narcotic plants. Value of the medicinal preparations obtained from them.
6. Most certain methods of distinguishing the alkaloids in narcotic medicaments.
7. Best methods of preparing the bitter almond water.
8. Necessity of strict standard amounts of specific substances and of the alkaloids in extracts, tinctures and other medicaments of heroic action.
9. Establishment of an international standard for the Galenic preparations (*Galenica internationalia*).
10. The drugs of domestic medicine considered histologically and chemically.
11. The serum and organ therapeutic medicaments from the pharmaceutical point of view.
12. Water from the hygienic and pharmaceutical point of view.
13. Microscopic examination of the identity and the actual value of the most important medical powders.
14. Products excreted by plants.
15. Most certain means to distinguish anatomically and chemically between the true *illicium* (*Illicium verum*, Hooker) and the false (*illicium religiosum*, Siebold).
16. Difference between the structure of the testa of black mustard (*sinapis nigra* L.), Russian mustard, called *sarepla* (*sinapis juncea* L.), and white or yellow mustard (*sinapis alba* L.).

SECTION 5.—INTERNAL DISEASES.

1. Essential causes of chlorosis.
2. Are the different forms of malarial fevers caused by Laveran's parasite or by still other species?
3. Climatic treatment of tuberculosis.
4. Relations of nervous dyspepsia to general neuroses—its symptoms and their pathogenesis.
5. Clinical classification of nephritis.
6. Pathogenesis of chronic nephritis.
7. Clinical forms of hepatic cirrhoses.
8. Pathogenesis of chronic lesions of the valves of the heart.
9. Pathogenesis of obesity.
10. Pathogenesis of gout.

SECTION 6.—DISEASES OF CHILDREN.

1. Diagnosis of pulmonary tuberculosis during early infancy.
2. Diagnosis of tuberculous meningitis.
3. Whooping cough complicated with influenza (grippe).
4. Diarrhea accompanying diseases of the respiratory organs.
5. Affections of the lymphatic system during childhood.
6. Normal properties of the blood and their modification in diseases of different ages.
7. Results of serum treatment of diphtheria and other diseases.
8. Results of "belt puncture" in hydrocephalus.
9. Arrhythmic action of the heart in children.
10. Results of laparotomy in tuberculous peritonitis.
11. Organization and results of the work of Russian foundling asylums, or asylums for abandoned children in general.
12. What is the difference between natural and artificial alimentation of children from the standpoint of physiology and pathology.
13. Hereditary syphilis.
14. Hemorrhagic diathesis and geographic distribution of rhabdomyositis.
15. Influence of school work on the physical development of children.

SECTION 7.—NERVOUS AND MENTAL DISEASES.

I.

1. Pathology of the nerve cell (normal microscopic anatomy and pathologic lesions).
2. Pathogenesis and pathologic anatomy of syringomyelia.
3. Pathogenesis and treatment of tabes dorsalis.
4. Operative treatment of diseases of the brain.

II.

1. Hallucinations and fixed ideas.
2. Pathogenesis of the general paralysis of the insane; delimitation of this disease from kindred morbid manifestations.
3. Hypnotism and suggestion in relation to mental diseases and medical jurisprudence.

SECTION 8.—DERMATOLOGY AND VENEREAL DISEASES.

1. Cutaneous actinomycosis.
2. Primary cutaneous tuberculosis.
3. Cutaneous arthritis.
4. Cutaneous sarcomatosis.
5. Acanthosis nigricans.
6. Pathogenesis of area Celsi sive Jonstoni.
7. Gonorrheal dermatoses.
8. Mercurial dermatoses.
9. Cutaneous paludal eruptions.
10. Treatment of simple scleroma (scleroderma).
11. Treatment of Frisch's scleroma (rhinoscleroma).
12. When should the treatment of syphilis with mercury be commenced? How long should it be continued? Should syphilis be treated at the time when the syphilitic accidents make their appearance, or should the treatment be provisional without waiting for the appearance of the syphiloderms.
13. Modifications in the elements of the blood in syphilitics during the condylomatous period.
14. Syphilis and serum therapeutics.
15. Treatment of syphilis with soluble and insoluble mercurial preparations.

SECTION 9.—SURGERY.

1. Methods of treating infected wounds.
2. Methods of treating malignant neoplasms without operating, especially the results of treatment with serum therapeutics.
3. Cerebral surgery in cases of tumors and Jacksonian epilepsy. Results of operative procedures.
4. Surgery of the lungs, principally from the standpoint of the formation of tuberculous caverns and of gangrene of the lungs.
5. Treatment of cancerous strictures of the esophagus, pylorus and rectum. Results of the different methods of treatment.
6. Gonorrheal and syphilitic affections of the articulations.
7. Principles of the construction of protheses of the lower extremities in affections of the articulations, paralyzes, congenital luxation of the femur and after amputation.

SECTION 9, A.—DISEASES OF THE TEETH.

1. Nature and treatment of pyorrhea alveolaris.
2. Hygiene of the oral cavity and of the teeth.

SECTION 10.—MILITARY MEDICINE.

1. In what respects should the Geneva Convention be examined again to avoid differences of interpretation of its various articles, and what changes should be made in it on account of the transformation of armaments and the increase in the number of combatants?
2. Organization of the search for the wounded on the battle field.
3. First dressing for bullet wounds. What is the best?
4. Most convenient surgical case for the treatment of fractures caused by firearms.
5. Best styles of litters for the wounded.
6. Most convenient and inexpensive ambulances for the transportation of the wounded. Transportation of the wounded.
7. Transportation of the wounded in narrow gauge railway field cars.
8. The supply of drinking water for armies in the field.
9. In what way and to what extent can uniformity in the military medical service be secured?

SECTION 11.—DISEASES OF THE EYE.

1. Operative treatment of myopia (Fukala's method).
2. Trachoma and its treatment.
3. Therapeutic value of sub conjunctival injections.

SECTION 12, A.—DISEASES OF THE EAR.

1. Inflammation of the middle ear in new-born infants.
2. Classification of the inflammations of the middle ear according to the products of the inflammation.
3. Physiologic importance of the special parts of the labyrinth, especially in regard to the question whether complete deafness is caused by a partial alteration of the labyrinth.

4. Treatment of attico-mastoid suppurations and of the subsequent intracranial affections.
5. Contribution to the study of cholesteatoma.
6. Diseases of the ear originating in inflammation of the cranial sinuses (maxillary, frontal or sphenoidal).
7. Comparison of the value of simple trephining and the large opening of the cavities of the ear in chronic otorrhea.
8. Surgical treatment of sclerous otitis and its therapeutic value.
9. Acute adenoiditis in adults.
10. Study and treatment of internal complications in purulent inflammation of the ear.
11. Primary affections of the bony walls of the labyrinth.
12. Therapeutic importance of exercises of the ear for deaf persons and the deaf and dumb.
13. The dimensions of the auditory cavities regarded as a predisposing cause of diseases of the ear.
14. Pathology and treatment of sclerosis of the tympanic cavity (its difference from other similar lesions of the labyrinth).

SECTION 12, B.—DISEASES OF THE LARYNX AND NOSE.

1. Suppuration of the nasal sinuses (the maxillary excepted). Diagnosis and treatment.
2. Cancer of the larynx. Diagnosis and treatment.
3. Causes and treatment of loss of voice in singers.
4. Progress realized since the last Congress in the local treatment of tuberculosis of the larynx.
5. Autopsy of the larynx.
6. Laryngo-straboscopy.
7. The X ray applied to rhino-laryngology.
8. Esophagoscopy.
9. Photography of the larynx.
10. Report of the committee in regard to obligatory standards in the construction of rhino-laryngoscopic instruments and apparatus.

SECTION 13.—OBSTETRICS AND GYNECOLOGY.

I. OBSTETRICS.

1. Symphysiotomy.
2. External exploration.
3. Serum therapeutics in puerperal septicemia.
4. Connection between gonorrheal infection and puerperal affections.

II. GYNECOLOGY.

1. Colpotomy in cases of inflammation of the uterine adnexa, in displacements and neoplasms of the uterus.
2. Gonorrhea and its treatment in non-pregnant women.
3. Surgical treatment of peritonitis.
4. Comparison of the operative methods of treating cancer of the uterus in regard to their prevention of relapses.

SECTION 14.—HYGIENE, ETC.

This program will be announced later.

SECTION 15.—LEGAL MEDICINE.

1. Creation of an institute to instruct physicians in medical jurisprudence and consequent modification of the conditions of medico-legal instruction. Necessity of requiring a special diploma of medico-legal experts.
2. The necessity of a more extensive application of the method of microscopic investigation in legal medicine. Application of bacteriology to legal medicine. Medico-legal demonstration of the presence of gonococci.
3. Present status of the question of ptomains in legal medicine.
4. Present status of the question of vital proofs and the conditions which affect their reality.
5. Value of the indications of death from asphyxia. Conditions favorable to the genesis of sub-pleural ecchymoses. Ecchymoses and their relations to strangulation.
6. The glycogenic function of the liver in its relations to medico-legal expert testimony.
7. Anatomic-pathologic indications of death caused by cold.
8. Medico-legal investigation of death caused by chloroform.
9. Cauterizing action of arsenious acid and its salts.
10. Responsibility of hysteric subjects.
11. Penalty to be applied to crimes in the sphere of the sexual functions.
12. The criminality accepted by the Lombroso school. Does it exist?
13. Death from shock.
14. Cadaveric rigidity.
15. Peculiarities of the decomposition of the cadaver of the fetus and the new-born infant.
16. How to distinguish human blood from the blood of mammals in medico-legal investigations.
17. Criminal morcellement of the cadaver and means to determine the particulars of the cutting process and the length of time that has elapsed.

Association of Military Surgeons of Ohio.—In response to a call of the Surgeon General of the State, the medical officers of the Ohio National Guard met in the retiring room of the House of Representatives, in the State House, Thursday afternoon, Dec. 17, 1896. A constitution and suitable by-laws were adopted, forming the "Association of Military Surgeons of the State of Ohio," with active members consisting of the medical officers of the Ohio National Guard, associate members consisting of ex-medical officers of the Ohio National Guard and ex-medical officers of the United States Volunteer service and honorary members. The following officers were elected: President, Brig. Gen. J. E. Lowes, surgeon general of Ohio, Dayton; vice-president, Maj. L. T. Guerin, surgeon Fourteenth Infantry, Columbus; secretary, Maj. H. M. W. Moore, surgeon First Light Artillery, Columbus; treasurer, Maj. Frank Bain, surgeon Second Infantry, Kenton; executive committee, the foregoing officers and Maj. E. C. Farquhar, surgeon Eighth Infantry, Zanesville; Capt. Gilbert I. Cullen, assistant surgeon First Infantry, Cincinnati; Lieut. (junior grade) C. W. Newton, surgeon First Battalion, Naval Brigade, Toledo. Lieut. Col. William E. Walters and Capt. James E. Pilcher, of the Army, were elected honorary members.

NECROLOGY.

WILLIAM WALLACE, M.D. of Brooklyn, died December 22, in consequence of an attack of locomotor ataxia of about three months duration. He was born in Cork, Ireland, in 1835, and studied at Rothesay, Scotland, and at Foyle College in Londonderry. In 1851 he took up the study of medicine in Edinburgh, in 1856 was graduated from the Royal College of Surgeons and in 1860 from the Royal College of Physicians. During the year 1855 he acted as an assistant surgeon in the royal navy in the Russian war. It was in 1864 that Dr. Wallace came to Brooklyn to pursue the practice of his profession. Three years later he married Miss Ellen Louise Ladd of Throggs Neck. During his residence in Brooklyn Dr. Wallace was actively engaged in educational and philanthropic work. He was attending physician to the outdoor department of the Long Island College Hospital, and was visiting physician to the Long Island College Hospital, St. John's Hospital, Home for Consumptives, consulting physician to the Long Island Hospital and St. Mary's Hospital, and later, medical director of the college dispensary. He was also appointed a member of the council of the Long Island College Hospital, of the hospital committee of St. Mary's Hospital and of the board of managers of the Church Charity Foundation. He was at one time president of the Pathological Society, censor of the Kings County Medical Society and a delegate to the State Medical Society. Dr. Wallace leaves a widow and two sons, one of whom is a physician and was associated with his father in practice. Dr. Wallace was a man of sterling worth and wide popularity.

JOHN D. BRUMLEY, M.D., New York Medical College, 1858, died in Newark, N. J., January 8, aged 62 years. He became a Union army surgeon in 1863, and his first assignment was with the Seventh Michigan Volunteer Infantry, just before the "seven days' fight." He was captured and confined in Libby prison for a month. After his release on exchange he served to the end of the war. He was afterward a United States examining surgeon for pensions and for years the commandant of the New Jersey Home for Disabled Soldiers in Kearney. He held several public offices in Newark, was a member of several medical associations of New Jersey and Essex County and a member of the Society of the Army of the Cumberland.

BENJAMIN F. KETCHUM, M.D., New York University Medical College, 1860, formerly surgeon of the Twelfth Vermont Infan-

try, U. S. V., and mustered out Oct. 4, 1862, died suddenly of angina pectoris at the Brooks House, Brattleboro, Vt., January 9. He was born in Troy, N. Y., Dec. 25, 1837.

PATRICK H. BRYANT, Passed Assistant Surgeon, U. S. N., died at Newport, R. I., on board the training ship *Constellation*, Dec. 29, 1896.

BOOK NOTICES.

The Diary of a Resurrectionist 1811-1812, to which are added an account of the resurrection men in London, and a short history of the passing of the Anatomy Act. By JAMES BLAKE BAILEY, B.A., Librarian of the Royal College of Surgeons of England. 8vo. Cl. Illustrated. Pp. 184. London: Swan, Sonnenschein & Co., 1896.

The student of medical history can not fail to be interested in the story of the troubles of William and John Hunter, Matthew Baillie, the elder Cline and Sir Astley Cooper in the matter of anatomy. That interesting work by Bransby Cooper, "Life of Sir Astley Cooper," refers in several places to the diary which is now reprinted by the Librarian of the College of Surgeons, to which institution the MS. was presented by the late Sir Thomas Longmore, who during his pupilage was dresser to Bransby Cooper.

The diary itself is of little intrinsic value, but as a collateral reference to the times immediately preceding the passage of the British Anatomy Act, it is of great interest. The gruesome details of the accounts of Mr. Josh. Naples, the chief resurrectionist, belong to the chapter of horrors fortunately closed by the more enlightened legislation of the last half of the nineteenth century, whereby the trade of the resurrectionist was relegated to the pages of history.

The reader will find in this volume, among other interesting matters gathered by Mr. Bailey, a copious extract from Southey's "Surgeon's Warning." After the surgeon died, notwithstanding his elaborate preparations to prevent the dissection of his body, the "'prentices" finally got his body in a bag.

"So they carried the sack pick-a-back,

And they carved him bone from bone,

But what became of the surgeon's soul

Was never to mortal known."

The Surgery of the Chest. By STEPHEN PAGET, M. A. Oxon., F. R. C. S. Illustrated. New York: E. B. Treat, 5 Cooper Union. Pp. 479. 8vo cloth. 1897.

This is a timely contribution to the literature of thoracic surgery. The author's interest in the subject is profound and it has led him to produce a monograph that for suggestiveness and at the same time true conservatism has few equals.

We are pleased that Mr. Paget has the courage to state the case fairly against the great mutilations which have lately come into vogue, and to reassert the advantages of the classic Greek practice in cases of empyema.

Full credit is given to our American authors on this subject and indeed it may be fairly claimed that few recent important articles written on this side of the water have escaped him. But little note, however, has been taken of the American or English systematic treatises on general surgery, many of which contain reference to cases, but ancient and medieval literature have been thoroughly examined and modern medical periodicals exhaustively searched.

The work is of great value to every general practitioner of medicine and surgery.

Two Health Seekers in Southern California. By WILLIAM A. EDWARDS, M.D., and BEATRICE HARRADEN. 16mo, cl. Pp. 144. Philadelphia: J. B. Lippincott. 1897. Price \$1.00.

Dr. Edwards says in the preface, "I have long felt that an impartial account of Southern California, devoid of the fulsome praise of guide books and land office advertisements, would be of interest and help to a large class of health seekers. If invalids would bear in mind that no climate is

perfect, much disappointment would be saved. Again, if physicians would explain to their patients the absolute necessity of coming earlier in their disease, much suffering could be avoided."

Dr. Edwards has given his conclusions after a residence of eight years and Miss Harraden after two and one-half years' sojourn.

The style of the book is pleasant and the conclusions, we doubt not, are accurate. The work will be of good service in teaching the valetudinarian what to expect from the Southern Californian climate.

The Retrospect of Medicine. A half-yearly journal containing a retrospective view of every discovery and practical improvement in the medical sciences. Edited by JAMES BRAITHWAITE, M.D., London, assisted by E. F. TREVELYAN, M.D., B.Sc., M. R. C. P. Volume 113. January to June, 1896. 8vo, cl. Pp. 464. London: 1896, Simpkin, Marshall, Hamilton, Kent & Co., Ltd. Price 6s. 6d.

This volume is fully up to the standard of its predecessors and we are pleased to see that American literature is given a large space in the work. "Braithwaite" is one of the most popular, comprehensive and useful in the collection of "year books" that come to our table.

PUBLIC HEALTH.

Health Statistics in Family Archives.—A writer in the *Journal d'Hygiène* suggests that if families would preserve in their archives full records of the important illnesses, accidents, operations, etc., as they occur in them, with detailed reports of necropsies, "which should be more frequent," they would possess immense scientific and historic value and interest in time and prove of great service to the health of future generations. He cites the queen mother of Henry IV., who left commands that her head should be dissected in order to discover the cause of her frequent severe headaches, that the information thus obtained might be applied to prevent the same trouble in her children.

Anthrax at Sing Sing Prison, New York.—A convict in Sing Sing Prison has recently developed a case of malignant anthrax, the result of scratching a pimple on his neck with his finger nails. He had been handling curled hair, such as is used in upholstery work, and it is supposed that the anthrax spores had collected under the nails. He has had violent hemorrhages from the nose and mouth, and his left side is completely paralyzed, but Dr. R. T. Irvine, the prison physician, thinks his chances of recovery are good. It is said that only about a dozen cases of this disease in man have heretofore been reported as occurring in New York State.

Origin of Epidemics of Cholera.—The *Progrès Méd.* of December 12, quotes Courtellement, who has just returned from a trip to Mecca, that epidemics of cholera do not originate there, but that it is brought from India by Indian pilgrims, who flock in great numbers every year, attracted as much by commercial interests as by religious sentiment. Protégés of England, they come to sell English products, which explains the consideration with which they are treated at Bombay and Aden. Arrived at Mecca, the cholera they bring attacks the crowds of other pilgrims there, exhausted by their travels, while according to M. Courtellement, it could be easily stamped out if the simple necessary precautions were taken on the arrival of the pilgrims from India.

Memorial to Michigan Members of Congress, Relative to a Permanent Census Service of the United States.—At the regular meeting of the Michigan State Board of Health at Lansing, Jan. 8, 1897, the following preamble and resolutions were unanimously adopted:

WHEREAS, The bill "to provide for a permanent census service" reported to Congress by Hon. Carroll D. Wright, will

be of great usefulness to the sanitary service of this State, as follows: 1. By providing a more frequent statement of population, thereby affording a basis for reliable vital rates and the more accurate calculation of intercensal populations, upon which such rates depend. 2. By providing means for ascertaining, for the first time in the history of the census, a reliable representative death rate for the State which will be comparable with those of other States and countries, Michigan being now a so-called non-registration State. 3. If Michigan shall become a registration State by act of the present Legislature for the immediate registration of deaths, by providing an annual comparative compilation of its data in connection with those of other registration States, thereby greatly increasing the usefulness of the Michigan statistics; therefore be it

Resolved, That the Michigan State Board of Health, at its quarterly meeting held at Lansing, Jan. 8, 1897, urgently recommends the passage of the bill for a permanent census service, on the ground of the improvement that will result therefrom to the sanitary interests of the country; and further,

Resolved, That a copy of this resolution be sent to each Senator and Representative from Michigan in Congress, with the request that they labor for the passage of the measure.

HENRY B. BAKER, Secretary.

MISCELLANY.

A Milwaukee physician has forwarded \$5.00 in currency to Dr. Henry P. Newman, Treasurer, without enclosing his name. The amount will be properly credited if he will send in his name and give date of transmittal.

The President of the Republic of Brazil was recently operated on for vesical calculi by Professor Alfonso of Rio Janeiro, with an uneventful recovery.

Prognosis by the Servant Girl.—Sick man: "Is this the West-end Sanitarium?" New Girl (mystified): "This is Dr. Brand's house." "Yes, but doesn't he take sick people to nurse sometimes?" "Oh! maybe he does. There's two or three skeletons in the back office."—*Philadelphia Record*.

The Largest of Coffins.—One of the strangest coffins ever told of is that for which the British War Department is said to be responsible. The story is told that a workman engaged in casting metal for the manufacture of ordnance in the Woolwich Arsenal lost his balance and fell into a caldron containing twelve tons of molten steel. The metal was at white heat and the man was utterly consumed in less time than it takes to tell it. The War Department authorities held a conference and decided not to profane the dead by using the metal in the manufacture of ordnance, and the mass of metal was actually buried and a Church of England clergyman read the services for the dead over it.—*Notes and Queries*.

Sickness Does Not Excuse Tenant Holding Over.—The fact that a member of his family is sick and it would endanger the life of the latter to be moved, the appellate division of the supreme court of New York holds in the case of *Herter v. Mullen*, Nov. 6, 1896, does not furnish a valid excuse for a tenant holding over after the expiration of his lease, so as to relieve him from the operation of the rule of law that where a tenant holds over, without the consent of the landlord, the landlord may elect to treat the holding over as creating a new lease for another year, and it will not make it otherwise for the tenant to notify the landlord in advance that he does not propose to keep the property another year.

Separate Account Books for Patients.—It is not probable that any great number of physicians keep separate account books for different patients. But the case of one who did comes to light where he filed a claim for medical services to the decedent, *in re* *Fulton's Estate*, upon which the supreme court of Pennsylvania passed Oct. 5, 1896. Here, when proof of the claim was to be made, a separate book was produced, containing no charges except against the decedent. The physician explained that this book was so kept at the decedent's request. Its character, however, the supreme court holds to be an

insuperable objection to the book, which it rejects as not being one of entries in the regular course of business. The regularity of an account as to its place in the ordinary books of the business, the court says, is as necessary as its regularity in other respects.

Dr. Colden's Coach.—In 1732 there was but one vehicle on Manhattan Island that bore any resemblance to a coach, and forty years afterward there were only half a dozen coaches. There were several chaises, but carts were the common conveyance. In 1772, according to authentic local history, there were five private coaches in use here. One belonged to the Governor, one to Lieutenant Governor Cadwallader Colden, M.D., one to William Walton, one to Mr. Murray, for whom Murray Street was named, and the fifth was the property of Mrs. Alexander. Carpets were unknown in New York at this period, for "all the houses were sanded with white or silver sand, in figures and devices."—*New York Tribune*.

The Beginning of a Medical Code for Austria.—After a long and animated discussion, the Medical Chamber of Vienna has at last adopted the following recommendations as to the mutual relations of physicians, patients and the public. The first article, referring to the intercourse of physicians between themselves, declares that the maintenance of the honor and dignity of his profession is the medical man's first duty. Misunderstandings as a rule arise from the fact that patients seek further advice without previously informing the practitioner already engaged. If a medical man knows that a patient who consults him is already under the care of another practitioner, he ought to decline further attendance and ought not to express an opinion as to the diagnosis or treatment of such a case unless he has conferred with his colleague who has first been called; he should not refuse a consultation on the ground of the alleged inferior position or attainments of the proposed consultant. If two physicians do not agree a third is to be called. Fees ought to be claimed at the time; gratuitous treatment is only admissible in the case of poor patients. A medical man is not obliged to attend a patient, but he ought not to withhold assistance in urgent cases. Reticeance as to the patients' confidences is already prescribed by law.—*London Lancet*.

Location of Hospital.—Under chapter 157, General Laws of Minnesota of 1895, entitled "An act to create a commission to locate, acquire land and prepare plans for a fourth hospital for the insane," the supreme court of Minnesota holds, in the case of *State v. Bondy*, Nov. 19, 1896, that the location of a site within the meaning of the act signifies and includes not merely a determination as to that part of the State where it should be located, but also a selection and designation of the precise tract or parcel of ground upon which the hospital should be located, and until this was done the location was incomplete, and therefore the commission still had the power to reconsider any partial or tentative action which it had taken upon the subject. The court further holds that conceding, without deciding, that after the commission had once located a site, its power would be *functus officio* and therefore without power to reconsider or change its location, yet upon the facts appearing in the record in this case, the *viva voce* vote on the location of a site, by which the commission voted to locate it at Hastings, did not amount to a complete location or selection of the site within the meaning of the act, nor did it amount to such an acceptance of the offer of the city of Hastings as to make it a binding contract between the parties and hence it was within the power of the commission to locate the site elsewhere.

Italian Surgical Congress.—The seats of learning and scientific research in Italy are not centralized as in most countries, but all over the land are small groups of enthusiastic investigators clustered around some progressive professor, constantly at work according to the most advanced methods of modern bacteriology, experimental pathology, etc. The Congress at Rome

in October brought out numerous communications of the results attained, which time may possibly prove to be of great importance. We notice among them Salomoni's report of some experimental surgery of the heart on dogs, which survived wounds into the heart—sutured by the usual methods—and showed only slight pericardial adherences when killed two to three weeks later. Farina recently sutured successfully the left ventricle of a patient who was recovering when a fatal intercurrent disease occurred. Sgambati has secured one success in his experiments on dogs to ascertain if normal epithelial tissue implanted in the pulmonary arteries would continue to grow and proliferate like abnormal cancer tissue. He used the skin of the submaxillary gland and of the testes, in an endo-venous injection after soaking them a while in salt solution at 38 degrees C. The dogs were killed afterward and the hemorrhagic infarcts found in the lungs examined. Most of the results were negative, the embolic elements being found in a more or less advanced stage of degeneration, but in one case the experiment had succeeded and the epithelial elements from an organized thrombus in the testicular epithelium had located and proliferated presenting the picture of a tubular adenoma. These experiments are the first by the embolic method although Cohnheim and Maas have transplanted embryonal tissue and observed its reproduction *in situ*. Gangitano also announced that numerous experiments have shown that occluding the cystic duct by tying it or closing the lumen with aseptic small stones was invariably followed by atrophy of the gall bladder. On the other hand, if septic substances were introduced, such as non-sterilized stones, saliva, etc., into the gall bladder after the cystic duct was tied, hydrops invariably followed. He considers therefore that hydrops in man is due not only to the obstruction of the duct but also to infection. He advises consequently in cases of gallstones when the biliary passages are free from infection and otherwise normal, not to perform cholecystostomy or cholecystectomy, but merely to tie the cystic duct. —*Cbl. f. Chir.*, December 19.

A Delirium of Loquacity.—The *British Medical Journal*, December 5, has a cautionary word about orators, political and other, that may profitably find lodgment in this orator-ridden country. It says in part: "We live, in fact, in a whirlwind of words, a delirium of talk; and this unwholesome environment leads to the development of a neurotic condition of the political and social organism which is fraught with the gravest danger to the commonweal. More than once in recent years the excitement of oratory has led to attacks of hysteria affecting large numbers of the public, and it is conceivable that a state of acute National frenzy might be brought about by the same cause. It is hardly too much to say, therefore, that the mere orator is a danger to society. Dr. Le Bon has told us what the madness of crowds may lead to, and the orator has the power of engendering this madness and stimulating it to the highest pitch of destructive fury. Not only does the orator act upon the crowd, but it reacts upon him. He becomes intoxicated with the exuberance of his own verbosity, and is carried into excesses of speech which, when translated by those whom he has influenced into action, he would in his saner moments deplore. A curious illustration of the possible dangers of oratory was afforded recently by the lunatic who lectured on his own disease at Vienna. The lecture, we are told, was admirable as a display of oratorical art; the wealth of ideas was only equaled by the brilliancy of expression. The effect of such a discourse on a popular audience may easily be imagined. The speaker might in this country have carried on a campaign against the lunacy laws, the iniquities of 'mad doctors,' and the horrors of madhouses, which would have led to an agitation for the setting free of all lunatics and the abolition of asylums. And if 'a tale told by an idiot, full of sound and fury, signifying nothing,' could do this, what might not a course of inflammatory orations by a master of the art of mak-

ing the worse appear the better reason, on subjects as to which the people are without authoritative guidance, accomplish? Plato banished poets from his republic, and we are inclined to think that it would be for the good of mankind if a similar course were adopted with orators."

Not Bound to Employ Physician or Avoid Hysterical Outbreaks. In a personal injury case it was asked that the jury be instructed: "If the plaintiff was injured by the collision, he was bound by law to use ordinary care to render the injury no greater than necessary. It was therefore his duty to employ such medical assistance as ordinary prudence in his situation required, and to use ordinary judgment and care in so doing." This, the supreme court of Illinois holds, in the case of *Chicago & Erie Railroad Co. v. Meech*, Nov. 9, 1896, stated a correct but abstract rule of law, which, because it was likely to mislead the jury for want of directions in regard to its proper application to the case in hand, was properly refused. It points out that the jury would probably have understood from such an instruction that although there was culpable negligence on the part of the defendants, and consequent injury to the plaintiff, yet if any aggravation of injurious consequences was caused by subsequent negligence of the plaintiff, then there was no cause of action, even for such consequences as necessarily resulted from the injury. The doctrine, it affirms, is that where, after the occurrence, the plaintiff by his own negligence increases the damage, then the defendant is liable only for the consequences of his own acts and not for those of the plaintiff, or of those of a third person, which are separable from the results of his own acts. The court also holds in this case that the fact that a plaintiff or defendant or witness, or any other person, suddenly swoons or faints, or gives vent to hysterical exclamations, or breaks down with hysteria, does not call for the granting of a new trial, though, of course, if it appeared that the dramatic occurrence that took place in the midst of the trial was intentional and for an improper motive, it would afford ground for setting aside the verdict.

Placental Vestigial Origin of Uterine Tumors.—Dr. Adami in the *Montreal Medical Journal* discusses the influence of placental tissue upon the uterus, finding reason for holding that portions of the fetal epiblast that may be left behind after the separation of the placenta may continue to grow and assume the characters of a definite tumor growth. That uterine tumors may thus develop from placental relics is now pretty well recognized by pathologists. "The placenta is in the main a fetal structure, nourished by the maternal blood, and being in the main fetal, it is possible that such tumors can be of fetal origin. Meyer has described an epitheliomatous growth which followed the removal of a hydatiform mole, in which the resemblance of the invading columnar processes to chorionic villi was especially noticeable. Meyer, it is true, did not venture to describe the growth as entirely fetal, but imbued with the present German view, suggested that the epithelial element was of maternal origin and that the chorionic villi had protruded into it, a view which our present knowledge of placental structure renders eminently improbable. But Fränkel has published a case of 'carcinoma developing from chorionic villi.' Here also malignant disease of the corpus uteri followed removal of a vesicular mole. This growth had a papillary form, invaded the deeper tissues and gave rise to metastases. Microscopically it was shown to have originated from the remnants of chorionic villi left after the removal of the mole, since the structure of the uterine glands was still recognizable and its histologic appearance was quite different from that of cancer of the endometrium of the corpus uteri. The writer has been unable in a hurried search to discover other cases of this nature, but these two would seem to support the view that (not only can cells derived from one tissue invade others and form metastases, but also that) cells originating from

another individual—the embryo—are capable of assuming similar powers of invasion and metastatic growth. That this process of invasion should be developed by the multiplication of parasites within those cells seems to me most unlikely, when it is remembered that these same cells of the chorionic villi, under physiologic conditions manifest this same power of invasion to a considerable, if strictly limited, degree; or otherwise these facts brought forward by Professor Young seem to be wholly in accord with the argument adopted by me in the article to which I have already referred. A consideration of another most interesting form of tumor of placental origin—the so-called malignant deciduoma—must be left for another occasion. To discuss the various theories propounded as to its nature would unduly prolong this article. Sufficient has been already brought forward to show that a fuller knowledge of the placental structure materially advances our views in many directions."

The Teaching of Pediatrics in London.—At this season of the year it is usual for the various medical schools in London to attract by advertisements and prospectuses as large a number of new students as possible. We, as a journal devoted to the diseases of infants and children, are concerned only in that particular branch of the student's education, probably the most important, and, in London at any rate, the worst taught of any of the numerous subjects which the student has to study during his hospital career. It can hardly be disputed that, in the interests alike of the public and of the profession, every newly qualified man should commence practice with a thoroughly practical knowledge of the diseases of infants and children; not only because children's ailments constitute a very large percentage of the work of the general practitioner, but because of the lifelong influence for good or evil which the medical treatment effects upon their future existence—nor indeed can it be maintained that the physical examination of children, which is so necessary for accuracy in diagnosis, is an easy accomplishment, or one which is likely to be mastered without considerable practice. It is then obvious that the General Medical Council of Great Britain should insist upon each and every examining body thoroughly testing the student's practical and theoretical knowledge of pediatrics before granting him his diploma, and that the authorities of every medical school should be called upon to provide facilities for its pupils to obtain the requisite tuition. We at any rate are disposed to regard the diagnosis and treatment of children's diseases as among the most difficult of the varied duties of the general practitioner, to be learned thoroughly only by special training, and it consequently behooves us to call attention to the attitude at present adopted toward this question by the examining and teaching authorities in London. We must confess to a feeling of the keenest disappointment that none of the examining bodies in London insist upon the student taking out a course of special study of pediatrics, and as we find that this grave omission in their schedules leads to an almost total neglect of the subject in the medical schools, we propose in future numbers to criticise the very imperfect arrangements which at present exist at the different general hospitals in London, and to suggest reforms which we consider are urgently required.—*Pediatrics*, November.

Liability of Non-resident Specialists.—The decision of the supreme judicial court of Maine, in the malpractice case of *Feeney v. Spalding*, which was rendered April 8, 1896, is now accessible to the public. It grants the defendant's motion for a new trial. He is a physician and oculist, practicing in Portland. In the summer of 1891, while on a trip to Machias, to visit patients, he stopped over a short time at Cherryfield. While he was there, the plaintiff, at that time a girl seven years old, who had been cross-eyed in one eye since she was a year and a half old, was taken to him by her father for exami-

nation and operation if thought desirable. After an examination by the physician, he performed the usual operation for a difficulty of this kind, bandaged the child's eye, gave certain directions to the father, and proceeded upon his journey. Prior to the operation, it was alleged, that the sight of this eye was, at least, fairly good; that, in fact, no defect whatever in the vision had ever been complained of by the plaintiff or observed by her parents or teacher; and that, after the operation, the sight of the eye operated upon was entirely gone, which result, it was alleged, was caused by the ignorance and want of skill of the defendant, and by his carelessness in the performance of the operation. But the court holds that before the plaintiff was entitled to recover a verdict, it was incumbent upon her to prove that the injury complained of was caused either by the defendant's want of that degree of skill and knowledge which is ordinarily possessed by physicians who devote special attention and study to the treatment of the eye, or by his failure to exercise his best judgment in the application of his skill to the particular case, or by his failure to use ordinary care in the performance of the operation, and in giving such instructions as should have been given by a surgeon who was only to perform the operation, and who was temporarily in the locality where the patient lived. At the trial, the plaintiff relied almost entirely upon the result which it was contended followed the operation. As to this, the evidence was conflicting. The expert testimony upon the part of the defense was to the effect that an examination of the eye showed conclusively that the defective vision had existed from birth, and that it was as good at the time of the trial as it ever had been. And not only was there no evidence of any want of the requisite skill, knowledge or care upon the part of the defendant, but the evidence on his behalf was that the operation was a proper one, skillfully performed, and incapable of causing the injury complained of. Under such circumstances, the court holds a verdict for the plaintiff not authorized.

Journal of Experimental Medicine.—The November number of this journal is fully up to the standard of its preceding issues and contains the following: "Histological Lesions of Acute Glanders in Man and of Experimental Glanders in the Guinea Pig." After a series of experiments, the author concludes as follows:

"The glanders nodule in the class of cases studied by us is in no sense analogous to the miliary tubercle in its histogenesis and our studies afford no support to Baumgarten's views. The primary effect of the bacillus of glanders on a tissue we found to be not a production of epithelioid cells, which undergo necrosis and invasion by leucocytes, as happens in the cases in which the bacillus of tuberculosis is concerned, but to be the production of primary necrosis of the tissue, followed by inflammatory exudation, often of a suppurative character. Degenerative changes rapidly ensue in the inflammatory product."

A report of "Two Cases of Sarcomatosis with Purpura Hemorrhagica" by C. F. Martin, M.D., and W. F. Hamilton.

John Lovett Morse, A. M., M.D., gives an interesting study of the "Changes Produced in the Kidneys by the Toxins of *Staphylococcus Pyogenes Aureus*." As the result of experiments made upon rabbits which were injected with the toxin, Dr. Morse says:

"The lesions of the kidneys produced by bacteria have been carefully studied by many investigators during the last ten years. Ribbert has devoted especial attention to those produced by the *staphylococcus aureus*. Pernice and Scagliosi injected guinea pigs with filtrates of the anthrax bacillus and of the bacillus pyocyaneus. The animals were killed in forty-eight hours. In general the results were almost negative. In some cases, however, hemorrhages were found in the interstitial tissue. The epithelium was as a rule unchanged. Here and there, however, it showed granular degeneration. The epithelium of some of the straight tubules was desquamated and in some cases the walls were collapsed. With this exception, I am unable to find that any attempt has been made to study the renal lesions produced by bacterial toxins alone.

Certainly no one has made a careful study of the effects of continued and repeated injections of such toxins. The positive results obtained in these three animals seem sufficient to prove that a chronic interstitial process may be caused in the kidneys by the action of the toxic products of bacteria. It must be admitted that the human kidney is more or less constantly exposed to the action of chemical substances produced by bacteria. Hence it would seem justifiable to assume that a certain proportion of the cases of chronic interstitial nephritis in man may be due to the action of such substances."

C. C. Stewart contributes an article on the "Influence of Acute Alcohol Poisoning on Nerve Cells." This series of experimentation is in extension and confirmation of Dehio's researches, and the bacteriologic procedures are very minute.

F. S. Locke's article on "The Action of Ether on Contracture and Positive Kathodic Polarization of Vertebrate Voluntary Muscle" is subdivided into four parts: 1, the action of ether on veratrinized muscles; 2, the action of ether on muscles under the influence of physiologic salt solution; 3, the action of ether on dehydrated muscles; 4, discussion of results, and concludes with some remarks regarding positive kathodic polarization of vertebrate voluntary muscle.

"The Regeneration of the Blood," by Winfield S. Hall and Marion Eubank, comprises twenty pages devoted to: Methods of observation; the withdrawal of blood; the course of the blood; the microscopic observations, and transfusion of an artificial serum or of a physiologic salt solution. The authors conclude with the following summary:

- a. The blood of apparently normal animals undergoes considerable variations within physiologic limits.
- b. After a loss of blood the regeneration is more rapid if there has been a transfusion of an artificial serum.
- c. Regeneration after transfusion is less rapid during the first half of the regeneration period than during the second half.
- d. The regenerative processes once stimulated into activity carry the blood, qualitatively, considerably beyond the established normal. Otto observed a similar phenomenon.
- e. The quantity of hemoglobin per volume of red blood corpuscles is not constant.
- f. The volume of red blood corpuscles varies as the product of the average volume of individual corpuscles and the number of corpuscles per unit volume ($V \propto v \times n$).
- g. When the number of the corpuscles increases the size decreases, and conversely ($n \propto 1 \div d$).
- h. The quantity of hemoglobin varies in general with the number of red blood corpuscles per unit volume ($Hb. \propto n$).

Dr. G. F. Novy's conclusions in an article on the "Immunizing Power of Nucleohiston and Histon" are as follows:

1. Nucleohiston does not protect against a separate and subcutaneous injection of tetanus toxin, diphtheria toxin, hog-cholera bacillus, or anthrax bacillus.
2. Mixtures of nucleohiston and either tetanus toxin or diphtheria toxin lose their specific action—the latter much more readily than the former. Animals that recover after inoculation of such mixtures are not rendered immune.
3. In a mixture of nucleohiston and anthrax bacillus the latter is unaffected, even after a lapse of eleven days.
4. The destruction of specific toxins in a solution of nucleohiston, though in part due to sodium carbonate, is probably chiefly due to nucleohiston.
5. Histon does not protect against a separate and subcutaneous injection of tetanus toxin, diphtheria toxin, hog-cholera bacillus, or anthrax bacillus.
6. In a mixture of histon and diphtheria toxin the latter is destroyed in a few minutes. This action is in part, if not wholly, due to the acidity of the histon solution. Similar mixtures of closely related bodies, serum globulin or albumoses, in Witte's pepton, give analogous results. The animals that recover from such inoculations are not rendered immune. Histon does not destroy the tetanus toxin as readily as the diphtheria toxin.
7. Histon possesses decided and marked toxic properties which are not due to the hydrochloric acid present.

Dr. G. W. Fitz reports a "Study of Types of Respiratory Movements." He concludes as follows:

1. Children of the two sexes differ very little in the character of their respiratory movements.
2. Between girls and women and boys and men there is little or no difference in respiratory type.
3. Childbearing does not permanently affect respiration.

4. The natural type of respiration for both sexes is one in which the movement is fairly equally balanced between chest and abdomen, the abdominal being somewhat in excess.

5. In typical unconstricted individuals the chest contributes about the same bulk of air as does the abdomen.

6. Constricting dress causes preponderance of thoracic movement in ratio to its restriction of abdominal movement and to the sensitiveness of the nervous coördination.

Syphilology in Early English Drama.—Some weeks ago the JOURNAL called attention (Volume xxvii, page 1252) to the ludicrous blunder of a commentator who, destitute of even popular medical knowledge, distorted the Hippocratican facies Shakespeare so beautifully illustrated in Falstaff's death into bizarre absurdities. Senator Lodge, in his "American Slang in Shakespeare," makes a similar amusing blunder when he remarks:

"In the soup' to express defeat and disaster, is apparently very recent, yet it is singularly like the language of Pompey (Measure for Measure, act 3, scene 2) when he says 'Troth, sir, she hath eaten up all her beef, and she is herself in the tub.'"

The tub reference was a sly illusion to the "occupation diseases" afflicting the procuress of whom Pompey was speaking. The "tub" was a sweating apparatus employed in venereal disease by Herodotus in the second century (Dupouy, *Histoire de la Prostitution*) and later advocated by Cornelius Agrippa, whence the appellation "Cornelius tub." This "tub" is still employed in syphilis at Hot Springs and elsewhere. The patient, according to Ambrose Paré, who gives (Works, Edition 1575, p. 598) a figure of this tub, was seated inside on a perforated stool, beneath which were hot bricks or stones. Through a trap door in the side of the tub, a mixture of vinegar and brandy (to which mercurials and aromatics were sometimes added) was thrown upon the heated bricks. The steam was confined by a sheet fastened around the neck. In England, as Dr. R. Fletcher shows (*Alienist and Neurologist*, 1895) the tub used for salting or "powdering" meat was thus employed. Rabelais was an advocate of its use. His attention was early attracted to syphilis because of a kindly disposition which drew him toward all neglected invalids. In 1538 he made great efforts to reform (Dupouy, *Medicine in the Middle Ages*) the treatment of these patients who had been abandoned by physicians to quacks, who terribly abused mercurial inunctions. Rabelais had "often seen syphilitics when greased with mercurial ointment; their faces on edge like a knife and their teeth clacking like the keyboard of a broken down organ." In the treatment of syphilis Rabelais employed the hot air and other baths, which had long previously been used by Torella. Rabelais, believing that ere the discovery of America, syphilis ravaged Europe, made a tutor of Gargantua die of it in 1420.

"In fourteen hundred and a score,
Did pox come to him full sore."

To the use of sweating in syphilis, Rabelais makes a most pungent allusion in his explanation of why the sea is salt.

"The earth at this time was so exceedingly heated that it fell into an enormous sweat, yea, such an one that made it sweat out the sea, which is therefore salt, because all sweat is salt, and this you can not but confess to be true if you will taste your own or of those that have the pox when they are put into a sweating, it is all one to me."

The tub or bath (for tub was then as now an accepted English synonym for bath) treatment for syphilis was very popular in Shakespeare's time, as witness Timon's cynical advice to Phryne and Timandra, the courtesans (Timon of Athens, act 4, scene 4).

Make use of thy salt hours;
Season the slaves
For tubs and baths; bring down rosy-cheekd youth
To the tub fast and the diet.
Consumption sow in hollow bones of men; strike their
sharp shins
And mar men's spurring; crack the lawyer's voice
That he may never false titles plead.
Down with the nose.
Down with it flat; take the bridge quite away;
Make curly headed ruffians bald.

Strict diet, as Shakespeare implies, was enforced. Dry food, especially overdone mutton from the neck, was alone allowed. Beaumont and Fletcher (Knight of the Burning Pestle, act 3, scene 5), in a burlesque on Spenser's *Faerie Queene*, imprison a knight and lady in a cave by a giant who tortures them. The Knight, who has carried off his "lady dear" from Turnbull Street (then notorious for houses of prostitution) thus tells his tale of woe.

Man.—I am an errant knight that followed arms,
With spear and shield; and in my tender years
I stricken was with Cupid's fiery shaft,
And fell in love with this my lady dear,
And stole her from her friends in Turnbull Street
And bore her up and down from town to town
Where we did drink and eat and music hear,
Till at the length at this unhappy town
We did arrive and coming to this cave,
This beast us caught and put us in a tub
Where we this two months sweat, and should have done
Another month if you had not relieved us.

Woman.—This bread and water hath our diet been
Together with a rib cut from a neck
Of burned mutton; hard hath been our fare.
Release us from this ugly giant's snare.

Man.—This hath been all the food we have received
But twice a day for novelty,
He gave a spoonful of this hearty broth,
To teach of us through this same slender quill.
[pulls out a syringe.]

Beaumont and Fletcher in another comedy (*Honest Man's Fortune*) thus reproach a libertine:

All women that on earth do dwell thou lovest,
Yet none that understands loves thee again
But those that love the 'spital. Get thee home
Poor paluted butterfly; thy summer's past;
Go sweat and eat dry mutton.

Middleton (*Michaelmas Term*, 1607) predicts the like fate to another rake:

He'll be laid shortly;
Let him gorge venison for a time, our doctors
Will bring him to dry mutton.

Lustic alopecia early lead to numerous allusions to "French crowns and nightcaps." In "A Fig for Momus" (the oldest satire in the language) occurs the following stanza:

Last day I chaunst in crossing of the street
With Divilus, the lunkeeper, to meet.
He wore a silken nightcap on his head,
And looked as if he had been lately dead.
I asked him how he far's; not well, quoth he,
An agree this two months hath troubled me.
I let him pass and laught to hear his abuse
For I knew well he had the pox by Lnee
And wore his nightcap heribbl'd at the ears
Because of late he sweat away his heares.

Middleton (*Your Five Gallants*, 1603) remarks:

"He is in his third sweat by this time, sipping of the Doctor's bottle or picking the ninth part of a rack of mutton dry roasted, with a leash of nightcaps on his head, like the pope's triple crown, and as many pillows crnsbed to his back."

George Farquhar has the following high opinion of the value of the "powdering tub" in lues:

You will revive, the pox expire
Then rise like Phoenix from the fire.
The metal's stronger that's once soldered
And beef keeps sweeter once 'tis powdered.

Armin's "Nest of Ninnies," 1608 says anent the students:

And when they should study in private with Diogenes in his cell, they are with Cornelius in his tub.

Cornelius was thought popularly to be a corruption of Diogenes who thus naturally offered the following mark for the satirist in Cotgrave's *English Treasury of Wit and Language* (1655):

As for Diogenes, that fasted much
And took his habitations in a tub
To make the world believe he loved a strict
And severe life, he took the dyet, sir, and in
That very tub sweat for the French disease
And some unlearned apothecary since
Mistaking name, called it Cornelius tub.

Dietetic treatment was an early favorite, Gandy's Arabian dietetics, so popular in the first decades of the present century, and even now, were in use in the reign of Charles II. of England. Gandy's diet consisted exclusively of dry biscuits, nuts, dried almonds, figs and raisins. An infusion made from sarsaparilla, China root and cloves was freely given and a mercurial pill was administered thrice daily. Mrs. Aphra Behn, the most pornographic novelist of the time describes this procedure in (1660) the following doggeral "Letter to a Brother of the Pen in Tribulation." (Tabernaclers were street preachers who

preached from casks or tubs and thus furnished another sly allusion to the "tubbing" of luetics:

Poor Damon art thou caught. It's even so,
Art thou become a Tabernacler too,
When sure thou dost not mean to preach or pray
Unless it be the clean contrary way.
This holy time I little thought thy sin
Deserv'd a tub to do its penance in.
O, how you'll for the Egyptian flesh pot wish
When you're half famished with your lenten dish,
Your almonds, currents, biscuit, hard and dry
Food that will soul and body mortally.
Dammed penitential drink that will infuse
Dull principles into thy grateful muse.

A powerful method of sweating then in use that would have greatly pleased the advocates of the dry earth treatment, is described by D'Avenant (*The Wits*, 1636, act 4, scene 1):

Though I endured the diet and the flux,
Lay seven days buried up to the lips like a
Diseased sad Indian, in warm sand, whilst his
Afflicted female wipes his salt foam off
With her own hair, feeds him with bnds of guacum
For his sallad and pulp of salsa [seaweed] for
His bread; I say all this endur'd would not
Concern my face. Nothing can decline that.

Massinger (*The picture*, 1620, act 4, scene 2) plays two rivals, Ubaldo and Ricardo, against each other. Ubaldo first backbites his rival to Sophia, with whom both are in love:

Sophia.—How, is he not wholesome?

Ubaldo.—Wholesome, I'll tell you for your own good he is
A 'spital of disease indeed
More loathsome and infectious; the tub is
His weekly bath. He hath not drank this seven years
Before he came to your house but composition
Of sassafras and guacum and dry mutton,
His daily potion. Name what scratch soever
Can he got by women and the surgeon will resolve you
At this time or that, Ricardo had it.

Sophia.—Bless me for him.

Ubaldo.—'Tis a good prayer, lady,
It being a degree into the pox
Only to mention him; if my tongue burn not hang me
When I but name Ricardo.

After Ubaldo had been dismissed by Sophia Ricardo is introduced, who thus rewards his friend's kindness:

Ricardo.—He did not touch your lips.

Sophia.—Yes, I assure you
There was no danger in it.

Ricardo.—No, eat presently
Those lozengers of forty crowns an ounce
Or you are undone.

Sophia.—What is the virtue of them?

Ricardo.—They are preservatives against stinking breath
Rising from rotten lungs.

Sophia.—If so, your carriage
Of such dear antidotes, in my opinion,
May render yours unspected.

Ricardo.—Fie, no; I use them

When I talk with him. I should be poisoned else,
But I'll be free with you; he was once a creature
It may be of God's making, but long since
He is turned to a druggist's shop, the spring and fall
Holds all the years with him; that he lives he owes
To art not nature. She has given him o'er.
He moves like the fairy king on screws and wheels
Made by his doctor's receipts and yet still
They are out of joint and every day repairing.

He's acquainted
With the green-water, and the spitting pill's
Familiar to him; in a frosty morning,
You may thrust him in a pottle pot; his bones
Rattle in his skin like beans toss'd in a bladder
If he but hears a coach. The fomentation,
The friction with fumigation can not save him
From the chine-evil. In a word he is,
Not one disease but all; yet being my friend
I will forbear his character, for I would not
Wrong him in your opinion.

Venereal disease in the sixteenth and seventeenth centuries had many popular synonyms. In the fifteenth century (*Les Cents Nouvelles Nouvelles*, 1456) it was called the "spite" (that predecessor of the toasting-fork), which was easily converted into the "Devil's Spit for Rakes" of more than one author. In the thirteenth century in France and Scotland, it was termed the "grand gorre" or "pocky pork."

In a Scotch version of the French "XXIII Kinds of Vulgar" appears the following ("Sibbald's Chronicle of Scottish Poetry," 1802):

Now cursit and wareit he their wyrd
Quhyll [while] they be levand on this erd
Hunger, sturt and tribulation
And never be but [without] vexation.
The paneful gravel and the gutt.
The gulsech [jaundice] that they never be but [without]
The straungolis and the grit glengor.

A later English translation of the French version is:

That they may be
Itchy, pocked and apostumed,
Dug with ulcers, badly rheumed

By gout and gravel pained; by jaundice sapped
That they may be also clapped.

Strangolis was strangury produced by venereal infection. Fracastor, first called venereal disease syphilis (syphilis sive morbus Gallicus) from sus, pork, and philos, love. Gorre (meaning pork in Romance) was applied by pirates to the women sold as slaves and hence easily drifted into a designation of prostitutes whose ranks were largely recruited in this way. Fracastor to avoid national prejudice (which made the Turks call syphilis the "Christian disease;" Germans, Italians and Spaniards the "French disease;" Frenchmen, Dutchmen and Scotch, the "Spanish disease" and Poles the "German disease") translated the Romance term into Greek and made it popular. In England (as Dr. Fletcher remarks) one of the oldest terms in the copious popular nomenclature of syphilis is the "Winchester goose." In early London, the Bankside, a row of brothels near the river, was under jurisdiction of the Bishop of Winchester. The victim who suffered the usual consequence of a visit to this tainted locality was called a "Winchester goose." The term was finally applied to the disease itself. The old writers very frequently use it. John Taylor, the Water Poet (intimately acquainted with all river-side customs and phrases), calls it

A groyne, or a goose from Winchester.

The Nomenclator (an English dictionary of 1585), defines it as "a sore in the grine or yard, which if it comes by lecherie, it is called a Winchester goose or a botch."

Ben Jonson (Underwoods) says:

And this a sparkle of that fire let loose
That was rak'd up in the Winchesterian Goose
Bred on the Bank in times of popery
When Venus there maintained the mystery.

Shakespeare makes more than one stage use of the term. Pandarus (Troilus and Cressida, act 5, scene 2) in what is clearly intended to be an epilogue, employs the term as a stage trick to avoid being hissed.

Pandarus.—Some months hence my will shall here be made.
It should be now but that my fear is this:
Some gall'd goose of Winchester might hiss;
Till then I'll sweate and seek about for ease
And at that time bequeath you my disease.

In Henry VI (part 1, act 1, scene 3) Humphrey, Duke of Gloster, applies the term to the Cardinal Bishop of Winchester, the ruler of the Bankside:

Duke of Gloster.—Stand back, thou manifest conspirator,
Thou that givest whores indulgences to sin.
Winchester.—Gloster, thou'lt answer this before the pope.
Gloster.—Winchester goose.

Webster ("Westward Ho") has an elaborate explanation of the origin of the term identical with that already given. To be "bitten by the Winchester goose" was in popular speech, to have syphilis. As the pigeon as well as goose meant in slang a gull, "Winchester pigeons" were like "Winchester geese" victims of syphilis.

Bone-ache is another synonym for syphilis, used by both Nash and Shakespeare. Nash (Pierce Penniless, 1592) says:
But cucullus non facit monachum; 'tis not their newe bonnet will keep them from the old boan ache.

Shakespeare (Troilus and Cressida, act 5, scene 2) employs this term in the same sense. Another synonym bore reference to the supposed origin of lues at the siege of Naples. In Motteux's English translation of Rabelais, Friar John says: "He looks as if he had been struck over the nose with a Naples cowl-staff."

That the relationship between genital infection and constitutional results should be so early recognized by dramatists may seem strange to those who believe Hunter discovered the chancre called by his name, and who fail to recognize that printer shops, publishing medical works as well as general literature, were the haunts of poets and dramatists in search of material. This was excellently shown by Dr. R. N. Hawley in a paper read before the Milwaukee Medical Society (N.W. Lancet, December, 1892). While admitting Shakespeare's debt for medical lore to his friend Dr. Helden, and to his own son-in-law, Dr. Hall, Dr. Hawley pointed out that Helkiah Crooke pub-

lished what was probably the first great work on anatomy published in English. It contains over one thousand pages imperial quarto and is illustrated by numerous drawings of anatomic subjects. It contains beside anatomy, various references to physiology and psychology. In this work the brain membranes are well described. W. Jaggard of the Barbican, London, printed the works of Crooke. He was the printer for Shakespeare. Within easy walking distance from the Globe Theater (the scene of Shakespeare's managerial glory) was the printing office of Jaggard, where the plates and letter press of Crooke would for a long time be the most remarkable press-work of the time. To that office the indefatigable playwright would often be drawn by his own business. There he could hardly fail to see unfolded before him the anatomy of man from a sure source in just the form that would most readily appeal to his ever-absorbing mind. The closer this book and the plays are read together, the more clearly, Dr. Hawley remarks, it is detected where and how the dramatist became the student of anatomy.

Long before Hunter, both Fallopius and Ambrose Paré (Buret, History of Syphilis) had recognized the constitutional prognostic significance of the hard chancre.

Washington.

THE MEDICAL SOCIETY ELECTS OFFICERS.—At the annual meeting of the Medical Society held on January 6, Dr. Samuel C. Busey was elected president by acclamation. This is the fourth time he has been thus honored. The other officers elected were Drs. J. D. Morgan and Stone, vice-presidents; Dr. C. W. Frangoni, treasurer; Dr. T. C. Smith, corresponding secretary; Dr. S. S. Adams, recording secretary; Dr. Hayes, assistant secretary, and Drs. Kleindschmidt, Acker, Richardson, King and Winters, censors. The society formerly issued the licenses to practice medicine in the District, but a recent act of Congress transferred that power and created the Medical Examining Board, who now perform that function.

MEDICAL ASSOCIATION.—An adjourned meeting of the Medical Association was held on January 12 to consider a report from a special committee appointed to investigate the subject of free dispensary abuses. Several valuable recommendations were adopted. The fee bill, which has been in vogue for many years, was revised and a special committee of three appointed to cooperate with the other societies in the suggestion of a plan for checking the frauds practiced by patients on physicians. Washington has been a Mecca for "beat" and "rounder" patients.

FEES FOR HEALTH TRANSCRIPTS.—Senator McMillan has introduced a bill on the recommendation of the Commissioners, authorizing the charge of 50 cents for issuance of transcripts from the records at the Health Department. Health Officer Woodward's letter, accompanying the bill, states that these transcripts are asked for in great numbers for private purposes, especially by applicants for insurance. He would have the money derived from this source turned over to the collector of taxes. Mr. Babcock introduced a similar bill in the House.

MEDICAL LICENSES.—The Board of Medical Supervisors has decided not to issue licenses to physicians connected with the army, navy and marine-hospital service. They are exempted by the act.

MEDICAL SOCIETY.—At the regular weekly meeting of the Medical Society held on January 13 Dr. W. K. Butler read the essay of the evening, entitled "Syphilitic Ophthalmia," and presented cases and specimens. Dr. Jos. Taber Johnson reported a case of extra-uterine pregnancy and presented the specimen.

MONEY FOR THE FREEDMEN'S HOSPITAL.—Mr. McMillan has given notice in the Senate of an amendment to the District of Columbia appropriation bill which he proposed to make. The amendment provides: "For Freedmen's Hospital, for sub-

sistence, \$22,500; for salaries and compensation of superintendent, not to exceed \$3,000; for clerk, engineer, matron, nurses, laundresses, cooks, teamsters, watchmen and laborers, \$15,000; for rent, hospital buildings and ground, \$4,000; for fuel, light, clothing, bedding, forage, transportation, medicine and medical supplies, surgical instruments, electric light, furniture and other absolutely necessary expenses, \$11,500. Total appropriated by this amendment is \$53,000." The amendment also provides that hereafter the incorporators of this institution shall have full control and management thereof. This is a very proper amendment. It gives the same rights to this institution which are enjoyed by all the other hospitals in the District and removes the obnoxious political control which has been so objectionable in the past.

TO REGULATE EXPERT TESTIMONY IN LOCAL COURTS.—Senator Morrill has introduced a bill in the Senate to regulate the employment of expert testimony in the courts of the District. It bestows the power upon the trial judge, subject to review by the appellate court, to decide whether a person is competent to testify as an expert. Further provision is made in insanity cases for the appointment of a commission of three medical officers, one to be named by the government, one by the defendant and one by the court.

SECRETARY MORTON'S CRITICISM OF THE MEDICAL SOCIETY'S ANTI-ADULTERATION BILL.—Secretary Morton of the Department of Agriculture has written to Mr. McMillan, chairman of the Senate committee on the District of Columbia, in reference to Senate bill, 3,485, relative to the adulteration of food and drugs in the District of Columbia. Mr. Morton says he takes liberty to submit a few comments on certain portions of this bill which, it seems to him, would be benefited by further consideration. In the definition of adulteration of drugs, he says, it should be stated that only in cases in which they profess to be in harmony with the United States pharmacopeia should they comply with its requirements. He says it would probably be very difficult to pass any bill with the provision relating to patent medicines as provided in the measure under consideration on account of the active opposition of manufacturers and dealers in patent medicines to such a provision. He says the whole bill would probably be defeated with this clause left in. Mr. Morton says it seems to him it would be far better, instead of trying to define standards by statute, to simply state that all the articles of food should conform to standards to be established by the Commissioners of the District of Columbia and to be approved by the Secretary of Agriculture. The legal fixing of standards, he says, is attended with many difficulties, and is not a proper subject of legislation. In case these standards are fixed, however, by Congress the description of one for cream should be inserted. There is probably more fraud practiced in the District of Columbia, he says, in the selling of cream than in any one article. If the standards to be used in the bill are to be retained that for cream, he says, should certainly be inserted, and the butter fat therein should not be less than 20 per cent. He says the whole description of flour in the bill is of such a nature as to cause all samples of buckwheat, rye flour, Indian corn flour and rice flour to be regarded as adulterated. He says no attempt should be made in describing flour to fix the limit of protein matters, as the cereal from which the flour is made may contain from 7 to 17 per cent. of such material. He says the provision that the analysis should be done in the presence of the owner or his agent is wholly unnecessary, inasmuch as the presence of strangers in a laboratory where analysis is going on can only impede the work, and such persons not being professionals can have no idea of the processes which are used. It is presumed, Mr. Morton says, that the District Commissioners will have their analyses made by competent experts and need not be watched by persons who are utterly ignorant of what they are doing. Mr. Morton says that the provision found in line 69 of the bill will tend to invalidate the efficiency of the law. It is not sufficient, he says, that the seller make known orally to the purchaser the character of the goods. The character of the goods sold should appear plainly written or printed upon the package, otherwise there would be confusion between what the purchaser says was said and what the seller says was said in all such cases. Mr. Morton concludes that the whole bill appears to be rather loosely drawn and without an adequate conception of the purpose for which such a bill should be enacted. He says the provision which repeals all other laws on the same subject might affect very seriously the standing of the oleomargarin and the filled cheese acts, especially in regard to color, when it is considered that under the present bill the coloring of butter is not permitted.

Cincinnati.

THE LAURA MEMORIAL Medical College and Presbyterian Hospital contemplate improvements to the extent of \$100,000.

A LABORATORY for vivisection has been presented to the Laura Memorial College by Mr. Alex. McDonald, and elaborate researches will be carried on in this work despite the threatened protest and prevention by the Humane Society.

THE WOMAN'S MEDICAL ASSOCIATION convened recently at the residence of Dr. Amelia J. Pryor. Dr. Julia Carpenter made an address upon "The Trend of Medicine." The annual election of officers resulted as follows: President, Dr. A. J. Pryor; vice-president, Dr. Henrietta Buchanan; secretary, Dr. Emma Batchelor; treasurer, Dr. E. J. Dickey. Dr. Bertha Glaeser will read a paper upon "Appendicitis" at the next meeting.

THE PUBLIC SERVICE.

Navy Changes. Changes in the Medical Corps of the U. S. Navy for two weeks ending Jan. 16, 1897.

P. A. Surgeon M. S. Guest, detached from the "Massachusetts" Jan. 9 and ordered to the "Vesuvius" Jan. 12.
P. A. Surgeon L. W. Atlee, detached from the "Richmond" on relief and ordered to the naval hospital, Philadelphia.
P. A. Surgeon W. F. Arnold, detached from the "Enterprise" and ordered to the "Richmond."
P. A. Surgeon R. P. Crandall, detached from the "St. Mary's" and ordered to the naval hospital, Norfolk.
Asst. Surgeon Lewis Morris, promoted to P. A. Surgeon from June 27, 1895, and ordered to the "Essex."
Medical Director H. M. Wells, retired Jan. 20.
Medical Inspector J. R. Tryon, ordered to examination for promotion Jan. 11.
Surgeon G. P. Bradley, ordered to examination for promotion, Washington, D. C., Jan. 18.
Medical Inspector J. C. Wise, relieved from duty at the Museum of Hygiene.
Surgeon A. C. H. Russell, ordered to the "Lancaster" per steamer of Jan. 27.
Surgeon C. T. Hibbett, detached from Norfolk navy yard Feb. 1, and ordered to the "Independence."
P. A. Surgeon F. W. Olcott, detached from the "Independence" on reporting of relief, and ordered to the Puget Sound naval station.

Change of Address.

Bennett, Alice, from Wrentham, Mass., to Thomasville, Ga.; Bouton, W. C., from 320 to 248 E. 57th Street, Chicago, Ill.; Bouton, J. F., from Galesburg to Peoria, Ill.; Boyer, J. S., from 3203 Cottage Grove Ave., to 3765 Rhodes Ave., Chicago, Ill.
Heuley, A., from Fairmount, Ind., to Melbourne, Ind.; Holmes, E. L., from 1216 Milwaukee Ave., to 206 Cass Street, Chicago.

LETTERS RECEIVED.

Anderson, Winslow, San Francisco, Cal.; Atkinson, W. B., Philadelphia, Pa.; Alma Sanitarium Co., Alma, Mich.
Bates, C. B., Santa Barbara, Cal.; Brown, Caleb, Sac City, Iowa; Banks, W. H., Keokuk, Iowa; Brokaw, A. V. L., St. Louis, Mo.; Bishop, S. S., Chicago, Ill.; Braislin, W. C., Brooklyn, N. Y.
Carbaugh, Harriet M., Lookout Mt., Tenn.; Carpenter, J. G., Stanford, Ky.; Craig, G. G., Rock Island, Ill.; Cullen, C. W. & Son, Cullen P. O., Va.; Chambers, J. H. & Co., St. Louis, Mo.; Cain, J. S., Nashville, Tenn.; Curtis, W. K., Midland, Texas.
Dennis, F. W., Unionville, N. Y.; Dorman, H. W., Ashtabula, Ohio; De Vilbiss, A., Toledo, Ohio; Donald Mineral Spring Co., Weems, Miss.; Dennis, W. A., (3) St. Paul, Minn.
Eastman, Chas. A., Exeter, N. H.
Frauk J., Chicago, Ill.; Fringer, W. R., Rockford, Ill.; Fosberg, G. E., Grand Rapids, Iowa; Finch, H. C., Lynnville, Iowa.
Gould, G. M., Philadelphia, Pa.; Gibson, P. G., Brooklyn, N. Y.
Hummel, A. L., (3) Adv. Agency, New York, N. Y.; Hawley, C. W., Chicago, Ill.; Hanbold, H. A., New York, N. Y.; Halls, S. C., Shickshinny, Pa.; Hopkinson, B. M., Baltimore, Md.; Horner, Frederick, Marshall, Va.; Horrell, C. B., Colchester, Ill.
Instant Cut Off Co., Pt. Huron, Mich.; Imperial Granum Co., New Haven, Conn.
Kellogg & Griffith, Chicago, Ill.; Koehel, Victor & Co., New York, N. Y.; Keener, W. T. & Co., Chicago, Ill.
Lentz, Chas. & Sons, (2) Philadelphia, Pa.; Le Roy, I. D., Pleasant Valley, N. Y.; Lambert Pharmacal Co., St. Louis, Mo.
Monosmith, O. B., Lorain, Ohio; Marchand, P. Alfred, Cincinnati, Ohio; Macmillan, The Company, New York, N. Y.; Merrick, M. B., Passaic, N. J.; McFarland, Geo. C., Jacksonville, Ill.; Mills, H. R., Pt. Huron, Mich.; McClellan, B. R., Xenia, Ohio; Menninger, C. F., Topeka, Kan.
Prewitt, T. F., St. Louis, Mo.; Pigman, S. C., Concordia, Kan.; Pilcher, James E., Columbus, Ohio; Poehler, F. T., Waseca, Minn.
Subscription News Co., St. Paul, Minn.; Souchoy, Edmond, New Orleans, La.; Schering & Glatz, New York, N. Y.; Seidler, W. F., Newark, N. J.
Western Machine Addressing Co., Chicago, Ill.; Wingate, U. O. B., Milwaukee, Wis.; West, C. I., Washington, D. C.; Weaver, C. F., Norristown, Pa.; Wood, Wm. & Co., New York, N. Y.
Yarnall, J. H., Washington, D. C.
Zaring, P. A., Tampico, Ind.

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ORIGINAL ARTICLES.

PAIN AND ITS THERAPEUSIS.

BY S. V. CLEVENGER, M.D.

Alienist and Neurologist of the Alexian Brothers' and Michael Reese Hospitals, Chicago; formerly Medical Superintendent of the Illinois Eastern Hospital for the Insane, and Pathologist of the Cook County Insane Asylum; author of "Spinal Concussion," "Comparative Physiology and Psychology," etc.
CHICAGO, ILL.

What is pain? The question to the mass of suffering humanity would appear absurd. The one who has experienced pain fancies that he knows what it is, just as

"The primrose by the river's brim
A yellow primrose is to him,
And nothing more."

But to the philosopher, and especially to the physiologist, the nature of pain, in common with the nature of all other life phenomena, has a significance unknown to those not given to such analysis.

Consciousness is requisite in pain appreciation as well as any kind of feeling. The suppression or blunting of consciousness notoriously suppresses or blunts pain. The cognizance of pain being a cerebral process involving consciousness, cutting off the route to the brain by which pain is conveyed to consciousness disposes of the pain, but not of the cause originating it. Too many pain alleviators are mere deadeners of sensation. The inebriate "drives dull care away" with his dram, but awakes to a realization of having intensified his troubles by the means adopted to escape them. Schopenhauer holds that pains are positive and pleasures are negative experiences; that pleasures are due to the absence of pain and the intensity of one is often in proportion to the other feeling that preceded. Susceptibility to painful impressions increases with development of the nervous system in the ascending scale of life from lower animals to man and in the ratio of intellectual growth, and enjoyments are correspondingly multiplied and intensified. The pains and pleasures of the intellect are both qualitatively greater with its development.

The major anesthetics act upon pain by extinguishing consciousness in general, other chemicals arrest the pain consciousness alone, and in rare cases ether and chloroform have unexpectedly allowed intelligence to be preserved during the painlessness induced by them, while intermediate states between total and partial abolition of consciousness occur from insufficient anesthesia, to that which is called the surgical degree. Shock to the nervous system is more likely in the former case, and it sounds strange to say that, other things equal, death during an operation is more likely to occur from imperfect than from full anesthesia.

The philosophic claims of pleasure being not only antithetical to pain but due to pain absence, finds justification in the universal prevalence of care, which is essentially a painful state, and the fools' paradise to

which the drunkard is conveyed by his anesthetic alcohol. Further, in parietic dementia there are both physical and mental anesthesia; the tactile sense impairment, akin to what is found in locomotor ataxia, is accompanied by the loss of care, indifference to what otherwise would cause grief, or other degrees of mental pain. The consequence is the feeling of well being, *bienfaisance*, and upon this is erected the "delusion of grandeur" which takes the direction of assertions of great wealth, strength, or powerfulness in some form, according to the ideals usual to individuals of different classes.

So parietic dementia and the complacent megalomania stage of paranoia may be put in the category of pathologic mental anesthetics, all the more properly as both disorders indicate impending total destruction of the organ of the mind.

Many bodily functions, such as digestion, assimilation, etc., are unfelt, conveying nothing of their workings to consciousness until some fault in their process render them apparent; induces discomfort, anxiety, or pain.

Interference with customary nerve action may, under certain conditions, be the basis of painful sensations. In all life relations that which occasions the least effort impresses consciousness least. Changes from usual experiences may entail effort, greater expenditure, more labored heart and blood vessel impulses; more heat is evolved, tissues are consumed and require more repair than usual. Mosso shows that thought is no exception to the rule, for blood pressure and temperature are raised in this kind of brain activity, and the wear and tear of cerebral structures in worry, grief, anxiety, can be as actual as from some mechanical destruction such as a tumor or direct injury could induce.

Effort of any kind has in it the constant menace of pain, and relaxation the promise of release therefrom, though inactivity sometimes may also become painful if maintained by effort.

Life itself is activity, whether in rest or in labor. Molecular or mass motion must proceed in varying degrees, asleep or awake, toiling or recuperating. And the law of relativity complicates considerations of activity and inactivity by making effort and rest impossible to classify under all conditions. What would be labor to one person is not such to another. Ease to one individual would be torture to another, and accompanying circumstances may convert what would be pleasure at one time into pain at another.

Pain also is relative, for a certain nervous molecular activity may be over-stimulation in one person and normal in another.

For the proper maintenance of nerve function there must be continuity of the conducting organ, a normal degree of pressure thereupon not to be exceeded; heat above a certain level and within definite limits; a suitable supply of nutritive material usually secured from

the circulation, and that it should be suitable refers to both quality and quantity.

Pain may result from interrupted continuity, from irritation or pressure upon nerves or their centers, from heat or cold extremes and from defective nutrition, provided that the sensory portion of the nervous system is not disabled from conveying intelligence of such changes to consciousness.

Great organic destruction may proceed unrecognized as such until the sensory nervous distribution is in some way appraised; so while pain may in a general way serve to warn of danger, it may fail to do so, or prove unreliable in making a great disturbance over an imperfect tooth while failing to inform the drunkard of the slow destruction of his liver or brain. History also abounds in instances of universal hubbub over trifles and apathy concerning matters of the greatest importance.

Hunger is a form of pain which disappears in the extremity of starvation. One may freeze unawares but suffer acutely during warmth restoration.

Local blood quantity may increase or decrease emotional, intellectual or sensory faculties. Nerve stimulants raise the spirits and make sensations keener. Sedatives diminish mental pain as they do physical. Only broad generalizations are practicable in determining what would be pleasurable or painful, for so many modifying factors complicate both extremes of these sensations that experiences when repeated may fail to act as before, or pain may become pleasure or pleasure pain. And what would afford pleasure to one person may be annoying to others. The color blind and tone deaf persons are merely bored by what others enjoy.

Dean Stanley actually suffered from listening to music, yet Jennie Lind once told Max Müller he paid her the highest compliment she had ever received. Stanley was very fond of Jennie Lind, but when she staid at his father's palace at Norwich he always left the room when she sang. One evening Jenny Lind had been singing Handel's "I Know that My Redeemer Liveth." Stanley, as usual left the room, but he came back after the music was over and came shyly up to Jenny Lind.

"You know," he said "I dislike music; I don't know what people mean by admiring it. I am very stupid, tone deaf, as others are color blind. But," he said with some warmth, "tonight when from a distance I heard you singing that song I had an inkling of what people mean by music. Something came over me which I had never felt before, or yes, I had felt it once before in my life." Jenny Lind was all attention. "Some years ago," he continued, "I was at Vienna and one evening there was a tattoo before the palace performed by 400 drummers. I felt shaken, and tonight, while listening to your singing, the same feeling came over me; I felt deeply moved."

"Dear man," she added, "I know he meant it, and a more honest compliment I never received in my life."

What savages consider musical the civilized could not tolerate, and the untrained ear is wearied by classical music as is the untrained mind by discourse beyond ordinary understanding. For this reason, as Herbert Spencer claims, wisdom always has appeared and always will appear to be folly to the ignorant.

The special sense nerves have been excluded by some physiologists from among conveyers of pain, but blinding light, disagreeable sounds, odors and tastes are analogous to tactile pains, and are induced by

over-stimulation or other comparable interruption to the customary nerve workings.

As frequently more than a single factor enters into the creation of pain and its exacerbations, the withdrawal of one of these elements may modify or even relieve the suffering. For example it is told that a professor lectured through his hour unconscious of a cinder in his eye which made itself felt immediately afterward. Referring to the use of derivation such as blisters, hot foot baths, cathartics, etc., in relieving pain by reducing circulation in the painful part, enables the relief obtained by the professor to be explained as blood supply withheld from the point of irritation while the blood was contributing to brain functions.

In parietic dementia and megalomania the false happiness engendered by the brain destruction, and the disappearance of hunger when dissolution is begun, may serve to explain the *spes phthisica*, or hopefulness of consumption, through blunted pulmonary afferent impressions. Thus the reverse of pain accompanies anesthesia, or absence of sensation, and it is the thoughtless who are gayest and freest from care.

Lucretius, Seneca and Homer allude to what modern psychologists call the luxury of grief (Spencer), pleasure in pain (Ribot), and the pleasure of pain (Boullier). There are pleasures derived in some morbid conditions from physical and others from moral pain. Jerome Cardan wrote that he could not endure existence without pain and he resorted to self-torture to secure enjoyment. Krafft-Ebing discusses such flagellants as a recognized type of sexual pervers. The melancholy of lovers (spoken of by an Irishman as "sweet pain"), that of poets and artists is included in pleasureable pains. Spencer ventures the explanation that the feeling is one of pleasure in deserving more than has been received.

Depression of vital functions is involved in ordinary pain. Melancholia is a "psychical neuralgia," according to Krafft-Ebing.

The coupling of pleasure with what is beneficial and pain with what is detrimental, originated with Aristotle, but it is far from being a universal rule, for pain may be far more useful as a life-conserving than pleasure, and the latter may indicate dissolution, while both may be associated in apparently outrageous fashion in pathologic instances.

Susceptibility to pain may persist in spite of anesthesia, though analgesia is a common accompaniment of loss of sensation. In locomotor ataxia anesthesia and the terrible shooting pains co-exist.

Hyperalgesia can be considered as an aggravated hyperesthesia. The zone of irritability parallel to that of anesthesia on the chest of one with spinal cord disease, can be explained by the hyperesthesia being due to central nerve root irritability as a forerunner of the more serious cause of the associated loss of sensation in the adjacent nerve distribution.

If this irritability involved the blood supply reflex of the spinal cord gray matter, pain is intensified and is induced by ordinary stimulation of the implicated nerves.

In a work entitled "Comparative Physiology and Psychology" (1884), I detailed reasons for the existence of what could be called a "nutrient reflex," whereby blood was instantly impelled to localities in the body that had undergone waste through action, and were hence in need of repair. The mechanism consisted in an intimate association of the vaso-motor nerves with the cerebro-spinal nervous system as seen

in the rami communicantes running from the spinal to the sympathetic system of nerves and their ganglia. It is only by introducing nutrient reflexes into consideration of all the higher vital processes that they can be even approximately understood. The regulation of the caliber of blood vessels, the swiftness of the current of blood and the amount supplied to parts in proportion to their needs in such parts, by a harmonious working of the vaso-motor nervous system with the cerebral and spinal, when carefully considered, clear up many an obscure point in nerve and brain physiology and consequently in psychology. Failure of this relationship will also account for pathologic phenomena explicable in no other way.

Thus in hysteria, instead of proper vascular workings, blood is withheld from cerebral centers, giving rise to aphonia, deafness, blindness, etc., and when impelled to inappropriate parts an inversion of the emotional exhibitions may result in pleasant impressions starting the weeping mechanism, and laughter following upon unpleasant impressions.

Cramped vascular and other renal channels sufficiently account for hysteric urinary suppression, and relaxation of these parts induces the copious *urina spastica*, or vast quantities of limpid urine, passed after a hysteric attack.

Ordinary toothache induced by alveolar abscess is lessened by whatever draws blood from the painful part and is increased by hyperemia. The irritation of the carious tooth starts the pain, but the battle of the phagocytes and microorganisms induces an increased blood accumulation, which by mere pressure may intensify the agony. Relief through evacuation of the abscess points to the blood pressure as the aggravator of the pain.

When pain is relieved by a mental impression it can best be accounted for through derivation. Some other portion of the cerebral or other organ drains away the overplus blood, with corresponding relief. Some headaches dependent mainly, though secondarily, upon too much blood, or erratic blood distribution in the brain meninges, can be relieved by whatever will determine blood elsewhere, whether by full or partial hot bath, a mustard plaster, a changed current of thought, or a mental impression. Conversely an anemic headache may disappear upon lying down or by heart stimulation.

That the circulation participates in suffering either as a cause or consequence is readily observable.

Congestion may induce tactile pain, offensive odors, ringing in the ears, flashes of light or perverted taste, according to the nerve distribution affected; the extreme congestion can obtund or even cut off special sense appreciation, inducing anesthesia, deafness, blindness, inability to smell or taste, through pressure, and the opposite extreme of bloodlessness can set up identical defects.

The old saying that "pain is the cry of the nerve for purer blood," is in a restricted sense true. Impure blood may induce pain through acting as a foreign substance and through reducing the quantity of blood proper. Pain may be the cry for less blood also.

Headache from bad air is a toxemia, ordinarily relieved by fresh air. The insufficient oxygenation renders this qualitative a quantitative condition. Headaches caused by tumors, especially the grinding luetic headache, are through meningeal nerve pressure and irritation. Similarly meningitis and injuries to the head that involve the brain and its covering,

when inflammatory conditions follow, depend upon the vascular troubles associated with such inflammations. Reducing the blood supply to the head modifies the pain and destructive processes.

Irritation of ordinary sensory nerves suffices to cause pain, as when an amputation stump cicatrix includes a nerve and neuromatous growths are formed. That the circulation contributes to the pain is evident through the desire to elevate the stump and by gravitating the blood therefrom allay the suffering.

Normal irritation of nerves produces the feeling of general comfort, free breathing, and tactile impressions generally. Hunger, thirst, malaise, horror, fatigue are due to nerve terminal irritation. Mechanical, chemic, thermal and electric stimulation may cause pain if transcending certain limits, or if intense enough may destroy sensation altogether, and beyond this the *anesthesia dolorosa* may appear. Pains are not always definitely located, through irradiation, or may be referred to the wrong source of origin, as when amputation pains are felt to be in the lost member.

Varieties of pains are in proportion to the intensity of the stimulus, and massiveness regards the number of nerves involved.

Most of the differences described by the words piercing, shooting, cutting, boring, burning, pressing, gnawing and acute, are due to the intermittent or continuous molecular changes in nerves or their centers, but the throbbing and dull pains usually owe their peculiarities to arterial or passive congestion. The headache known as angio-paralytic has been often relieved by pressure upon the carotid supplying the aching part and the angio-spastic kind should be treated by means calculated to relieve spasm, such as amyl nitrite inhalations. In the one case there is the hyperemic throbbing arterial impulse, and in the other intense constriction of vessels inducing localized anemic pains.

In inflammatory affections of the skin hyperalgesia may be so extreme that a breath of air or light touch produces pain. The blood superabundance in the nerve terminals here is plainly the cause.

The disordered sensations called paresthesiæ including chills and burnings, creeping, itching, formication, are related to pains, and may become so intense as to become such. Causalgia and erythromelalgia are described by S. Weir Mitchell as burning sensations and reddenings due to central nerve irritations.

Neuralgias, with shooting pains transmitted the length of the nerve affected, primarily or secondarily involve blood distribution, and inflammation of nerve roots frequently give rise to neuralgias. The inflammation may not be the cause of the original disturbance, but even though produced by the same irritation that induced the neuralgia it is an aggravating factor, and when this inflammation is controllable a step toward possible cure is taken.

The structural commotion recognized as pain can only be maintained by blood presence, as nutrition is necessary for prolongation of any vital phenomenon.

When the vascularity of a point of irritation, such as the amputation end of a nerve, is relieved of blood supply by gravitation or pressure the pain is lessened. Anesthesia often accompanies bloodless peripheral states and the numbness of freezing depends upon the constriction of blood vessels and other circulatory reduction in the frozen part which visibly whitens through being deprived of blood.

Inflammation of a spinal nerve root or in the sensory neuroglia of the spinal cord causes the lightning pains of neuralgias, ataxia and sciatica. Relief of the inflammation necessitates more than mere temporary alleviation of the pain, for the primary cause of the irritation that induced the inflammation must be reached, and a destructive process in the nerve centers from chemic changes is too often beyond control.

Among painful states associated with too much engorgement of nerves or their centers are all the hyperemic, congested or inflammatory cerebro-spinal disorders, such as some headaches, toothaches, neuralgias, ataxic pains, overheating, hyperalgesias and hyperesthesias.

The opposite condition of relative bloodlessness occurs in cold, hunger, thirst, fatigue, pressure, anemic headaches and other painful states depending upon reduced blood volume.

Blood poisoning by alcohol, septic matter, gases, etc., while qualitatively altering the blood for the worse, reduce the quantity of pure blood to parts and act as anemic factors, while the foreign substances "irritate" the nerve centers. Uric acid crystals mechanically cause pain in the kidney tubules, ureters and bladder, and may reasonably be regarded as sensory disturbers elsewhere. Sodium urate deposits in the joints exert painful pressure.

In all these phases of suffering we observe an irritated part of the nervous system, bloodlessness or engorgement, associated with the pain, either as cause, effect or added factor.

A toxic substance circulating in the blood whether introduced from without or manufactured in the body, if denied proper elimination, as often takes place with uric-acidemia or other auto-intoxication, may irritate the vascular nervous control so as to produce contracted arterioles with increased arterial tension, a spastic condition observable in migraine and to an extreme in the frightful *raptus melancholicus*.

In these disorders, irritation primarily and relative anemia secondarily, are at the foundation of the suffering, while as a consequence engorgement of other organs or parts of organs complicates and adds pressure, or congestive pains.

Over-stimulation of nerves often produce over-stimulation of the circulation, or even its practical paralysis, with localized hyperemia and resulting pain.

In short all painful states may include the conditions of irritation, too much or too little nutrition, separately or combined, in various ways. These pain factors may be symbolically represented by the initials of irritation, hyperemia, anemia, to graphically illustrate pain, however induced:

Uric acid headache: I. A.; the irritation causing the anemia.

Chlorosis headache: A. I.; the anemia causing the irritation.

Cerebral congestion: H. I.; the congestion causing the irritation.

Over-stimulation: I. H.; the irritation causing the hyperemia.

These three conditions may be combined simultaneously or successively to produce very many apparently discordant pathologic states. Anemia in one part, however induced, may result in congestion in an adjacent part, and the pressure hyperemia may cut off nutrition from surrounding points so that both hyperemia and anemia may occur in closely related

parts, each condition adding its special irritative influence to the total pain; so the localized pain may have the formula I. A.; I. H.; I. H. A. within a narrow area, or either H. or A. may cause I., and, further, the combination I. H. A. may set up intensified irritation; the withdrawal of one factor serving to lower the pain intensity and paving the way to removal of the entire pain.

Let I. be induced by an exposed nerve, H. follows with may be A. in contiguous parts by pressure of blood; now while the removal of H. by blood evacuation may reduce the aggravating influence of blood pressure, which acts irritatively, the most sensible thing to do is to get at and remove the primary cause of the pain by protecting the nerve from exposure which sets up the hyperemia. If an abscess results from the phagocytic battle the septic advance adds further irritation, which must be disposed of in attempts to remove all causes of pain.

A general blood condition may favor the production of pain by having within it the elements of disturbance ready to centralize upon a weak point. Analogous sociologic states exist. Peter the Hermit and Walter the Penniless were foci of irritation in the eleventh century, leading up to the crusades in which two million Europeans were slain in two centuries. This blood letting finally carried off the disturbers and the disturbed, and, therapeutically, venesection has for ages been resorted to in pain relief, though derivation or the transfer of the disturbed circulation is nowadays preferred.

A point of irritation may be starved out by keeping nourishment reduced, it may be evacuated at the expense of the blood, or it may be held in check by removal of the elements that nourish its fury, or, best of all, the focus sometimes may be directly destroyed by medical or surgical means.

Far too often this latter process is impossible through inability to determine at the proper time just where or what the primary disturbing influences may be, or even if determined there is in most cases inability to get at and remove the origin of the pain. But the safest rule to adopt is to attempt to do so if within possibility, and where relief of pain is imperative with no practical means of removing the cause only such agents should be resorted to that do not entail other and often greater disadvantages to the economy, sooner or later.

Only such portions of the body as are supplied with sensory nerves relate consciousness to pain. Irritation of unsupplied parts may advance to various forms of destruction and until the sensory filaments are secondarily involved by extension, or through accompanying circulatory alterations, the warning which pain is supposed to afford is absent.

Several of the recently discovered synthetic compounds combine antipyretic with analgesic properties in different degrees. Acetanilid, formerly known as antifebrin, has been too recklessly used. It depresses the heart dangerously and requires careful watch of its physiological effects. "Antikamnia" (Helbing, Modern Materia Medica, page 3) has been found to contain acetanilid, sodium bicarbonate, caffeine and tartaric acid. In many such advertised preparations the possible introduction of acetanilid should be regarded. Even external application of acetanilid, as has been suggested for antiseptic purposes, is dangerous. Pseudo-scientific compounds, mainly with acetanilid mechanically mixed with other substances,

can be avoided by learning the status of their originators, manufacturers and clinical reporters.

Antipyrin is incompatible with too many materials to enable its administration in combination with ordinary remedies. Cesari's claim that it thickens and condenses the blood without coagulating it may account for its hemostatic properties and should be regarded in a study of its antineuralgic, antipyretic and other influences. Exalgin is too poisonous for analgesic use. Methyl chlorid as a spray produces local anesthesia through freezing the part to which it is applied. The visible whitening of the surface that occurs during its application indicates that bloodlessness is the cause of the sensory arrest. Paraldehyde is an unreliable sedative or hypnotic. Phenacetin or phenocoll have been successfully established as sedatives and are far safer than acetanilid or antipyrin. The salicylates and salol possess indirect slight analgesic properties, due to their antiseptic and anti-rheumatic tendencies, and dilute carbolic acid blanches animal surfaces and produces local anesthesia. Cocain hydrochlorate likewise reduces blood circulation at the point of local anesthesia. Its fascinating temporary euphoria and later excitation of nerve centers are worthy of study among psychologic effects of drugs.

Opium and its congeners are responsible for legions of debauched habitués, most of whom date their addiction from incautious prescribing. The benumbing influence of alcohol and opium upon the nervous system generally account for their exhilarating influence, on the principle of mental anesthesia inducing relative exaltation; the relief from care, concern and painful memories being subjectively interpreted as happiness. The debased sensory apparatus of the parietic dement causes him to insanely ascribe his bouyancy and general good feeling to greatness or good fortune realized.

Drugs that depress the motor apparatus mainly, such as conium maculatum, do not exalt the sensory field, rather the reverse, but many degrees of association between anesthesia, analgesia and exhilaration are observable in other neurotic medicines.

Opium primarily relieves pain, raises the spirits, then stupefies. Alcohol anesthetizes, exalts and ends in stupor. Chloral may numb the nervous system, mildly exhalt, then stupefy. Chloralamid, a much safer article, is mildly sedative, causes hypnosis, and the day following large doses a feeling of exhilaration is reported. Chloroform and ether excite, and finally obtund consciousness. Oxygen gas exhilarates. Nitrous oxid gas first exhilarates, and then affects consciousness. The bromids depress the circulation, are mildly analgesic, and in over-doses stupefy. Ergot by constringing overloaded blood vessels may secondarily act as an analgesic.

Phenacetin and phenocoll have greater analgesic properties, while being vastly safer in practice. Acetanilid and antipyrin possess varying degrees of pain relieving power.

Lactophenin is destined to largely supersede the entire array of analgesics proper, owing to its non-toxic peculiarities and the feeling of comfort described by many physicians as following its use. It is also antipyretic definitely, and being without the heart-depressing effect of the older antipyretics it will come into still more extended hospital and private practice administration.

It has occurred to me that the physiologic chemis-

try of materia medica could be appreciably advanced by tabulating the effect of graded doses, particularly of the recent synthetic compounds, as to when the sedative, antipyretic, antiseptic and hypnotic effects, if any, ensued, juxtaposed with their rational chemie formulae, their relative looseness or closeness of molecular construction and affinities, with their relations to temperature, solubility, etc. The rapidity or slowness of compounds to enter into new combinations under the conditions afforded by the bodily organs has greatly to do with the therapeutic effects. Antipyretic influence can be exerted through action upon the blood vessel tonus or the blood corpuscles, and in some instances upon the thermal brain centers demonstrated by Ott.

Antisepsis can be conceived in such preparations as acting directly upon septic material or so modifying their products or the vital fluids as to lessen septic activity. Antagonism to fermentation is often practically antiseptic.

Analgesia can result from the direct influence of antiseptics upon irritative points susceptible to their influence; from allaying some consequence of irritation such as an accelerated circulation which aggravates pain, and if pain is due to circulatory faults mainly or wholly this effect upon the heart, arteries, or blood tends to relief. The visible change in the blood materials claimed by Cesari when antipyrin is given can readily be tentatively assumed as a cause of heat reduction, and incidentally pain alleviation.

The rush of phagocytes to an irritated point is accompanied with accumulation of red blood corpuscles. Pain can not continue without the material that enables molecular activity, and this material is afforded by the blood and lymph. Drive away congestion and though the cause of the irritation may remain, its influence is lessened greatly, and the warrior wandering cells have better opportunity to attack the foreign material unless they also are driven from the field of battle.

The pain of a "bone felon" is modified by holding the hand aloft; the Esmarch's bandage anesthetizes by blood deprivation; freezing anesthetizes similarly. Derivation may not be the means by which a disorder can be cured, but when blood accumulation in an organ is pathologic its distribution at least facilitates recovery.

The properties of lactophenin and its superior claims to the attention of physicians where a reliable and non-poisonous analgesic, antipyretic, and incidentally hypnotic, is needed, may thus be summed up from the vast number of favorable clinical reports.

It affords the best results with the least ill effects; it gradually reduces the temperature and for a longer time; occasionally the reduction is more rapid, but controllable.

The analgesic dose of 8 grains has no noticeable effect on the temperature.

Its range of incompatibility is less than other synthetic compounds such as antipyrin. It is combined with caffeine, quinin and salicylic acid by some practitioners. The minimum dose is 5 to 10 grains and during the day as high as 45 grains have been advantageously given in divided doses, according to the physiologic effects desired.

It is but slightly soluble in water, but as there is no disagreeable taste it can be given dry and be washed down with a drink of water. Notwithstanding its insolubility it acts promptly. A dose

of 15 grains usually acts as a gentle hypnotic. Cyanosis of lips and face attending occasional overdosing with acetanilid, antipyrin and sometimes phenacetin, does not occur when lactophenin is given, as it never produces heart or respiratory disturbances, dyspnea or collapse. The breathing and circulatory rate are unaffected except that the pulse becomes fuller and stronger, the reverse of the influence of the dangerous antipyretics. The nearest approximation to any unpleasant effect has been a slight faintness and moderate sweating, observed by a few physicians, while there is a general agreement among authors on the subject, that lactophenin not only relieves pain but adds a soothing, comforting feeling, sometimes ending in an agreeable slumber, without giddiness or uneasiness at any stage.

The unpleasant subsidiary effects of phenacetin are absent from lactophenin. Six grams daily have been used when indicated, though 3 grams *pro die* are mentioned as a maximum dose. Vomiting and exanthemata are not generally recorded as observed in using lactophenin. One writer says that it rarely induced vomiting and another mentions a rash in one or two cases. Children of 2 years of age require about one-eighth the adult dose and at the age of 14 about one-half that quantity.

The soothing influence, accompanying relief from pain, caused by lactophenin is described as "a calming effect in restlessness or delirium," "specially calmative of the nervous system in typhoid fever," "a pronounced soothing effect," "a calming hypnotic effect," "a feeling of comfort and ease." It also diminishes sensitiveness to painful impressions.

Experimental doses given to rabbits "annulled sensation and voluntary movements and lessened reflex excitability without respiratory or heart affection."

Von Jaksch mentions lactophenin as useful in typhus, others found it decidedly beneficial in articular rheumatism, insomnia, occipital neuralgia, frontal headache, the headache of typhoid fever, migraine, neuralgic pains generally, pneumonia, erysipelas, influenza, polyarthritis, scarlatina, sepsis, sciatica, headache attending round gastric ulcer, headache and sleeplessness in Bright's disease, bronchitis, acute gastritis, diphtheria, measles. It is reported to have relieved megrim and nervous headache in twenty minutes, and that in one to two hours after 15 grains were taken a quiet sleep began which lasted several hours. In croupous pneumonia the breathing improved, the cough of phthisis florida was lessened, an excited patient became calm and felt easier and better. It has been substituted for salicylic acid with advantage and reduced pain and swelling in twenty-four hours.

Personal observation enables me to corroborate the findings of other physicians as to the superior analgesic and antipyretic effects of lactophenin, its safety and promptness of action. The lancinating pains of locomotor ataxia and the suffering of syphilis of the spinal cord were not influenced by the remedy, nor could it be expected to avail much, if any, in cancer pains, but in all instances of pain attending acute disorders such as make up the generality of cases where analgesia is desirable, lactophenin has given better results than other synthetic compounds of the same group. Toothache from alveolar abscess was relieved long enough to secure a good night's sleep, and at the same time when the 15 grains of lactophenin was taken a fretful baby was being nursed, which

also slept unusually well the same night. Hoping that it might serve as a substitute for the bromids in the treatment of epilepsy, while my trials are not concluded, the results are negative. A hot bath or massage serving to distribute the circulation, catharsis that unloads the congested intestine and vascular system, even a hot foot bath, through derivation, has relieved headache, earache and even toothache. It is the withdrawal or minimizing of blood from the painful area that serves to allay if not remove the suffering.

When the professor referred to, set his cerebral machinery in motion so that his brain required blood and withdrew it from the optic that was being irritated by the cinder, the pain was absent until the lecture was concluded. Similarly, the seat of consciousness can be affected by hysteric, erratic blood-vessel action, so as to produce or terminate pain and paralysis through mental influence, and the pain suppression occasionally accomplished under hypnotic conditions is undoubtedly of this nature, and the seat of consciousness may, through derivation of blood by physical or mental action, be similarly affected. The operation of the nutrient reflexes in connection with every nerve impulse should have careful regard by physiologists, and many a mystery would be thus disposed of. The association of antiseptic properties with the analgesic and antipyretic in so many of the phenetidin compounds is also worthy of consideration. If such antiseptism is secured through a direct action of the medicament upon living plant and animal microorganisms, within the varying degrees of arresting or destroying their vitality, analgesia likewise could ensue from chemical lowering of nerve function, directly or through blood changes such as occur with antipyrin.

So it ceases to be remarkable that a substance hostile to minute organisms, an antiseptic, should also act as an antipyretic and analgesic by chemically exerting control over such vital operations as heat and pain production of higher organisms. These lessened molecular activities are exerted in different degrees by the different compounds; some are too strongly antiseptic to be safely used as analgesics or antipyretics; nevertheless the three properties are connected, notably in the case of carbolic acid, and to a safer therapeutic extent in the phenetidin derivatives. Both acetic and lactic acids are oxidized in the body to form carbonic acid, but isomerids of lactic acid exist in many tissues of the body and are products of muscle action. All acids lessen muscle irritability, and ethiden lactic acid has been found as a normal constituent of brain tissue in the proportion .05 to 100. The displacing from phenacetin of the acetic acid constituent by lactic acid, in the conversion of the phenacetin base into lactophenin, introduces an anti-ferment of a physiologic product, a recognized auto-antiseptic, elaborated in higher animal life in place of an acid such as acetic, which is more of a by-product in the economy. The lactic acid combination is more likely to meet physiologic needs than acetic acid when united with a phenetidin base.

70 State Street.

Ichthyol Administered Internally in Certain Gynecologic Troubles.—Günsburg has found ichthyol administered according to the following formula of the greatest service in chronic affections of the genitalia, with reflex disturbances of the digestive system: Ichthyol 4 grams, licorice extract and powder q. s. Mix and divide into forty pills; take two pills three times a day. He has them keratinised. Dyspepsia, constipation, abdominal pains and menorrhagia are rapidly improved or cured with it. —*Semaine Med.*, December 30.

SURGICAL DISEASES AND INJURIES OF THE NECK.

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It is here assumed that the student of regional surgery is possessed of the knowledge of the general surgical diseases, *i. e.*, those diseases which may be observed in any other region, and the descriptions will be limited to the peculiarities only which those diseases present when they affect the neck or one of its regions, thus avoiding repetition as much as possible. If no peculiarity is mentioned in regard to diagnosis and treatment it is because they are the same as for the diseases in general.

This study is divided into that of the diseases and injuries of the neck as a whole and that of the diseases and injuries of its seven regions: The infra-hyoid (including the thyroid body, the supra-sternal fossa), the supra-hyoid, the lateral supra-hyoid (or digastric triangle or submaxillary region), the parotid, the lateral region (or region of the sterno-mastoid, or of the carotids), the supra-clavicular and finally the posterior region.

The following order will be followed in the descriptions: Malformations and swellings, injuries, neuroses, softenings, indurations, congestions, inflammations, gangrenes, ulcers, fistulæ, tumors.

SURGICAL DISEASES AND TUMORS OF THE NECK IN GENERAL.

Congenital fistulæ of the neck are due to arrest of development or lack of fusion of the branchial laminae or folds and clefts of the pharyngeal fissure; they are sometimes hereditary, but are sometimes discovered only a long time after birth; they may be due there to a cyst which has ruptured externally; they are usually very small, seldom admitting more than a case probe, exceptionally the end of the little finger. The external orifice is situated most commonly on the right side of the neck in front, and behind the sterno-mastoid, and between the thyroid cartilage and the sterno-clavicular articulation; sometimes, but rarely, at the angle of the jaw; it is sometimes on a projection, at other times in a fold of the skin; it occasionally presents cartilaginous or osseous particles; it may be found blocked by the dried secretions. These fistulæ resemble congenital tracheal fistulæ, but the latter open commonly on the middle line; they are more rarely found on the side and still more rarely on both sides. The internal orifice may open into the pharynx or larynx or trachea; it is observed almost always near the tonsil and base of the tongue, and is very small; it may become the starting point of serious inflammation and abscess. When they are complete an injection of milk penetrates the pharynx or the larynx. These fistulæ may be external blind or internal blind; the external blind are by far the most frequent. The course of the fistula is marked by a cord-like tract which corresponds to the track of the fistula; its direction is straight or tortuous, oftenest in the direction of the great horn of the hyoid bone; it is constituted by an external thick, fibrous coat, which forms the cord and is lined by a sort of mucous membrane which secretes a thin, viscid fluid containing epithelial cells, or is purulent. Internal blind fistulæ are very rare, but it is positively known that they exist. They present the variety called diverticula "by pulsion" of the pharynx and esophagus, due to the

dilatation and development of an originally small pouch under the influence of the accumulation of the food; they sometimes form very large tumors. The diagnosis of congenital fistula rests upon the secretion of the fluid, the presence of the cord, the penetration of the probe and the injection of colored fluid. Congenital fistulæ are almost always stationary; they are more a deformity than a disease.

Treatment is usually unnecessary, and fortunately so, because it usually fails when limited to stimulating injections; dilatation or curetting and excision is a laborious operation, not without danger and scarcely justified by the inconvenience experienced. Both orifices may close and leave an intermediate tract.

Congenital atrophy of the whole or more or less extensive parts of the neck is very rare without participation of the rest of the body.¹ The *congenital pigment atrophy* called *vitiligo* is rather common on the neck. Other skin atrophies are very rare. *Congenital atrophy of the sterno-mastoid* has been observed. *Congenital atrophy of the other structures of the neck* have not been observed.

Congenital hypertrophy of the whole neck has never been reported; neither has partial congenital hypertrophy apart from the congenital cysts and tumors. *Congenital hypertrophy of the constituents of the skin or of the tissues of the neck* has been reported; congenital hypertrophy of the thyroid body and of the thymus gland will be studied in their proper places. *Congenital deviations* have been observed, due to malformations or diseases of the vertebræ.

Acquired malformations of the neck.—Acquired *atrophic malformations* are observed here as the result of injuries, diseases, operations, cicatrices, as in cases of torticollis.

Acquired hypertrophic malformations of the whole region is noticed; a short neck is considered as a predisposing cause of apoplexy. Hypertrophy of the whole neck is observed in elephantiasis and myxedema. Acquired malformation of the skin and of the other structures of the neck present no specially interesting points.

Acquired deviations or asymmetries are seen, especially after burns and cicatrices and after torticollis or paralysis. Cicatrices are due to burns, wounds, abscesses, gangrene, ulcers, fistulæ; they are unsightly and often cause impairment of function; the skin may be bound down to the sternum; they excoriate easily from traction by the involuntary movements of the parts, and in that case they should be excised and sutured if small, but grafting or autoplasty should be resorted to, to prevent their reproduction if they be large.

Swellings of the neck.—Swellings of the whole neck are common; their causes are numerous; they may follow injuries, inflammations, tumors, operations. Their common feature is the great danger from the propagation to the aryteno-epiglottic folds, causing obstruction of the larynx and pressure symptoms, specially dyspnea, which it is often impossible to relieve because of the difficulty of reaching the trachea. If an attempt is deemed justifiable the operator should be provided with an extra long tracheal canula.

Softenings of the neck present nothing peculiar.

Indurations are represented by the peculiar indurations of the sterno-mastoid, which will be described with the diseases of the lateral regions of the face.

¹ We may recall here, however, the naturally long and slender neck of the unfortunate Anne Boleyn, who remarked that her neck would not give the executioner much trouble to sever.

Injuries of the neck.—Burns are here particularly serious on account of the swelling and the edema of the larynx, which may complicate them. Even when no deeper than the skin they result in cicatrices which are most deplorable because of the appearance of the parts and because of the deviations they cause, sometimes binding the chin down to the sternum; for this reason they should be grafted at the earliest possible time. Deep burns extending to the muscles and to the vessels are most serious, even when limited, for obvious reasons. The cicatrices pass into keloids oftener than in the other regions.

Contusions are not frequent, they are usually produced by falls, blows, hanging, garotting, throttling, passage of a wheel over the neck, or by the pressure of the dislocated clavicle. A blow on the side of the neck is a great aim with pugilists, because it is almost a sure knock-down or knock-out; it is often in its results grave, because of the importance of the organs of the neck, and may be accompanied by fractures of the hyoid bone, larynx and trachea; injuries to muscles, vessels, nerves, pharynx, esophagus; vertebral lesions, concussions and contusions of the spinal cord;² hematoma may form and become large and cause grave pressure symptoms on all the structures. Death may occur after a few days from edema of the lungs; also from embolism from one of the large vessels of the neck.

Wounds of the neck are comparatively rare in civil practice; sometimes they are accidental and due to a fall on a fragment of glass, a stem of iron or wood; they are most commonly due to attempts at murder or suicide; the suicidal are the most common and the most interesting.³ Superficial or extra-fascial wounds of the neck, *i.e.*, wounds not extending beyond the superficial cervical fascia, present nothing peculiar. However, a large incised wound of the external or anterior jugular, especially if these veins happen to be unusually large, may give entrance to air. In tracheotomy the anterior jugular is often wounded; also the inferior thyroid veins. If the parallelism of the lips of the wound has been disturbed, there may be much infiltration of blood; this requires enlargement of the incision and ligation in preference to pressure; cellulitis spreads rapidly. Gunshot wounds are rare, yet there are instances when a bullet has traveled under the skin and above the fascia without penetration of the fascia. Contused and lacerated wounds, if extensive, may be followed by cicatrices and their consequences.⁴ Gunshot wounds causing much destruction of skin present the same remarks as the lacerated wounds. Deep or sub-fascial wounds⁵ are almost all very serious because of the almost constant injury of some of the large vessels and nerves or of the special organs of the neck, larynx, trachea, pharynx, thyroid body, giving passage to air, food, blood, each of which call for special treatment. Complications of the wounds of the neck are the following: thrombus or extravasation of blood, due to the loss of parallelism of the lips of the wound through the various layers; entrance of air in the veins, more frequent and dangerous here than anywhere else; passage of food through the wound and

into the larynx or trachea; hemorrhage more or less profuse according to the vessels injured and its accessibility; emphysema, due to injury of some point of the respiratory tract with a gravity greater than in any other region on account of the involvement of the aryteno-epiglottic folds and the consequent obstruction of the larynx; aphonia from injury to the vocal cords or to the nerves; emphysema, edema, penetration of blood in larynx, or injury of the pneumogastric or laryngeal nerves; dyspnea due to the same cause plus injury to the phrenic; dysphagia, due to swelling or pain; erysipelas is a frequent complication; also pyemia or sepsis; edema of the glottis is very common; spasmodic croup due to pressure or to nerve injury, is not rare; concussion of the cervical column communicated to the spinal cord, to the pneumogastric, phrenic, cervical plexus, brachial plexus, have been observed in severe wounds.

The symptoms of entrance of air into the veins are a wind-sucking or gurgling sound, immediate pallor of the face, dilatation of the pupil, irregular or tumultuous action of the heart, embarrassed breathing and death. The wound should be plugged at once with the finger, and all the usual means of resuscitation vigorously and persistently applied. The amount of air introduced is a grave factor. If the wound be small, the operation may be continued by keeping it constantly filled with warm sterilized water.

The sequels of the wounds of the neck are: permanent aphonia or dyspnea or dysphagia, necrosis of the cartilages and of the hyoid bone, torticollis due to contraction of cicatrix, to inflammatory adhesions of the muscles or to nerve injury; fistulous tracts; granulations obstructing the respiratory tract.

Deep punctured wounds striking the large vessels are those which are most commonly followed by deep and extensive extravasation and traumatic aneurysms; they call for the ligation of the two ends of the wounded vessels; it is here that a proximal loop ligation of the main trunk, low down when practicable, will be of the greatest assistance in controlling the hemorrhage during the search for the bleeding ends. They are also more commonly followed by emphysema than the incised wounds. When they involve a nerve they may cause tetanus or spasmodic croup. Deep incised wounds are often rapidly fatal from the excessive hemorrhage, because it is rare that some artery or vein has not been opened; the same foregoing remarks apply here as to their treatment. Deep contused and lacerated wounds present here no special peculiarities not covered by the above descriptions and the description of these wounds in general. Gunshot wounds usually cause much hemorrhage; they sometimes recover most unexpectedly; of course their gravity varies with the injuries inflicted. When the ball is deeply seated, no dissection should be made to extract it until later if it produces disturbances. Foreign bodies in wounds of the neck are common, wadding, pieces of clothing, piece of the weapon or bullet.

Fractures of the neck are rare; their description belongs to another chapter.

Dislocations, also *sprains*, are the result of injuries in which the head is much stretched, most commonly and especially when violently striking an obstacle vertex first; they give rise to great pain, particularly when the head is thrown backward. The treatment consists in thorough rest of the part by lying on a bed or by applying a liquid glass bandage.

Poisoned wounds, i.e., bites, stings, are more fre-

² They are usually due to a fall, the passage of a cart wheel, the stroke of a stick, a fist blow; to the pressure of the dislocated clavicle.

³ The wounds are penetrating or non-penetrating according to whether or not they reach the trachea or the esophagus or the vessels.

⁴ Gunpowder stains should receive as especial attention as for those of the face, especially in the exposed parts of the neck.

⁵ That is wounds, extending beyond the cervical fascia and more or less deeply.

quent on the neck on account of its exposed condition; also more grave, because no clothing has protected the parts; also, because they are usually followed by great swelling, which reaching the aryteno-epiglottic folds, causes obstruction of the larynx. Bites of a rabid animal are more serious because they have a shorter distance to travel to reach the central organs of innervation and because no clothing has wiped the animal's teeth. In all injuries of the neck causing obstruction to the free circulation of the air, from whatever cause, there is great dyspnea, cyanosis, anxiety; the pulse is full, rapid; there is also aphonia, dysphagia, pain. Tracheotomy should be performed; it is often advisable not to wait for very urgent symptoms to have the operation performed, because death may come on rapidly or suddenly before the patient can be reached.

Surgical neuroses of the neck, i.e., paralysis, spasmodic affections, retractions, neuralgias are rare except those which affect the sterno-mastoid and the trapezius and which will be described in speaking of the various forms of torticollis.

Hyperemia or congestion of the neck often accompanies that of the face, but it seldom exists alone.

Inflammations present most important differences according as they are superaponeurotic or subaponeurotic. Inflammations of the skin proper present nothing peculiar except that erysipelas seldom originates there; it is usually an extension of erysipelas of the head; it is seldom that erysipelas affecting the head will not extend to the neck, and it is also rare that it extends beyond and reaches the trunk. Furuncles and carbuncles may be serious by their extent and by the swelling they cause, which may extend to the epiglottic folds and cause obstruction of the laryngeal opening. Malignant pustules are most common on the neck; the swelling which accompanies this affection is an added danger here if it extends to the aryteno-epiglottic folds. Superficial or superaponeurotic cellulitis is serious only when diffuse or extensive and for the same reasons as given above. When a superficial abscess forms and has to be opened, care should be taken to avoid the anterior and the external jugulars, because they are always pressed toward the surface close to the skin. Deep or subaponeurotic cellulitis is a very grave affection, because of the compression due to the swelling and because these symptoms are increased by the unyielding nature of the fascia. It may be primary, the result of cold, or secondary due to some injury or some lesion of the teeth, especially of the wisdom teeth, bones, lymphatics, thyroid body, scalp, ear, face, mouth, or to low fevers. It may come from neighboring organs; tonsillar abscess sometimes opens under the inferior maxilla, and deep axillary abscess in the supra-clavicular region, as does also anterior mediastinal abscess. Primary cellulitis and abscess may be due to wounds external or mucous, to fractures, to osteo-periostitis, to osteomyelitis of the inferior maxilla, to phosphorous necrosis of jaw, to submaxillary adenitis, to thyroiditis, or acute hygroma of the serous bursae of the neck. Most of these acute inflammations are really adenocellulitis, due itself to lesions of all kinds of the face and neck, superficial and deep. Sometimes the initial lesion is very small and insignificant; often the gland itself does not suppurate but the connective tissue around it does (peri-glandular connective tissue); this adenitis may involve the following ganglia: submental (or digastric, or supra-hyoid), infra-hyoid along the middle line (juxta-laryngeal, sterno-hyoid,

laryngo-pharyngo-esophageal). In general diseases (diabetes, typhus, pyemia, typhoid fever, measles, variola, diphtheria, especially scarlatina) these inflammations appear most commonly toward the end of the disease or in the convalescence, and are more frequent here than anywhere else and call for special stress on some of the general features. The microorganisms met with vary much; beside the ordinary agents of inflammation we may meet with the micrococcus tetragonus, bacilli of typhoid fever, encapsulated diplococci from pneumonia; it is difficult to say which of these microbes are simply phlogogenous or also pyogenous. In abscess from dental caries spirilla of saliva have been met. Actinomycosis may cause cervical abscesses, although the organism lives specially in the mouth, in tonsillar depressions, in diseased teeth particularly; they may produce metastatic abscesses in the brain, thorax, abdomen; these abscesses are usually multiple and usually run an insidious and chronic course. Abscesses following injury or scarlet fever sometimes form a hard mass, slow in suppurating, causing great damage; sometimes they bleed alarmingly when opened, even after they have been opened several days, on account of sloughing of the vessels; they may be accompanied by thrombi in the large veins or sepsis. When the cellulitis suppurates the abscess may be circumscribed or diffuse; the pus may fuse in the chest, in front of the thyroid and sternum (previsceral route), behind the pharynx and esophagus (retrovisceral route), or along the carotid and jugular vessels in their sheath or in the sheath of the nerves of the brachial plexus behind the sterno-mastoid, reaching the supra-elavicular region and the axilla; it may open into the pharynx, esophagus, larynx or trachea, pleura, or mediastinum. Retro-pharyngeal abscesses may be limited; then they project on the sides of the neck in the maxillo-pharyngeal space; when they are median they can be reached through the mouth. In some subacute cases in the upper cervical region and at the root of the neck abscesses have a tendency to become encysted, and finally open on the skin; they may be chronic. When an abscess is near or over the cystoid, it pulsates, but then there is no expansion.

Chronic abscesses are oftenest due to a constitutional cause; sickly children with bad hygienic surroundings are the most common sufferers; they often start in the glands or bones or cartilages. A residual abscess is one due to the revival of an old cured inflammation. Chronic abscesses sometimes present multiple openings or sinuses; they sometimes ulcerate and perforate the arteries and veins. Scrofulous adenitis has the neck for a seat of predilection; the acute form is very rare; it is more special to adults; when the swellings are established the course is often slow. Simple chronic adenitis is very rare, it is very often scrofulous but not always inflammatory; they are due to repeated pharyngitis or carious teeth.

En résumé, the most common causes of cervical cellulitis are dental affections, lesions of the face and mucous membrane of mouth and pharynx; diphtheria and especially scarlatina; hence the great frequency in children and adolescents.

Diffuse abscesses are rare on the neck; they are sometimes gangrenous, they are often the result of a bad general condition, or of a badly treated circumscribed cellulitis. The peculiarities of cervical cellulitis are that sometimes they are very extensive and the general symptoms precede all the local signs of

deep cellulitis; usually they all suppurate; also they often cause cerebral anemia due to the compression of the carotids or to the coagulation of the blood in the compressed artery and vein.

The diagnosis of deep abscesses, especially of the acute abscesses, should be made at once by using the exploring needle and syringe, not a hypodermic needle, which may not give passage to thick pus, but a needle at least twice as large as the ordinary hypodermic needle. Exploration should be repeated every second day if necessary.

The treatment is evacuation and drainage, but in these dangerous regions fear of wounding important structures often holds the surgeon's hand when the abscess is one or two inches deep, until it becomes more superficial. By incising on the middle line and going around the trachea the knife can penetrate deeply with safety; also by incising behind the posterior border of the sterno-mastoid, or along the base of the jaw. It is recommended by some to cut down and ligate the vessels as they are divided, but when these are imbedded in indurated tissue this is almost impossible. Others leave the needle in place and cut down along it, but the divided vessels present the same dangers and difficulties. Hilton's method is to use the knife only to start, and as soon as deep parts are reached to tear with the director and use dressing forceps to dilate the small entrance gained into the abscess; it offers the same objections. The writer calls his method guided dilatation; it consists in the following steps: As above described, use a proper needle to locate the pus at the depth of one, two or three inches; unscrew the syringe and leave the needle in place; introduce through the needle a steel wire seven or eight inches long until it reaches the bottom of the abscess; remove the needle, leaving the wire in place; make a small incision through the skin to overcome the only serious resistance to the introduction of the dilators; take a trocar (with canula) of one-eighth of an inch in diameter, perforated from point to handle, and run it over the wire into the cavity of the abscess; it penetrates by dilating the tissues by the three blunt edges of its prismatic triangular point: then remove this trocar, leaving the wire still in place; take a trocar and canula of three-sixteenths of an inch and introduce it likewise along the wire; withdraw the second trocar and insert in a like manner one of a quarter of an inch, then one of five-eighths; finally withdraw the trocar and the wire and leave the canula in place; through the canula introduce a drainage tube of a quarter of an inch in diameter; remove the canula, leaving the drainage tube in place. A suitable probe can be introduced through the drainage tube and a counter-opening made at the proper place. After forty-eight hours the opening can be safely dilated to a half inch or more if it is found that the quarter-inch drainage tube is not sufficient.

By this method the tissues are not cut, but simply pushed aside all around, uniformly; there is no cutting at any time, since the edges of the triangular point are blunt; a round or conical point sometimes packs the tissues and does not penetrate; if a vessel or a nerve is encountered it is shoved gently aside out of the way; that is one reason why the dilatation should be gradual and why it is not advisable to pass at once from a one-eighth to a five-eighth trocar. There is no difficulty experienced, as far as the introduction is concerned, in passing from the smallest trocar to the largest.

Glanders is often accompanied by such swelling of the glands and peripheral tissues that life is much endangered thereby.

Inflammation of the tendons and of the muscles of the neck is very rare. The sterno-mastoid and the trapezius are sometimes inflamed more or less, acutely or chronically; but this will be described with the surgical diseases of the regions to which they belong.

Periostitis and osteitis of the region belong to another chapter. Arteritis presents nothing peculiar. *Phlebitis* of the external jugular is sometimes observed and is recognized by the usual dense cord; it often gives rise to intense pain of a neuralgic character. *Phlebitis* of the internal jugular is a most grave affection because of the propagation to the lateral sinuses of the brain; it will be described more fully when treating of the diseases of the region of the carotids. *Lymphangitis* is rare on the neck as a primary affection. *Adenitis* is most frequent, on the contrary, following the diseases of the various organs; they will be treated with the regions to which they belong. *Neuritis* is rare. The special organs of the region, the parotid and submaxillary glands, thyroid body and thymus, are liable to become inflamed, but very seldom, and they will be described further on.

Gangrene of the neck, in whole or in segments, is rare; grafting should be resorted to early to prevent the cicatrices and the consequences.

Ulcers of the neck resulting from inflammation are not common unless there has been sloughing. Strumous ulcers are common and often leave an indelible and much-dreaded tell-tale cicatrix. This can be removed when not too large by excision and stitching, leaving only a linear cicatrix instead of the irregular and striated strumous cicatrix. Tuberculous ulcers, secondary to the suppurated tuberculous glands, are also among the most frequent and present the same remarks. Syphilitic ulcers are the next in frequency. Cancerous ulcers are more rare; they are usually due to ulcerated cancerous glands, due themselves to secondary glandular infection; they have already been described. *Fistulae*, accidental, due to wounds are the most common. Aerial fistulae are those which communicate with the air passages; they may be laryngeal or tracheal; they are usually the result of wounds, accidental or surgical; they may be congenital, but it is rare; the tracheal are the most frequent, and are oftenest due to incomplete transverse wounds and to the retraction and stricture of the lower end; sometimes they result from the removal of parts of the tracheal cartilaginous rings in thyroidectomy, sometimes to tracheotomy. Alimentary fistulae communicate with the esophagus or the pharynx, and are called esophageal or pharyngeal; they are usually the result of accidental or surgical wounds or follow the opening of extensive abscesses. Glandular fistulae are the most common of all, being due to the suppuration of the glands of the neck. Cellulitis or abscess fistulae following these diseases are comparatively rare. Fistulae may remain after the complete removal of tumors; after the simple puncture or incision of cysts, of serous bursae. Dental fistulae follow the opening of abscesses due to diseased teeth, specially the wisdom teeth; they do not heal until the culprit tooth is extracted. Osseous fistulae are kept up by some carious or necrosed bone of the region which has to be treated. Fistulae complicated with erysipelas may be cured by it. Fistulettes may be cured by cauterization. In old fistulae the orifice is circumscribed by a cicatricial ring inti-

mately adherent to the edges of the loss of substance of the trachea; they demand an autoplasmic operation. Plastic operations are necessary to cure many of these fistulae which remain after the removal of the original cause and after the dilatation and curetting of the tract.

(To be continued.)

THE DIAPHRAGM AND CENTRUM TENDINEUM.

WITH TEN ORIGINAL ILLUSTRATIONS BY THE AUTHOR.

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The diaphragm is the chief characteristic of mammalian myology. The amphibia and animals below them in scale of structure have no diaphragm. The first distinct trace of it may be found in crocodile and bird, where the muscular fibers which are concerned in its formation arise from ribs. Even animals as high in the ascending scale as birds have an imperfect diaphragm; it does not separate the lungs and abdomen of aves completely. In fact several descriptions have appeared as to what is considered a diaphragm in birds. A complete diaphragm which arises from the vertebral column, ribs and sternum is a mammalian property only. The exact mode of the formation of the muscle is not fully known. The mammalian diaphragm is probably homologous to the so-called diaphragm of other vertebrates. The mammalian diaphragm is supplied by the phrenic nerves, which arise from the fourth, fifth and sixth cervical nerves and course along the lateral borders of the heart in contact with the pericardium to supply chiefly the anterior primitive portion of the diaphragm. In the human species it receives a sympathetic branch from the inferior cervical ganglion. Some of the lower intercostal nerves pass to the midriff. Besides, the diaphragm receives sympathetic branches from the abdominal brain along the phrenic arteries—the phrenic plexus. Originally the body cavity extended in the embryo from the visceral arches to the pelvic cavity; in the mammalian embryo the pericardio-thoracic cavity begins to be distinctly marked off from the future abdominal cavity by a transverse fold. This transverse fold begins at the vertebral and lateral wall, projects median-ward and dorsal-ward into the primitive pleuro-peritoneal cavity. This fold marks the course which the terminal part of the omphalo-mesenteric vein takes in order to reach the heart.

Oscar Hertwig says, "subsequently there is found imbedded in the transverse fold all of the venous trunks which empty into the arterial sinus of the heart, *i.e.*, the omphalo-mesenteric and umbilical vein with the ducts of Cuvier which collect the blood from the walls of the trunk." From this view it would result that the transverse fold—the incipient diaphragm—is intimately connected with the development of the veins. Similar folds are produced in the peritoneum by blood vessels as the plica-duodeno-jejunalis, the folds due to the arteriæ hypogastricæ and umbilical vein. It is known as the septum transversum or as Uskow named it, "massa transversum."

The primary diaphragm really belongs to the heart, as it consisted originally of projecting folds through which were conducted blood vessels to the great fluid or blood center—the heart. It may be noticed that the ventral part, *i.e.*, the primitive or original part, of the

diaphragm is the older and this explains why the two phrenic nerves chiefly supply the primitive or anterior portion. The muscular portion of the diaphragm gradually projects from the lateral and dorsal aspects toward the central portion of the body cavity between the growing liver and sinus venosus. A final fusion results between the primitive and secondary portion of the diaphragm. The hepatic and diaphragmatic development is inseparably connected early in embryonic life. But first the pericardial cavity is completely closed and then there remains two tubular cavities projecting from the peritoneal cavity bilaterally up to the visceral clefts. His called these cavities, thoracic prolongations of the abdominal cavity—a very suitable name. Into these original peritoneal prolongations jut out the lung structures, growing from the vertebral wall of the intestinal tube. Later in embryonic life the pericardial cavity is closed and occupies the chief ventral side of the embryo, the thoracic cavities now closed occupy the dorsal side, while the rapidly growing peritoneal cavity occupies the posterior portion of the embryo, all three cavities

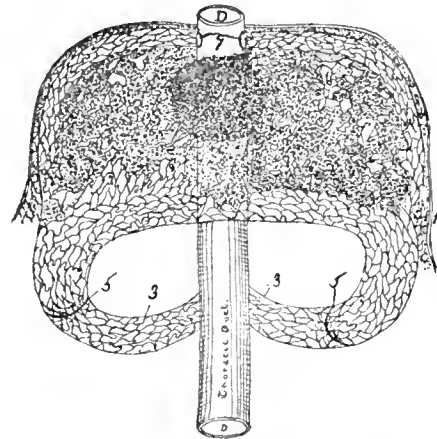


Fig. 1.—Diagram to illustrate the lymphatic drainage of the centrum tendineum of the diaphragm into the two anterior and two posterior trunks. D, D., upper and lower end of the thoracic duct; 1, outer end of the diaphragm; 2, anterior lymph trunks passing on the posterior surface of the xyphoid appendix to accompany the mammary arteries; 3, 3, two posterior trunks of lymphatic vessels which drain the centrum tendineum and empty into the thoracic duct; 5, 5, valves of the trunks; 6, 7, 8, are dilated lymph spaces in the tendon. The black spot represents the point of the centrum tendineum where the heart rests on it, at which point there are no lymph spaces; 9 represents the mouths of the two anterior channels.

distinctly divided off by the characteristic mammalian muscle of the diaphragm. The pericardial sac first closes from above by the forward projection of the ducts of Cuvier, the primitive diaphragm forming the lower portion of the pericardial sac. Finally the edges of the projecting folds, due to the ducts of Cuvier, fuse and the pericardial sac is formed. The remains of Cuvier's ducts is the superior vena cava. From the dorsal and lateral walls of the trunk project folds, known as the pillars of Uskow, which fuse with the original septum transversum which was thrown into a fold by the veins which course to empty their contents into the heart. The diaphragm has an older ventral part supplied by the phrenic nerves and a younger dorsal part. The pericardial sac is of enormous size in the embryo while the two narrow, lateral tubular sacs hold the rudimentary lungs which are very small from non-use and slight blood supply. But with further ventral growth of the lungs they detach more and more the wall of the pericardium from the diaphragm and from the lateral walls of the thoracic cavity, thus increasing the pleural diaphragm-

matic surface. Again the liver is gradually separated from the primary or ventral portion of the diaphragm by the peritoneum growing over and becoming adherent to the upper surface of the liver, only leaving a small portion of the upper surface uncovered by peritoneum. This uncovered liver surface is bounded by the basal margins of the coronary ligaments. The characteristic mammalian muscle serves mechanically as, 1, a partition to divide the peritoneal cavity from the pleuro-pericardial cavity, 2, to fix the pericardial sac and 3, as a floor to support the pleuro-peritoneal endothelium. Anatomically it is so designed by origin and insertion as to aid respiration, allowing lung expansion and aiding contraction. It permits of much adjustability of pleura-peritoneal organs. It accommodates itself to the varying size of adjacent viscera. Physiologically the diaphragm is a vast and active absorbent. It is a filter, a sieve for peritoneal fluids (and also to some degree for pleural fluids). A considerable portion of the central part of the diaphragm of most animals is of a tendinous or aponeurotic nature. In some mammals there are several tendinous portions separated by muscular and connective tissue ridges. In cetacea the centrum tendineum is almost obsolete.

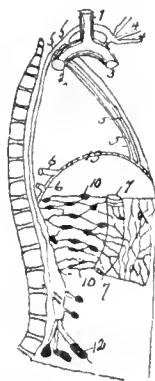


Fig. 2.—A diagrammatic profile view of the lymphatic duct with its visceral tributaries and nodules and two posterior lymph trunks from the diaphragm. 1, internal jugular vein; 2, innominate vein; 3, subclavian vein; 4, thoracic duct; 5, 6, small branches of the thoracic duct converging at a point where it empties into the subclavian vein; 7, 8, the two anterior lymph trunks which drain the anterior portion of the diaphragm and accompany the internal mammary vessels; 9, 10, the two posterior lymph trunks which drain the posterior portion of the diaphragm emptying into the thoracic duct; 11, a portion of intestine to illustrate the lymph capillary vessels; 12, lymph capillaries; 13, mesenteric lymph nodes; 14, receptaculum chyli; 15, lumbar lymph nodes or glands; 16, diaphragm. This figure represents the three great divisions of the lymph system: a, the non-valved variable lymph capillaries (9, 10), with sinuous endothelia and excavations emptying into the lymph trunks (10, 12) and nodes; b, the valved lymph trunks with the intervening lymph nodes emptying into the thoracic duct; and c, the thoracic duct (3) emptying into the subclavian vein.

In the study of the histology and physiology of the mammalian diaphragm the chief attention is nearly always confined to the centrum tendineum. My studies were mainly concerned with the diaphragm of man, the dog, rabbit and guinea-pig. The most convenient animals on which to study the central tendon of the diaphragm is the one which possesses a central tendon so thin and transparent that it will require no section for microscopic examination. The cheapest, most accessible or perhaps the most satisfactory animal on which to pursue histologic and physiologic study of the centrum tendineum is the rabbit. The centrum tendineum of this animal consists essentially of four layers, viz.: First, there is a layer of parallel radiating tendinous bundles, passing from the region of the vertebral column toward the costal arches. This tendinous layer lies on the posterior or abdominal side of the diaphragm. In the intertendinous spaces or

clefts of this layer, long irregular interstitial or lymph spaces exist; with the naked eye one can observe the radiating tendinous ridges, especially by stretching the tendon. In physiologic experiments it is in the intertendinous spaces that the chief accumulations of colored granules are deposited and really seen by the eye or tracing lens.

The second layer of the centrum tendineum is the circular or that lying on the pleural side of the diaphragm. It is quite uniformly developed, but at localized prints there appears to be an excessive amount collected. These two tendinous layers, the radiating and circular, may be readily dissected from each other.

A third layer of the centrum tendineum is the pleura serosa lying on the circular tendinous layer. It is composed of an endothelia interrupted by stomata vera and spuria. It lies in contact with the lung.

A fourth layer enters into the centrum tendineum, the abdominal serosa. This is an endothelial membrane composed of flattened connective tissue cells, so placed edge to edge, as to produce a membrane which is interrupted only by stomata vera and spuria. The diaphragmatic abdominal endothelia rest on the basement membrane, the membrana limitans, which is perforated by groups of small openings. The histology and physiology of the above four layers of the centrum tendineum will engage our attention both experimentally and microscopically.

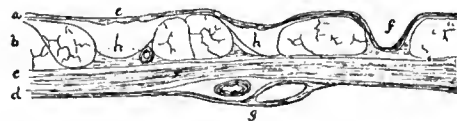


Fig. 3.—(After Ludwig and Schweigger-Seidel, 1866). This is a section of the centrum tendineum of a rabbit, 150 diameters; a, the peritoneum; b, the four radiating tendon bundles; c, the tendinous lymph spaces, one fully and the other partially distended; d, the peritoneum over a lymph space between the tendon bundles, depressions, i.e., the fluid lymph has disappeared from the channel; e, a blood vessel; f, the circular fibrous layer; g, the peritoneum put on a stretch over the intertendinous lymph space.

Histologically the centrum tendineum has engaged the attention of original investigators for over thirty-five years. Von Recklinghausen began 1861 by showing that particles suspended in fluid and injected into the peritoneum passed through the serosa of the centrum tendineum and were liberally deposited in the lymphatics of the diaphragm. He used milk, oil, cinnabar, chinese tea, etc. His pupils Pia, Foa and Radjewsky continued his researches. Chzrozozinsky, and his pupil, Afannasiew (1867), did some excellent work on the diaphragmatic peritoneum. The most extensive and far-reaching labors on the centrum tendineum since the epoch-making experiments of Von Recklinghausen were the researches of Ludwig and his pupils, Schweigger-Seidel, Dogiol and Dyb-kowsky in the Leipsic Physiologic Institute in 1864-67. Those laborers asserted that the peritoneum is a lymph sac. The Russians, Lawdowsky and Kolossoff did excellent work. The Italians, Bizozzero, Salvioli, Maffuci and Muscatello were progressive workers, and Bizozzero announced in 1874 that the membrana limitans of the centrum tendineum was perforated by groups of openings. The excellent labors of the Frenchmen are well known, as those of Ranvier, Dubar, Remey, Tourneaux, Hermann. The Englishmen, Klein and Burden-Sanderson produced meritorious works. The combined labors of these investi-

gators point to the diaphragm or centrum tendineum as the significant locality of physiologic activity of the peritoneum.

The serosa of the peritoneal side of the centrum tendineum presents special features requiring careful attention. If a rabbit's diaphragm be stained *in situ* with .25 per cent solution of AgNO_3 and removed without trauma and mounted in glycerin we observe the endothelia and their corresponding dark network of interendothelial spaces; interendothelial substance is discarded. At the common junction of several endothelial cells may be seen structures which are designated stomata vera, while situated along the interendothelial spaces are structures known as stomata spuria. Again, another distinctive characteristic of the centrum tendineum is presented in the microscopic field which consists of parallel dark and light spaces. These dark and light strips radiate from the vertebral region toward the costal arches and correspond to the tendinous bundles and intertendinous spaces. The distinctive feature of the peritoneal serosa of the centrum tendineum is that directly over the radiating tendinous bundles the endothelia are large, regular and possess relatively few stomata vera, while the endothelia covering the light or intertendinous spaces are small, quite regular and possess very numerous stomata vera. Occasionally the large, regular endothelia may not only stretch as usual over the tendon bundles but in irregular distanced localities even bridge all the way across the lymphatic intertendinous channels, taking the place of the small irregular endothelial cells which cover the lymph spaces. In intertendinous spaces the stomata are arranged in rows chiefly occupying the central portion of the space. The light spaces are intertendinous lymph channels, while the dark spaces represent non-transparent tendinous bundles. The intertendinous lymph channels are irregular in shape and size, possess lateral bulgings or sinuses and run parallel with the bundles of tendons. The size of the intertendinous lymph channels vary according to the amount of fluid in them. They measure according to Schweigger-Seidel and Dogiel, from 0.06 mm. to 0.12 mm., *i.e.*, they vary one half in size.

The stomata vera of the peritoneal serosa of the central tendon, located chiefly in the intertendinous lymph spaces, are vertical canals connecting directly, the peritoneal cavity with the sub-peritoneal lymph channels. It must be admitted that there is an uncertainty in the examination of the peritoneum whether the stomata vera really correspond to holes in the serous membrane or not. Yet this uncertainty becomes less as one actually observes that, by injecting fluid holding in suspension solid particles into the abdominal cavity the solid particles will pass in vast numbers into the sub-peritoneal lymphatics of the central tendon of the diaphragm in a few minutes. The stomata vera are lined by granular, polyhedral, nucleated cells. The vertical canal has varying length. Sometimes it may only be as long as the thickness of the peritoneal layer, plus that of the sub-peritoneal lymph vessel wall, or the canal may pass down obliquely. Again, the vertical canal may pass down through a wide lymph capillary field to connect a deep subserous lymph space. In such a case the vertical lymph channel is really invaginated by the lymph space through which it passes.

It is true the stomata vera are irregular in distribution, share, size and number, but that can hardly be

considered sufficient proof against their existence. Schweigger-Seidel's theory that the stomata vera are surrounded merely by the nuclei of the adjacent endothelial cells must be abandoned as it does not correspond with the observed facts. One can see the usual nucleus in the endothelial plate, which surrounds the stomata vera in its accustomed locality. In examining specimens of the central tendineum the stomata may be observed open or closed, the mouth may represent a curved line as is easily observed on the lymphatic cisterna magna of the frog. Klein adds another kind of stomata, which are mere breaks or discontinuity in the endothelia leading into some lymph space which is only covered by a single layer of endothelium. Such stomata are not lined by granular, polyhedral, nucleated cells. The application of a solution of AgNO_3 to the stomata vera of the diaphragm produces in them a rich brown color, owing to the amount of precipitable albumin they contain. The stomata vera or vertical lymph channels are lined by a special layer of endothelial cells, more or less polyhedral in shape, consisting of granular protoplasm. The expansion and contraction of the granular nucleated cells which line the vertical lymph channels control the lumen of the stomata vera. They have a sort of sphincter so as to control the flow of peritoneal fluids. Ranvier called the stomata vera



Fig. 4.—A figure to represent a portion of the peritoneal serosa of the centrum tendineum of a rabbit after injecting fluid into the peritoneum for forty minutes while alive and again forty minutes while dead. The specimen was slightly silvered, then prepared by a solution of gold chlorid 1 part, acetic acid 5 parts, and water 994 parts, whence it presented a most beautiful and brilliant picture. 2, nuclei; 1, 1 shows the leucocytes emerging from sub-endothelial spaces, through stomata vera or stomata spuria—however, always through interendothelial space; 3 points to a leucocyte emerging from a stomata verum; 5 indicates a leucocyte emerging through a stomata spurium; 6 is a leucocyte entirely free. Note that the leucocytes become elongated as they emerge; 4 and 7 point to the leucocytes shimmering through the cover plate. Under the cover plate the leucocytes are round. Peritoneal irritation induces the leucocytes to come to the surface.

lymph wells and claimed that the so-called granular cells lining them were leucocytes. They are doubtless localities for reproduction of endothelial cells to replace worn-out or dying comrades. My experiments seem to show that the Berlin blue particles may be found passing through deposited in the vertical lymph channels.

On the interendothelial spaces of the centrum tendineum there exists after the application of silver nitrate solution dark spots, rings, ovals, thin rings with large light centers or thick rings with small light centers or very irregular masses. These structures are known as stomata spuria. Virchow called them lymphoid cells, Oedmansson, Von Recklinghausen and others called them connective tissue corpuscles projecting upward between the endothelial plates. I am quite well convinced by experiments that leucocytes wander from the lymph spaces below to gain entrance to the peritoneal cavity.

The interendothelial space in the centrum tendineum originally was called interendothelial substance, fluid, semifluid or cement substance. I have discarded all names for the word interendothelial space. By the use of osmic acid as a fixation agent, and silver

nitrate and tannin as reduction agents, we can dissolve the interendothelial space into two parallel lines with an intervening light space crossed transversely by anastomotic protoplasmic processes. The two parallel lines on the borders of the cover plate and the transverse anastomotic processes are the protoplasmic processes which bind the endothelial cells into colonies and groups. The anastomotic processes are thin and fine at the surface but increase in thickness and numbers as they descend from the surface. This interendothelial space gives ample room for contraction and expansion of endothelial cells, contraction of the cells elongate and thin the protoplasmic anastomotic process and the expansion causes the reverse condition. It thus can regulate peritoneal fluids currents.

The endothelium of the centrum tendineum consists of a cover plate (Kolossow, Ranvier), an indurated, hardened, metamorphized portion of protoplasm which is fixed by protoplasmic processes to the subja-

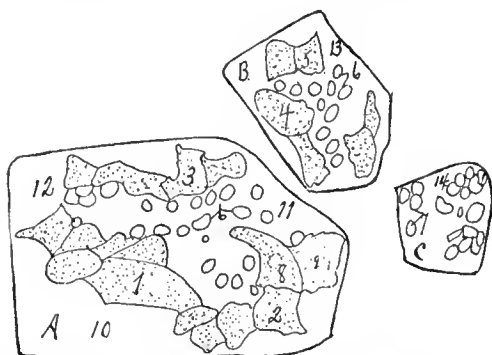


Fig. 5.—Drawn from the abdominal side of the diaphragm of a girl 13 years old to illustrate the pores in the membrana limitans. This diaphragm was removed seventy-two hours after death. It was stained with a 1 per cent. solution of nitrate of silver for ten minutes. It was then placed in carmin colored fluid for ten hours, where it absorbed considerable numbers of colored granules of carmin. It was then placed in Muller's fluid two days, sections prepared by snipping off small bits of the diaphragm were in general mostly desquamated and especially the cover plate and its edges were much dissolved. In this diaphragm the apertures of the membrana limitans appear mainly in groups. The groups are in general 10, 20, 30 and 40 in a group. Some groups of apertures in the membrana limitans appear to be 75 or 100, yet this may be where two or more groups coalesce. The size of the holes would appear large enough to admit from one to four red blood corpuscles abreast. Single holes may appear alone in the membrana. There is no doubt that some of the bright spots in the cover plate represent the apertures in the membrana limitans, as it is plain to see in this diagram. Some have interpreted the bright spots in the color plate as holes peculiar to it. The holes are round, oval, oblong, square, but chiefly round or oval. The maceration of the endothelia and their falling off by merely washing or rinsing is one of the best ways to observe the holes or pores. However, on vast areas of the diaphragm one can not see the pores. Hard brushing destroys distinct views of the pores. Nos. 1, 2, 3, 4, 5 endothelia isolated and connected; 6, 6 and 7 show the shape, size and relation of the apertures in the membrana limitans; 8, 9, nuclei of endothelia; 10, 11 and 12 in A and B and 14 in C show the membrana limitans with its pores. It resembles a soap bubble in fineness, but is visibly granular.

cent protoplasm, but the lateral edges have little or no connection with adjacent fellow endothelial cover plates. The best animal to study to observe the cover plates are the frog and turtle. The portion of the endothelial cell immediately beneath the cover plate is the real living protoplasmic essential part of the endothelial cell which contains the nucleus. It is contractile and expansive and connected to its fellows in colonies by anastomotic protoplasmic processes. The pleural serosa situated on the anterior or upper surface of the centrum tendineum is similar in structure to the peritoneal serosa situated on the under or posterior surface of the tendon.

We note then that the centrum tendineum has two layers of serosa and two tendinous layers. The elements of the serosa are the endothelial plates, stomata vera et spuria and interendothelial space, which we

have discussed sufficiently to expose the views of their structure and significance. We will now discuss the fine membrane on which the endothelia rests, the peculiarity of which is that it is perforated by groups of apertures in the serosa of the abdominal side of the centrum tendineum. It is known as the membrana limitans.

The membrana limitans is a transparent, glassy, fibrillar-like membrane situated beneath the peritoneal endothelia. The earliest amount of this membrane at command is a well-written article by Brinton, in Todd's Encyclopedia, 1847, under another name; "basement membrane." Todd and Bowman describe it as "a continuous transparent membrane of excessive tenuity and homogeneous or nearly so." Goodsir (1847) also described it, but he noted that it could be separated into its component cells, which were of a rhomboid and extremely flattened shape. Goodsir named it the "germinal membrane." Many examinations of this subject were made fifty years ago, with the result that vigorous denials of its existence were asserted. Brinton himself could not confirm Todd and Bowman's investigations. Arnold, in his "Hand-

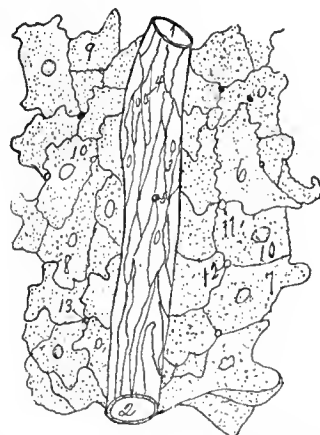


Fig. 6.—Drawn from peritoneal side of a rabbit's centrum tendineum to illustrate a small capillary distinctly invaginated in the vast lymph spaces through which it courses. The diaphragm was silvered and the simple handling of the diaphragm during an experiment suffered to desquamate the free peritoneal endothelium so that one can readily see the blood vessel with its long spindle-shaped endothelia coursing through the vast lymph field recognized on each side by their sinuous endothelia. The lymph spaces pass over the blood vessels, but that is omitted to avoid confusion of endothelia; 1, 2, blood vessel; 3, 4, their nuclei; 5, stoma verum; 6, 7, 8, 9, sinuous endothelia of the lymph spaces; 10, 10, their nuclei; 11, 12, and 13, stomata vera of the lymph spaces.

buch der Anatomie," Freiburg, 1844, p. 216, calls it "a finely granular, fiberless ground substance." There can be no doubt that the basement membrane of Todd and Bowman and the granular fiberless substance of Arnold are one and the same membrane. In 1850 Kolliker, in his "Mikroskopische Anatomie," could not fully confirm the basement membrane, but acknowledged that beneath the endothelial layer there appeared a homogeneous element which was similar to a membrane. Henle, in 1840, "Ueber Serosen der Haute," in Frobiep's "Notizen," demonstrated this membrane as intercellular substance of connective tissue, and again as formless germinating material. Luschka, in 1851, in "Die Structur der Serosen Häute des Menschen," calls it by various names, as structureless connective material, almost completely homogeneous, of glass-like transparency, smooth or very finely striped lamella. He says it is clear and shining and has the appearance of lightly ground glass. It may be noted that but little could be added to make Luschka's structureless material exactly the same as

the differently termed membrana limitans of today. He says this structureless material is found in all the serous membranes between its fibrous elements. The far-famed Reichart, who in 1845 first proposed the term connective substance, considered this material intercellular substance, which is finally transformed into a membrane possessing rudiments of the original cell elements. Luschka incidentally remarks that Todd and Bowman found occasion to call their structureless membrane the basement membrane.

In 1873 Bizzozero, who studied extensively the peritoneum, established the less distinctly seen object of older authors as a definite, recognized membrana limitans. However, it is the same identical membrane of Arnold, Henle, Todd and Bowman, Luschka, Reichart, Goodsir, Kölliker and others. What brought Bizzozero into prominence is not reaffirming the existence of the membrana limitans, but the announcement that the membrana limitans is perforated by apertures on the diaphragmatic serosa. This significant discovery is the only explanation so far offered which explains why the finely divided, colored granules are so rapidly carried into the lymph channels of the diaphragmatic serosa when injected into the peritoneal cavity. The diaphragm is the chief region of absorption of the material injected into the peritoneum, because the membrana limitans is perforated only over the diaphragm.

The membrana limitans has been described in animals by Wadd and others. Bizzozero asserted that it contained no cells, that it is simply finely striped. Acetic acid applied to it makes it swell and become invisible from transparency. I have made long search as to the location of the perforations and so far have never seen the membrana limitans perforated outside of the centrum tendineum. Almost all the perforations of the membrana limitans found have been situated toward the line of junction of the centrum tendineum and the muscular portion of the diaphragm, *i. e.*, toward the costal margin of the central tendon. My best specimens so far came from the human species and the dog. In these the membrane appeared as thin as that of a soap bubble with peculiar fine striations running parallel to each other, resembling glass ground in one direction only. The groups of perforations in the membrana limitans in the human species were apparently larger than in the dog and contained numbers of pores. In one case there appeared to be 80 to 100 pores in one group. In the dog I seldom saw groups containing more than 40 to 50 but oftener much less. The distribution of the groups of apertures were similar in man and dog. The group of pores resembled in distribution somewhat a vast herd of sheep in a wide pasture with larger and smaller groups here and there with but a few stragglers existing between. The distribution of the groups of pores might be compared to the groupings of the gonococcus in a specimen.

Irregularity of number, size and shape of groups characterize the distribution of pores on the peritoneal serosa of the centrum tendineum. The shapes of the pores are chiefly round and oval. The best specimens on which to find the pores are those preserved several days in Muller's fluid or preserved 12 to 24 hours in water, subsequently gently washing off the endothelia. In some specimens the pores could be observed through the serosa of the central tendon. So far in our work we have not found the pores in the center of the centrum tendineum, but always

toward the periphery. The outline of the perforation or pore is always sharp and distinct. The circumference of the pore seems to take on the silver stain actively, making it appear quite distinct. Where the pores are located as Muscatello notes, the membrana limitans appears to be quite adherent to the adjacent tissue. As regards the ease with which the pores in membrana limitans may be demonstrated, I must demur to the idea that it is certain or easy of execution, for one may attempt to find them on many specimens before success results. It is easy to observe that the membrana limitans is thicker and thinner, in different localities of the peritoneum.

(To be continued.)

DISEASES OF THE RECTUM AS A CAUSE OF AUTO-INFECTION, WITH REPORT OF CASES.

BY J. R. PENNINGTON, M.D.

CHICAGO.

Auto-infection is not altogether a new subject, yet it has remained for modern bacteriology and chemistry to demonstrate its relation to, and importance in, the production of disease; and, today no subject commands greater interest or demands more serious thought and careful study, because when more thoroughly understood it will be found to be at the root and foundation of many of the so-called reflex and other obscure diseases. There are many sources of auto-intoxication, but this paper deals more especially with that variety of infection caused by the absorption of toxic substances generated within the alimentary canal by chemic, putrefactive or fermentative changes or bacterial development, aided and influenced by the existence of a pathologic condition of the rectum and contiguous structures.

That I may more clearly elucidate the subject, it will be necessary to call attention to the fact that the physiologic processes of the abdominal and pelvic organs, as well as those of many other organs and parts, depend in a great measure upon a healthy and non-toxic state of the sympathetic system of nerves. These organs, through this same system of nerves, are in profound and intimate relation with the rectum; and, therefore, any diseased condition of it, such as piles, fistula, ulceration, stricture, congestion, inflammation, etc., intoxicates and impairs the function of this system of nerves, and, according to that degree of intoxication and impairment, weakens the defense, modifies the nutrition and perverts the physiologic function of the kidneys, liver, intestines, etc., which in turn favors and invites infection.

It should also be remembered that because of the peculiarity of the nerve supply to the rectum, a patient may, and often does, consider a trivial affliction of this organ as one of great magnitude, while he regards and treats a truly serious and dangerous condition as if of no vital importance whatsoever; or, perhaps, the local manifestations may be so slight that the patient has not the least suspicion of its existence. In fact I have had patients doubt my diagnosis when they were actually suffering from self-poisoning caused by a pathologic rectum, saying it was impossible, as they suffered little or no pain and their bowels were regular. Future treatment, however, convinced them of the correctness of the diagnosis, that the rectal trouble was at the foundation of their affliction. Others again have questioned

my judgment when I have assured them that their rectal affliction was, comparatively, insignificant.

Bouchard tells us that "the organism in its normal, as in its pathologic, state is a receptacle and laboratory of poisons." This declaration is endorsed by our most eminent bacteriologists and chemists. And, further, recent investigations have established the fact that many of the morbid conditions from which the human race suffer have their origin or source of infection in the intestinal canal of their own systems.

The bacillus coli communis, the most prevalent bacterial germ developed in the intestinal tract, has been found in the brain, liver, lungs, kidneys and in fact in nearly every organ of the body. Its toxins are very virulent and under favorable conditions affect the vital tissues most insidiously. The watery extract of putrefying fecal matter within the intestinal canal has also been proven to be, under some circumstances, very poisonous.

Auto-infection is a very insidious disease and manifests itself in a multiplicity of ways. The following are a few of the commoner symptoms observed: headache, drowsiness, lassitude, "tired feeling," loss of ambition, palpitation, impaired appetite, flatulence, indigestion, nervousness, irritability, cold hands and feet, etc. Such patients are usually inclined to be melancholic. The skin has a pale, muddy, greenish-yellow or unhealthy color, and may have the odor of foul-smelling secretions. The breath is also frequently foul. In more severe cases the symptoms are those of impending dissolution. Many of these patients travel from doctor to doctor and are usually treated for grip, malaria, biliousness, nervousness and constipation. They tell you that as long as they continue to take medicine they feel better. This improvement is oftentimes chimeric and simply serves to aid the grim monster of death in more securely and insidiously fastening his venomous fangs into the very heart of their lives. When they stop taking drugs the trouble recurs and frequently in an aggravated form. To cure these individuals it is absolutely necessary to locate and remove the cause of the infection, otherwise it is simply a waste of time, energy, life, happiness and money. Constipation, it may be said, is probably accountable for more ills than any other condition to which human flesh is heir. It is one of the most frequent causes of self-infection, yet it should be regarded as a protection against intoxication, as it presupposes that all that is absorbable has been absorbed. But are constipated people healthy? They have headache, dizziness, lassitude, etc. Hypochondriacs are usually constipated and suffer from all manner of nervous phenomena, such as perverted sensibility, tingling and "creepy" sensations, and mental disturbances. The insane very commonly suffer from constipation. So do many epileptics. I do not say that all these troubles are caused by constipation, but I do say, regardless of the cause, that they are aggravated by it and that it impairs the function of the nervous system. Another point, and one which I wish to emphasize, is that a daily evacuation of the bowels does not necessarily mean that the individual is not constipated, neither does the absence of constipation exclude other ailments.

Were the esthetic young lady aware of the fact that in many instances her bad complexion and other ill feelings were due to the absorption into the blood of fecal matter and its deposit in her tissues and skin, we believe that she would pay more attention to the

physiology and hygiene of defecation and the diseases of the rectum and intestinal tract. And further, as we become more familiar with the various poisons generated within us and their great destructive powers, their power to disorder nerve centers and paralyze the action of the vital organs, we come to realize and are forced to admit, that we are constantly standing at the very threshold of self-destruction, that we are our own murderers. In another part of this paper I called attention to the close and intimate relation existing between the rectum, pelvic, abdominal and other organs, and shall now briefly append a few cases to illustrate what serious and dangerous constitutional diseases may be, and often are, caused by rectal affections and that the relief and cure of these afflictions depend upon the administration of proper and intelligent treatment of the rectal ailments.

Case 1.—Mrs. S., consulted in May, 1895, in regard to an external pile. She was emaciated, nervous, had a sallow complexion, palpitation, bronchial cough, pain in the left side and back, also ovarian and uterine symptoms, had no ambition and was inclined to be melancholic; her bowels were constipated and her appetite poor. Suspecting a more serious local trouble than that of an external hemorrhoid, I explored the rectum and found an ulceration the size of a silver quarter, located two inches above the anus. This cured, her symptoms vanished and she regained her usual health.

Case 2.—Miss B., age 25, hysteric, nervous, emaciated, suffering from palpitation and indigestion, bowels slightly constipated, breath foul, bronchial cough and cachectic. Removed four hemorrhoids July last. She now has a beautiful rosy complexion and has gained 20 per cent. in weight.

Case 3.—Bright's disease(?), examination of urine of patient, upon whom I operated for fistula, showed albumin in considerable quantity. He also had slight edema of feet and ankles, waxy complexion and other symptoms indicating Bright's disease, all of which including the albumin disappeared after the operation, when he became healthy and robust.

Case 4.—J. B., age 43, typical case of self-infection. Hypertrophied sphincter, greenish yellow complexion, palpitation, dyspepsia, headache, loss of appetite, nervousness, constipation, etc. Divulsion of the sphincter and a thorough course of the waters at West Baden and French Lick Springs completely restored his health. Will say in passing that I have found the waters of these springs most admirable agents for such cases. By their laxative, diuretic and diaphoretic properties they give the system a most thorough cleansing from all impurities. They are the most potent depuratives of which I have any knowledge.

Case 5.—Asthma(?). Patient afflicted with hemorrhoids and ulceration. Had a chronic cough, cooing râles, tenaceous expectoration and gave a history of asthmatic attacks and evidences of auto-infection. The hemorrhoids and ulceration cured; the lungs cleared up, the cough and *asthma* (?) disappeared.

Case 6.—Rheumatism(?). J. S., age 42, presented evidences of chronic muscular rheumatism, for which, to use his expression, he "had taken a barrel of medicine." The rheumatism disappeared simultaneously with the cure of his rectal affliction.

Case 7.—Salpingitis(?). Mrs. R., with soreness in left iliac region, pressure increasing the pain, emaciated, nervous and irritable, irregular as to bowels, leucorrhœic and passing large quantities of mucus. Her physician had been treating her for inflammation of left ovary and tube. I diagnosed her condition, catarrhal inflammation of the sigmoid flexure, and by treating her accordingly the *salpingitis* (?), pain, nervousness, discharge of mucus, etc., ceased.

Case 8.—A. R., 53 years old, emaciated, had diarrhea and cough, and was thought to be suffering from consumption of the bowels. By relieving him of an ulceration and stricture of the rectum his diarrhea and *consumption* (?) were cured. It is needless to say that his general health materially improved.

My friend, Dr. Mathews, in his most excellent "Treatise upon the Diseases of the Rectum," reports a number of very interesting and obscure cases, many of which no doubt were suffering also from auto-infection. I herewith submit a brief abstract of one of his cases taken from the chapter on "Reflexes."

Mr. H., a prominent banker, was afflicted with a fissure of the anus. Several eminent physicians thought him afflicted with a malignant disease, which they were unable to locate,

and that he was dying from its effect. Mathews also shared in this belief, saying that from his appearance and condition he thought he had a cancerous disease and that it never occurred to him that the ulceration in the rectum could bring him to such a deplorable condition; and he further says that after the fissure was cured "in a few weeks he resumed his business at his bank, having fully recovered from his *malignant(?)* disease."

Doubtless the reflexes played an important part in this case as well as in some of the others herein reported. Yet it was undoubtedly the auto-infection from which this patient was suffering that caused these able men to err in their diagnosis and opinion.

I could cite other illustrations, but these cases speak for themselves and serve to show that no diseases more secretly impair and undermine the constitution or cause a greater degree of personal distress, or are productive of more misery and suffering or serious consequences than those occurring around the rectum and anus; and yet, notwithstanding their great importance, no class of diseases is more grievously neglected. Granting that the above were cases of auto-infection originating from disease in the rectum (and if they were not what were they?) how many more sufferers might be relieved, or even cured, by properly studying and treating pathologic conditions existing in this region?

To permit this insidious and perpetual fire of infection and disease to gradually, though slowly and surely, burn out man's existence, either by ignoring, overlooking or treating with apathy the real cause of his trouble, and constantly filling him, empirically, with drugs, when by intelligent and proper treatment this destructive flame could be so easily and completely extinguished, thereby lifting him from a pit of misery and wretchedness to that high plane of sunshine and happiness, is but little short of criminal ignorance and negligence.

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HEREDITARY TREMOR.

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Owing to the small number of cases of this disease reported thus far, the following history may be of interest:

C. S., aged 35 years, single, school-teacher, has always been in rather delicate health, but has never been seriously ill. At the age of 22 years, she for the first time observed a tremor of the hands which recurred at intervals, especially when excited or exhausted from work. One year after the first appearance of the symptom, it became worse after an illness of several weeks duration. About eighteen months ago, after an exciting experience in connection with her school-work the tremor became more general, and has continued to grow worse more rapidly, ever since; so that she was finally compelled to discontinue her work on account of the annoyance caused by this distressing symptom.

She states that the tremor becomes more marked in the presence of strangers, and for this reason she has avoided coming in contact with them for some time past. When alone it is very much less intense and disappears when she is at rest.

On examination the tremor is found to affect the upper extremities and the head more particularly. It is slow, rhythmic and affects speech somewhat, which

is slow and strained, apparently in the effort of suppressing the tremor. Nystagmus is absent. The hand writing is clear, firm and gives no evidence of tremor. An examination of the nervous system is productive of only negative results. The patient is somewhat depressed on account of her condition and presents some neurasthenic symptoms. Aside from this the psychic functions are normal.

On further inquiry the following family history is obtained. The parents are both living. There is no history of any irregularity of habits, etc., on either side. The father has always been nervous and has been afflicted with a tremor of the hands ever since some time previous to his marriage. His mother had a tremor of the head at the age of 35. The patient's mother's half-sister became insane at the age of 18 years, and died insane at the age of 60 years. The mother's father was periodically insane. One of the patient's sisters died during her confinement at the age of 35; was previously healthy as far as can be ascertained. Another sister, aged 25 years has had a tremor of the head for several years past. The third sister, aged 15 years, is afflicted with a tremor of the head and of the hands since childhood.

Hereditary tremor appears to be a rare disease. Brasch after a careful review of the literature on the subject has found reports of only thirty cases. He suggests the designation "Essential Hereditary Tremor" as the most appropriate one, since it is descriptive of the disease. The essential feature of the disease is the hereditary occurrence of tremor, without any other symptoms of nervous disease.

Clinically, hereditary tremor possesses no characteristics, being subject to many individual variations. In some cases the tremor is slow, rhythmic and with slight excursions. In others it is rapid and less regular. It may be confined to the upper extremities, which appear to be most frequently affected; or it may involve these together with the head, eyes, tongue and vocal cords. The lower extremities appear to be less frequently involved. In the majority of cases it is absent when the patient is at rest, but in some cases it continues even during sleep. Excitement and excesses of every kind tend to increase it. It may develop gradually and increase progressively, or it may develop suddenly and remain stationary thereafter. The age at which the disease begins varies much. In my case it began at the age of 22; in the case of one of her sisters at about the same age and in the younger sister during childhood. The age at which the disease first put in its appearance in the case of her father and in that of her paternal grandmother is indefinite, but it began rather early in life. Hereditary transmission is not always direct from parent to children, since one generation may be exempt, and the following generation inherit the disease.

More recently some authorities (Raymond and Serieux, Hamaide, Vantrien, Achard) have expressed the belief that a relationship exists between hereditary tremor and psychic degeneration.

That this relationship is a fact in all cases is certainly doubtful but in many cases one is almost forced to the conclusion that some such relationship does exist. My case is of little value in this connection. The patient's father has always been "nervous." It is evident that this may be interpreted in various ways. It certainly is very probable that the existence of a tremor would impress those about him as an evidence of nervousness. On the other hand the patient's ma-

ternal grandfather and aunt were insane. On first thought this fact may look like evidence supporting the above stated belief. A more careful analysis however will lead us to the conclusion that it is not. As far as I have been able to ascertain mental or nervous diseases have not occurred on the father's side. Neither have there been any peculiarities of character or disposition. The only evidence to be found is the tremor occurring in the father and in his mother. The maternal branch of the family can not be held responsible for the tremor occurring in these two cases. Then why should it be in the case of our patient? In two cases out of the three reported by Brasch no evidence of psychic degeneration could be obtained.

In the absence of reports of autopsies in such cases we are not informed of the pathologic changes, if any exist, upon which this peculiar disease is based.

The prognosis has been unfavorable with few exceptions. Haebler has reported a case in which recovery occurred after several applications of the faradic current for the relief of an intercurrent radial paralysis. It is doubtful if other cases that have been reported recovered were true cases of hereditary tremor. In my case the neurasthenic symptoms have disappeared under treatment but the tremor continues, though less severe.

AUTHORITIES CONSULTED.

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Gowers: Nervous Diseases.

NITRATE OF SILVER IN DISEASES OF THE SKIN.

Read before the Society for Medical Progress of the West Side German Dispensary, New York City, Jan. 9, 1897.

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At a time when the markets are flooded with new remedies, each one backed by innumerable clinical observations, it would indeed seem reckless presumption to speak about one laden with age. But, while in the wide range of applicability the drug for which I propose to take up the cudgels this evening falls far below many of the recent ones, yet in effectiveness, circumstances and conditions remaining the same, it outdoes all the latest rivals and arrivals.

My object here is to speak about nitrate of silver, its value in the local treatment of diseases of the skin.

The physiologic action of nitrate of silver as applied locally, depends upon the strength of the salt employed. It may be caustic, escharotic, astringent and alterative, each condition resulting from the use of the mitigated, pure, saturated or very weak solution. A quality of silver nitrate passed unmentioned by writers on materia medica, but one which is probably recognized by all physicians, is this, that the salt of silver, even in its weakest state of solution, is a good antiseptic. There is little doubt but that its excellent effects in gonorrhea, ophthalmia neonatorum, etc., are due to its antimicrobial properties.

Wart.—Every variety of wart is amenable to nitrate of silver. Silver caustic has been used successfully in the removal and destruction of these papillary excrescences from time immemorial. The location of the verruca is no contraindication to the use of silver, but the size often is; for example in a case of condylomata acuminata, or venereal warts, in which the luxurious growth of the papillary buds covers a large surface, the use of silver, by reason of pain and hem-

orrhage, would be impracticable as well as objectionable. The technique in all cases is simple: Work the silver stick down to the bottom of the wart, make a few sweeps around, and the papillomata, by virtue of the chemic and mechanical action of the hard lunar caustic, will be destroyed. Or, scrape off the lesion with spoon or finger nail and then apply the silver stick—here the salt acts as a caustic in destroying that which the spoon or nail failed to get away, and as a styptic in stopping the bleeding.

Corn.—I venture to recommend nitrate of silver in that form of epidermal callosity commonly called corn. Soak the corn in hot soapy water, then shave down the horny layers and then apply a 30 per cent. solution of silver nitrate. If personal experience is the best form of clinical evidence, then I could conscientiously testify to the effectiveness of this mode of treatment. The corn will never, or hardly ever, suffer resurrection after the silver has been applied to it.

Lupus Vulgaris.—Certain forms of lupus vulgaris are eminently adapted to the local application of nitrate of silver. The first indication is found in the small lupus papules which characterize the commencement of the destructive disease. It is evident that by effectively cauterizing the primary lesions the disease will be prevented from taking root. The second indication is suggested by the lupus nodules which are formed by the coalescence of the initial papules. Lupus in both these forms can be radically cured by and through the thorough application of silver caustic. The third indication is the serpiginous form of lupus. Here silver is used as a means only to stop the downward march of destruction. Kaposi¹ thus speaks of silver in the treatment of lupus vulgaris: "Apart from mechanical treatment, the use of caustic is important. The most practicable is solid nitrate of silver. It has sufficient resistance to penetrate the individual lupus nodules, thus uniting mechanical and caustic action. It also possesses the advantage that it does not enter healthy tissues. Large nodules of lupus tumidus, and particularly superficial infiltrations, may be burned out as thoroughly as with the sharp spoon. Since the solid stick not only destroys the vessels of the border and base mechanically, but also causes thrombosis, the cauterization furnishes all the requirements for effecting a cure." In the face of this eminently authoritative statement, it is hard to see why some writers of distinction fail to include this agent in the local therapeutics of lupus.

Epithelioma.—Lunar caustic finds a fitting place in suitable cases of epithelioma of the skin and mucous membranes. Generally speaking, the method of applying the caustic in cutaneous cancers is the same as in lupus or in the other growths above mentioned, but the indications are fewer. As in lupus, when the cancerous nodule or ulcer is small, nitrate of silver is an effective and curative remedy. It is also indicated in inoperable cases, in recurrent nodules and serpiginous forms of epithelioma.

The employment of the silver stick in various non-specific ulcers on the legs or other parts of the body, applied with the object to remove spurious granulation tissue, or to freshen up indurated edges, this use of silver is so universal that it needs mention only.

¹ The author, in every instance mentioned in this paper, refers to that form of lunar caustic the composition of which is: One part silver and three parts nitrate of potash.

² Kaposi: Pathology and Treatment of Diseases of the Skin. American translation, page 555. 1895. Wood & Co.

Of venereal ulcers, those most amenable to the treatment with silver are chancroids and the phagedenic type of either hard or soft ulcers. Specific ulcers pursuing, so to speak, a regular course of evolution and involution, should not be subjected to any cauterizing process whatever—silver or galvano-cautery; its treatment, however, is not the object of this paper. Chancroids, when properly treated from their very inception, rarely require the caustic action of silver or any other metal, salt or acid; it is only those soft ulcers whose treatment was unmethodical by the physician, or neglected by the patient, or abused by the quack, which become subjects of the silver treatment. In all those neglected ulcers the application of saturated solution of silver once or twice will materially change their looks and aspects, so that instead of the dirty-looking slough at the base and edges, healthy granulations will take its place in and around. There is one contraindication to the use of silver in chancroidal ulcer, and that is the locality or site of it. An ulcer situated at or in the meatus, or urethra, should not be cauterized, "since such cauterization is liable to produce edema and even result in stricture."³ In case of phagedenic ulcers, I believe that Ricord's nickname for potassio-tartrate of iron, is admirably adapted to silver nitrate, namely: It is the born enemy of phagedena." It is as good as the actual cautery. The result I have had and the results I have seen from the repeated applications of a saturated solution of silver nitrate to this class of intractable ulcers were indeed most gratifying. Ulcers which threatened to destroy the penis and some adjacent territory, were first checked and afterward cured by the timely and judicious use of this drug. This treatment should especially recommend itself to the man in general practice whose armamentarium may be lacking in a Paquelin cautery, or even to specialists who are well armed with instruments but whose patients stubbornly resist the application of "hell on earth," as one of my blasphemous victims specified the hot iron. It is true that annoying edema occasionally follows the application of the salt, but this drawback can be equally charged to the cautery. The application to the ulcer of a piece of absorbent cotton saturated with a 4 per cent. solution of cocain should always precede the silver treatment. This precaution will insure rest and quiet to the patient during the treatment, which should not last longer than a minute. Base and edges should be made the harbor of the solution. The mode of applying the silver is simple: Wind wadding around a stick or the uncharged end of a match, dip it in the solution and apply it. The frequency of the application is regulated by the resistance of the lesion to the treatment. Sometimes one application is enough and at other times two or more are necessary. The treatment after healthy granulations are set up, consists in the use of dermatol, boric acid or any other mild antiseptic.

Erysipelas.—As long ago as 1829 an English observer, Mr. Higginbottom,⁴ advocated the use of nitrate of silver in the treatment of erysipelas. He believed that with nitrate of silver, if properly applied, the spreading of the disease could be prevented. In 1869 the same observer reiterated his recommendation with renewed emphasis and additional conviction. He

attributed the neglect of adopting this method of treatment to an imperfect understanding of its correct application. The following are his directions: "The affected part should be well washed with soap and water, then with water alone to remove every particle of soap, then to be wiped dry with a soft towel. The concentrated solution of 4 scruples of nitrate of silver to 4 drams of distilled water is then to be applied with a small piece of clean linen attached to the end of a short stick, the linen to be removed at every subsequent application. As the solution of nitrate of silver is colorless, it is necessary to pass a little linen, just moistened, over every part where it has been used, in order to be equally diffused, so that no part may be left untouched. In about twelve hours it will be seen whether the solution has been well applied. If any inflamed part be unaffected, the solution must be immediately reapplied. Sometimes, even after the most decided application of the nitrate of silver, the inflammation may spread, but it is then generally less severe, and is eventually checked by repeated application." According to Wood, "this plan of treatment received a great deal of commendation from authorities." Wood also reports ulceration in two cases "apparently the result of the treatment." Personally, I have had no experience with this method of treating erysipelas; my lack of experience is not due, however, to hesitancy of adopting it, but rather to ignorance of the recommendation. It is reasonable enough to merit trial.

Eczema.—Most important of all diseases of the skin in which nitrate of silver does the most good is that form which is designated by the name of eczema intertrigo. This condition is always the result of friction and sweating occurring between two opposing surfaces of the skin. Therefore it is most commonly found in the axilla, bend of the arm, popliteal space, behind the ear, under large pendulous breasts especially in stout women, between fingers and toes, and last but not least, on and around the genital organs of male and female. This form of eczema is characterized by a destruction of the epidermis, weeping surface and intense itching. The first effect of the application of the nitrate of silver in any of these cases is a cessation of the terrible and agonizing itching; second, a discontinuance of the weeping; third, a stimulation of a growth of new epidermic cells and consequent restoration of normal tissue; in other words, the patient is cured. My experience in the treatment of eczema intertrigo in male or female genital organs is very considerable, and the almost uniformly excellent result obtained from the application of nitrate of silver renders me quite enthusiastic in my recommendation. It is no exaggeration to say that silver succeeded where other drugs eminently failed. It would certainly be a burden for you to listen, although a pleasure for me to recite, a long list of clinical histories of the patients thus treated. I must content myself with stating the fact that among the patients who were treated with nitrate of silver for eczema intertrigo could be found young and old—men, women, children and infants. The condition in some existed, prior to treatment, for weeks, in others months, and still in others, years.

Strength of the solution: The site of the eczema determines the strength of the solution to be used. The fluid is applied in the same manner as above described in the case of ulcer. It must be mentioned in passing that the silver stick is never applied in

³ Robert W. Taylor: A Clinical Atlas of Skin and Venereal Diseases, p. 103, 1889. Lea Bros.

⁴ Essay on the use of nitrate of silver, Ed. 2, London, 1829. Higginbottom's Practice, 1869, II, 34. Cooper's Surgical Dictionary, Vol. II, p. 573, 1872. Therapeutics, Its Principles and Practice, II. C. Wood, 1891, p. 480.

these cases. Now then, a 3 per cent. solution of silver is applicable to eczema intertrigo when located at the following places, namely: Behind the ears, on the penis, and between fingers and toes. Ten to 20 per cent. in the axilla, bend of the arm, under pendulous breasts and labia majora, in the latter event especially when the trouble is due to diabetes (pruritus). Twenty-five to 50 per cent. on the inner surface of the thighs and pubis. On several occasions a .5 to 1 per cent. solution was applied with benefit, in the form of a wet dressing, to a scrotum which was the seat of chronic eczema for months, if not years. The appearance of such a scrotum is quite characteristic; its tissue and size are increased in thickness and extent, and the indurated, rough skin is thrown into itching folds. The application in all these cases can be repeated three or four times during the week; the only time to stop is when an unduly marked hyperemia occurs, as it sometimes does, after the excessive use of the medicinal agent.

In acute and chronic eczema of the face and head, of infants and children, a 3 per cent. solution of silver nitrate is at times very serviceable. But the application need not and ought not to be kept up too long, as the above mentioned resulting hyperemia in some cases will interfere with its speedy and good effects. "Occupation eczema" sometimes can only be cured by the application of a 3 to 5 per cent. solution of silver nitrate. In all these instances the treatment in the interval consists of powdering the parts with bland powders and in keeping them well separated with wadding to prevent further friction.

Parasitic eczema.—Eczema marginatum is a disease which very frequently defies all sorts of applications, but will yield to a strong solution of nitrate of silver. I never began the treatment of marginal eczema with a solution of a strength less than 20 per cent., and very frequently applied a 50 per cent. solution. The raving itching can be successfully combated by this drug, while a complete cure is not a remote possibility.

Herpes tonsurans is the only other parasitic skin disease which can be practicably treated with silver. The application of silver to ring worm is, however, limited. The discoloration the salt produces would be a strong objection to its extensive use on the face, for example. Yet in suitable cases nitrate of silver is a clean and effective remedy. Not very long ago a friend, a young counsellor, visited one of the Turkish baths of the city. A week after, at least this was his affidavit, the right side of his gluteal region became the seat of a good baker's dozen of ring worms. After a few applications of nitrate of silver (30 per cent.) he was completely cured. The discoloration in this case was no ground for objection.

I now come to consider the last condition in which nitrate of silver is in the highest degree *the drug*. I refer to pruritus ani. The difficulty in managing this symptom can only be appreciated by the multiplicity of suggested therapeutics. It is evident that the proper treatment of a symptom is the removal of the disease. Such, however, is not always the case with itching of the anus. It frequently happens that after curing the hemorrhoids, the fistula, the constipation, the pin worms, etc., the itching will still continue unabated. Sometimes it seems as if it becomes a habit with the anus to itch and the patient to scratch. Besides, there is no denying the fact that the pruritus is often present to an excruciating degree while all

efforts to find its cause end in failure—we then take refuge in that mysterious term, neurosis. While eczema may occur, either localized at the anal region or as an extension and continuation of such a condition existing at the genital organs, yet in a great majority of cases the eczema in the case of pruritus ani is secondary, the result purely of that constant scratching in which all patients take a fiendish delight. In the treatment of this distressing ailment there is nothing in the pharmacopeia better, more effective, more gratifying to the patient and his medical attendant, than the vigorous application of a strong solution of nitrate of silver. In all cases the cause should be sought and when found removed, but if the pruritus still continues, apply a 30 or 40 or 50 per cent. solution, depending on the severity and intensity of the itching, and your reward will be worth the effort. In instances where the pruritus is apparently idiopathic, nitrate of silver in the strength alluded to is a veritable specific. Even where there is a palpable cause, silver will insure rest at night and quiet by day while the cause is being removed. The application should be made once or twice a week; in the interval, if necessary, use zinc salve plain, or with cocain (1 per cent.) in it. The preliminary use of cocain (4 per cent.) before painting the anal region with the solution of silver should never be forgotten, for while it does not obviate the subsequent transitory burning produced by the silver, it still mitigates it while the solution is being applied.

I am at an end of the discussion. I am aware that something is still missing in my paper, and that is an explanation of the *modus operandi* of the nitrate of silver in each and all of the diseases mentioned. But as the *rationale* is not far to seek, and as the physiologic action of the salt is so well understood, it is hardly worth while entering into it in a purely clinical paper such as this.

As a final remark I must state that many of the observations herein recorded were made and treated in private and dispensary practice, and that my entire experience with this valuable drug was rendered possible by my long, useful and grateful assistantship to that distinguished dermatologist, Dr. S. Lustgarten, in his skin clinic of the Mt. Sinai Hospital Dispensary.

156 Clinton Street.

THE PATHOGENESIS OF GOUT.

BY HANS FROELICH, A.M., M.D.

CHICAGO, ILL.

Garrod demonstrated in 1848 with his thread test the presence of uric acid in the blood in gout, and basing himself upon this fact, said that in gout there was reduced capacity of the kidneys to pass uric acid; and second, that the alkalescence of the humors in gout was decreased. Charcot believed in an increased production of uric acid, caused by a functional disturbance of the liver, and Cantani thinks that the uric acid originates in the cartilages themselves, and believes that the uric acid diathesis is the consequence of disturbance in the nutrition of the cartilages, the ligaments and the tendons near the bone. The scientific researches in gout and kindred diseases had for forty years been under the ban of Garrod's discovery; all the immense work done within this span of time has been in vain, of no practical value, because now we know that not only the methods which had been

employed for the discovery of uric acid were so inexact as to render the results almost valueless, but it has been proven that uric acid and the substance which generates it, is found in many other diseases without causing gouty symptoms. Von Jacksch found that in the blood of the normal muscle there is no uric acid, but that it is present in pathologic conditions, as in dyspnetic diseases like pneumonia, nephritis, and constantly in anemia. More and more evidence of this fact has accumulated. It was proven that diet had less influence upon the generation of uric acid than was supposed; it has been demonstrated that uric acid is constantly and considerably increased in leukemia, where it reaches the amount of 4 to 5 grams within twenty-four hours; even where the uric acid has been found not to be increased as such, it is always increased in its proportion to urea. Yet this increase of uric acid in leukemia never produces gout; there is in fact only one case known (Priebram's case) where gout complicated leukemia.

The first great step in discovery of the pathologic facts in this disease was taken by Ebstein, who proved (1882) that the precipitation of urates always is preceded by a necrosis of tissue, a purely local process, thus indorsing Cantani's views. Ebstein found characteristic changes in the kidneys, a shrinking caused by interstitial inflammation and accompanying deposits of urates, mostly biurate of sodium. Litten found that urates sometimes not only fill up the tubuli, but are interspersed within the interstitial tissue, and Dickinson joins him by declaring that precipitation of urates takes place solely within the intertubular fibrous tissue and that this part of the organ, thickened by a kind of inflammation, shrinks, compresses the tubuli, causing thereby the granulated kidneys. Wagner demonstrated that lead poisoning can be at the basis of this inflammation, and give rise to consecutive gout or deposition of urates. Cornil and Ranvier are convinced that in the gouty process of the cartilage the cells take part in the inflammation, and Rindfleisch calls them the very centers of the starlike crystals of urates. Ebstein found that the inflammation and precipitation of urates follow the cartilage fibrils, that is, their connective substance. The necrosis of tissue, according to his view, is secondary to the disturbance of the nutrition, which is the primary phenomenon of gout and must have reached the most advanced degree, must present the symptoms of complete decay before urates precipitate. Concerning the cause of this necrosis Ebstein clings to the view of all others, that it must have been caused by the gouty matter, the fluid uric acid, but he is not able to explain why the uric acid should cause tissue necrosis here and not in leukemia or other diseases which are accompanied by presence of uric acid. The question as it stands today is that we have a tissue necrosis in certain points of predilection, preceding precipitation of urates into these necrotic localities.

The questions we have to solve are:

1. What causes the pathologic appearance of uric acid in the tissue and blood?
2. What causes this necrosis?
3. What is the physiologic treatment of gout, after we have answered these questions?

The first question has been fully answered by Horbaczewsky (1892). His discovery brought us near the solution. He found that in maceration of nuclein-containing tissue outside of the body, which is pro-

duced by a certain degree of putrefaction or through boiling water, there are products split off, which produce uric acid. It is furthermore a fact, that nuclein-containing substances decay within the living body too; one is entitled, therefore, to suppose that the uric acid within the living organism originates from leucocytes.

The fact that in leukemia, where leucocytes decay *en masse*, the production of uric acid is constantly and considerably increased, confirms this supposition.

The further fact, that quinin and atropin, which arrest the formation and decay of leucocytes, reduce the production of uric acid, is another proof.

W. Weintraud (1895) in his investigations upon the influence of the nuclein contained in food upon the formation of uric acid, comes to the following conclusions:

The recent investigations with reliable methods concerning the secretion of uric acid, demonstrate that it is dependent in a high degree upon the metabolism of albumin. It has been found that animal or vegetable food had not the energetic influence which formerly it was supposed to have, even the quantity of the secreted uric acid did not vary according to the increased or decreased quantity of fed albumin.

It became evident that the absolute quantity of the secreted uric acid is individually somewhat varying, but represents a pretty constant quantity eagerly retained by each individual.

This agrees with Horbaczewsky's hypothesis, that uric acid originates from the metabolism, that is, from the decay of leucocytes, and that there is a constant proportion between the secretion of uric acid and the number of leucocytes. The increasing recognition of Horbaczewsky's theory removed the influence of food upon production of uric acid still more to the background. It was thought necessary to adopt this view only so far as the introduction of food produces digestive leucocytosis.

Weintraud demonstrated to a certainty that nuclein-containing food, thymus, brain, etc., is perfectly absorbed and causes a considerable increase of uric acid and its excretion.

The resorbed nuclein influences merely the formation and decay of leucocytes and by their increase indirectly the production of uric acid.

Horbaczewsky says that the number of leucocytes in fasting condition is small (hypoleucocytosis) and increases at once after introduction of food (leucocytosis). A similar parallelism exists if we compare the number of leucocytes of persons of various age, sex, nutrition, etc., with the secretion of uric acid of such persons. Children have more leucocytes than adults and secrete more uric acid. Women have less leucocytes in the blood than men and secrete less uric acid; also well nourished people have more leucocytes in the blood and secrete more uric acid than others do.

Not each rise of temperature causes increased secretion of uric acid, only the character of the fever is of influence (Bartel) as we see in the epicritic increase of uric acid after acute feverish diseases. This inflammatory leucocytosis takes place in croupous pneumonia, when the secretion of uric acid shows a hypernormal value during the fever, still increasing with falling temperature, and reaches its height when temperature is normal, and it increases in the same measure as the number of leucocytes decreases. T. F. Richter also says it is certainly true that this con-

nection between uric acid and leucocytes exists, but we do not yet know the degree of it; we know how much uric acid is secreted, but not how much has been formed in the organism.

According to F. Levison (*Zeitschrift für klin. Med.* 1894, p. 292) uric acid can not, like urea, be considered a metabolic product of albumin introduced through food. The secretion of uric acid in the body can not be considerably increased through introduction of large quantities of easily digested albuminates, neither decreased by hunger diet. It is generated through oxidation of the organized albumin in the body especially the nuclein, and its secretion is increased or decreased by all factors which produce a faster or slower destruction of the cellular elements of the body, especially the leucocytes, like disease, medicines, poisons, etc.

The production of uric acid in the body is in direct proportion to the number of leucocytes used up within that given time. So it is with the well known increase of uric acid of infants, it is directly proportional to the increase of leucocytes. Fleasburg found six hours after birth infarcts of uric acid in 14.3 per cent. of infants; twelve hours after birth in 56.2 per cent.; after twenty hours 94.7 per cent. These oscillations in uric acid are in direct proportion to the amount of leucocytes, which rises the first days after birth and then decreases until the fifth day, when it reaches the point where it has been the last month of fetal life.

Number of leucocytes in the last month of fetus 8,053; immediately after birth 19,600; twenty-four hours after birth 23,000; forty-eight hours after birth 17,500; fifth day after birth 8,500.

Gundoline examined the number of young, ripe (neutrophile) and over-ripe leucocytes and found:

| | Leucocytes per sq. cm. | Young. | Ripe. | Over- ripe. |
|---|---------------------------|--------|-------|----------------|
| Last month of fetal life | 8,053 | 1,013 | 556 | 6,458 |
| Right after birth | 19,600 | 4,000 | 2,352 | 12,348 |
| Twenty-four hours after birth | 23,000 | 5,520 | 1,840 | 15,640 |
| Forty-eight hours after birth | 17,500 | 3,695 | 1,575 | 12,250 |
| Fifth day after birth | 8,500 | 2,720 | 680 | 5,100 |
| Nursing-age | 12,908 | 7,598 | 833 | 4,477 |

This table shows the rapid transition of leucocytes into the over-ripe form. They can increase in pneumonia to 40-50,000 (Monti, Bergrun), though never in typhus.

Levison doubts the existence of leucocytosis in gout and ascribes the production of uric acid to retention by the kidneys (Garrod, Roberts).

The renewed activity in this whole question brought out a few publications about the metabolic changes in leucemia, which has so much in common with gout and which I report here only with the purpose to more fully exhaust the metabolic percentage of uric acid.

Kuehnau relates statistics of two cases. The leucocytosis in these cases was about constant at the beginning; the daily secretion of uric acid vacillated between 1.5 and 2 grams. This was succeeded by a period of increase of leucocytes which was followed by an increase of the daily secretion of uric acid. After this a rapid decrease of leucocytes set in, while uric acid even increased to 3.39 grams. This certainly gives basis to the apprehension that uric acid is formed through destruction of leucocytes.

The most exhaustive publication about leucemia appeared lately in the *Berl. klin. Woch.* by A. Fränkel. He found the marrow of the bone always diseased, the

spleen only sometimes enlarged. Fränkel's investigations of the blood of acute leucemia are the only ones thus far published. He found increase of the white and decrease of the red corpuscles, the leucemic character of the blood is based exclusively upon an increase of mono-nuclear cells of the character of lymphocytes, which had lost the ameboid motion, the multi-nucleated cells were present only in minimal quantity. The cartilages in some cases swell and are painful, the pain extends over the bone. Two cases which died from septic infection, showed with the appearance of the infection an immense decrease of leucocytes, which Fränkel attributes to leucolysis; with this leucolysis the general condition of the patient grew worse, which was partly due to this leucolysis, partly to sepsis. With the decrease of leucocytes the uric acid increased considerably, not only relatively to the present urea, but absolutely. The secretion of uric acid in leucemia can increase to five or six times the amount of the normal secretion. This publication again demonstrates conclusively that destruction of leucocytes is essential as regards the amount of uric acid secreted.

There are only a few micro-chemic investigations published, but those confirm the facts gained by experiment and investigation on pathologic specimens in regard to the origin of uric acid from leucocytes.

Neusser (*Wiener klin. Woch.*, 1894) found the number of leucocytes always decidedly increased, contradicting Levison, who denies any leucocytosis in uric diathesis. He observed the appearance of particular granules and formations of lumps within the protoplasmatic zone, mostly in the immediate surroundings of the leucocyte nucleus which color black with the basic component of Ehrlich's triacid. They form perinuclear granulations roughly dentated, especially within the mononuclear large and small leucocytes, sometimes in polynuclear neutrophile and even in eosinophile cells, probably a forerunner of uric acid.

Neusser found these changes in gout, muscular rheumatism, asthma nervosum, chronic dermatitis, diabetes, neuralgias, migraine, vertigo and neurasthenia.

L. Heine (*Zeitsch. für phys. Chemie*, xxi, i) says nucleic acid, unpaired, possesses very peculiar qualities, which disappear more or less in the paired combinations with albumin, and one is justified in thinking that formation and destruction of these combinations is a physiologically important process, which is connected with important functions of the nucleus. Liberfeld's experiments with Ehrlich's coloring demonstrates that in those conditions where a morphologic partition goes on, also a chemic dissolution of the nucleus constituents takes place, a splitting off of nucleic acid from albumin. Heine believes himself to have found that the essence of mitosis does not consist in a chemic dissociation of the nucleic bodies; these substances seem more to preserve their peculiarity as albumin combinations of the nucleic acid, only their physical grouping is modified in mitosis for the purpose of exact bisection.

In the above we have been able to demonstrate that the uric acid in the human body is generated by the decay of leucocytes, which have not reached their full physiologic development, that it is not a weaker oxidation of the albumin of the food, which latter always is oxidized, to urea. This destruction of leucocytes, for which Locvitt gave the name of leucolysis, is always preceded by a leucocytosis. Leu-

colysis is a chemic process which separates nucleinic acid from the albumin.

We proceed now to answer the second question.

What causes the necrosis in gout? The solution of the question as to the generation of uric acid has great practical importance, inasmuch as it tells us that without leucocytosis there is no leucolysis, without leucolysis there is no formation of uric acid, and that only food rich in nuclein increases uric acid. We know furthermore that in many other diseases formation of uric acid takes place within the blood without accompanying necrosis and gouty symptoms, and still the belief in uric acid as *causa peccans* is paramount; no discoveries, no reasoning is potent enough to unsaddle the uric-acid diathesis in the mind. Philosophy used to, and still, plays too big a rôle in our science, as long as it could not lay claim to be an exact science; but the practical results of our physiologic researches upon the recognition of morbid conditions and their treatment, have changed this also. There was so much we did not know that we had to make up for this apparent deficiency with some theory, which used to be labeled with a big name, sufficient to embrace a controlling part of the things which we do not know or know but little. This comprehension of a whole mass of vague ideas and fallacious conceptions, I might say a world of negatives within a seemingly positive name, for the time covered up this chasm in our knowledge, the habit to classify nothingness within something became second nature and we thought we were talking science when we generalized a whole lot of negatives in groups as hysteria, functional nervous diseases, etc. When I, a few years ago (*Med. Mirror*, January, 1893), demonstrated that these functional nervous diseases were built up on the same physiologic and pathologic basis as chronic rheumatism, a few called it ingenious, the great army of authorities and their blind followers shrugged at last their shoulders and ignored it. Yet I had the satisfaction to see that chorea was taken away from the functional nerve diseases and referred to the rheumatic diseases, and only lately Leyden declared that tabes was of peripheral origin, caused probably by the same influences which generate usually rheumatic disorders. The same conditions hold good with that devotion to the uric diathesis, it serves as a covering of the most incongruous morbid states and affiliated diseases which have a pathologic or physiologic relation whatever. Rheumatism and gout are—especially by the English school—thrown together in all possible modification of Greco-Latin nomenclature, rheumatic arthritis, rheumatoid arthritis, gouty rheumatism, goutic rheumatoid, meaning to say something which does not really exist. How grateful am I to Roentgen and his rays, which will establish in most of the cases the absolute absence of any urates! Rheumatism can be following gout as it follows any disintegration of tissue or necrosis through the disturbance of the lymph current (lymphostasis), but that is their whole affinity, with the sole exception of one etiologic fact, the want of exercise and indulgence, too much and too often, in all good palatable things. There the relationship stops. Rheumatism is essentially of delicate reaction upon atmospheric changes, vacillations in the humidity of the air; gout is not. In the long run of the disease we can have atrophy in rheumatism, in gout we have necrosis from the start. In rheumatism the destruction of leucocytes plays hardly any part, in gout it does

most conspicuously. In rheumatism we have agencies, probably ferments, of purely peripheral origin, like cold or auto-intoxication from lymphostasis with their tendency upon the connective tissue to produce fibrinous masses; in gout we have to deal with direct poisons, which destroy the leucocytes and liberate nucleinic acid. This is a fact proven by experience and experiment. Lead is demonstrated by experience to cause the same tissue necrosis with following precipitation of urates as gout. Ebstein produced the same phenomena by injection of chromic acid. We have only one pathologic process, which can rank with that of gout, I mean atheroma of the intima of the blood vessels. There we meet with the same tissue necrosis and following atrophy, only we find instead of urates calcium precipitated into the rough necrotic surface, probably caused by the surplus of calcium in the blood, which in the age when atheroma occurs is no more needed for the building up of the osseous skeleton of the body. Never did a scientist and prominent authority himself utter a more truthful word than Sternberg did when he said that nothing impeded the progress of science more than blind thoughtless following of so-called authorities. Bouchard injected 64 centigrams of uric acid per kilogram of living weight into rabbits, to investigate its toxicity and comes to the conclusion that we can never introduce into the veins of an animal more uric acid than in his first experiment (250 centigrams to 0.641 kilogram), since the doses of uric acid would saturate a quantity of water which of itself is toxic. Yet we meet with recent publications where the toxicity of uric acid in the uric diathesis is the cause of all kinds of auto-intoxications. If asked the cause of this intoxication we get again a big word for an answer, which is meant to say much, says nothing, the leucomains. We have harmless as well as noxious leucomains, but the main excrementitious poison of our intratissue respiration, the carbonic acid, which through strain in the parenchymatous lymph current stays too long in contact with the tissue cell, killing its ameboid function and provoking from the connective tissue in defense of the cell proliferations, never is alluded to.

We have seen in Fraenkel's exquisite observations that in acute leucemia the marrow of the bones is diseased, the epiphyses swollen and painful. The leucocytes do not reach their full ripe stage and fall to destruction without causing tissue necrosis. In gout we do not notice these changes in marrow and epiphyses. We have an acute feverish though a septic inflammation localized within certain places of predilection, cartilages, tendons, etc., where circulation is naturally slow. We must deduct from this phenomenon that in leukemia the undeveloped mononucleated leucocytes, which lost the ameboid motion, and with it their ability of development, decay in a place where the alkalescence of the tissue is so powerful as to neutralize the tissue-destroying ability of those agencies at once, which are liberated through the chemic act of decay. That is after they have passed their breeding places and reached the free current of the blood.

In gout it is quite different. There the destruction takes place in certain places, which show the effect of the chemic action of the destruction which has taken place there in tissue necrosis. As these places have a naturally slower circulation and the plasma there accumulated is limited, we have certainly to accept the consequences of the fact, that

the noxious agencies, which are liberated through the decay of leucocytes, remain in longer contact with the tissue, and as the alkalescence of the present plasma does not suffice to neutralize these agencies, they as a matter of course corrode the tissue, cause necrosis, and the uric acid, which originates at the same time, precipitates upon the rough necrotic surface. What is this noxious agent? It must be an acid, and as only one acid appears in this chemico process, the nucleic acid, it must be this acid. Nucleic acid dissolves living tissue if this is exposed to it. It remains to explain what causes the destruction of leucocytes in gout, why does this destruction take place in those places of predilection and cause that destruction and not within the blood, as it does in leukemia? In leukemia the destruction takes place owing to the innate weakness, the undevelopment of the leucocytes. In gout we meet the same mononucleated leucocytes, though not to the same amount. We can explain their presence through the etiologic fact that the habits of those persons, their irregular meals, taken too often and too much of it at the time, are bound to produce a more or less continuing leucocytosis, the hemopoietic organs are subject to permanent activity, the leucocytes are not given the time for full development and the organs of their production put them out in a decrepid, mononucleated condition. But nevertheless they would not decay before they reach the general current of circulation if they did not meet on their way there an agent which provokes their destruction already within the cartilage, etc. In lead poisoning they come into contact with this mineral poison; in those cases of gout, which are not due to lead poisoning, there must be another poison. What might that be? There is one powerful poison, produced through the intratissue respiration of our body. If the circulation is impeded and accordingly this poison instead of being rushed away is left in longer contact with the tissues and may and probably does cause destruction of leucocytes in gout on their way to the general circulation, that is probably carbonic acid.

Carbonic acid, produced in intratissue respiration, is ejected with certain leucomains from the parenchymatous cell to the surrounding lymph spaces and from there through diffusion or action of endothelium, or both, through the venous capillaries. A stasis within these lymph spaces of course impedes this action, the carbonic acid stays there longer and is allowed to exercise its toxic influence upon everything it comes into contact with, especially decrepid leucocytes. That in goutic patients we have lymphostasis owing to their want of exercise and overfeeding is certain, and can be demonstrated if the lymph current is accelerated through a laxative, which causes at once a mitigation of all symptoms of the gouty attack, and that the gouty attack takes place where there is already a natural disposition to lymphostasis is another affirming factor.

Intratissue respiration is without any doubt the most potent factor for preservation of the physiologic integrity of all our organs. A. Poehl (*Zeitschrift für klin. Med.*, 1894) of late made it the object of his investigations in connection with the effect of organic extracts, which he says, especially spermin, cause in dissolved condition, intratissue respiration, acting like a ferment. The products of regressive metabolism, the leucomains, he continues, are those nitrogen-holding products of regressive metamorphosis, which are oxidized into so-called intermediary products

instead of urea. The accumulation of these leucomains causes autointoxication, and the most common kind of autointoxication he declares is caused by reduced tissue breathing. Spermin, a nuclein found in testicles, ovaries, etc., has oxidizing power, but only in dissolved form; in presence of phosphates it turns insoluble, inactive. (Charcot-Leyden crystals.) In tissue which is passed by normal alkaline blood no insoluble phosphates can form, reduced alkalescence of blood is the essential moment of inactivity of spermin and its formation can be explained as follows:

Any nerve or muscle tissue if irritated decreases its alkalescence and can be brought to acid reaction, and as phosphates always are present the moments of spermin-phosphate formation with acid reaction are given. Under normal conditions no inactive spermin phosphates are found, because the passing normal alkaline blood prevents it. Reduction of the alkalescence of the blood favors its formation and continuing irritation of tissues can reduce the alkalinity of the passing blood, which again causes formation of inactive spermin. He thinks urea is a special product of aerobic tissue life and goes parallel with intra-organic oxidation and explains the vacillations of the production of uric acid, that it depends upon the circumstance whether the destruction of the nucleins proceeds in a more or less alkaline or acid medium. If this destruction takes place in alkaline medium the spermin will remain active and the oxidation to urea goes on normally, but if it takes place in an acid or reduced alkaline medium, then through splitting off of phosphoric acid insoluble spermin phosphate is found, which reduces the oxidation process and uric acid accumulates.

This is a very captivating and ingenious theory, only it does not hold good in gout. It may be the cause of neurasthenic troubles, but even then it would not explain the long duration of such chronic ailments, even if the formation of insoluble spermin were the cause the current of the blood would in less than no time remove it and replace alkaline reaction, and even if lymphostasis should be present enough alkaline plasma would pass through to reestablish the normal. Uric acid is not in gout increased through retention, but through hypoleucocytosis, which followed by leucocytosis produces first decrease, afterward excess of uric acid, not only relatively to the present urea, but absolutely. Uric acid, furthermore, is generated through decay of leucocytes and not a lower oxidation of food, which always is oxidized to urea. Another very important factor against Poehl's theory is the circumstance that the curative effect of spermin in those ailments, which he praises so highly because of intense and rapid effectiveness, fail to give other investigators the desired and promised results. We therefore sum up our answer to question No. 2 as follows:

The tissue necrosis in gout is caused by a poison, probably nucleic acid, sometimes lead; the uric acid in gout is generated by decay of leucocytes, which destruction is brought on probably through carbonic acid. The reduced amount of uric acid in the beginning of the gout attack is parallel with hypoleucocytosis, the following increase with leucocytosis.

Treatment.—If ever we succeed in establishing the true physiologico-pathologic basis of a disease, it will naturally be followed by the indications of a real physiologic treatment, and the adoption of the latter will culminate in its success in praxis. So it is here. The

treatment which I have built up upon the above facts has proved superior to any other and a success throughout.

Prevention.—We have to convince the patient of the absolute necessity to regulate his habits. Two light meals and one substantial one every day, almost to the minute, at the same hour. Never eat so much that you could not again sit down to the table and eat more. No cheese or eggs, no brains, sweetbreads, liver or kidneys; light wine, if any alcoholics. This will reestablish regularity in the periodic leucocytosis, and regularity in this act will again strengthen the hemopoietic organs and enable them to turn out vital leucocytes. Passive and active exercise sufficient to agreeably fatigue the body, but never so much as to provoke exhaustion, this is especially to be avoided. Massage daily, not by a so-called professional masseur, but by a physician who makes this treatment a specialty. The professional masseur gives everybody the same general, more or less superficial, massage. This is good enough for a business man who substitutes this treatment for exercise, but it will never do where intratissue respiration has to be influenced. I do not mention this from personal motives, *pro domo*, because I limit my practice to this kind of work; I had to do it because I did not find satisfaction with the work of these masseurs. Especially the powerful muscle layers of the body have to be worked and emptied of their lymph down to the periosteum of the underlying skeleton, and in gout especially, those parts have to be well taken care of, which, on account of their retarded circulation are predisposed to localization of gout.

Alkaline mineral waters, if recommended, ought to be taken hot. The only effect of the lithia waters consists in their being substituted for alcoholic drinks, which still is a fact in their favor. I only mention here an experience I had with a patient whom I sent to Hot Springs, Ark. She suffered from rheumatic hemiplegia, but no one suspected her of being subject to lithiasis. Whenever she went there and drank the hot water, for the first few days she used to evacuate immense quantities of gravel. She drank for months lithia waters, *ut aequid fiat*, without any effect. I ascribe this effect to the small proportion of alkali in those springs, which, especially if taken hot, approach more the real physiologic conditions. I recommend douches alternately with hot or cold water (Scotch douches).

Treatment of the attack.—We have to treat the attack locally, because gout is a local disturbance caused by poisons suspended in the blood, and generally to eliminate these poisons from the blood.

The general treatment has to be directed toward the change of the reduced alkalescence of the blood and strengthening of the blood corpuscles. Adherents of the old school of course would forbid anything acid, fruits, salad, etc., on account of the alkalescence of the blood. I am only glad in the interest of the welfare of these patients and of the promulgation of the principles of digestion, that they will never succeed in keeping the stomach from producing hydrochloric acid, they may envelop humanity in as much sweetness as the plesse. To strengthen the blood corpuscles we have in diluted hydrochloric acid a very good medium, it is an agreeable drink and can be taken oftener during the day. To remove the poison from the blood, we have only one way, that is a good old-fashioned bleeding, which may be repeated according

to the condition of the patient, especially if lead poisoning is apparent. Bloodletting should not be limited to the pocketbooks of our patients, it is a harmless remedy, as the removed blood is restored in a few days, and is the most powerful means of changing the condition and composition of the blood by its enormous influence upon the hemopoietic organs to more energetic and more extensive activity. The experience of our grandfathers, which praised this proceeding even in those persistent cases of chlorosis in apparently well nourished individuals, we know now to be based upon the fact that the bloodletting removes the numerous decrepid mononucleated cells and replaces them with more vigorous corpuscles. I can not make a plea strong enough for rehabilitation of this remedy, the interdiction against which I contemplate as one of those modern windmills, which have to be fought. Of course its use has to be left to the discretion of the physician.

To increase the alkalescence of the blood we might apply the lymphagoga, which Heidenhain introduced. The extracts of crab-muscles and leech heads seem to be varying in their efficacy.

Of all the lymphagogas cinnamonic acid is the most reliable, the most rapid and the most harmless, but as the physiologic effect of all these medicines is connected with and based upon leucocytosis, I preferred to do without it, as just in gout too often repeated leucocytosis seems to be the main cause of the deficient development of leucocytes. Still, in cases where the kidneys or other organs are effected, which we can not reach by local treatment, lymphagogas could be the only way to increase the blood's alkalescence at once.

The local treatment is the most important, and in its effects the most effective. We are accustomed to regard a surgical treatment of the local precipitation of urates, the tophi almost as sacrilege. They play the part of foreign bodies in our system, and each foreign body, if accessible, ought to be removed and we should thank Heaven in the interest of our patients, if there are any surgical means to treat their ailments. There is so much talked and written about dissolving these urates with lithium salts, piperazin and of late lysidri. They work very nicely in the reagent tube with water, but as soon as we take urine, the dissolving effect stops. How it works in plasma, I don't know; if these agencies are locally injected in a concentration strong enough to take effect, that the resulting chemic process causes a painful inflammation, which lasts almost two days. The only way to remove these tophi is curetting under asepsis, it ought certainly to be done in each case during the time no acute attack is apparent.

Another way to cut off an attack is the neutralization of the nucleic acid with a very diluted solution of bicarbonate of sodium. It is injected peripherally from the inflamed section hypodermically, and tenderly massaged over the whole part. It can be preceded by an injection of cocaine. My experience is that this local treatment is really abortive, it cuts off the attack within a day or two. Connected with these locally intended alkaline injections the same solution might be injected in larger quantities underneath the skin, certainly the best way to influence the alkalescence of the blood.

As a matter of course the free action of the bowels is the first thing to be attended to in an acute attack of gout, it has a sudden effect upon the lymph motion

and through this accelerates the access of alkaline blood to the inflamed districts.

Our views of disease at present are in a stage of transition, the inherited slab bones are found to not fit anymore and if several diseases are discovered to present one identical pathologic phenomenon, they are thrown together heterogeneously as they might be. Loewitt observed what he calls leukopenia in rabbits with rapid sinking of temperature as soon as they were exposed to shock; another repeats the same experiment on turkeys, with the same results, finds leukopenia in neurasthenia (a totally arbitrary classification of morbid symptoms, which accompany many entirely different diseases) and says that leukopenia is the cause of neurasthenia, because we notice the same morbid fears there. Since excessive formation of uric acid has been discovered in many other diseases besides gout, Haig and others subject almost every chronic ailment to the uric diathesis, it has seemed to me therefore necessary to show that uric acid has no toxin effect and that its presence has directly nothing to do with the apparent disease. We have to go back to the generation of uric acid, to the poisonous noxes, which create uric acid, and there we find that gout is a disease *per se*, it has nothing to do with rheumatism or other diseases, we are able to distinguish it clearly from that whole mass of confused conception and substitute for its treatment a really physiologic basis.

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THE USE OF THE CURETTE IN THE TREATMENT OF ENDOMETRITIS.

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Endometritis, for the purpose of discussing the use of the curette in its treatment, is best divided into three varieties—catarrhal, septic and gonorrheal.

Catarrhal endometritis is the form of pelvic disease most frequently induced by improper habits of life, consequently the one most amenable to constitutional or medical treatment.

A large percentage of cases occur in unmarried women. In the society girl it is produced by the nightly exposure of the arms and a large portion of the chest, whereby the blood is driven into the interior of the body, congesting the uterus along with other organs; the tight corset, displacing the abdominal organs and interfering with the action of the heart and lungs; the numerous meals at irregular hours of stimulating and indigestible food, the position assumed in dancing and the exposure and lack of rest during menstruation.

In her less fortunate sisters, the school teacher and the shop girl, the constant standing serves as an efficient exciting cause.

Another cause, I deem of importance, is unsatisfied sexual desire. Genito-urinary surgeons tell us this is an important factor in the production of hypertrophy of the prostate, which is a condition in the male somewhat analogous to fibroid tumors of the uterus in the female. We all recognize the fact that this latter affection is a penalty frequently paid for celibacy. If it produce this graver result of persistent uterine hyperemia it is fair to suppose that it will also produce catarrhal endometritis.

The cause of the disease having been recognized, the proper treatment suggests itself. The faulty habits must be, as far as possible, corrected. If the patient

is anemic, iron, quinin and strychnin between, hydrastis and hyoscyamus or cannibis indica during the menstrual periods. An occasional mercurial purge is always indicated. While the symptoms are acute and exercise gives rise to pain, rest in bed should be enforced; later the patient's mind should be diverted from herself and her disease and healthful exercise in the open air, horseback riding, bicycling, etc., are of the greatest value. A change of climate, particularly a residence for some time at mineral springs, is beneficial. These measures faithfully used will cure many cases, and they should always be employed before resorting to any local treatment in the unmarried. I wish to protest against the growing tendency to curette every girl that has a little leucorrhea and menstruates a day too long or with some pain.

If these measures fail the curette is indicated. It is much to be preferred to prolonged office treatment.

In married women the objection to local treatment does not exist, and in the majority of well-marked cases curettement is the appropriate measure.

It is true that a large number of this class of cases can be cured by office treatment. Drainage of the uterus secured by gauze, application of carbolic acid and iodine to the endometrium, bleeding the cervix, correction of mal-positions, etc., will in time effect cure, and there are cases where it is advisable to proceed in this way. Where existing disease of the heart or kidneys makes it unsafe to use an anesthetic, or where the patient will not readily submit to an operation, the gynecologist may prefer this method of treatment. To the general practitioner who desires to treat his own cases it will usually commend itself, for lack of operative experience makes an aseptic technique well nigh impossible for him to attain, and without there is some danger in the operation.

The severer forms of the disease can not be cured without curettement. Nor will curettement alone cure all of them, but curettement combined with such other local and constitutional measures as are indicated will.

It may be necessary to repair a lacerated cervix, or perform an anterior or posterior colporrhaphy, or both. Or an Alexander operation or suspension of the uterus may have to be done, for unless the circulation in the uterus can be restored to its normal condition, no relief of the symptoms will be permanent.

Septic endometritis usually follows abortion or labor at term, and this phase of the subject will be discussed by my friend, Dr. Mitchell; but it may follow the introduction of an unclean sound or operation upon the cervix; it may also develop during menstruation by infection from germs existing in the vagina. The curette with antiseptic irrigation should be used as soon as the diagnosis is made. Where there are stitches in the cervix they should be removed. If this treatment is instituted sufficiently early, it will generally give relief and obviate the necessity of later resorting to more dangerous surgery, that, even if successful, leaves the patient mutilated.

Gonorrheal endometritis when seen in its incipency can usually be cured by intrauterine irrigation and gauze packing, provided the disease be vigorously attacked at the same time, wherever else it may have found a lodging place, in the vagina, the urethra, the glands of Bartholin.

But if it has been in progress some time when it

comes under the physician's care, or if after a faithful trial of these measures it fails to yield, curetting is indicated, no matter whether the symptoms are acute and alarming or chronic, the only contraindication being a palpable accumulation of pus in or around the appendages. When this condition exists the pus should if possible be evacuated through Douglas' cul-de-sac; if this can not be done an abdominal section should be made for its removal, either operation being immediately followed by curetting.

Technique.—We are to have a special paper on this branch of the subject, so I touch very briefly on but one or two points. Before curetting, the uterus should always be thoroughly dilated. For this purpose I prefer the Goodell-Erlinger dilator and always work it with the hand, never with the screw, and make the pressure intermittently, as does Dame Nature when she dilates the cervix in parturition. Believing that in this way the cervix is less apt to tear, and if it should do so the force can be released before the tear progresses far. The sharp curette is the only instrument of any value in these cases. The sizes needed are the smaller to enter the horns of the uterus, the larger to more rapidly and with greater certainty go over the walls in their entirety. The curetting should be continued till at every point the operator can feel firm tissue and hear it grate under the instrument. The uterus should now be mopped out with a strong antiseptic, dried with absorbent cotton and packed with iodoform gauze tight enough to prevent any oozing of blood. In catarrhal endometritis this packing may be allowed to remain for from seven to ten days if there be no elevation of temperature. In septic or gonorrheal cases it is wiser to remove it in forty-eight to sixty hours, irrigate the uterus and loosely repack it. If the tight packing cause painful uterine contractions they can be relieved with codeia and hyoscyamus. Patients who have been curetted for endometritis should be examined a few weeks later, and if there is still some discharge issuing from the uterus, the endometrium should be treated with iodized-phenol twice a week. If this does not give entire relief, the curetting should be repeated. In some cases even the third operation is required. The accidents incident to the operation are laceration of the cervix, perforation of the uterus and rupture of an abscess adjacent to the uterus.

Laceration of the cervix can usually be avoided by following the method of dilatation indicated above. If a laceration of any extent take place it should be sutured at once.

Perforation of the uterus is an accident that has happened one or more times to almost every operator of experience. A soft cervix from which the vulsellum is inclined to tear, would put the operator on his guard. In two cases in which I have met with this accident I noticed afterward that the cervix was unusually friable. One of the cases had never been pregnant, the other had borne two children, the youngest of which was 16 months old. Both recovered without untoward symptoms. When the uterus has been perforated it will not be irrigated or swabbed out with strong antiseptics. It may be wiped dry with sterile absorbent cotton, and packed loosely with iodoform gauze. If the uterus was pretty thoroughly cleaned out before the perforation was made and the operator recognizes what he has done recovery is to be expected.

If one has good reason to suspect he has ruptured

a pelvic abscess into the peritoneal cavity, the proper procedure is an explorative abdominal section, and if his suspicions prove true he will flush and drain.

DISCUSSION.

Dr. PALMER—I do not know that I ought to speak upon this question, since I have designed two of the instruments referred to tonight, the dilator and the curette, and it might be too personal for me to speak upon the matter just now. I will, however, make a few remarks upon the propriety of using the curette.

There can be no doubt about the curette being an exceedingly valuable instrument. It is valuable in many cases of abortion, those cases, for instance, which we technically call "incomplete" abortions, in which some portion of the ovular tissue is retained, and these remnants give rise to trouble, sepsis and hemorrhage. Now, when the curette is used under such circumstances the instrument should be as large as can be put inside of the uterine cavity. The cervix is generally soft and relaxed and a larger sized instrument will usually go in than one would think. For an abortion which occurs at the most common time, some time along about the third month, the curette should be somewhat scoop-like in shape, smooth, blunt and not sharp. What we want to do is to remove any of the ovum that is retained, all the retained forming placenta and the decidual structures, but none of the genuine mucous membrane. In other words, we do not want to use any force but gently pass this kind of a curette from the fundus down, taking perhaps more care in going over the posterior wall and the horns of the uterus. But we never ought to use it with any degree of severity and never when it is sharp, as we ordinarily do employ the curette for certain gynecologic affections.

About twelve years ago the subject of the employment of the curette came up before this society at a meeting held at my house. I think I was the only one then who advocated the use of the sharp curette in gynecologic practice, and for this I was criticised pretty sharply. Now almost everybody employs the sharp curette. The dull curette, as a rule, is employed in obstetric and the sharp curette in gynecologic work. It is my practice ordinarily to dilate the uterus when the curette is employed for gynecologic purposes, but, as I have said, this is not necessary when the curette is employed for obstetric purposes. I am in the habit, usually, of washing out the uterus with the reflux tube before curetting. Before I stuff the uterus with some antiseptic gauze I generally again wash the cavity out with some hot antiseptic fluid.

Dr. STARK—In the first paper presented this evening a statement was made, that the further advanced in pregnancy the less is there a necessity for the use of the curette, and the essayist attributed the cause for this to the fact that the muscular structure of the uterus had become hypertrophied and its expulsive power had become thereby increased. I am inclined to take exception to this view. I believe the greater necessity for the curette early in pregnancy than late may be attributed to two reasons. During the first two months of pregnancy the ovum is covered over its entire surface with chorionic villi, and the attachment to the uterus is so extreme as to prevent the separation of the chorion in the expulsion of the ovum. I have seen ova expelled, and have no doubt others have, whose outer covering consisted only of the amnion. Another reason is that you do not have the same changes at this period which takes place later, namely, fatty degeneration of the sub-decidual stratum. In many instances also, the decidua vera is thrown off in large pieces, after seemingly the whole ovum has been cast off. That is, where the ovum is surrounded with the chorionic villi, you subsequently have clots expelled containing large pieces of the decidua vera, and this is due to its primary non-separation. And I believe, also, that we are able to cure many cases of true septic endometritis by the use of the curette. The reason for this is that we

remove the source of the lymphatic inflammation, in the same manner as we are able to cure a lymphangitis of the arm by disinfection and drainage of an infected hangnail or felon. In regard to the treatment of gonorrheal endometritis by the use of the curette, I am thoroughly opposed to it. I do not believe it is scientific. I think the very fewest of such cases are cured. We all know that men who have had gonorrhea come to us years afterward and complained of a slight gleety discharge in the morning, and if we examine the discharge it is free of gonococci; but, if we pass a sound and repeat the examination in a few days the discharge is very often purulent and full of gonococci. I remember when I was studying in Breslau I saw a case in which a woman gave birth to three children, each born with ophthalmia neonatorum. The lochial secretions examined were full of the gonococci. After the lochia had subsided, there were no gonococci. It has furthermore been shown that the discharges from the uterus just prior to and shortly after menstruation contain gonococci, while in the interim the secretion is free from the gonococcus. The mucous follicles of the uterus extend between the muscular bundles, and down there you will also find white corpuscle infiltrations which contain the gonococci, and make it impossible for the curette to remove the infection. All you can do with this procedure is to stimulate the germs and further their growth. And that has been my experience in practice, too. I would never think of curetting a case of acute gonorrhea, and the chronic cases which I have curetted were worse afterward, and in one I know I induced a purulent salpingitis.

Dr. PALMER—In those cases, in which you did not think you got good results, was there any perimetritis?

Dr. STARK—Not evident, but perhaps there was some latent perimetritis. I believe there was some latent trouble there beforehand. But I am referring to cases of pure and simple gonorrheal infection. After the curettage and other associated treatment the discharge is more profuse and the gonococcus is developed into activity and multiplies.

Dr. E. W. MITCHELL—Dr. Stark is correct in saying that the changes which take place in the decidua and in the development of the placenta are the chief factors in the more thorough separation of ovum and secundines as pregnancy advances. In speaking of the greater development of the *musculature* I had in mind the more prompt and thorough evacuation of the contents. I purposely said little about the technique, as Dr. Jones was to consider that subject especially.

I must confess that I have not been able to clear out the uterus with the fingers with the facility some of the gentlemen claim, although I have tried it many times.

SPECIFIC MEDICATION IN TUBERCULOSIS OF MAN AND BEAST.

Written for the Mississippi Valley Medical Association at St. Paul, Minn.

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ST. LOUIS, MO.

Specific medication in specific maladies is now recognized as the objective point of medical research. Whatever the means employed, the course of events and the processes to that end, the object sought is the all-important question. The men who have, or do now, play a rôle in the endeavors of medical science, no matter how divergent their opinions may be, no matter how inharmonious their relations, results and manner of work, are only instruments for the accomplishment of a great task, and their personality and differences, as in all processes of evolution, are insignificant and inconsiderable as compared with the achievements sought for the benefit of mankind. Conflicts of intellects are as essential factors of medical evolution as are conflicts of intellects in other

spheres of civilization. As long as carried on in the broad, manly spirit, that characterizes the man of truth, evidence and knowledge of cause and worth they will always receive attention from thinkers and honest delvers, and in the end must command respect, whatever may be the temporary influence of selfishness, greed, malice, commercialism and speculation, in the ranks of the original investigators or their followers and imitators, unfortunate conditions which of late are not wholly absent factors in the dissensions and retarding circumstances in medical science.

The study of the effect of antitoxin on the tuberculous phenomena in human beings, leads us back to the active principle underlying immunization, to-wit: the special agent which is itself curative to a degree, by virtue of its power to provoke the formation of a defensive force in the system. When Koch declared, publicly, for the first time, that the toxins produced in the culture of the bacilli of tuberculosis had a certain specific effect on the lesions of lupus, he did not explain what existed in tuberculin that could cause the modification. In fact, it seems that it was not then understood. We know now that it was because the tuberculin (or bacilli culture toxin) used by hypodermic injection in the patient suffering from lupus, provoked the formation of the antagonistic agent in the blood and tissues of the individual, which is now known as antitoxin, a name which is the general designation of nature's own remedy in the cure of microbial maladies. Tuberculin then is, to a degree, capable of modifying certain forms of tuberculosis, because it forces the affected organism to produce a certain amount of tubercle antitoxin. The inconvenience of it, from a practical standpoint, consists chiefly in the more or less severe reaction which follows the injection in the already seriously ill patients, and in the fact that in certain stages of certain forms of tuberculosis, particularly of the lungs, it seems to hasten the breaking down of tissue. It is claimed now that tuberculin, under other names, brought forth through the efforts of the Klebs school, may be so modified as to be free from the poisonous principle or principles. This theory seems supported by numerous animal experiments of Klebs, particularly in guinea pigs. Series of these have been published, and if we are to credit them as the reputation and scientific standing of the learned German in this country suggests, tuberculin, under its new name, deserves careful consideration. But if devoid of toxic principles, modified tuberculin (whether named tuberculocidin or antiphthisin) as curative or immunizing agent is not free from grounds of criticism involving the very structure upon which the modifiers of Koch's original discovery have sought to erect a school of therapeutics in the treatment of tuberculosis. In the first place, the only thing that science can possibly suggest as curative in tuberculin is its very power of provoking the formation of antitoxin in the affected and thereby a degree of immunity. Now what is the agent that forces nature to produce this defensive power? It is precisely the principle that *causes poisoning*, the principle that causes the fever and destruction, without which deleterious effects there would *occur no* demand on the injected body for the production of a defensive force. So it is that, notwithstanding the numerous animal experiments of Klebs (denied or not very well supported by other experimentalists) which seek to establish positively and definitely the therapeutic value of modified tuber-

culin, we find ourselves compelled to doubt their efficacy. In these days, when the ultra-progressive physicians clamor so loudly for experimental evidence in animals, of results obtained in man before accepting the latter, it would seem that the apparently brilliant results of Klebs in experimental tuberculosis would settle the fact that antiphthisin is indeed almost a perfect curative preparation. But unfortunately the results in man, except under the direction of the originators and controllers of the remedy, do not support the claims of the experiments in guinea pigs, as numerous and as thorough as they are pictured, and upon which I do not wish to reflect discredit.

On the other hand comes numerous reports by numerous physicians, abroad and on this continent, in which is proclaimed the value of sero-therapy in tuberculosis, but which fail to support their claim by animal experiments, fully, in all the physiologic and pathologic details that are demanded by the profession, and yet they bring forth proofs of unmistakable recoveries of tuberculous patients. Not one of the experimentalists and investigators abroad and in America has succeeded in proving, with all the delicate niceties of Klebs in his work, that antitubercle serum cures tuberculosis in man because it positively does so in guinea pigs or other small animals. Noting the definite and positive results in human beings, they have seemingly neglected the animal experiments which are today demanded as a crucial test that serum can cure tuberculosis in man. But if apparently neglected, let me say to you that the laboratories interested in the question have not been idle. From the humblest to the greatest, there has been conducted experiments for a long period on this very point, and if the workers in that field are few who have dared to publish results and pronounce them reliable, it is not because of dearth of them, but because they realize the exceeding delicacy of the work and the numerous fallacies and deceptions that follow apparently proven problems in laboratory investigations concerning tuberculosis. The unequal sensitiveness of guinea pigs and rabbits to tuberculosis and the tox-albumin of the germ structure, the excessively rapid development of the tuberculous phenomena in some of them when inoculated, have been factors which have made curative measures uncertain and the results often vague and valueless. It is not true that one can always interpret properly the results of any form of treatment in experimental tuberculosis in small animals, and apply them to man as a reliable guide in therapeutic expectations. This claim which the profession wants demonstrated before accepting sero-therapy in tuberculosis is made by the rash or inexperienced, not by the careful and conservative, who have delved the longest in the problems in question.

Experimental tuberculosis in the guinea pig and accidental tuberculosis in man, so far as the nature and effects, locally and generally on the system, and the rapidity and fatality of their development are concerned, offer very different conditions to deal with in treatment, which should not be forgotten by those who must have animal experiments today to confirm the assertion of a competent physician that a man who has been cured a year ago is really cured.

However, animal experiments are indeed a necessity in the prosecution of the task undertaken by several to demonstrate the value of serum in the treatment of tuberculosis. The results thus obtained, both

positive and negative, are scientific beacon lights of great importance—indeed indispensable, both with respect to the immunization processes, and in the domain of therapy.

My own very imperfect work in the study of tuberculosis dates back several years, and my first efforts in the line of therapy in experimental tuberculosis in small animals began during the period of the furore that followed Koch's famous pronunciamento on the action of tuberculin in tuberculosis. With plenty of material, I carried on at the State University of Missouri, tuberculin treatment of several series of guinea pigs and rabbits for a long period, with indefinite, unreliable results, although fruitful in the varied information gained in so-called experimental medicine.

My experience with serum in experimental tuberculosis is much more recent, and was almost concomitant with tests of the same nature in man. Without facilities, the small animals inoculated with tuberculosis and afterward treated with serum were very few until this year, when several series have been used in different experiments, many of which are still in progress.¹ For the purpose of this occasion I shall mention, in figures only, the results obtained to date with serum in man and beast.

In guinea pigs 10 per cent. of the subjects inoculated with tuberculosis and then treated with serum from horses immunized by the use of only pure tuberculin were saved; rabbits, by the same treatment, 8 per cent. This was early in our experiments and indicated a meagre therapeutic value in serum—since, we have produced serum of much greater potency by using not only tuberculin in producing the immunity of the horse but also the tox-albumin of the dead virulent bacilli and even living cultures, as will be seen further. Experimental tuberculosis under various circumstances was arrested with this serum in from 25 to 55 per cent. of cases, according to stages and lesions. In man the results of sero-therapy in 226 cases of tuberculosis, reported with sufficient details to form a fairly accurate judgment, were as follows:

| PULMONARY TUBERCULOSIS. | | Number of cases. |
|---|-------|------------------|
| Class 1. Destructive Bronchopneumonia and cavities | ..... | 37 |
| Class 2. Destructive Bronchopneumonia without recognizable cavities | ..... | 66 |
| Class 3. With diffuse Febrile Pneumonia with or without a destructive process | ..... | 19 |
| Class 4. With diffuse Non-Febrile Bronchopneumonia with or without destructive cavities | ..... | 19 |
| Class 5. With circumscribed Febrile Bronchopneumonia | ..... | 35 |
| Class 6. With circumscribed Apyretic Bronchopneumonia | ..... | 13 |
| Diagnosis not reported clear enough for classification | ..... | 32 |
| Hip Joint Tuberculosis | ..... | 2 |
| Laryngeal Tuberculosis | ..... | 2 |
| Ovarian Tuberculosis | ..... | 1 |
| | | 226 |

In every one of these cases the diagnosis was verified microscopically. During the treatment of these 226 cases the following results obtained:

| | Not Recorded. |
|---|---------------|
| Effect of Serum on Fever, Subsided, 60; Reduced, 56; Stationary, 26 | 81 |
| Effect of Serum on Night Sweats, Ceased, 69; Unchanged, 17 | 140 |
| Result of Serum on Weight | |
| Increased, 125 | 15 |
| Unchanged, 29 | 27 |
| Decreased, 154 | 21 |
| Result of Serum on Strength | |
| Improved, 114 | 15 |
| Unchanged, 29 | 27 |
| Decreased, 154 | 21 |
| Effect of Serum on Local Signs, Disappeared, 46; Mitigated, 58; Unchanged, 29 | 94 |
| Effect of Serum on Tubercle Bacilli, Disappeared, 40; Reduced, 103; Altered, 7 | 76 |
| Effect of Serum on general well-being, Exclusive of 40 cures, Improved, 145; Unchanged, 9 | 32 |

¹ The report on these will form the basis of a paper which I shall have the honor to read before the Chicago Medical Society, within short period. In this paper scientific details shall be given.

| | |
|---|-----|
| Number of recoveries that seem complete and permanent | 40 |
| Number of apparent recoveries with existing lesions in statu quo . . . | 3 |
| Number of improved, capable of performing usual duties | 41 |
| Number of improved to a lesser degree | 69 |
| Number of deaths reported | 32 |
| Number of cases disappeared from observation or under various treatment | 41 |
| | 226 |

As to pulmonary cases, the extent, stage and importance of the conditions at the beginning of treatment were as follows:

In class No. 1 there were 20 cases in advanced stage; 3 in early stage.
 In class No. 2 there were 33 cases in advanced stage; 6 in early stage.
 In class No. 3 there were 12 cases in advanced stage; 6 in early stage.
 In class No. 4 there were 9 cases in advanced stage; 0 in early stage.
 In class No. 5 there were 12 cases in advanced stage; 3 in early stage.
 In class No. 6 there were 7 cases in advanced stage; 1 in early stage.

93

13

Unclassified accurately enough for satisfactory description, 115. These ranged between the first and third stage of a variety of classes.

Now as to the immunization process and the necessity of measuring the antitoxic value of serum in units, as for diphtheria antitoxin, as it is asserted Maragliano gauges the serum he uses.² I shall, only touch upon these points here. First: Immunization of the horse or other animal, is produced more or less completely by injections of tuberculin, and intensified by injections of tox-albumins and may be still exalted by injections of living cultures in the circulation; the whole period of daily or alternate daily injections covering three to six months, sometimes more. The less natural immunity an animal possesses, the greater the value of the antitoxin produced by artificial immunization. The antitoxic value may be measured by the physiologic neutralizing power of a given quantity of immunized serum on a toxic dose of tuberculin and tox-albumin in a given weight of guinea pig. Notwithstanding assertions to the contrary, among scientists considered authorities, and the very flattering comments of the American medical press thereon, the measuring of the value of therapeutic serums is not yet as reliable in practice as is that of diphtheria antitoxin. Among the causes which vitiate the application of Behring's law in tubercle antitoxin is the fact that healthy guinea pigs of the same weight respond differently to a given dose of tuberculin and tox-albumin of a given culture, and consequently the very basis of unit measurement is not absolutely uniform. On the other hand, the unit measurement has little practical value as a guide in dosage in therapeutics, because of the very numerous different forms of tuberculosis, the lesions present, the complications, the susceptibility of patients, and the more or less pronounced general effects on various important systems of organs in the affected, which are not subject to neutralization by tubercle antitoxin.³ The unit of measurement, however, is desirable and should be in vogue as far as it is practicable and no pains should be spared to render it more thoroughly reliable and useful, if for no other purpose than that to establish a standard of defensive power as uniform as possible. This year's series of animal experiments includes researches on that line and if I have been slow in using the facts accumulated and marking the bottles of our serum with a unit measurement, it is because no one realizes more fully than I do the uncertainty of experimental work in tuberculosis and that I must back my conclusions with a voluminous list of reliable results, which the critics of competence may duplicate and the pretenders in medical science can not

refute successfully by mere quibbling or disputing statements, malicious reflections, or meager and untrustworthy experiments.

Foreign investigators assert the reliability of their unit of measurement. As yet the assurances have not been confirmed by other than assistants of the originators of the systems, although our American medical press has with avidity accepted their statements on this point, as on all others, as being infallible, granting to investigators of our own country much less comfort, even though they present equally good results.

The earlier treatment is begun the better the chances of recovery. It is essential, therefore, that we leave nothing undone to advance our knowledge of the earliest diagnostic signs of tuberculosis, in order that we may begin treatment very early when most cases may be saved and that we leave no stone unturned to increase the power of serum.

Anti-tubercle serum is positively curative and has passed the experimental stage, but it is far from perfect. In our reports we respectfully submit the good, bad and indifferent results. The basis of the reports are on file in our office and subject to the scrutiny of any honest physician, just as we open to him every department of our laboratories. From the experience of others and my own, it will be observed that only a relative number of tuberculous patients can, with our present knowledge of tuberculosis and anti-tubercle serum, be treated successfully. The very fact that many cases of different kinds have been cured by the exclusive use of serum in bad climates proves its curative properties. If it does not succeed it is because of existing conditions such as intolerance to serum injections of any kind, which is very rare; general destruction of physiologic equilibrium beyond repair; incurable lesions; mixed infections, etc. As to mixed infection, I am glad to say that a serum specially adapted to arrest mixed germs is being prepared, and already we have flattering results.

SOCIETY PROCEEDINGS.

Chicago Pathological Society.

Regular meeting November 9, 1896.

Dr. JAMES B. HERRICK, President, in the Chair.

Dr. ARTHUR DEAN BEVAN read a paper on

CAUSES OF OBSTRUCTION OF THE COMMON BILE DUCT.

The following is a synopsis: The subject of gall bladder and gall duct surgery is of recent development. In 1867 Bobbs of Indiana first performed cholecystotomy; in 1882 Langenbuch made the first cholecystectomy; in the same year Gaston suggested cholecystenterostomy and demonstrated its feasibility by experimental operations on dogs, and in 1889 Terrier performed the first anastomosis between the gall bladder and the small intestine. In 1890 Courvoisier added the last of our present list of operations on the bile tracts, choledochotomy. In the last six years the pathology and surgery of the gall tracts have been carefully studied and worked up, and we are now in a position to draw conclusions approximating the truth.

In the development of this work many men have taken part. Among those who have done much for this new field of surgery should be mentioned Lawson Tait, Courvoisier, Riedel, Czerny, Murphy, Fenger, Merriam, Terrier, Heddaens, Kehr, Sandler, McGraw and Mayo Robson. The work of these men has gained for the surgery of the bile tract a recognition among standard surgical procedures. As in any line of surgical work, this work rests upon a careful study of the anatomy, the physi-

² These points are also part of the paper I am preparing for the Chicago Medical Society.

³ Serum produced by immunizing the horse with the complicating germs usually found in the lungs in pulmonary phthisis has proven very efficacious in mixed infections.

ology and pathology of the structures involved, and of a careful analysis of the clinical histories of cases. It is not my intention to weary you with a review of the anatomy and physiology of the bile tracts, but I would desire to emphasize the fact that in no field of surgery is this elementary knowledge of more value to the diagnostician and the operator than here; a knowledge of the pathology of the conditions which demand surgical interference is no less necessary; this knowledge has grown with the development of the surgery of the bile tracts; a thorough knowledge of the anatomy, physiology and pathology is requisite, therefore, to the correct interpretation of the clinical evidences submitted by an individual case; the pathologic conditions which may interfere with the normal functions of the bile tract are many, and it is to this point, and especially to the causes of obstruction of the common duct, that I desire to call your attention in this paper, and it is in this line that I would ask that your discussion be directed.

To no one does the practical surgeon turn more frequently for instruction than to the pathologist; the findings of the postmortem room are the proofs of the correctness or error of his diagnosis and practical work. It is usually an easy matter to make the sweeping diagnosis of obstruction of the common duct. It is, however, often difficult or impossible antemortem to diagnose correctly its exact cause. For instance, in one list of reported operations for cases diagnosed as obstruction of the common duct, more than one-half were shown by laparotomy to be due to other conditions. My own limited work has curiously emphasized this point, and has led me to search rather carefully the literature with the hope that a careful study of the pathologic conditions found postmortem and by laparotomy, together with the clinical histories of the cases, might lead to a better understanding of the subject, to more accurate diagnoses and to fewer unnecessary operations.

As a basis upon which to discuss the broad question of the causes of obstruction of the common duct, let me report briefly some cases of common duct obstruction, each one illustrating a different type, which have come under my own observation. These cases show the difficulty of making an accurate diagnosis of the cause of the obstruction.

Case 1.—An Italian of 65, referred to me by Dr. Coolidge. Intense jaundice of six months' standing, frequent attacks of colic, intermittent chills and fever, pain over epigastric region; on pressure some sense of resistance, but no distinct tumor. Diagnosis: Probable obstruction of common duct by stone. Operation at Presbyterian Hospital, assisted by Dr. Coolidge. Found carcinoma of head of pancreas, atrophied gall bladder, no stone. Abdomen closed, patient recovered from operation; died some months later from carcinoma.

Case 2.—A woman of 35. Intense jaundice of four months' duration; previous history of frequent attacks of colic, no history of having passed stone. Intermittent rigors and fever. Enlarged and easily palpated gall bladder. Operation at St. Elizabeth's Hospital; abdominal incision, exposed gall bladder, distended, aspirated it; contents clear, glycerin-like fluid, about half a pint; as the last of this fluid was drawn out a sudden rush of pure bile came out of the needle with some small fragments looking like ground coffee; bile tracts examined, no stone found. Several very large lymphatic glands in front of common duct larger than the end of my thumb; these were tightly bound down between the folds of the gastro-hepatic omentum and produced direct pressure of common duct. Gall bladder was stitched to abdominal wound and drained; bile flowed very freely from fistula, jaundice disappeared, temperature became normal and patient improved greatly; later a cholecystenterostomy with Murphy's button was made by my colleague successfully. The pathology of this case is uncertain, but I introduce it here to show the possibility of obstruction of the common duct by pressure of enlarged lymphatic nodes in the gastro-hepatic omentum.

Case 3.—A case at St. Luke's Hospital in which I was associated with Dr. L. L. McArthur. A woman of 35; repeated attacks of jaundice, no clear history of colic, last attack of jaundice has persisted for three months, slight temperature, general condition fair; physical examination negative. Operation by Dr. McArthur revealed no stone, normal gall bladder; a firm smooth mass in head of pancreas, which we believed to

be carcinoma, although it did not feel like one. Cholecystenterostomy with Murphy button, recovery and improvement, disappearance of jaundice, subsequent history makes diagnosis of carcinoma improbable. Dr. McArthur and I now both believe the case to be one of obstruction of the common duct by pancreatitis.

Case 4.—A woman of 23, referred to me by Dr. Frankenthal; history of repeated attacks of colic and jaundice; intermittent temperature, pain over epigastrium. Diagnosis: Obstruction of common duct probably due to stone. Physical examination negative. Operation at St. Luke's Hospital. Gall bladder normal; in front of common duct an atheromatous cyst three and a half inches long and one inch in diameter, between the layers of the gastro-hepatic omentum and winding over the right edge of same into the foramen of Winslow. With great difficulty the cyst wall was dissected out entire: wound packed with gauze and tube. Recovery normal; left hospital at end of four weeks; jaundice and pain disappeared. This is a most interesting and rare case; I find the only one on record of an atheromatous cyst producing obstruction of the common duct, although Wiedel reports a case of an atheromatous cyst in the gall bladder. There is some question as to the pathology of the condition, for the section of the cyst wall shows no epithelium, but the gross appearance of the cyst and its contents were typical of atheromatous cyst, and a careful examination excludes echinococcus and does not furnish positive proof of tuberculosis.

Case 5 is a postmortem made at Leipsig by Birch Hirschfeld, which I had the opportunity to examine; the patient had died of cholemia. The examination revealed obstruction of common duct due to syphilitic gumma.

Case 6.—A man of 60; repeated attacks of jaundice and colic, remittent slight elevations of temperature, pain over epigastrium; referred to me by Dr. Herrick, who made the diagnosis of obstructive jaundice, probably stone. Operation at Presbyterian Hospital. Gall bladder very small; stone in common duct, freely movable; common duct incised, stone removed, no other stones found; could not close duct with suture, so drained with rubber tube and gauze; recovery uninterrupted; bile flowed through tube for nine days, then ceased and evidently now flows into duodenum. Jaundice has disappeared. Pain has ceased and patient has apparently made a complete recovery.

Here we have in these six cases six different and distinct pathologic conditions of obstruction of the common duct. In reviewing the literature I find many others. Grouped together I find that obstruction of the common duct may be due to:

1, catarrhal jaundice; 2, gallstones in common duct; 3, carcinoma of the duct; 4, stricture; 5, sclerotic pancreatitis; 6, gumma; 7, hydatids in duct; 8, ascariis, seven cases reported; 9, pressure from stone in cystic duct; 10, enlarged lymphatic glands by pressure; 11, pressure from extramural tumors; benignant: atheroma, papilloma, papillomyxoma; and malignant; sarcoma and carcinoma; 12, pressure from inflammatory exudates; 13, adhesions producing flexures of the duct; 14, tuberculosis, one case reported.

I have grouped together all the causes of obstruction of the common duct reported in the literature to which I have access. Many of these causes are extremely rare, but the very number of possible causes shows how difficult it is to make a positive diagnosis before operating. The common causes of course are catarrhal obstruction, stone and carcinoma. In many cases it is not difficult to distinguish between these conditions and yet it has been impossible to make an absolute diagnosis in the majority even of the cases submitted to operation, as shown by the cases collected by Greig Smith, in which thirty-five laparotomies for suspected stone showed in eighteen cases obstruction due to other causes.

DISCUSSION.

Dr. D. W. GRAHAM—There is one cause of obstruction of the common duct mentioned by Dr. Bevan which has lost much of its importance, as we shall see if we compare the literature of today with that of twenty or thirty years ago. I refer to gastro-duodenitis. While no doubt a few of the milder cases of jaundice are still properly attributable to this cause, gastric disturbance accompanied with jaundice even though mild and transient, which were formerly ascribed to gastro-duoden-

itis, are today properly counted as due to the passing of gallstones through the common duct into the intestine.

Dr. HEKTOEN—Attention may be briefly directed to chronic biliary obstruction due to chronic cholangitis following acute cholangitis developing in close connection with typhoid fever. The gall bladder has been shown by Fütterer and Chiari to become a reservoir for typhoid bacilli in typhoid fever. The bacilli may remain in the bile long after subsidence of the fever. The routine bacteriologic examinations during postmortems made the last two years or so of typhoid fever patients have confirmed these statements. Cases of suppurative cholangitis and cholecystitis have also been described after typhoid fever. Not long ago I made a postmortem examination of a woman for Professor Henry M. Lyman. Some years previous to death she had an illness diagnosed by Professor Lyman as typhoid fever; toward the end of the attack there developed jaundice and pain in the region of the gall bladder. Since then she suffered from chronic jaundice, dying from hemorrhage from a gastric ulcer, after having presented for a time the bone symptoms of osteomalacia, which was verified by the autopsy. In this case there was a dense fibrous pericholangitis and cystitis, the bile ducts being greatly narrowed and practically occluded. The liver contained biliary retention cysts and was quite green in color. General jaundice was present.

Dr. SAMUEL H. FRIEND read a paper on "Investigations upon an Umbilical Origin of Peritonitis."

Dr. LEMKE presented a paper for Dr. Dysart on
THE ACTION OF HUMAN SERUM UPON TYPHOID BACILLI; A CLINICAL STUDY.

Dr. Lewis R. Dysart, late resident physician of the Cook County Hospital, has made a clinical study of the action of human serum upon typhoid bacilli, the more important results of which I have the honor of communicating to the Society, in the absence of Dr. Dysart, who has gone to Mexico.

The majority of the tests were made by making an emulsion of typhoid bacilli in a drop of water upon a glass slide; three or four drops of blood were then obtained upon a glass slide, and by touching the blood with a loop of platinum wire the serum which collects on the outside of the drops was transferred to the emulsion of typhoid bacilli, with which it was thoroughly mixed. Care was taken that the bacilli were thoroughly emulsified, so that no clumps were present before the addition of the serum.

A cover glass was then placed over the emulsion and this examined with an oil immersion; hanging drops were also made in a like manner. Other tests were made according to the methods of Professor Pfeiffer, which consists in adding blood serum to an emulsion of typhoid bacilli in a test tube and noticing the formation of clumps, as seen by the microscope, and the precipitation of the bacteria to the bottom of the tube, as shown by the clearing up of the fluid and the appearance of a flocculent precipitate.

In eighty-nine cases of typhoid fever, where the clinical diagnosis seemed positive, and in some few of which the postmortem findings were those of typhoid, the bacilli rapidly gathered into the characteristic clumps; some of these were large and others of medium size, the bacilli becoming immotile. The clumping in many of the cases was marked as soon as the specimen could be gotten under the microscope, and in all at the end of from three to five minutes.

In fifty-nine cases in which the clinical diagnosis was not typhoid fever, and in many instances verified by the postmortem, the reaction was not obtained. This list includes a great variety of different diseases, such as cirrhosis of the liver, chronic valvular heart disease, tertiary syphilis, pulmonary, intestinal and bone tuberculosis, malarial fever, lobar pneumonia, acute rheumatism, carcinoma of the stomach, tetanus, gonorrheal rheumatism, multiple neuritis, nephritis, hysteria, insanity, etc.

The reaction was obtained in three cases of diseases not typhoid fever; namely, in one case of acute articular rheumatism, in one of malaria (controlled by demonstration of the organisms in the blood) and in one of chronic rheumatism. In the last case only was there a history of typhoid fever previously, namely, thirty years ago. The reaction in these cases was prompt and the clumps were large. In two cases in which the diagnosis of typhoid fever seemed positive, clumping did not occur in five minutes, but when the Pfeiffer method was used marked clumping occurred within a short time, with considerable precipitation in the bottom of the tube. One of these patients has since died and the postmortem examination showed lobar pneumonia and the characteristic typhoid lesions.

In two cases in which the diagnosis of typhoid is not positive (patients still living) the reaction was not obtained by the simpler method but the Pfeiffer method gave a positive result. In one of these cases the diagnosis lies between an acute exacerbation of a chronic endocarditis and typhoid fever, in the second between typhoid and malaria, but the plasmodia were not found. In two other cases the reaction was also obtained but the diagnosis of typhoid did not seem absolutely positive but no other definite diagnosis could be made. In two cases in which the diagnosis lay between typhoid fever and miliary tuberculosis in one case and acute exacerbation of a chronic endocarditis in the other, the reactions were all negative. No opportunity has presented itself to verify the indications thus obtained by autopsies.

From a study of the cases, positive as well as negative, and also from a careful consideration of the doubtful cases referred to, Dr. Dysart reaches the following conclusions:

1. This reaction can be obtained from the great majority of, if not from all, patients suffering from typhoid fever.
2. That the reaction can not be obtained from the great majority of other diseases.
3. That in three cases, clearly not typhoid fever, a marked reaction was obtained repeatedly in the hanging drop.
4. That in some cases of typhoid fever, in which the reaction is not obtained within five minutes in the hanging drop preparation, the Pfeiffer test tube method may give positive results.
5. The absence of the reaction in typhoid fever has not yet been demonstrated to occur in cases verified by postmortem examination.
6. The presence of lobar pneumonia, and probably other complications and sequelæ of typhoid fever, does not prevent the occurrence of the reaction, as shown by two cases verified by postmortem examination.
7. In doubtful cases the serum should be diluted in accordance with the methods of Durham, Greenbaum and others, and in this manner the results might be found to be more definitely conclusive.

DISCUSSION.

Dr. PREBLE—I have followed Dr. Dysart's studies in the wards with a great deal of interest, because the subject is of far greater importance than the subjects which we ordinarily meet. Every one knows the extreme difficulty at times of making a positive diagnosis of typhoid fever. It is to be regretted that Dr. Dysart had so few opportunities to apply this test to cases in which the differential of typhoid fever from diagnosis of other diseases such as acute miliary tuberculosis is difficult. It is in these cases that we wish such aids as this. The method appeals to one as possibly being a rational one; I suppose the rationale of the test being, that the serum of typhoid patients contains antitoxins, which in some way impair the vitality of the typhoid bacilli, thus causing the motion to cease. It would be interesting to know in what way the serum of typhoid patients affects the bacterium coli commune, which resembles the typhoid bacillus in so many respects. Perhaps Dr. Lemke will be able to enlighten us upon this point. The

test has not been used to any great extent as yet. Dicalafoy reported one hundred cases of typhoid fever, each time with the same result, the serum causing agglutination of the typhoid bacilli. It is as important to know the negative side of a test as to know the positive side. We can know this only by further observation of cases of endocarditis, miliary tuberculosis, and cryptogenetic sepsis and the like, in which there is later opportunities of confirming the diagnosis by postmortem.

Dr. BABCOCK—I would like to ask at how early stages in typhoid fever the serum works on this culture.

Dr. WEAVER—There was a question raised in regard to the action of the serum in the case of the bacillus coli communis. It has been shown that the bacillus coli communis thrives in typhoid serum and that there is no clumping or death produced. This work which Dr. Dysart has done has added considerably to our knowledge of a subject which we know comparatively little about so far. The work of Dr. Dysart seems to me to be one of the most valuable things in a scientific line that has been carried out by any of the house men in the County Hospital, so far as I know anything of their work, for a number of years. It seems to me he deserves particular credit for this work which he has accomplished.

Dr. HEKTOEN—It will be remembered that when Pfeiffer and Kille published their first article concerning the action of serum of immune animals on typhoid bacilli they asked particularly that the profession repeat these experiments and verify them, and it seems to me that in Dr. Dysart's work this request has been carried out well. The practical importance of this reaction, the apparent rationale of which we all understand, is being appreciated everywhere, and this is shown by the fact that already the boards of health have arranged for carrying out this reaction quite generally.

Dr. HERRICK—Dr. Hektoen has called attention to the fact that boards of health have already offered to make examinations in the same way that examinations are made for the profession in suspected diphtheria. That has been rendered possible by the fact that this same reaction has been found to occur when a drop of dried blood, even though it be several days old, is moistened with water and added to the emulsion of typhoid bacilli. The reaction with the dried blood has been proven by Vidal, and independently, I believe, by Wyatt Johnston of Montreal, who, about a week ago, reported that fact and made the announcement that the Montreal Board of Health would make examinations for the profession.

Still, we must not be premature in our conclusions. If Dr. Dysart's results are true, it shows that perhaps 3 per cent. of failures will be met with. He found in three cases, one of acute articular rheumatism, one of chronic rheumatism and one of malaria, a distinct reaction, and found it repeatedly, so that the test may be, after all, rather of negative than of positive value, that is to say, the failure to get the reaction may be all that we can rely upon and it may tend to exclude typhoid fever.

Dr. HEKTOEN—That is a very proper objection taken by Dr. Herrick just now; it may be said, however, that the test as carried out by Dr. Dysart is not altogether correct, because the serum must be diluted to a certain percentage, and in his last conclusion Dr. Dysart referred to that fact and says, that in continuing such tests, if the serum be properly diluted according to the recommendation of certain authors, the reaction may become more conclusive; and herein lies opportunity for still more work in the future.

Dr. LEMKE—With reference to Dr. Babcock's question, I can only say that Dr. Dysart was able to get positive reaction in all cases entered at the hospital; in many cases it was at the end of the first week.

EXHIBITION OF SPECIMENS.

Dr. L. HEKTOEN showed a carcinoma of the pylorus with extensive growth of tumor into the veins about the stomach

removed from a greatly emaciated colored man, 56 years of age, upon whom, as a last resort, an operation for gastro-enterostomy had been made by Prof. John B. Hamilton, shortly before death. The tumor is situated around the pylorus, which is practically occluded, and it presents a large ulcerated surface with raised margins. The particular feature to which attention is called is the extensive growth of tumor tissue into the wall of the stomach and behind it (Fig. 1). The gastric veins are all distended and nodular, as though they were the seat of an extensive thrombosis. This tumor-thrombosis, so-called, extends into the portal vein and fills the entire main trunk, and from this vein the thrombosis extends backward against the blood current into the veins that go to make up the portal vein, the splenic vein and the superior mesenteric vein for some distance, but just how far can not be said, because in the removal of the growth these veins were cut off while still containing tumor masses in the gastro duodenal vein. There is also extensive secondary carcinoma of the lymphatic glands in the gastrohepatic omentum and the pressure of these upon the bile ducts produced biliary obstruction and some jaundice, and this is still shown in the specimen by the greatly extended gall bladder.

In order to explain the intravenous extension of the tumor it is assumed that in some way the carcinoma grew into the venous or capillary network of the wall of the stomach and

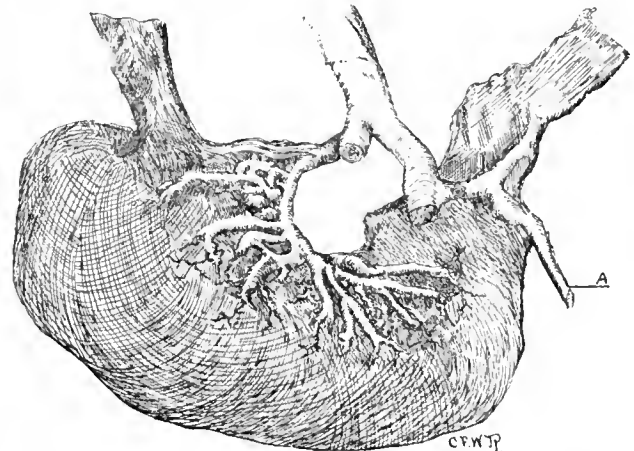


Fig. 1.—Growth of carcinoma into gastric and portal veins and the radicles of the latter, secondary to carcinoma of the pylorus. The posterior surface of the stomach, which is turned so that the pylorus is to the left, is exposed. A, cut end of gastro-duodenal vein, from which the microscopic section drawn in figure 2 was taken.

from there rapidly extended in many directions, finding but little obstruction to its growth in the blood channels. It is quite remarkable that the growth should continue against the current instead of into the liver, as would be expected. There were no metastases in the liver. Contrary to expectations there was no ascites. The absence of ascites is hard to explain. The extreme emaciation and the consequent small amount of blood in the body may have allowed collateral circulation to be established without any evident changes in the caliber of the collateral channels.

The microscopic examination (Fig. 2) shows the lumen of the gastro-duodenal vein, at a point about three inches from its end, to be filled with a typical carcinomatous growth, the islands of epithelial cells being enclosed in distinct and often broad bands of connective tissue which seem to be more an integral part of the tumor than a new production from the vein wall. Here and there are spaces filled with blood, and it may be that the portal circulation was maintained in sufficient degree to obviate passive congestion through such spaces in the "carcinomatous thrombus."

Dr. KING presented some specimens of *tuberculosis testis* and related the history of the case from which they were obtained.

Dr. HERRICK presented specimens of heart, showing *mitral and tricuspid stenosis*.

He said: I will take a few minutes to show a heart that shows mitral and tricuspid stenosis, the third case that has come to the autopsy at the County Hospital recently. It concerns a middle-aged woman with a previous history of rheumatism, subjective symptoms of heart disease and physical findings that indicated pericarditis. Tricuspid stenosis was not recognized during life. The heart shows a mildly enlarged left ventricle, the walls thickened, the mitral valve with the cusps thickened and drawn together, the orifice admitting perhaps one and one-half finger tips; the left auricle is also enlarged, as it is in any case of mitral stenosis. In the left heart I should also say the aortic valves are slightly thickened and it was thought at the autopsy, which was made by Dr. Hektoen, there was possibly a slight incompetency. The

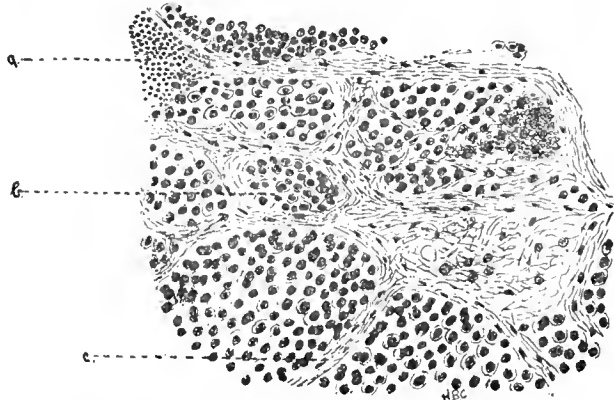


Fig. 2.—Growth of carcinoma in gastro-duodenal vein, multiplied 175 times; a, blood; b, cell nest; c, connective tissue trabeculae.

right heart shows a dilated and hypertrophied right ventricle, the tricuspid orifice admitting three finger tips, the free margins of the valve being thickened and deformed. The right auricle is hypertrophied and dilated. At the last meeting I reported two cases of tricuspid stenosis and it is certainly very strange that a third case should have come to autopsy within so short a time. This case corresponds to the common findings in cases of tricuspid stenosis. The patient was a woman; the tricuspid obstruction is combined with lesions of the left heart and most commonly with an obstruction at the mitral valve. This is further a case of acquired tricuspid stenosis, not congenital, that being proved by the absence of symptoms of cyanosis in earlier life, proven also by the absence of defects in the ventricular and auricular septum and of a history of rheumatism.

PRACTICAL NOTES.

More "Brutal Figures" in Favor of Serum Treatment of Diphtheria.—Cuno describes in the *Deutsche Med. Woch.* of December 24 the results of two years' treatment of diphtheria with Behring's serum at a hospital in Frankfurt a.-M. There were 483 cases received in all and the mortality fell from never less than 37 per cent. in previous years to 10.5 per cent. of the total number, or to 7.03 per cent. excluding the moribund cases. The noticeable feature of the report is that no local treatment was used. It was found that with sufficient doses of the No. 3 serum the false membranes rolled up at the edges, seemed to dry up and were finally expelled without bothering the already sufficiently tormented little patients with local applications. Heart weakness was combated with injections of alcohol and camphor, and abundant nourishment was given through a sound if necessary.

Erythromelalgia.—Dr. Schenk has described a case of erythromelalgia in an article published in the *Medicinische Presse*, on the subject of his clinical investigations of the nervous sys-

tem. This disease was first described by Graves and afterward by S. Weir Mitchell, according to whom it is a disturbance of the circulatory system, whereas Vulpian named it *paralytic vasomotricie des membres*. At present it is supposed to be the result of a disturbance of the nervous system. The symptoms include sleeplessness, urinary and rectal troubles, spinal ataxy, atrophy of the skin and the muscles of the upper arms, increase of the knee-jerks, analgesia alternating with hyperalgesia, and decrease of the sexual impulse. The urinary and sexual disturbances are due to a lesion of the vesico-spinal and genito-spinal centers which are to be found in the region of the fourth lumbar vertebra; the ataxy points to a disease of the posterior column, the increase of the knee-jerks to an irritation which may be caused by an inflammation. The disease is no doubt due to vaso-motor disturbance consequent on an ascending degeneration in the posterior column of the cord. Woodnut has also described a case of erythromelalgia due to myelitis.—*London Lancet*.

The Treatment of Piles and Pruritis Ani with Collodion.—Dr. D. W. Samways says he has found that the itching in cases of pruritis ani disappears at once on the application of simple collodion. After a few moments of somewhat intense smarting (which can be prevented by cocain if necessary) no further itching is felt ordinarily for twelve or twenty-four hours, if at all. He supposes that the ether or alcohol in which the gun-cotton is dissolved stops the irritation and the collodion film, by protecting from the air, prevents its reappearance. In cases of external piles he has observed that the application stimulates the pile to contract, that the hardening film of collodion supports the pile thus contracted, and that the contracting collodion (not collodion flexile) further reduces it. It is the principle of the elastic stocking applied to the hemorrhoidal instead of the saphenous veins, he says, and with a like result. The collodion is best applied by dropping it on a few fibers of cotton wool, which are spread over the pile each morning after defecation.—*British Medical Journal*, November 21.

Effect of the Influenza Bacillus on the Central Nervous System.—Cantani first ascertained that rabbits supported easily intracerebral injections of sterilized water, and intraperitoneal injections of non-fatal doses of Fraenkel's diplococcus. He then experimented with living cultures of the influenza bacillus (Pfeiffer's), injecting them into the dura mater and even into the brain matter. The results showed that the brain is a particularly favorable medium for the development of the influenza bacillus. A series of passages through rabbits' brains produced a culture which killed others in small doses injected into the peritoneum. The same results were obtained by inoculating with cultures first sterilized by being heated to 57 degrees C., only larger quantities were required. The animals that died from the injection of the virulent cultures, showed all the signs of a profound infection. The congested peritoneum frequently contained extravasated fluids; the spleen, kidneys and capsules were gorged with blood; the bladder contained bloody urine. The lungs were congested, the pericardium contained exudations. But in none of these organs, nor in the blood, was the influenza bacillus discovered. The brain had every indication of a subacute meningo-encephalitis, and the bacilli were found in the cerebral and also in the medullary substance.—From the *Ztschr. f. Hyg. u. Infektionskr.*, No. 2.

Trional.—The superiority of this hypnotic over all others is proclaimed anew by Von Mering in the *Presse Médicale* of December 9. He has administered it to over a thousand patients without a single accident. His dose is 1 to 1.20 gram before retiring each night, and it can be kept up for a long while. It is especially serviceable in neurasthenic insomnia, psychosis with excitement, etc. In insomnia due to some painful affection he gives 5 milligrams of morphin with the gram of trional. Not content with his own experience, he wrote to

seventeen eminent authorities, including Krafft-Ebing, Norden, Jastrowitz, Binswanger, Rabour, etc., for their opinion of trional. Fifteen expressed their preference for trional: one used sulfonal or trional indifferently, and the seventeenth failed to reply. Dr. Vogt recommends that a certain quantity of some warm liquid be taken at the same time (about 200 grams). If the trional is continued a long while it is well to have a bottle of some alkaline water taken during the day (Vals, seltzer), and to suspend the medication for a day or so every five or six days. The one drawback to trional is the hemato-porphyrinuria occasionally caused by it to a slight extent ("infinitely less frequent than with sulfonal"). Von Mering's experiences and experiments incline him to believe that it is not due directly to the trional, but to a sort of idiosyncrasy, a less than normal resisting power to the effect of the medication. (See the JOURNAL, page 765, Vol. xxvii.)

Alexandroff's Sign for Early Diagnosis of Coxalgia.—Beside the usual symptoms of incipient coxalgia, Alexandroff insists on the importance of two additional signs, the atrophy and fatty degeneration of the muscles and bones, and especially the hypertrophy of the subcutaneous cellulose-adipose layer, which exists in every stage of the disease from the first and increases with the gravity of the case. In advanced stages the hypertrophy extends throughout the whole member. This is the cause of the effacement of the fold between the thigh and buttocks (*pli fessier*) and the difference in this respect between the sound and the affected thigh is very evident, as much as $1\frac{1}{2}$ to 4 mm. in some cases. Alexandroff has invented a special instrument, the adipometer, resembling Weber's compass, to measure the thickness of this subcutaneous layer. The movable portion of the apparatus slides on a graduated plate and a spring near the handle allows a pressure of 5 to 10 grams. He has been using it for six years and states that atrophy of the member coinciding with hypertrophy of the fold, is one of the most important signs by which to recognize tuberculous osteo arthritis before any other symptoms have appeared, while the absence of these trophic troubles is conclusive evidence of the non-existence of a tuberculous lesion of the coxo-femoral articulation, even when it is indicated by other symptoms.—*Presse Médicale*, December 9.

Surgery of the Pancreas.—A successful operation for tumor of the head of the pancreas which has showed no relapse in the two years since, inspired the surgeon D. Biondi, to study the literature on the subject and experiment for himself further. He found that his was the only successful case of the kind on record. He ascribes the infrequency of such operations to the difficulty of diagnosing, as neighboring organs may be the seat of trouble, and also to the difficulty of operating in such friable tissue and the dangers of hemorrhage. He states that it is necessary to leave a portion of the head of the organ, as total extirpation is fatal, while animals and his patient bore partial extirpation without inconvenience. His method was the extra-peritoneal treatment of the pedicle. His patient recovered rapidly and gained twenty-four pounds in six months. He finds that small wounds of the wall of the common bile duct heal without closing the lumen. Also that the secretions of the pancreas are liable to cause peritonitis indirectly, and therefore it must not be allowed to penetrate into the peritoneal cavity. It is impossible to prevent this if the entire head of the pancreas is removed, although as stated above, a portion of the head can be removed with impunity if one of the ducts is left intact. The indications for surgical intervention he considers to be cysts, hemorrhage, suppurations, local fatty degeneration, calculi and benign neoplasms. In malignant neoplasms an operation may ensure six to eight months of comparative health. He recommends an exploratory laparotomy to confirm the diagnosis (*Chl. f. Chir.*, December 19). We note in connection with the difficulty of diagnosis in these

cases a recent case described in the *Wien. klin. Woch.*, No. 45, which presented every symptom of intestinal occlusion, although no obstruction was found at the laparotomy to account for it. Death soon followed and the necropsy disclosed apoplexy of the pancreas with gangrene of the peritoneum and purulent peritonitis.

Ulcus Ventriculi Treated by Rectal Alimentation Alone.—Boas and others have recommended this method of treating ulcer ventriculi when all others have failed, but E. Ratjen writes to the *Deutsche Med. Woch.* of December 24 describing the brilliant results he has obtained with it, used exclusively. Treatment commenced at once as soon as the diagnosis is established. He combines it with the strictest repose in bed and absolutely nothing taken into the stomach except clear water, peppermint tea, or pieces of ice dipped in brandy and water if there is heart weakness. The absolute rest for the stomach thus induced (even the secretion of hydrochloric acid ceases comparatively) allows the healing process to continue undisturbed, and the relief from pains reconciles the patient to the treatment. He uses Boas' clyisma (250 grams milk, two yolks of eggs, a pinch of salt, one tablespoon red wine, one tablespoon starch flour) three times a day for ten days, after a natural or artificial evacuation of the bowels each morning. A special apartment is set apart for the use of these patients in his hospital or at their homes, where they never see or smell the food of others. Local hot compresses are used to relieve pain. As aids to diagnosis he mentions the following symptoms: 1, the subjective symptoms make their appearance soon after eating and depend upon the variety of food; 2, the freedom from pain after vomiting and when the stomach is entirely empty; 3, the points painful to pressure in the epigastrium and in the back near the vertebra. The pains are worse during the ectasia of the organ from stenosis of the pylorus after eating and are relieved by acid vomiting; 4, the hemorrhages. The diagnosis can never be absolutely certain at the best, but this exclusive rectal alimentation benefits other gastric troubles and also serves to differentiate ulcer from carcinoma ventriculi. It has also been successful in one case of nervous vomiting from hyperesthesia of the stomach. He has found in each case that the stomach was not entirely normal in its position, and has explained to the patients the importance of having all their clothing suspended from the shoulder, etc. With three exceptions who did not complete the cure, the patients have all been able to eat solid food since without pain, and have increased in weight. His report includes fifty-five cases.

Hay Fever and Uric Acid.—Dr. N. L. Wilson of Elizabeth, New Jersey, writes the *New York Medical Journal* for December 26, as follows: "I do not mean to say that every case of uric acid diathesis is a hay fever subject, any more than I would say every such case had eczema, but I do mean to say that there is a close relationship between uric acid and hay fever, and I do say that every patient having a neurasthenic tendency, if you please, and a pathologic mucous membrane of the respiratory tract, is irritated by uric acid, and thus far my observations have led me to suspect it in every case of periodic hyperesthetic rhinitis. In the treatment of these cases the greatest care must be exercised. You must ever keep in mind that alkalies, salicylates, etc., produce a uric acidemia so long as there is an increase of uric acid within the system. During the attack they must be used with care and in small doses. I have certainly increased the severity of an attack by giving ten grains of salicylate of sodium three times a day. During the attack it is better to free the blood from uric acid by the administration of an acid. Aromatic sulphuric acid acts very well. After freeing the blood gradually extract the uric acid from the tissues by 2 or 3 grain doses of salicylate of sodium (given three times a day), cut off the acid-producing foods, such as meat, beer, wine, cider, lemonade, etc. Keep your patient's

nervous system in the best possible condition by proper feeding, hygienic measures, and nerve tonics if necessary. See that no polypi, spurs, or hypertrophies exist in the nostrils. Begin a crusade against uric acid six weeks or even two months before the time of the attack. For the local relief I have found menthol and camphor in liquid albolene, very gently sprayed into the nostrils, effectual in some cases. There are cases, however, which are apparently irritated by this solution, and for these I have found, if I would contract the tissue with a 6 or 10 per cent. solution of cocain, and then gently coat the turbinate with a thin film of flexible collodion, they would experience relief. For the itching and irritation of the conjunctiva, hot water or yellow ointment rubbed into the conjunctiva will afford relief.

Disinfection of the Urethra by the Internal Administration of Enterol.—Enterol is a watery, colorless, sometimes slightly brown liquid, with a specific gravity of 1.036, and with the taste and smell of kresol. It is slightly soluble in one hundred parts of water, and has about six times the antiseptic strength of carbolic acid. Properly diluted—that is, one part of enterol to five hundred of water, it can be given in the dose of from half a dram to a dram daily for months at a time without producing any untoward symptoms. It is given in pill, capsule, and mixture with equal parts of olive oil. Fass, in *Centralblatt f. die Krankheit. der Harn*, etc., states that thirty of the capsules can be taken at a dose without harm. After entering the stomach about 80 per cent. remains in the alimentary canal and 20 per cent. is excreted by means of the urine. If employed in weak dilution and with abundance of liquid, the probability is that much more is absorbed. In the treatment of bacterial inflammations of the genito-urinary tract, the patient is gently purged, the lower gut washed out with clysters of water or neutral oil, and a milk or liquid diet given, enterol being administered with each repast. After large doses and prolonged use of enterol the urine sometimes turns green. The author states, however, that he has given the drug in doses of one-half to one dram daily for weeks, the urine exhibiting the characteristic gray-green color, without producing any systemic complications. Indeed, the drug does not produce the slightest irritation in the kidneys or genito-urinary tract, and even in chronic nephritis the albumin contained in the urine is not increased. Nevertheless, we are cautioned against the use of the drug in cases of acute nephritis, congestion of the kidney, or feebleness of the heart. The drug possesses the merit of being safer and more efficient than any of the non-internal antiseptics. Nervous women, after taking the capsules, complain of an unpleasant taste in the mouth and burning in the stomach. When there is marked inflammation of the stomach the drug should be greatly diluted. In the case of gastric ulcer the drug should not be exhibited. The indications for the use of the drug are for the cure of cystitis, pyelitis, and before and after operative interference with the urinary passages in cases of acute gonorrhea. In the latter affection the enterol is particularly efficacious, eight capsules being given each day.

Guaiacol and Creosote in Pulmonary Phthisis.—Dr. F. R. Walters joins with some other contributors to the *Lancet* in drawing attention to the value of this group of remedies in the treatment of phthisis, which many in England are disposed to doubt. He says: I am well acquainted with the advantageous properties of the carbonates of creosote and guaiacol and have myself prescribed the former with apparent benefit. But at present the price of the drugs is prohibitive except for wealthy patients. A lady under my care who had been taking creosotal for a few weeks plaintively asked me one day whether it was absolutely necessary to continue paying a guinea a bottle for her medicine. In some recent wholesale price lists the carbonates are listed at prices from fifty cents to a dollar, or more, per ounce. These high prices are prohibitory for hospi-

tal patients, and are strongly objected to by ordinary middle-class patients when the course of treatment is (as it must be in phthisis) a long one. Under these circumstances one is driven to use the cheaper remedies in most cases and to overcome their drawbacks in other ways. The causticity of creosote and guaiacol has in my opinion been somewhat overrated, as I find them clinically well borne if suitably prescribed, in most cases in doses up to 45 minims per diem by the mouth, and occasionally in much larger doses. Every medical man is in the habit of prescribing without any ill effects such caustic drugs as phenol, liquor potassæ, and nitric and sulphuric acids, merely by suitably diluting them, and the same can be done with creosote and guaiacol. The latter should always be given on a full stomach, and their solution in alcohol or glycerin further diluted by mixing with some bland fluid such as milk. Possibly in this way an albuminate is formed; but at all events, this is effective and in most patients causes no disturbance. Pills and capsules I regard with suspicion, as they might liberate their undiluted contents on the surface of the stomach and are much less readily tolerated by most patients. As regards the relative toxicity of creosote and guaiacol and their carbonates, one would not expect to find much difference after absorption, since the carbonic acid is liberated in the bowel. Poggi's experiments refer to guaiacol and not its carbonate. I hope very shortly to test their correctness. It will be a boon to the public if the profession can induce the manufacturers of creosotal to dispose of it at considerably reduced prices, and thereby themselves obtain for it a much larger market.—*London Lancet*, December 12.

Cause and Prevention of Suppuration of Stitches.—Some recent writers explain the occasional suppurations of the stitches in carefully performed operations to the presence normally of certain pathogenic microorganisms in the underlying layers of the derma which causes suppuration when exposed to the air by the wound. Remlinger even asserts that most of the microorganisms found in the blood drawn from the finger are derived from the lower layers of the skin. His statements are revolutionary in regard to the conclusions we have been drawing from inspection of a single drop of blood in infective disease. We know that the flora of the superficial layers is extensive, but he announces that he found the staphylococcus albus (twenty-three times); aureus (eleven times), and citreus (fourteen times); the streptococcus pyogenes (eight times) and the coli bacillus (five times), in his experiments on fifty perfectly healthy men, taken with a sterilized needle from the deeper layers of the derma. The only means to avoid error in examining the blood is to draw it from the deeper tissues with a needle not only sterilized, but inserted while still red hot. The logical inference is that surgeons should make their incisions with the thermocautery in order to destroy these intracutaneous germs, but the same effect is secured by a much simpler method, the disinfection of each stitch with alcohol, as E. Blondel announces in the *Journal de Méd. de Paris* in an able review of the subject and the latest theories. He has revived the Hippocratic practice of bathing wounds with wine as taught by Theodoric and Mondeville, and applies it with invariable success. Especially in total perineorrhaphy, which is so difficult to perform with perfect antiseptics, he has secured results far surpassing any previous achievements. He makes as few stitches as possible in the lower layers, and before drawing them tight he wets them and the edges of the wound with 90 per cent. alcohol, and sponges the tissues with a cotton pad dipped in it. Each suture is treated in the same way, and the final suture is sponged with strong alcohol and then dusted with iodoform or equal parts of dermatol and aristol, repeated every second day afterward. Alcohol dries the surfaces better than any other substance. Its effect on grease is also a factor in the result. It has a coagulating effect on the serum and thus favors cicatrization.

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SATURDAY, JANUARY 30, 1897.

THE HYPOTHETICAL CASE IN MEDICAL EXPERT TESTIMONY.

The value of the hypothetical case in obtaining medical expert opinion is one of the questions in regard to which both lawyers and doctors appear to disagree. A recent editorial in one of our contemporaries quotes a prominent lawyer as saying that it serves a purpose in showing the utter worthlessness of the opposing testimony, presumably seeing in it no other use or value. It was admitted by him that in this it was a weapon that cuts both ways and he considered that its influence in one direction was counteracted by that in the other, so that its real effect is practically zero.

If this notion is correct, no self-respecting expert would really care to go on the stand and answer a hypothetical question, and it would seem that no sensible lawyer would see any necessity for asking one, if the opinion obtained could be really at once counteracted by another equally well based. In fact, the lawyer's statement seems a little odd, since it practically assumes that the testimony on both sides must be equally worthless, and leaves a chance for anyone to suppose that he considers all testimony of witnesses as to facts, as well as of experts altogether, without value.

Theoretically, it would seem to an average, fair-minded individual that the hypothetical case offers an ideal method of obtaining expert opinion. A carefully drawn up question, embodying all the essential particulars fairly stated, is certainly a rational means

of obtaining the correct judgment as to the assumed facts, and it has the advantage to the expert of saving him the trouble of delving into details and of making him more or less a witness as to facts instead of opinion. The possibility that the hypothetical case does not represent the facts, does not alter the case: the fault is then with the advocate, not with the expert. If it is so used it ought to be a dangerous weapon to its employer, provided the opposing counsel knows how to avail himself of his opportunities, and ought to indicate a recognized weakness of his case by him who employs it.

The hypothetical case has also the advantage that it is not so liable to make the expert an advocate, as is so often the tendency when one is testifying as to the result of opinions obtained by personal examination. Physicians on the stand, of course, need not be unduly interested on the side of their employers, and as experts should not be, but they have the common human weaknesses, and it is believed that perfectly honest men feel some sense of obligation to render a *quid pro quo* when they have received large fees, and this, in itself honorable, feeling may lead them into awkward situations on the witness stand. If they only expect to receive large fees for their testimony they are liable like other men to be led into temptation, which is the stronger if they have given time and trouble to the personal examinations than if they have merely read over and formed an opinion on a stated case. It is only by assuming that physicians do sometimes, probably unconsciously, yield to such temptations that we can account for some medical testimony. Of course one who can not free himself from all prejudices, that of interest as well as others, is not fitted to give an expert opinion, but all persons are not always aware of their disqualifications. While physicians are condemned for this occasionally, it is only fair to say that they are no more liable to be faulty in this regard than are judges or jurymen, who should of all men be the most impartial.

One great trouble with the hypothetical case is that there are so many lawyers who do not know how to properly construct it. In cases involving medical questions, such as insanity, etc., they should as a rule employ a competent expert to help them draw it up from the facts that are to be brought out by their witnesses. It need not include all the facts but only enough, simply and clearly stated, to enable their experts to express a positive opinion, as it will be a great advantage to their cause if still others are in reserve to be presented before the jury to strengthen the case after the opinions have been obtained. The value of such a method has been repeatedly demonstrated, notably in one rather recent case in one of the large cities where this policy actually made the experts for the prosecution the most effective witnesses before the jury for the defence.

There will be, without question, many physicians who will prefer in certain cases, to testify only after personal examination and study, but for general purposes and purely for the obtaining of expert opinion, it is probable nothing better than the hypothetical case has been or can be devised. An honestly drawn up hypothetical case can not hurt a good cause and may damage seriously a bad one; one that misrepresents the facts should not deceive a jury, with a competent opposing counsel, and in either case the position of the impartial expert is the same: he has only to give his opinion on the case as put before him.

SINUS-PLEURITIS.

That attacks of pleurisy often pass unnoticed during life appears perfectly evident from the frequency with which adhesions and other signs of that condition are found postmortem in cases in which death has resulted from some independent disorder. There also come under clinical observation a very considerable number of cases in which fever of varying type, intensity and duration is the most conspicuous manifestation and for which no adequate primary cause can be discovered. That in many of these cases the febrile manifestations are dependent upon some obscure inflammatory disorder there can be no reasonable doubt and it can scarcely be considered hypercritical to question the actual existence of such a state as simple continued fever. It is possible that local elevation of temperature may result from purely local influences, but the cause for general elevation of temperature must be sought in some disturbance of the thermotaxic mechanism, resulting in a derangement of the adjustment between heat-production and heat-dissipation. This disturbing influence may be chemic (nutritive, toxic) or physical (traumatic, inflammatory).

For a number of cases in which inflammation of the pleura pursues an insidious and latent course, as well as for another number in which apparently inexplicable fever exists, an explanation is offered by the account given by KOLL (*Deutsches Archiv für klinische Medizin*, B. lvii, H. 5, 6, p. 597) of a group of upward of 30 cases observed in the medical clinic of the Julius Hospital at Würzburg and which he characterizes by the designation sinus-pleuritis. The symptoms of the affection are suggestive of some disorder of the heart or stomach, so that its true nature may escape detection unless it be specially looked for. The lesion of the disease consists in an inflammation of the lowermost portion of the pleura anteriorly and laterally and sometimes posteriorly, unattended with demonstrable effusion. In the large majority of cases the disease sets in suddenly, like an infectious disease, with usually slight fever and other symptoms of constitutional disturbance, generally without appreciable cause. Only in a small number was a previous

history of exposure to cold or of excessive physical effort, and the like, ascertainable. In isolated cases a relation appeared to exist between the attack and acute and muscular rheumatism. The disorder did not follow other affections predisposing to inflammatory complications of the serous membranes (diabetes, nephritis). In individual cases the onset was not acute, so that definite information as to the beginning of the attack could not be obtained. In one case it was related that the patient had had a similar attack some five years before.

The subjective manifestations in most cases pointed to acute or chronic gastric disease, the most conspicuous symptom consisting in diffuse or circumscribed tenderness in the gastric region, setting in suddenly during a state of health. A point directly below the apex of the ensiform cartilage was noted as painful with especial frequency. In about half the cases the pain was induced, or when already present, was increased by the ingestion of food, and almost always by pressure. Some patients further volunteered the information that forced inspiration was particularly painful. In a considerable proportion of the cases there was also frequent eructation and vomiting. One patient, in fact the first in whom the disease was recognized, presented symptoms of gastric ulceration, and she was accordingly nourished with food administered through a tube for a period of four or five days. In most cases the gastric symptoms disappeared in the course of several days almost completely. Almost all of the patients complained of pain behind and on either side of the sternum, radiating thence in the course of the inferior margin of the lungs. These pains, which were of burning character, were usually increased by deep inspiration, physical effort and inclination of the body forward. Some patients complained of palpitation of the heart, and in some the frequency of the pulse was found to be increased (to 140) without, however, physical evidence of cardiac disease. One patient suffered for eight or ten days from severe dysphagia.

In most cases the constitutional symptoms were mild—headache, fatigue, general malaise, impairment of appetite. In several the attack set in with a chill. Usually there was slight continued fever (101.5 degrees). As a rule the temperature declined on the second or third day. Then there was slight irregular elevation of temperature, usually in the evening, in some cases continuing for weeks and months.

In all cases there was found constantly a soft, fine, rhythmic friction-sound corresponding and restricted in distribution to the pleural sinus in the region of the heart and along the lower lateral borders of the lungs. It was most marked at the left border of the sternum on a level with the fourth and fifth ribs and was noted with especial constancy somewhat within and generally below the apex-beat of the heart at the

level of the small bridge formed by the tongue-shaped process of the upper lobe of the left lung between the pericardio-costal sinus and the phrenico-costal sinus. This sound could be heard faintly at mid-sternum at a point corresponding to the slight marginal sinus of the right lung, and from mid-sternum at the level of the sixth rib it radiated with increasing intensity along the lower sinus upon the right and left sides almost to the vertebral column; or it ended gradually in the lateral portions of the reserve spaces. The sound was principally to be heard only during the second half, viz., at the height of a deep inspiration and at the beginning of expiration and disappeared usually after protracted vigorous breathing, to return in the course of two or three hours. In a few cases the sound could be heard during the respiratory pause, isochronous with or following the action of the heart. The pleural character of this "precordial" sound was established by the fact that it was heard only over the pericardio-costal sinus and never over any portion of the anterior surface of the pericardium not covered by pleura. That it is not physiologic and dependent upon the movement on one another of healthy pleural surfaces was shown by comparative observation. In patients in whom spontaneous pain or pain induced by pressure below the apex of the ensiform cartilage was present, a distant friction-sound was audible. This might have been due to inflammation of the diaphragmatic pleura or of adjacent peritoneum.

Of complications there was noted in two patients, in conjunction with acute exacerbations, acute intestinal catarrh. In a case consequent upon acute rheumatism mitral endocarditis was observed. Another case also presented acute endocarditis.

The disorder was characterized by its obstinacy of course and its tendency to relapse. Even in cases in which the objective manifestations were mild from the outset the friction-sound was most persistent. In general, aggravation and improvement alternated, little influenced by medication. The most marked of the subjective disturbances subsided after eight or ten days' rest in bed, while the objective phenomena underwent but little change. Salicylates, phenacetin and the like appeared to exert no influence. Calomel in doses of $2\frac{1}{2}$ grains three times a day seemed to do good in some cases, as did also hot poultices.

In only about a quarter of the cases was recovery complete on dismissal from the hospital. The remainder, while in general free from subjective discomfort, except perhaps pain on deep inspiration or a sense of pressure or burning in the affected region, still presented objective manifestations. When the attack proper was over the patients displayed a tendency to lack for a long time the feeling of perfect health.

The condition is to be differentiated from acute or chronic gastric catarrh, gastric ulceration, pericardial

disorders, intercostal neuralgia and, in the absence of fever, from simulation.

THE CONTAGIOUSNESS OF PNEUMONIA.

In the London *Lancet* (An epidemic of pneumonia occurring at Peshowar, *Lancet*, 1896, p. 1630), Dr. JOHN STEPHENSON of H. M. Indian Medical Service, reports an epidemic form of lobar pneumonia occurring in the men of the First Bengal Infantry. The epidemic lasted for two months in the coldest part of the year, and was most intense at the middle of this period, while it was more fatal in the earlier part.

After giving details as to age, death rate, etc., the writer continues: "With regard to the etiology of the disease there were appearances at one time of its spread by contagion. Thus, the suddenness and severeness of the epidemic, and especially the so frequent development of the disease a few days after admission, led us to consider whether infection might not be a factor of the etiology. It appeared almost as if the hospital wards themselves might be harboring and diffusing the causal microorganism. Many men were taken from the lines to act as sick attendants, and several of these men were taken into hospital suffering in the same way. Thus, a Christian bandsman was being nursed by another Christian, who contracted pneumonia and was also given a Christian attendant: the latter also became ill with pneumonia. This appeared to be a passing on of the infection from the first to the second and from the second to the third. However, on examining the statistics it was found that in reality the sick-attendants were no more frequently afflicted than the regiment generally."

Many years ago this question of contagion had attracted attention, for in the memoirs of the United States Sanitary Commission, Dr. RUSSELL reports: "The surgeons on duty with the regiments in the barracks (at Benton, Mo.) report that men occupying the same bunks with those affected were very much more liable to be attacked than those more remote. Some of the most intelligent surgeons believed that it was actually contagious."

Quite recently, Dr. J. B. AYER has alluded to this phase in a paper on "Senile Pneumonia" (*Boston M. and S. J.*, 1896, p. 305). In referring to the contagiousness of the disease in old persons he says: "I have in mind the cases of a matron aged 79 and a nurse of 45, both nursing a woman 57 years of age, who died on the fourth day following an attack of pneumonia. The matron died four days later with typical senile pneumonia: the nurse also died of pneumonia, surviving the patient eleven days. I can not recall another case where the disease was so plainly transmitted." Dr. W. H. THAYER, in a letter (*Boston M. and S. J.*, 1896, p. 379) commenting on Dr. AYER's paper, throws some light on the subject by his statement that: "The increase of pneumonia has been in

the last thirty years, or since diphtheria became established in this country. Before the advent of diphtheria in 1858 contagious pneumonia was unknown, and single, uncomplicated pneumonia was rarely fatal. It was not recognized as a constitutional disease, but only as a local inflammation produced by exposure to cold."

More than twenty years ago Dr. WM. P. SEYMOUR of Troy, N. Y., began to recognize a pneumonia of diphtheritic character without any membranous exudation in the throat—he verified his observations by occasional cases from year to year—in which there was evident contagion, the fauces presenting a stringy secretion but no membrane.

It would seem that we have cases in which the diphtheria bacillus produces a typical lobar pneumonia, without involving the throat. If such be the case we can understand the so-called contagiousness. Probably researches to determine this point could be undertaken very profitably.

"CANCER HOUSES" AND CANCER AREAS.

Among other interesting topics connected with the alleged contagion of cancer is the one of "cancer houses" and cancer areas. By the former is meant houses which in a series of years will have several deaths from cancer among their tenants. The term cancer areas refers to large tracts of country where this disease is more than usually prevalent. The Old World offers a better field for observing these phenomena, as might be expected from the less migratory nature of its population.

Mr. LAW WEBB, known for his investigations into the immunity of colliers from cancer, has brought forward some interesting data on the subject of cancer houses (*Birmingham Medical Review*, 1892, p. 342). He states that in a certain village of Shropshire, of twenty houses, occupying not over an acre of ground, nine cases of cancer were treated in fifteen years. None of the patients were blood relations, but all the inhabitants used water from a pump by the roadside. One of the cottages which furnished three of the cases was preëminent for filth. Near this hamlet are three more houses which have furnished six cases of cancer in the last quarter century. Dr. ACKERLY relates an equally remarkable series at Ashburton, Devonshire. The town has a small stream running through it; near this stream (twenty yards), is a large house, with the cellars below its level, and where four cases have occurred in fourteen years: *A*, a lady occupying the house for many years; *B*, the next occupant, a lady; *C*, husband of *B*; *D*, the second wife of *C*. Again, four deaths have been reported in the last four years in persons living within 100 yards of the same house.

Mr. D'ARCY POWER narrates some striking examples in his paper on "Cancer Houses" (*British Medical*

Journal, 1894, i, 1240). Miss B., aged 45, lived in a certain house in the suburbs of London for thirteen years, and died of cancer of the stomach in 1884. Miss T., aged 47, succeeded to her place and occupied her bedroom. She had lived in the house for twenty years, and died of cancer of the liver in 1885. Mrs. J., aged 67, who had lived in the house for twenty-eight years, succeeded to the place and to the bedroom occupied successively by Misses B. and T., died of cancer of the breast and uterus in 1893. Each of these patients appeared to be in perfect health until they took one another's place; there was no blood relationship. BLYTH mentions three successive tenants of a house, who died of cancer. The last one was visited by a Mrs. V., who subsequently was affected. Mrs. V.'s niece of 14 years, who nursed her and slept with her, contracted cancer of the breast. SCOTT (*British Medical Journal*, 1894, i, 1302) reports three cases in a damp house, and CHAPMAN (loc. cit.) three in a fine house standing in large grounds.

Nor are cancer houses confined to Great Britain, for at the Surgical Congress at Lyons in 1894, GUELLOT mentioned fifteen examples which yielded fifty victims. FABRE, in his work "De la Contagion du Cancer" reports a case of MOLIERE'S. In a well built-house at Lyons on the banks of the Saone four deaths from cancer occurred in a decade; there were no deaths from any other cause.

In regard to cancer areas it is well known that the frequency of cancer varies widely in different countries, and that in each country there are equally wide variations in the frequency of its occurrence in different districts. ARNAUDET claimed some years ago that cancer is much more frequent in certain districts of Normandy than in Paris. A committee of thirty-five physicians was formed in Normandy to investigate these figures of ARNAUDET, and they assert that while cancer is undoubtedly unduly prevalent in certain remote hamlets (due in their opinion to heredity), yet taking the whole of Normandy, it is no more frequent than elsewhere in France.

Mr. HAVILAND (Allbutt's System of Medicine, i, 52), who is distinguished for his researches into the medical geography of Great Britain, has shown that in England and Wales the areas where the highest mortality from cancer obtains are found to be about the lower parts of rivers flowing through low lying valleys, and which seasonally overflow their banks. The areas with the lowest mortality occupy the more elevated regions in the old rock formations, as the Cambrian, Silurian and mountain limestone; the last has the lowest mortality.

These facts by no means prove that cancer is contagious; they seem to afford some comfort, however, to the adherents of its parasitic origin. If the disease be due to an organism, there may be some com-

mon condition of soil and water in the cases quoted by which the organism is enabled to pass part of its life outside its host.

SANITARY TRIVIALITIES.

"And it shall be unlawful for any person or persons to use or to engage in the sale of any bottle, mechanism or other device for the artificial feeding or nursing of infants or children under three years of age, that has connected therewith a rubber tube, hose or such contrivance."

The passage of an ordinance in the above terms, by the Board of Aldermen of the city of Buffalo, signals another victory for the Commissioner of Health, Dr. ERNEST WENDE, over popular incredulity and ridicule. One astute city father declared that "this is drawing it pretty fine. There are many healthy specimens of manhood here today that sucked at the end of the long tube, and it is used for the young of animals, too," and it was gravely argued that being good for the raising of pigs it ought to serve equally well for babies. Another asked: "Can't you blow in the thing and clean it?" "The trouble with the Doctor," said a third lawmaker, "is he thinks he has a patent on the health of the city. His circulars are not panaceas." Nevertheless, the Health Commissioner showed that the circular which he had first issued on this subject, and which was antagonized by the very aldermen opposing the ordinance, had resulted in the falling off in deaths of infants from between four and five hundred to about two hundred and forty. After a last shot in the sneering question: "Why don't you go further and declare in favor of a certain kind of nipple?" the amendment was adopted and druggists can no longer sell nursing bottles with rubber tubes in the city of Buffalo.

The city fathers do not suck milk through a rubber tube, whatever else they may absorb by suction through straws or paper tubes and probably very few are interested in drug stores that sell them, but the city father does cough and expectorate and chew tobacco and spit, and so the anti-spitting ordinance has not yet been added to the municipal code, and perhaps it had better not be, if like the analogous regulation of the New York City Board of Health it is only to be printed in scarcely legible type and displayed where it can not be read, or if read is never enforced.

Buffalo has already accomplished a great deal in municipal sanitation. The regulation of the milk supply and the identification and isolation of diseased cattle in herds are all-sufficient. A register is kept in the health office of the location of every fatal case of diphtheria, scarlet fever and typhoid fever, and if these are found to occur along any special milk delivery route, all the milk supplied on that route is carefully traced to the dairy and thence to the herd.

Municipalities are only the aggregate expression of individual education and individual perceptions. Nine out of ten in the community doubtless thought with the Board of Aldermen that the commissioner of health was engaged in a petty business interdicting the rubber tube of the nursing bottle, and many of them will probably send elsewhere for them and surreptitiously use them in defiance of the ordinance. Let any one attempt to call attention in a New York street car to a violation of the spitting regulation and he will be insulted by the offender, told by the conductor that it is none of his business, and recognize unmistakable disfavor among the passengers. The well-meant suggestion to a mother that her daughter was incurring danger by holding an especially dirty bank-note between her lips while looking for change was rewarded by an angry scowl from both. There has lately been a favorite toy on sale in the large cities by licensed street vendors, consisting of a pair of painted rubber mustachios, inflated to the length of several inches by blowing through a tube held in the mouth, a huge papier maché nose adding to the attractive grotesqueness of the thing, for children. The vendors, who are of the lowest order of unclean Greeks, Armenians and Russian Jews, attract crowds by suddenly distending the mustachios, holding the tubes in their mouths until a purchaser is found, and respectable, well dressed, intelligent people may be seen handing the toy over to their little children. How many house-keepers ever give a thought to the refrigerator in the butcher's shop, loaded day after day with often questionable meat, to the fish-box in which layer after layer of stale fish is buried in the ice, to the musty receptacle in which the grocer stores his goods, or to the cellar in which the dealer in fruit and vegetables keeps his perishable stock? Does any inspector examine the storage boxes beneath the dining-car, when they are refilled at a station, to see that they are thoroughly emptied and cleansed before refilled? One is confronted everywhere by apparently trivial sanitary neglects, each of which in its possibilities for evil will be found anything but trifling. Dr. WENDE deserves to be congratulated on his success in suppressing the rubber tube of the nursing bottle, and the city of Buffalo for having a commissioner of health who is not deterred by ridicule from attacking so-called sanitary trivialities.

CORRESPONDENCE.

Section Dinners.

PHILADELPHIA, Jan. 25, 1897.

To the Editor:—Some of us who are most familiar with the Annual Dinners of the Section on Ophthalmology, hope that the setting aside of the first evening of the coming meeting of the AMERICAN MEDICAL ASSOCIATION for section dinners is a step in the development of what will be in future, a very important feature of our annual gatherings.

These originated in the Section on Ophthalmology from a

suggestion by Dr. Leartus Connor, in his address as Chairman of the Section at the meeting in Washington in 1891. The suggestion meeting the approval of the Section, the first dinner was arranged for the Detroit meeting in 1892, and since then it has been a most enjoyable feature of our annual meeting.

For the sound development of the ASSOCIATION it is of the highest importance that the members of each Section have opportunities for becoming personally acquainted with one another. Personal acquaintance and friendship constitute the strongest basis for organization and add immensely to the pleasure of the meeting; and to the certainty that year after year the members who have experienced such pleasure will be found in regular attendance. I believe that it is to this, more than to any other one thing, that the exceptional and steady growth of the Section on Ophthalmology of late years has been due.

In arranging for such a dinner, certain points seem to be well settled by the experience of those Sections that have adopted the custom. Some of these I would commend to the attention of Section officers:

1. The greatest economy of time is secured by having the Section dinner about the usual dinner hour, say, between 6 and 8 o'clock P. M.

2. The price fixed should be low, that it may not prove exclusive or burdensome to the younger and poorer members. The price fixed for the Ophthalmic Section is \$2. This is quite sufficient to get a good dinner in any city that we meet in, but excludes wines, so that no difficulty is had from the scruples of the temperance members. At the same time those who wish wine are free to order for themselves.

3. No large number is necessary to make the dinner a success. Such an occasion may be quite as enjoyable where a dozen members with similar tastes and interests meet after the separation of a year as any larger gathering can be.

4. Speeches, if formal speeches are to be indulged in, should be *very* short. No one who can not recognize this requirement of the situation should be asked to speak. Indeed, it seems to me that a transgression against the rights of hearers, in the way of a tedious after-dinner speech, should be met by a polite, if possible, but firm refusal to listen, which might be expressed by the resumption of general conversation or by calling for someone else to speak. This sounds desperate, but desperate diseases demand desperate remedies.

To arrange for a Section dinner, the President of the Section, or, if the Section has an incompetent President who will not attend to the duties of his office, the Executive Committee should enter into correspondence with the proprietors of one of the hotels that are willing to grant concessions to the members of the ASSOCIATION. Or, what is perhaps better, the Section officer should enlist the service of some active and competent member of the Section residing at place of meeting. Having fixed the price to be paid per plate, the hotel manager can be asked to furnish a bill of fare, such as he would be willing to supply at such a price. When the arrangement has been made, and it should be made early, it should be announced through the JOURNAL and upon the program of the meeting, if this is sent to members of the Section. The announcement should state time, place and price of the dinner, and the name and address of the member to whom the names of those expecting to attend should be sent two or three days before the meeting.

If the President of each Section will this year take fifteen minutes and write to the proper member of his Section, resident in Philadelphia, a letter urging him to move promptly in the matter, and stating what is desired as to price and the probable number to be provided for, every Section can at the coming meeting have a successful dinner, to which those who participate will in future years look back with pleasure.

Some of the Section officers have, I know, already taken the necessary steps, and it is to be hoped that the others will immediately follow their example.

EDWARD JACKSON, M.D.

PUBLIC HEALTH.

The New Fluid Vaccln.—The New York City Board of Health has recently undertaken the preparation of bovine vaccin in capillary tubes and in vials, at a cost of 10 cents for a capillary tube suitable for a single case, vials for ten vaccinations and for fifty, at 75 cents and \$3, respectively. The ivory points are sold as formerly at 10 cents each. The pulp virus is examined bacteriologically and clinically before it is allowed to be used or sold. The tubes and vials should be kept in a cool, dark place and should not be opened till the time of using the virus. The virus is usually reliable for twelve weeks from date of collection, which is marked on containing box, but should not be used for a longer period than three days from the date of opening the vial. The virus may be removed from the vial by dipping into it the accompanying slip of wood, and from the capillary tube by blowing it out with a rubber bulb. The virus should be smeared on the scarified area and thoroughly rubbed in. Merely smearing it in is not sufficient. The area should be left bare until the virus has entirely dried.

Over 5,000 Cattle Condemned for Tuberculosis.—The Cattle Commissioners of Massachusetts have made their annual report for the year 1896. A large showing of work is made as to the quarantining of animals regarded as infectious and suspicious, the examination of animals coming from without the State to the cattle markets without certificates, and upon special permits, examination of stables with a view to their sanitary improvement, and laboratory and stable experiments to determine various problems connected with the work of the board. A table is given showing the number of animals quarantined in each city and town, the number condemned and the amounts paid. There are 550 animals which have been condemned, but the warrants for killing are in process of settlement. The totals of this table are: Meat cattle assessed in the towns 212,601; number tested 8,969; number condemned 4,694; amount awarded \$153,733. Thirteen towns made no returns as to herd inspections. During the year the board has had at its disposal \$30,000. It has paid for 5,198 head of cattle condemned as tuberculous, the sum of \$173,206. There are in hand 550 warrants for cattle to be killed, the value amounting to \$16,040. There has been paid for quarantines expense \$28,223, making a total of \$217,470 returned to cattle owners.

The Great Convention of the "Antis"—There is proposed to be held a great convention of the anti-vaccinators and other enemies of disease prevention, at or near Gloucester, England, in the year 1898. It is expected that Bacillus will preside, but there will be even older and better known names among the guests of honor. An English writer suggests that some good aristocratic names might be had to lead off with as, for example: "The Duke of Anasarca, Marquis Sarcoma, Earl R  theln, Viscount Rubeola, Lord Pertuesis. Legal luminaries, who have just as much to do with the subject, could be represented by Lord Justice Chlorids and Sir Albuminoid Ammonia, Q. C. The names of microbes might be borrowed and slightly modified to give dignity to the list: Sir Staphylococcus Aureus (suggestive of an eminent financier), the Rev. Bacillus Prodigiosus, D.D., Dean of Albumoses, etc. The names would sound well to foreign ears and really it seems a pity that we should have to put up with second-rate titled people when we have got such a good choice and such a wide range of professions to select from, whose members have just as much to do with public health work."

Leprosy in Iceland.—Dr. Edward Ehlers of Copenhagen, is the author of a prize essay on that subject. It is especially devoted to the study of the conditions under which leprosy has declined in Iceland and the extent of its former and present prevalence. Dr. Ehlers from his researches believes that leprosy was introduced into Iceland, after the crusades, from Norway. In the seventeenth century the disease was very prevalent, little being done in the way of isolation or otherwise to limit its spread. A great epidemic of smallpox in 1707, and of measles in 1846, did more than all other measures to lessen the number of lepers, as they were the first to succumb to any epidemic influence. At the present time it is computed that there are about 200 lepers in Iceland. As there is a considerable number of Icelanders in Manitoba, it is important that a strict watch should be kept on all emigrants coming from Iceland. The London *Lancet* has the following item which places the number of cases much higher than has been reported by Ehlers:

"Iceland, although larger than Ireland, is so sparsely inhabited that altogether the population does not exceed 75,000 or about one person to the square mile. Amongst the number, however, there are no fewer than 400 lepers, and yet no attempt has so far been made either to alleviate the condition of the sufferers or to prevent the spread of the disease. There is not a single refuge or hospital for lepers in the whole island. In the other parts of Europe where the disease is prevalent, to wit, Spain, Portugal, Italy, Turkey, and the Scandinavian peninsula, lazaret-houses were long since established, to the great advantage of the healthy as well as of the afflicted. In Norway especially, where of recent years segregation has been rigidly enforced, a great improvement has taken place and, according to M. Hallopeau, there are not now more than 800 lepers in a population numbering upward of 1,700,000 souls. Iceland, of course, belongs to Denmark, but its shores are largely frequented by the French for fishing purposes, while many English tourists visit the island every summer for sport or relaxation. It is certainly little creditable to international hygiene that no steps have been taken to ameliorate the miserable condition of Icelandic lepers."

Deficient Supplies of Water for the Cities of Eastern New York.—

An interesting report relating to the water supply of New York and Brooklyn and the Hudson valley cities has been made by Dr. Smelzer, the Secretary of the New York State Board of Health. It is held by him, and others whom he has conferred with, that this whole question should come under State control and in no way better than in connection with the work of the State board of health. For the past ten years the State of Massachusetts had maintained as a part of its State Board of Health an engineering department at an expenditure of \$30,000 a year, and, to use the language of that board: "It is difficult to estimate the extent of the useful results accomplished under the provision of the act establishing it." All sections of the country were indebted to Massachusetts for researches in connection with the purifying of water supplies. A comprehensive system of water supply, which should apply to the Greater New York and most of the Hudson valley cities, ought to be investigated and worked out by State authority, as was so satisfactorily accomplished for Boston and suburbs by the State of Massachusetts. An abundant supply of water could be obtained from the southern and eastern slopes of the Adirondacks for New York and Brooklyn, as well as for the Hudson valley cities. This was an enterprise, the report said, vitally affecting the health of a large population and it would more properly come within the scope of the State Board than under any other department. As an illustration of the very good work that could be done in that way the Croton watershed investigation was referred to, which the State Board of Health made in 1886. It was very much to be desired that an appropriation be secured to inaugurate and carry on this important work.

Egypt's Need for a Quarantine against the Plague. Circumstances alter cases. The recent history of Bombay in respect of

the plague is exciting solicitude in Egypt, for that country was once its habitat. It is true that there has been no plague there since 1845, but if it were to be accidentally re-introduced it might be even more difficult than was the case with cholera to eradicate it from its former haunts. No one knows quite why plague suddenly left Egypt, for it can hardly have been due entirely to the sanitary precautions of that day. Perhaps it was merely an extension of the eastward recession of the disease, which began in the latter half of the seventeenth century and helped, with other causes, to free Europe from its ravages. Quarantine may be quite unnecessary in England, protected by its insular position and by the millions spent upon the country's sanitation, but one can not help feeling that Egypt is still somewhat like a powder magazine from which the tiniest spark has very jealously to be excluded. The quarantine regulations of 1878 against plague have just been revised by the International Board in Alexandria. In accordance with modern notions ships are divided into three classes—clean, suspected, and infected. In the case of clean ships coming from a plague stricken port seven days must have elapsed, linen and bedding must be disinfected, and drinking-water must be renewed. Suspected ships are defined as those on which there has been plague, but not for the last nine days. Ships carrying a medical officer and a disinfecting stove will be allowed to traverse the Suez Canal in strict quarantine, while other ships will be kept long enough to disinfect clothes and personal effects and to satisfy the sanitary officer that there are no fresh cases on board. Passengers destined for Egypt will be kept under observation for two days while their effects are disinfected. Lastly, there are the infected ships, meaning those which have had a case of plague on board during the last nine days. Passengers suffering from plague must be isolated in a hospital on shore. Healthy passengers are to be divided into small groups and kept in quarantine long enough to allow eleven days to have elapsed since contact with the last case. The whole ship and its contents are to be disinfected, and as in all other cases, the drinking water is to be renewed and the bilge water disinfected and discharged.—London *Lancet*, January 9.

Action Regarding the Prevention of Tuberculosis.—Important action was taken by the Health Department of New York city on January 19, including pulmonary tuberculosis among the communicable diseases that must be reported by physicians to the sanitary bureau. The sanitary code was amended by the adoption of a new section, as follows: "Pulmonary tuberculosis is hereby declared to be an infectious and communicable disease, dangerous to the public health. It shall be the duty of every physician in this city to report to the sanitary bureau in writing the name, age, sex, occupation and address of every person having such disease who has been attended or who has come under the observation of such physician for the first time within one week of such time. It shall also be the duty of the commissioners or managers, or the principal, superintendent or physician of each and every public or private institution or dispensary in this city to report to the sanitary bureau in writing, or to cause such report to be made by some proper and competent person, the name, age, sex, occupation and last address of every person afflicted with this disease who is in their care or who has come under their observation within one week of such time. It shall be the duty of every person sick with this disease and of every person in attendance upon any one sick with this disease, and of the authorities of public and private institutions or dispensaries to observe and enforce all the sanitary rules and regulations of the Board of Health for preventing the spread of pulmonary tuberculosis." The medical members of that department, Commissioner George B. Fowler, M.D., and Drs. Hermann M. Biggs and T. Mitchell Prudden of the pathologic service have made a very close study of the prevalence of tuberculosis and of the best measures applicable

to a large city for its prevention. An estimate has been made that 20,000 sick exist in that city, and that the ravages by tuberculosis have increased 30 per cent. in the last fifteen years. A recent report by these gentlemen contains four leading recommendations that can be acted upon at the present time: "1, that such action be taken by the health board as seems necessary and proper to at once secure the provision of hospital accommodations, under its charge, for the care of the poor suffering from pulmonary tuberculosis, who, as active sources of danger to the community, may properly come under its supervision; 2, that an amendment be made to the sanitary code declaring that tuberculosis be officially considered a communicable disease, and formulating regulations under which its sanitary surveillance shall be exercised; 3, that all institutions in this city which admit and treat pulmonary tuberculosis be subjected to regular and systematic inspection by officials of this board, and that specific regulations be established for the conduct of such institutions in accord with the proposed amendment to the sanitary code; 4, that the scope of the measures designed for the education of the people in regard to the nature of pulmonary tuberculosis and the methods to be taken for its prevention be enlarged, and a closer sanitary supervision be maintained over individuals suffering from this disease in the densely populated tenement districts and in the crowded workshops and public buildings of the city." Their report also states further their convictions that the action proposed is timely and feasible: "We fully believe that with proper regulations tuberculosis may be restricted within the narrowest bounds and eventually, perhaps, almost exterminated. This is not the idle dream of sanitary enthusiasts or theorists, but is a conviction founded upon the most thorough and conclusive experimental investigations, which have been amply confirmed by practical experience." In order to make possible such restriction in the prevalence of this disease, it is necessary that the health department shall assume a more complete and comprehensive control. This requires: 1, the adoption of such measures as shall make possible the general sanitary supervision of pulmonary tuberculosis under well defined conditions and regulations, differing in many respects from those applied to other more readily communicable diseases; 2, the possession of such facilities for the care of the poor suffering from it as shall make possible the removal, when necessary, of those who are dangerous sources of infection. "From the beginning of this work the officials of this department have encountered, in the utter lack of proper facilities for the care of consumptives, an obstacle to practical success so great and so disheartening that we feel impelled to urge our conviction that the grave responsibility which rests upon the health department in this matter can not longer be adequately sustained without the immediate establishment under its direct control of a hospital for the sole benefit of the tuberculous sick."

NECROLOGY.

EDWARD PEARSON ELLIOT, M.D., first assistant in the Danvers Insane Hospital, died January 10. He was a native of Boston and was a graduate from Harvard College in 1875, and from the Harvard Medical School in 1882. He served as house-officer in the City Hospital two years, and studied abroad two years. He had held his position in Danvers during the past twelve years.

ASA J. WHITE, M.D. (University of Buffalo, 1863), of Cortland, N. Y., died from apoplexy, January 12. He was assistant surgeon of the 109th Regiment, N. Y. Vol. Infantry from Sept. 4, 1864 to June 4, 1865.

LUIGI CALORI, professor of anatomy at the University of Bologna, Italy, for fifty-three years, and subsequently presi-

dent. So many prominent members of the profession have died abroad within the past few months in the early prime of life, that we note with satisfaction that the career of this popular writer and instructor was rounded out to a more natural completion; he was in his 90th year.

JOSEPH A. LIVINGSTON, M.D., of Brooklyn died Dec. 31, 1896, in his 28th year, by typhoid fever, with intestinal perforation. He was a native of that city and a graduate at the Long Island College Hospital, of the class of 1890. He was for a time in practice at West Cornwall, Conn.

BYRON W. MUNSON, M.D., of Sharon, Conn., died January 3 of asthma and heart trouble. He was 53 years old. Dr. Munson was a graduate of the Yale Medical School of the class of 1869. He served through the late war with the medical corps. From 1881 until 1890 Dr. Munson was superintendent of the State Soldier's Home at Noroton, Conn.

ANDREW J. FULLER, M.D., one of the best-known physicians of Bath, Me., and the first vice-president of the AMERICAN MEDICAL ASSOCIATION, died there, January 10, aged 74 years. Among the offices he had held was that of president of the Bath Board of Trade for eighteen years, and of the Lincoln fire insurance company for five years. He was graduated in medicine from the Bowdoin School of Medicine in 1841, and Jefferson Medical College in the year following. In 1871, he was president of his State Medical Society. During the war he was surgeon to the Second Maine Infantry. He was connected in a prominent way with life insurance interests. His first place of settlement was Searsmont, but in 1847 he became permanently domiciled at Bath. An essay by him on the treatment of cholera infantum was presented as a report to our ASSOCIATION in 1856.

LOUIS J. SASS, M.D., of New York City, November 19, at the age of 76 years. He was a native of Havana, and was graduated from the New York Medical College in 1858. He was one of the pioneers in the modern treatment of diseases of the nose and throat, a specialty in which he won considerable distinction. He had a great deal of mechanical ingenuity, and was perhaps, the first to make use of compressed air for the application of medicated sprays to the larynx and nasal passages.

DANIEL MARCH, Jr., M.D., of Winchester, Mass., died in Woburn, January 1, aged 52 years, of angina pectoris. Dr. March was born in New Haven, Conn., but came to Woburn with his parents when a boy. He graduated from the medical school of the University of Pennsylvania in 1868. After serving as house physician of the Episcopal Hospital in Philadelphia for over a year, he removed to Pittsburg, where he practiced for a time. He removed to Winchester in 1879, and had a large practice in that town and vicinity. He joined the Massachusetts State Medical Society and his professional life is the subject of the following note in the *Boston Journal*: "He succeeded Dr. Winsor of Winchester, as medical examiner of the fourth Middlesex District about ten years ago and held that office ever since. He fell over a wire fence a few days ago while crossing a lot and received a severe shock, from which he had suffered considerably, and he had thought of going away for a while to recuperate."

MISCELLANY.

Notice to Physicians and Librarians of Public Medical Libraries.

[Medical journals are requested to copy this notice.]

1. Correspondence in relation to the enterprise should be addressed to Dr. Geo. M. Gould, 119 S. 17th St., Philadelphia.
2. Librarians of public medical libraries are requested to notice these exchange lists and to correspond direct with the advertised donors and recipients; and are also urged to for-

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THE PUBLIC LIBRARY, DETROIT, MICH., HAS:

Albany Medical Annals, vol. 9, 1888, Feb'y, April, May, Oct.
Am. Journal of Ophthalmology, St. Louis, vol. 2, 1885, Jan., April, Aug. Sept.

Am. Journal of Obstetrics, vols. 15, 1882; 16, 1883; 19, 1886, unbound. Vol. 15 lacks Jan.

Am. Journal of Ophthalmology, vol. 1, 1884, Jan., April, June, July.

Am. Journal of the Medical Sciences, vol. 103, 1892, Jan.

Am. Lancet, vols. 13, 14, 17, 18; 1889, '90, '93, '94.

Am. Medico-Surgical Bulletin, vol. 6, 1893, Feb'y and Dec. lacking; vol. 8, 1895, October lacking.

Berliner Klinische Wochenschrift, vol. 24, 1887, Nos. 40, 41, 43-47, 49, 50, 51.

Boston Medical and Surgical Journal, vol. 104, 1881, Nos. 1-4, 6-25; vol. 116, 1887, Nos. 1-4, 6-8, 10-26; vol. 120, 1889, Nos. 1-10, 12-17, 19-26; vol. 121, 1889, Nos. 1-3, 5-13, 15-26; vol. 122, 1890, Nos. 1-14, 16, 20, 21.

Canadian Practitioner, vol. 10, 1885, Nov. number lacking.

Chicago Medical Journal and Examiner, vol. 41, 1880, Jan., Feb., May, June; vol. 47, 1883, Feb.

Cincinnati Lancet-Clinic, vol. 7, new series, 1881, Jan., No. 1; vol. 9, 1882, Nos. 24, 25; vol. 13, 1884, Nos. 2-13, 15-19, 22, 23, 26; vol. 14, 1885, No. 19; vol. 18, 1887, No. 19, 3 copies.

Detroit Medical Journal, vol. 1, 1877, Jan.-Oct., Dec.

Epitome, A Monthly Retrospect, vols. 8, 10, 1887, 1889.

Epitome, quarterly edition, vol. 5, 1884.

Epitome of Medicine, vol. 8, 1891; vol. 9, 1892, Oct. and Dec. lacking.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, vol. 1, 1883, Nos. 1-8, 10-12, 14-26; vol. 2, 1884, Nos. 1-8, 11-26; vol. 6, 1886, Nos. 1-5, 7, 9-20, 22-26.

Kansas City Medical Index, vol. 10, 1889, Feb'y, Dec.

London Lancet, 1887, Jan.-Nov.

Louisville Medical News, vol. 8, 1879, Jan., 4 copies.

Medical Brief, vol. 16, 1888, Jan.-Aug., Dec.

Medical News, vol. 61, 1892, Nos. 1-25.

Medical News and Library, vol. 34, 1876, Jan.-May, July-Dec.; vol. 35, 1877, Jan.-March, May-Dec.

Medical News and World, vols. 7, 9, 10, 1889, '91, '92.

Physician and Surgeon, vol. 12, June, Sept.-Dec.; vols. 13, 14, 17, 1891, '92, '95.

Quarterly Journal of Psychological Medicine, vol. 4, 1870, April and July; vol. 6, 1872, Jan. July.

Southern California Practitioner, vol. 6, 1891, March-Nov.

Toledo Medical and Surgical Jour., vol. 3, 1879; vol. 4, 1880.

THE CLEVELAND MEDICAL LIBRARY ASSOCIATION, CLEVELAND, OHIO, HAS:

Wood's Library: Keyes, Venereal Diseases, 1880. Phillips, Chas. D. F., Materia Medica and Therapeutics, 1879. Salter, H. H., Asthma, its Pathology and Treatment, 1882. Noyes, Hy. D., A Treatise on Diseases of the Eye, 1882. Milton, J. L., Pathology and Treatment of Gonorrhoea, 1884. Sternberg, Geo. M., Malaria and Malarial Diseases, 1884. MacLagan, T. J., Nature, Pathology and Treatment of Rheumatism, 1886. Eichhorst, Herman, Diseases of Nerves, Muscles and Skin, 1886. Longstreth, Morris, Rheumatism, Gout and Some Allied Disorders, 1882. Routh, C. H. F., Infant Feeding and its Influence on Life, etc., 1879. Pavy, F. W., A Treatise on

Food and Dietetics, 1881. Parkes, E. A., Manual of Practical Hygiene, 2 vols., 1882. Smith, Eustace, On the Wasting Diseases of Infants and Children, 1885. Amory, Robert, A Treatise on Electrolysis, 1886. Index to Wood's Library, 1879-84. Dujardin, Beaumetz, Diseases of the Stomach and Intestines, 1886. See, Germain, Diseases of the Lungs, 1885. Powell, R. Douglas, Diseases of the Lungs and Pleura, 1886. Phillips, C. D. F., Materia Medica and Therapeutics, 1882. James, Prosser, Therapeutics of the Respiratory Passages, 1884. Eichhorst, Herman, Diseases of the Circulatory and Respiratory Apparatus, 1886; Diseases of the Digestive, Urinary and Sexual Apparatus, 1886; The Blood, Nutrition and Infectious Diseases, 1886. Buck, Albert H., Diagnosis and Treatment of Ear Diseases, 1880. Piffard, Henry G., Materia Medica and Therapeutics of the Skin, 1881. Wilson, James C., The Continued Fevers, 1881. Wendt, Edmund C., Asiatic Cholera, 1881. Witthaus, Robt., General Medical Chemistry, 1881. Rosenthal, M., Diseases of the Nervous System, 1882. Ellis, Edward, Diseases of Children, 1879. Guttman, Paul, Handbook of Physical Diagnosis, 1880. Putzel, L., Functional Nervous Diseases, 1880. Paul, Constantin, Diseases of the Heart, 1884. Verrier, E., Practical Manual of Obstetrics, 1884. Griesinger, W., Mental Pathology and Therapeutics, 1882. Sajous' Annual for 1891, 5 vol. Eberle, John., Practice, vol. i, 1830. Cooper, Samuel, A Dictionary of Practical Surgery, vol. i, 1830 (sheep). Transactions of the Ohio State Medical Society, 8th meeting, 1853 (unbound). Transactions of the New York Academy of Medicine, vol. ix, 1893; 2d series, vol. vi, 1890 (unbound). Transactions of the Ninth International Medical Congress, 5 vol. (unbound). Braithwaite's Retrospect, Nos. 1, January to July, 1840 (unbound); 4, July to January, 1841; 7, January to July, 1843 (bound); 8, July to December, 1843; 10, July to January, 1844 (bound); 10, July to January, 1844 (unbound); 13, January to July, 1846 (bound); 15, January to July, 1847 (bound); 17, January to July, 1848 (bound); 19, January to July, 1849 (bound). Parts 25, 1852 (unbound); 31, 1855 (unbound); 31, 1855 (bound); 33 and 34, 1856 and 1857; 35, 1857; 36, 1858; 37 and 38, 1858 and 1859; 39, 1859; 40, 1860; 41, 1860 (bound); 42, 1861 (bound); 43 and 44, 1861; 45 and 46, 1862 (bound); 65, January to June, 1877 (unbound).

Medical News and Abstract, vol. 39, 1881; also for 1880.

Americal Journal of Obstetrics, vol. 18, 1885.

Prager Vierteljahreschrift für Praktische Heilkunde, Jahrgang 27, 1870; Jahrgang 26, 1869.

Bronson's Medical History and Biography, 1876, 3 duplicates (bound).

Boston Medical and Surgical Journal, vols. 97, 1877 (bound); 98 and 99, 1878; 100, 1879 (bound); 101, 1879 (bound); 103, 1880; 105, 1881; 106, 1882; 107, 1882.

London Lancet, 1880, 1881, 1882, 1883, 1879; vol. 1, 1845.

British and Foreign Medico-Chirurgical Review, vols. 1, 1848; 2, 1848; 3, January to April, 1849; 4, July to October, 1849; 5, 1850; 6, 1850; 7, 1851; 8, 1851.

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American Journal of Medical Sciences, 1866 to 1882, complete; 1866 and first half of 1867 bound in three volumes.

American Journal of Obstetrics, all of 1882, including quarterly supplements; also the supplement of October, 1881.

Obstetrical Journal of Great Britain and Ireland, American supplement, all of 1874.

Quarterly Compendium of Medical Science, 1883, Jan., April, July; 1884, Jan., April, July, Oct.; 1885, Jan. only; 4 series, April, July, Oct.; 5 series, April, July, Oct.

Medical Abstract of Medical Science, vols. 2-7 (1875-1880).

Half Yearly Abstract of Medical Science, 1867 to 1871, in full; 1873 in full; 1874, Jan. only.

London Lancet, vols. 1 and 2 of 1893.

Annals of Surgery, vols. 15 to 18, 1892, 1893; extra numbers, 6, of vol. 15, and 5, of vol. 20.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, vols. 25 and 26, 1895; vol. 27 up to No. 20, 1896.

Medical News, vols. 27 to 29, 1869 to 1871, March No. of vol. 27 missing; vols. 31-37, 1873-1879; vols. 38-39, 1880-1881; also the supplement of July, Aug., Sept., Oct. and Nov. of 1874.

Half Yearly Compendium of Medical Science, 1874, part 14, July only; 1875-1882, parts 15-30, complete.

University Medical Magazine, vol. 1, complete; vol. 2, Nos. 1-10, only; vols. 6 and 7, 1894-5, complete; also extra No. 1 of vol. 1.

Annals of Hygiene, vol. 2, Nos. 6-12, 1887, an extra copy No. 7; vol. 3, Nos. 1-4 and 6-11, 1888.

New York Medical Record, vol. 20, Nos. 14-27, 1881; vols. 21 and 22, 1882, complete; vol. 34, Nos. 12-16, 18 and 19, 1888; vol. 46, 1894, complete; vols. 47 and 48, 1895, complete; vol. 49, 1896.

New York Medical Journal, vols. 21 and 22, 1875, complete; vol. 42, 1885, Nos. 5-13 only.

Medical and Surgical Reporter, vols. 32-43, 1875-1880, complete; vols. 44 and 45, 1881, No. 23 of vol. 45 missing; vols. 46-49, 1882 and 1883, complete; vol. 50, 1881, No. 19 missing; vol. 51, 1884, No. 24 missing; vols. 52 to 59, 1885-1888, complete; also odd numbers, Jan. and Dec., 1894, Oct., 1888, and July, 1887.

Ephemeris of Materia Medica, Pharmacy, Therapeutics, etc., vol. 1, No. 1 missing; vol. 2.

American Journal of Pharmacy, vol. 3, 1873, Nos. 4-12; vol. 46, 1874, complete.

Therapeutic Gazette, 3d series, vol. 1, 1885, complete; vol. 2, 1886, Nos. 1-8 only; vol. 4, 1888, No. 3 only.

Philadelphia Medical Times, vol. 18, new series, vol. 1, Oct., 1887 only; vol. 19, new series, vol. 2, Oct., 1888 only.

International Journal of Surgery, vols. 6-8, 1893-1895.

Railway Surgeon, vols. 1 and 2, 1895 and 1896.

New Remedies, vols. 6-9, 1877-1880; vol. xi, 1882.

Homeopathic Recorder, vol. 1, 1886, Nos. 4, 5 and 6; vol. 2, 1887, complete; vol. 3, 1888, Nos. 1, 2, 3 and 6.

North American Journal of Homeopathy, vols. 13 and 14, 1865 and 1866, bound; vol. 1, No. 2, Nov., 1886, unbound.

The Bucknell University Library, Lewisburg, Pa., has:

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Obstetrical Journal, supplements, vols. 1, 2, 3, 4, 5 and 6.

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American Journal of Ophthalmology, vol. 1, 1884, Oct. and Dec.

American Journal of the Medical Sciences, vol. 5, n. s., April, 1843; vol. 11, n. s., April, 1846.

AMERICAN MEDICAL ASSOCIATION, JOURNAL OF, vol. 22, 1894, Nos. 15 and 17-26.

American Practitioner, vol. 4, 1872, March; vol. 8, 1873, June; vol. 20, 1879, April and May; vol. 25, 1882, March.

American Practitioner and News, vol. 10, 1890, March; vol. 16, 1893, July; vol. 17, 1894, July and Dec.

Annals of Surgery, St. Louis, vol. 4, 1886, April.

Archives of Dermatology, vol. 3, 1877, Oct.

Archives of Gynecology, Obstetrics and Pediatrics, 1891, May; 1893, Nov. and Dec.

Archives of Pediatrics, vol. 10, 1893, Feb. and July.

Atlanta Medical and Surgical Journal, new series, vol. 3, Feb., 1887; vol. 7, Sept., 1890; vol. 9, Sept., 1892, Jan. and Feb., 1893; vol. 10, Jan. and Feb., 1894; vol. 11, Feb., 1895.

Berliner Klinische Wochenschrift, 1881, Nos. 6, 7, 20, 22, 27, 52; 1882, Nos. 17, 47, 48, 52; 1883, Nos. 4, 15, 22, 51; 1887, Nos. 10, 12, 22, 24, 30; 1889, Nos. 2, 43, 50, 51.

Boston Medical and Surgical Journal, vol. 123, 1890, Nos. 1, 2, 4, 7, 8, 10, 14, 21.

British Medical Journal, 1878, March 16, May, 4, August 3; 1887, August 27, Oct. 15, Nos. 5, 12, 19, Dec. 17; 1893, Oct. 28, Dec. 30.

Brooklyn Medical Journal, vol. 3, 1889, Jan. and Feb.

Buffalo Medical and Surgical Journal, vol. 19, 1879, Nov.; vol. 20, 1881, April.

Canada Lancet, vol. 13, 1880, Nov.; vol. 14, March, June, August, 1882; vol. 15, April, 1883; vol. 17, Sept.-Dec., 1884; vol. 19, April, 1886; vol. 21, June, 1889; vol. 25, Feb.-August, 1893.

Canadian Journal of Medical Science, vol. 4, 1879, August; vol. 5, 1880, Feb. March, Dec.; vol. 6, 1881, April.

Canadian Practitioner, vol. 13, 1888, Oct.-Dec.; vol. 16, 1891, Feb., April, July; vol. 17, 1892, Feb., Sept.

Chicago Medical Journal, vol. 24, 1867, March, April, May, Sept.; vol. 25, 1868, Jan., August; vol. 32, 1875, August-Dec.

Cleveland Medical Gazette, vol. 5, 1890, Nov., Dec., 1889, Feb., August, 1890.

College and Clinical Record, vol. 1, 1880, August and Dec.; vol. 3, 1882, March, Oct., Nov.; vol. 4, 1883, Sept.-Nov.; vol. 5, 1884, Oct.

Daniels' Texas Medical Journal, vol. 4, 1889, May.

Druggists' Circular, vol. 24, 1880, Jan. and August; vol. 29, 1885, May and June; vol. 35, 1891, Feb. and April.

Gaillard's Medical Journal, vol. 29, 1880, March-June; vol. 30, 1880, July and August.

Hahnemannian, vol. 23, 1888, Jan.

Journal of Nervous and Mental Diseases, new series, vol. 14, 1889, May; vol. 15, 1890, May; vol. 17, 1892, Oct.-Dec.

Medical Brief, vol. 18, 1890, July and Nov.; vol. 22, 1894, Oct.

Medical Bulletin, vol. 16, 1894, July.

Medical Counselor, vol. 12, 1888, Sept.; vol. 14, 1889, Dec.

Medical Missionary Record, vol. 2, 1887, Oct.; vol. 7, 1892, Dec.; vol. 8, 1893, Sept.; vol. 9, 1894, Oct.

Medical News, Philadelphia, vol. 52, 1888, Nos. 2, 10, 13, 14, 22, 24; vol. 53, 1888, Nos. 2, 7 and 8; vol. 55, 1889, No. 1; vol. 61, 1892, No. 27.

Medical Record, N.Y., vol. 34, 1888, Nos. 23, 24; vol. 35, 1889, No. 21; vol. 37, 1890, Nos. 21, 22, 23, 25, 26; vol. 38, 1890, Nos. 3, 4, 6; vol. 43, 1893, No. 5.

Medical World, vol. 11, 1893, Feb.; vol. 12, 1894, Nov.

Montreal Medical Journal, vol. 21, 1893, May.

New York Medical Times, vol. 21, 1893, Oct.-Dec.; vol. 22, 1894, Jan.

New Orleans Medical and Surgical Journal, vol. 17, 1890, March.

North American Journal of Homeopathy, vol. 41, 1893, August.

Obstetric Gazette, Cincinnati, Ohio, vol. 1, 1878, August.

Pacific Medical Journal, vol. 23, 1881, Oct.; vol. 32, 1889, May.

Peninsular Journal of Medicine, vol. 5, 1858, May, August, Oct., Dec.; vol. 9, 1873, Jan., June.

Physician and Surgeon, Ann Arbor, Mich., vol. 2, 1880, Dec.; vol. 16, 1894, Jan., May, August, Dec.

Practitioner, vol. 43, 1889, Dec.; vol. 47, 1891, Sept.

Quarterly Journal of Psychological Medicine, vol. 5, 1871, April, July.

Richmond and Louisville Medical Journal, vol. 12, 1871, July, August, Oct.-Dec.; vol. 16, 1873, July-Sept.; vol. 24, 1877, Dec.; vol. 25, 1878, June; vol. 26, 1878, July; vol. 28, 1879, Nov., Dec.

St. Louis Courier of Medicine, vol. 1, 1879, April, June; vol. 3, 1880, Jan., Feb.; vol. 5, 1881, Feb., May; vol. 6, 1881, July;

vol. 7, 1882, March; vol. 9, 1883, Jan.; vol. 10, 1883, August, Dec.; vol. 11, 1884, Feb., April, May; vol. 18, 1887, Nov.

Southern California Practitioner, vol. 1, 1886, Jan., Nov., Dec.; vol. 8, 1893, May; vol. 9, 1894, Jan., Feb., July, August.

Southern Practitioner, vol. 15, 1893, August, Oct.

Pasteur's Remains have been removed to the chapel built to receive them in the Institut Pasteur.

Frequency of Death from Pulmonary Tuberculosis after Amputations.

—Marie has found so many cases of death from this cause that he is inclined to consider it more than a coincidence, and asks whether it can be due to the diminished resistance of the vitality after the amputation. He suggests that this possibility be borne in mind and statistics collected to decide the question.—*Presse Méd.*, December 12.

A Joy to its Friends and a Terror to its Foes.—A journal that gladdens the heart and delights the understanding every month is the *Texas Medical Journal*, Austin, Texas, otherwise known as the "*Red Back*." As Chimmie Fadden would say, "it is up to de limit." Standing for the ethical in both medicine and journalism, it is the uncompromising foe to the medical pretender and adventurer. It is a joy to its friends and a terror to its enemies; *suaviter in modo, fortiter in re*. There is but

one *Texas Medical Journal*, and Brother Daniel is the editor thereof. May its vigor never perish, nor its complexion fade. —*Atlanta Medical and Surgical Journal*, January, 1897.

Roosevelt Hospital, New York City.—The trustees have recently opened for private patients a new pavilion, which has been erected west of the main building of the institution. It is designed for the treatment of surgical, gynecologic and medical cases under the most approved conditions, and care has been taken to fit up the rooms in such a manner as to render them homelike, cheerful and attractive. The first two floors of the pavilion are arranged to accommodate patients in single rooms or *en suite*, and the third and fourth floors have been set apart and furnished as a home for nurses, thus providing accommodations for the training school just opened.

The New York College of Physicians and Surgeons.—The College of Physicians and Surgeons will profit by the proposed new gymnasium for Columbia University. That institution will soon begin building one of the largest and best gymnasiums in the country. It is to be included in what will be known as the University Building, which will stand near the center of the new grounds on Morningside Heights. This structure, which is to be three stories in height, will be 260 feet long and 180 feet wide. In the basement there will be a magnificent swimming pool, said to be the largest of its kind in the world, and around it will be ranged all kinds of baths. On the main floor will be the gymnasium proper, with rooms on either side for boxing, fencing and other exercises, and with a running track extending all around it. The latter will be one-tenth of a mile long and twelve feet in width. The estimated cost of the building is \$500,000.

The Economics of Pasteur's Discoveries.—One aspect of Pasteur's work is generally overlooked—his immense additions to the wealth of Europe, through the prevention of deaths among animals. Huxley said that the saving of animals in France alone was enough to pay the enormous indemnity demanded by Germany. Last spring a paper was presented to the French Académie de Médecine, by M. Hutrya of Budapest, describing some of the epidemics that have destroyed legions of cattle and sheep by anthrax, and myriads of hogs by swine disease in Hungary. Recently vaccinations against these diseases have been introduced. In 1894, 110,789 cattle were vaccinated, and the death rate among them, which had previously been 5 per cent., went down to 0.0024. Also, 224,684 sheep were treated. The death rate among these had been 10 per cent., and it went down to 0.32. We have read lately of great losses at the West from some disease among hogs; whether it is identical with what is known as swine disease in Hungary is not known; but in the latter country in 1894, 681,118 hogs were vaccinated, and the death rate went down from the 20 per cent. of relatively good years to 0.28.

State Care of the Insane in New York.—It is claimed by the State Commission in Lunacy that a saving of more than \$1,000,000 annually will result under the operation of the law providing for the State care of the insane. Under this law about \$5,000,000 is expended each year through the supervision of the commission for the operation and maintenance of the ten State hospitals and their 19,000 inmates. All the State hospitals are now completed with the exception of those in New York and Brooklyn. A contract aggregating \$350,000 for a group of buildings in connection with the Long Island State Hospital in Brooklyn has just been awarded. There are 2,500 dependent insane in Kings County. The commission has under way plans for the expenditure of \$750,000 for new buildings for the Manhattan State Hospital, in New York city. The legislature, however, has not yet made a good portion of this amount available. There are 7,000 insane in New York city, a large number being taken care of in the old structures on Hart's Island. New buildings are to be erected for these insane as

soon as possible. The system of caring for the insane wholly by the State has been in operation since March 1, 1896, when the County of New York transferred its insane and its property to the State. The year previous the County of Kings surrendered the control of its insane, with its property, to the State. In 1890 the transfer of the insane from the county poorhouse began. At this time there were 2,200 out of about eight thousand registered insane in the poorhouses, exclusive of those in the counties of New York and Kings. All of the insane are now receiving the beneficent care provided by the State. The private asylums in the State take care of more than one thousand insane persons. The number of private institutions is not increasing under the new law.

Cincinnati.

THE MORTALITY REPORT for the week ending January 22 shows: Deaths from all causes, 132; stillbirths, 3; annual rate per thousand population, 16.94; zymotic, 13; phthisis pulmonalis, 22; other constitutional, 13; local, 63; developmental, 13; violence, 8; preceding week, 145; corresponding week 1895, 125; 1894, 108.

THE OBSTETRICAL SOCIETY held its annual meeting January 21 and elected the following officers: President, Dr. Charles L. Bonifield; vice-president, Dr. C. B. Schoolfield; secretary, Dr. E. S. McKee; treasurer, Dr. Geo. E. Jones.

THE CONNER SURGICAL SOCIETY of the Medical College of Ohio held their first smoker and banquet January 23 at Lancet Hall and the affair was in every way a success. The membership of the society consists of the faculty and students of the Medical Department of the Cincinnati University.

THE WALNUT HILLS MEDICAL SOCIETY held its annual meeting at the Cincinnati Club January 21. The following officers were elected: President, Dr. Edward Ricketts; vice-president, Dr. Edward Shields; secretary and treasurer, Dr. O. W. Stark.

Philadelphia.

THE COLLEGE OF PHYSICIANS at its annual meeting, held January 6, re-elected Prof. J. M. DaCosta president and Dr. Thos. R. Neilson secretary. The president reported the clinical history of a case of hemiplegia from acute lead poisoning, in a woman 35 years of age, caused by exposure to the effluvia of fresh paint. Lead was detected in the urine, which was free from albumin and from sugar. Recovery followed treatment by iodid of potassium and massage with faradism of the muscles. Strychnia was substituted for the iodid, when improvement was marked. Dr. D. D. Stewart exhibited a specimen of large innominate aneurysm cured by the use of gold wire and galvanism, and claimed special advantage from combining the use of a weak galvanic current with the use of the wire for treating otherwise inoperable cases. The patient's condition, for months, had been rendered more comfortable, so that he could walk about the streets, and there was complete relief from former pain. The aneurysm was filled with a firm clot. Death was due to intercurrent disease (apoplexy) which was not connected with the aneurysm nor the operation. Dr. J. M. Anders read a "Memoir of the late Dr. Earnest Goodman." Dr. H. A. Hare read a brief communication on the effect of chloroform on the circulation, in which he especially spoke of the prompt fall in blood-pressure shown in experiments upon dogs, after beginning the inhalation of chloroform, which he had formerly attributed to heart failure. It was found, however, that by compressing the abdominal vessels so as to raise the arterial tension, the heart would resume its contractions. He now explains the cause of sudden death during chloroform narcosis as a vaso-motor phenomenon: the chloroform, acting upon the vaso-motor centers in the medulla, causes dilatation of the veins and fall of arterial tension, all the blood in the body being emptied into the veins. Therefore remedies to increase arterial tension should be resorted to, with compression of the abdominal aorta in cases of sudden asphyxia. Fatal results from the use of chloroform do not occur in parturient women, because the pains stimulate the vaso-motor

center and counteract the depressing influence of the anesthetic. It is also a comparatively safe agent to use in the case of children, as young hearts bear it better than old ones. The last paper was one by Dr. Stengel on "Auscultatory Percussion."

THE PHILADELPHIA PEDIATRIC SOCIETY held its first meeting after organization, January 12, Dr. J. P. Crozer Griffith, President, in the Chair. A case of neuritis occurring in a boy during the treatment of chorca with Fowler's solution, was exhibited by Dr. Stengel. A case of progressive neural atrophy beginning in the calf muscles (the peroneal form described by Charcot) was shown by Dr. C. S. Potts. Three cases of cretinism in patients under 12 years of age were shown by Dr. H. B. Carpenter and Dr. M. H. Fussell. All of them were said to be improving under the effects of extract of thyroid gland.

Dr. JAMES TYSON was elected president of the Philadelphia County Medical Society at its last meeting.

AT THE ANNUAL meeting of the Alumni Association of Jefferson Medical College, held January 9, Dr. H. G. McCormick of Williamsport, Pa., was elected president for the ensuing year. Resolutions were adopted relating to the deaths of Prof. Wm. H. Pancoast and Dr. James Graham. An appropriation of \$200 was made toward equipping the pathologic laboratories.

Washington.

HEALTH OF THE DISTRICT.—Dr. J. E. Walsh, medical sanitary inspector of the health department, who has had charge of the contagious disease branch of the service, is himself a victim of diphtheria.

TO REGULATE THE SALE OF POISONS.—A bill to prevent the sale of poisons in the District of Columbia was introduced in the House on the 18th inst. by Mr. McCormick of New York. This declares it shall be unlawful for any but a regular pharmacist, or some one under his direct supervision, to sell certain poisons, enumerated in two separate schedules. When sold by pharmacists these articles must be in triangular bottles and labeled "poison." The purchaser must also be informed of the nature of the poison, and must show that he wants it for legitimate purposes. A book, in which these sales are recorded, must always be kept open for inspection. The penalty provided is a fine of not less than \$5 nor more than \$50.

MEDICAL SUPERVISORS' FIRST MEETING.—On the 14th inst. the first meeting of the Board of Medical Supervisors was held for the examination of persons who want to practice medicine and surgery in the District. Dr. Kleinschmidt, president; Dr. Woodward, secretary, and the other members of the board were present. Three candidates were examined. Under the law establishing the board all graduates who desire to practice medicine have to undergo an examination. This applies to all persons who had not registered previous to June 6.

TO RESTRICT VIVISECTION.—Senator Gallinger has by request submitted to the Senate letters from various distinguished men throughout the country in favor of the bill for restricting vivisection in the District of Columbia.

INTERNATIONAL ANIMAL QUARANTINE.—The agreement between the Secretary of Agriculture and the Canadian Minister of Agriculture relative to the quarantine of animals passing from one country to another, provides that each country shall accept the veterinary certificate of the other as final, and that they shall keep each other informed of any outbreaks of contagious disease; that a quarantine of from ninety to fifteen days shall be imposed upon cattle or ruminants, or swine coming from European countries in which pleuro pneumonia or foot and mouth disease exist; that breeding cattle shall have certificates of freedom from tuberculosis, or submit to a week's quarantine, and cattle from feeding or stock ranches must have certificates of freedom from diseases of all kinds. Sheep may be admitted subject to inspection and slaughter if disease appears. They are also accorded privileges of passage in bond through ports without inspection. Swine for slaughter may pass without inspection to bonded slaughter houses, or when properly certified as part of a settler's effects. Liberal rules are laid down for the entry of horses into either country, and particularly for those belonging to Indian tribes and travelers.

ANTHROPOLOGICAL SOCIETY'S OFFICERS. At the annual election of the Anthropological Society, recently held, the following officers were elected for the year: President, Dr. Frank Baker; vice presidents, Prof. W. J. McGee, Mr. George R. Stetson, Gen. George M. Sternberg and Dr. Cyrus Adler; general secretary, Dr. J. H. McCormick.

THE OLEOMARGARIN BILL PASSES THE HOUSE.—The oleomargarin bill passed the House on the 14th inst. The full text of the bill is as follows: "That all articles known as oleomargarin, butterin, imitation butter or imitation cheese, or

any substance in the semblance of butter or cheese not the usual product of the dairy and not made exclusively of pure and unadulterated milk or cream, transported into any State or Territory, or remaining therein for use, consumption, sale or storage therein, shall, upon arrival in such State or Territory, be subject to the operation and effect of the laws of such State or Territory enacted in the exercise of its police powers to the same extent and in the same manner as though such articles or substances had been produced in such State or Territory, and shall not be exempt therefrom by reason of being introduced therein in original packages or otherwise: Provided, that nothing in this act shall be construed to permit any State to forbid the sale of oleomargarin except in such a manner as will advise the customer of its real character."

MEDICAL SOCIETY.—At the regular meeting of the Medical Society held on the 20th inst. Dr. Bishop read a paper entitled "Some Physical and Therapeutic Facts on Static Electricity." Dr. L. W. Richardson reported a case of laryngectomy, and presented the specimen. Dr. Burnett presented pathologic specimens of gumma of the ciliary region and a phlebolith of the conjunctival veins.

THIRD TRI-ANNUAL MEETING OF THE CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.—Dr. S. S. Adams, chairman of the Committee of Arrangements of the Third Tri-annual Congress, called a meeting of the committee on the 21st inst. The congress will meet on May 4, 5 and 6 next at the Columbia Theater, Washington, D. C. Important business matters for the coming event were transacted. The members of the committee present were Drs. S. S. Adams, W. N. Johnston, S. O. Richey, G. M. Sternberg, Shands and Frank Baker from Washington and Drs. Meak, Tiffany, Atchison and Theobald of Baltimore, Md.

THE PUBLIC SERVICE.

Navy Changes. Changes in the Medical Corps of the U. S. Navy for the week ending Jan. 23, 1897.

Asst. Surgeon H. LaMotte, detached from treatment at naval hospital, Philadelphia, and ordered before retiring board at Washington Jan. 26, then home and placed on waiting orders.

Change of Address.

Beach, S. C. from Chicago, Ill., to McCook, Neb.; Bazan, F., from 415 Sutter St. to 776 Geary St., San Francisco, Cal.; Berg, O. H., from Carpenter and Milwaukee Ave. to 547 N. California Ave., Chicago, Ill.; Dal, J. W., from 860 to 482 Milwaukee Ave., Chicago, Ill.; Lincoln, D. T., from Geneva, N. Y., to 73 Pinckney St., Boston, Mass.; Lau, O. H., from 1356 Woodward Ave. to 25 Piquette Ave., Detroit, Mich.; Stover, G. H., from Eaton to Fort Collins, Colo.; Westervelt, J. D., Jr., from Alice to Dallas, Texas, care Jeff House's Drug Store; Wilmarth, A. W., from State Hospital for the Insane, Norristown, Pa., to State Home for the Feeble Minded, Chippewa Falls, Wis.

LETTERS RECEIVED

Anderson, Winslow, San Francisco, Cal.; Alma Sanitarium Co., Alma, Mich.; Betz, F. S., Kelly & Co., Chicago, Ill.; Bridgman, S. C., Seitate Center, Mass.; Buckmaster, S. P., Hudson, Wis.; Birch, T. J., Port Carbon, Pa.; Bowne, E. H., Kingston, N. J.; Bourland, Wil, Earls, Ky.; Cleborne, R. K., Locust Point, Baltimore, Md.; Cohen, I. N., LaCrosse, Wis.; Chambers, J. H. & Co., (2) St. Louis, Mo.; Chilgren, G. A., St. Peter, Minn.; Cook, G. H., Paris, Texas; Dennis, W. A., St. Paul, Minn.; Daniel, Z. T., Carlisle, Pa.; Dial, E. A., (2) San Luis Obispo, Cal.; Devlin, J. B., Denver, Colo.; Dillingham's, E. B., Advertising Agency, Hartford, Conn.; Douglas, Richard, Nashville, Tenn.; Davis, W. H., San Bernardino, Cal.; Ekern, A., Grand Forks, N. D.; Eshner, A. A., Philadelphia, Pa.; Elsner & Mendelson Co., New York, N. Y.; Fitch, W. E., Durham, N. C.; Ford, Rochester, Tucson, Ariz.; Fleming, J. H., Joplin, Mo.; Friernood, E. K., Greentown, Ind.; Fuller's, Chas. H., Advertising Agency, Chicago, Ill.; Foukera, E. & Co., New York, N. Y.; Flite, C. C., New York, N. Y.; Fort Wayne Medical Journal Magazine, Fort Wayne, Ind.; Farber, James H., Dayton, Ohio.; Gryttenholm, K., Zumbrota, Minn.; Gardner, R. W., New York, N. Y.; Hertz, E. F., Minneapolis, Minn.; Imperial Granum Co., New Haven, Conn.; Ingals, E., Fletcher, Chicago, Ill.; Jonas, A. F., Omaha, Neb.; Jones, D. N., Gaylord, Minn.; Knudson, T. J., Chicago, Ill.; Love, J. J. H., Montclair, N. J.; Londonderry Lithia Spring Water Co., Nashua, N. H.; Law, A. R., Madison, Wis.; Langhlin, E. D., Orleans, Ind.; Larrabee, J. A., Louisville, Ky.; Mogk, Wm. A., Ann Arbor, Mich.; Merrick, M. B., Passaic, N. J.; Moore, D. L., (2) Columbus, Ohio; Mark, A. A., New York, N. Y.; Mathews, J. M., Louisville, Ky.; Moss, Robert H., Niagara, Ky.; Nicholson, Geo. T., Chicago, Ill.; Naar, Day & Naar, Trenton, N. J.; Noer, J., Stoughton, Wis.; Pressy, A. J., Grand Rapids, Mich.; Patch, Wm., Sibley, Ill.; Palmer, O. W., Spaulding, Neb.; Poorman, Warren M., New York, N. Y.; Rutledge & Hobart, Grand Forks, N. D.; Rochelle, W. F., Jackson, Tenn.; Reilly & Ritchie, Appleton, Wis.; Richter Bros., Milwaukee, Wis.; Robbins, Charles Fern, Winona, Minn.; Smiley, T. B., Mt. Vernon, S. D.; St. Peter State Hospital, St. Peter, Minn.; Shoemaker, F., Ft. Sill, Oklahoma Territory; Scott, E. C., Maxwell, Iowa; Slocum, Charles E., Defiance, Ohio.; Walker, J. W., Hospital, Ill.; Wright, J. P., St. Louis, Mo.; Willard, F. W., Anna, Ills.; Wells, W. A., Washington, D. C.; Zenner, Philip, Cincinnati, Ohio.

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No. 6.

ORIGINAL ARTICLES.

A CONTRIBUTION TO THE STUDY OF THE DIAGNOSIS OF TYPHOID FEVER BY MEANS OF THE BLOOD.

Read before the New York State Medical Society, Albany, Jan. 26, 1897.

BY A. HIRST APPEL, A.B., M.D.

CAPTAIN MEDICAL DEPARTMENT U. S. ARMY, AND

FRANK J. THORNBURY, M.D.

LECTURER ON BACTERIOLOGY, UNIVERSITY OF BUFFALO.

In a recent article upon the subject of continued fevers,¹ its distinguished author commenting upon anomalous typhoid, writes "it will lurk and hide its features completely, where it is unsuspected the difficulties attending its clear discernment from certain continued fevers of considerable duration not typhoid, may baffle even the most sagacious physician."

Among the febrile conditions the diagnosis of which may offer at times extreme difficulties of differentiation, he enumerates remittent and relapsing fevers; influenza; the "ardent fever" of the tropics; "thermic" fever (Guit  ras); "asthenic" simple fever (Murchison); "starvation" fever (DaCosta); "Malta" or "rock" fever (Milner); atypical continued fever" (Cain), from a supposed septic agency in the soil; "cypress" fever (probably relapsing fever); the "simple continued fever" described by Baumgarten (doubtful as to its being anomalous typhoid); the prolonged fevers arising in connection with local conditions, as from miliary tubercle, the fever of fecal accumulations, at times closely resembling typhoid; anemic fever; the fever of purpura, especially hemorrhagic; "hysterical" fever, in which the disturbance of heat function may last weeks, months, or even years; the "innominate" fever, described by Goddheart; fevers arising from organic changes—as rapidly advancing arterio-sclerosis; the fever of lithemics; of organic disease, as the endocardium, lung, pleura, duodenum, in which the lesion is slight, masking the etiology; of catarrhal pneumonia; of local plastic pleuritis; and the cases of "inexplicable pyrexia" described by Hale White.

Outlining the distinguishing clinical features of these various conditions, and the bacteriologic, microscopic, and chemic examinations of the blood upon which reliance is placed for making the differential diagnosis, no mention is made of the reaction obtained, in cases of true typhoid, with the blood when applied to active cultures of the Eberth bacillus; a test which since 1894, when Pfeiffer first called attention to the subject, has been confirmed in value, and bids fair to become pathognomonic, if this expression can be applied to a test, in the differentiation of these obscure febrile conditions from true typhoid.

The antagonism existing between the typhoid bacillus and blood in which an antitoxin has been devel-

oped by the presence of its products, has been known since 1888, when Chantemesse and Widal demonstrated that certain animals could be rendered immune against the typhoid bacillus, by the subcutaneous injection of sterilized cultures of this organism.

In 1892, Bitter concluded that immunity, which he induced in rabbits in the same manner, was due to the presence in the animal of "antitoxin."

Bruschettini in the same year, following the same line of research, noted that the blood serum of animals immunized by cultures sterilized at 60 degrees C., possessed antitoxic properties, and had far greater germicidal potency over the typhoid bacillus than the blood of the normal rabbit. Stern (1892) observed that the blood of a man who had suffered an attack of typhoid fever 17½ years previously, showed unusual bactericidal power over the bacillus of Eberth; and Chantemesse and Widal arrived at the conclusion that "in general the guinea pig is immunized against the action of virulent typhoid cultures by the subcutaneous injection of a small quantity of the serum of persons who have suffered an attack of typhoid fever, no matter how remote." The fact of the existence of antitoxin in the blood of patients who are or have been victims of typhoid, and of its presence also in the blood of immunized animals has been utilized successfully, experimentally, in animal therapy and more recently to some extent in man.² The serum of the blood from a fatal case of typhoid was found by Stern to be still more potent in animal as a therapeutic agent, than that of recent convalescents.

In 1894 the discovery was made by Richard Pfeiffer of Berlin that the specific poison of the bacillus of Eberth is not present in the filtered culture but is closely associated and remains with the bacterial cells. The bacilli may be killed by a temperature of 56 C. without injury to this toxic substance. By the latter, then, animals may be immunized and their blood be found to contain an antitoxin which has a specific bactericidal action upon the typhoid bacillus. Pfeiffer also clearly established the presence of this antitoxin

² Pfeiffer and Kolle, (Deutsche Medicinische Wochenschrift, Nov. 16 p. 6), publish results obtained upon the human subject by injection, into the subcutaneous tissue of the back, of bouillon cultures of typhoid bacilli, sterilized at 56 degrees C.

Healthy persons having no previous history of typhoid fever, experienced malaise, chills, giddiness and pain at sight of puncture, usually two or three hours after injection, with evening temperature upon the first day of about 101.3 F. which soon fell to the normal. They find that one injection of culture brings about the specific change in the blood which causes agglutination and immobility of the typhoid bacilli in pure cultures, recognizable in about six days, and exercised in as great a degree as they have ever been able to observe in convalescents from typhoid.

By mixing serum thus obtained with unsterilized bouillon cultures and injecting the mixture intraperitoneally, they find that guinea-pigs, although succumbing to the unsterilized cultures alone, will survive inoculation with the mixture, and tabulated the quantities of dead culture thus required to secure immunity.

Injection of dead cultures in man resulting in the production of substances in the blood serum inhibiting the specific bacteria, they hope thus to secure immunity by prophylactic inoculations, analogous to the results of Haffkine's protective inoculations against cholera, now substantiated by many thousands of cases. Should further observations confirm that they can confer the same immunity as exists in persons having had the disease, the procedure will become one of the greatest practical value, especially "in the face of epidemics or in war, since whole armies having been at times decimated by this scourge."

in the blood of patients who had recently suffered an attack of typhoid, and in the same year demonstrated its peculiar action upon the Eberth bacillus. Undoubtedly however, to Widal of Paris is due the credit of first utilizing this knowledge in every-day practical clinical work. Instead of obtaining the serum from the vein of a patient's arm, by means of a sterilized syringe, decanting after separation, the technique originally employed, he found that the dried blood or serum would give the result as published by him in the *Bulletin Médical* of August 12, 1896.

On Sept. 17, 1896, Wyatt Johnston of Montreal, observing the same fact, read a paper before the American Public Health Association, advocating the use of dried blood, as better adapted for bringing this test within the range of ordinary public-health laboratory work, and "enabling it to be dealt with in a wholesale manner." The latter method makes the discovery easy of application, and gives it the practical importance it now possesses. A drop or two of blood dried upon a slip of paper or cover glass (absolute sterilization is not essential), can be transmitted long distances with ease and safety, and is sufficient, in most cases, to determine the presence or absence of the disease.

To obtain the reaction it is simply necessary to dissolve the drop in sterile water and transferring it to a cover slip, inoculate with the pure culture and examine. If the case is one of typhoid fever, the reaction becomes manifest within a few minutes.

The following scale, formulated by Widal, enables the stating in terms of more or less exactness the measure of agglutinating power of any given specimen, indicating the strength of the antitoxin in the serum examined, and may be useful in doubtful cases.

Taking a series of sterile tubes containing respectively 1, 2, 3, 4, and 5 c.c. of bouillon, he added to each a drop of the serum to be examined; inoculates with a trace of culture, and examines in from twelve to twenty-four hours. If, for example, the tube containing 3 c.c. of bouillon, gives a typical reaction, while that which contains 4 c.c. does not, the agglutinating power of the fluid studied is exercised between 1 to 60 and 1 to 80; in a typhoid case the agglutinating power of the serum varies generally between 1 to 60 and 1 to 80; it could reach 1 to 100, rarely passing this limit; where it reaches 1 to 80 or 1 to 100 we find the reaction always takes place immediately. Let the specimen be prepared ever so quickly and examined as soon as it can be placed under the microscope, beginning of the clumping process of the bacilli will have already taken place. In the very early stages of the disease we found the reaction less pronounced at first, but gradually increasing in intensity, although even late a few bacilli may still retain some motion. These evidently were not acted upon by the agglutinating substance, which apparently had exhausted its energy upon the organisms already aggregated into clumps. Its action here presents some similarity to the chemic process of disinfection, which results in the production of a third substance through *contact* of the bactericidal agent with the cells. But that the process of agglutination is probably not a chemic change in the composition of the bacteria, but rather a sort of catalytic action, is proven by inoculating suitable media with the bacteria which had been agglutinated and rendered immotile by typhoid serum. Strangely enough, they grew with apparently the same vigor as the original cultures, their progeny

recover their independence and active motion and the new growths again respond to the typhoid reaction.³

The blood retains its agglutinating power with great tenacity. In dried specimens reexamined after two or three months we found it undiminished, although no particular care was taken to guard against contamination. A number of specimens sent us for examination from a distance, were collected without aseptic precaution upon ordinary writing paper and transmitted by mail. The method employed did not appear to affect the result, typhoid cases promptly giving the reaction, thus indicating that unusual precaution in the collection of specimens to be examined may be quite unnecessary. Dried blood is slow to undergo putrefactive changes, the saphrophytes responsible for such changes needing moisture for their proliferation.

That the agglutinating property be exhibited it is not necessary that the culture be living and active; dead bacilli are likewise massed into clumps by the serum. After exposing a pure culture of Eberth's bacillus to 60 C. for half an hour (the thermal death point being 56 degrees) they were still found to agglutinate. Further illustrating the tenacity with which the antitoxic power is retained in Stern's case, cited above, showing unusual bactericidal power in the blood of a man who had suffered an attack of typhoid fever seventeen and a half years previously, and Widal's reported case, which gave the reaction after seven years, we were successful in obtaining a decided reaction in a case thirty-one years after recovery,⁴ and other cases examined after one, two, eight and ten years, gave the reaction with virulent cultures. We have also found, as stated by Dieulafoy, that the agglutinative power is by no means confined to blood serum, but is found in other fluids of the economy. The reaction appears, exceptionally, in the *urine* of typhoid cases. It is constantly found in the serum of *vesication*. Widal and Sicard found it in the pericardial, peritoneal and pleural serum in three cases, post-mortem. A marked reaction can be obtained from the *milk* of nursing women affected with typhoid; likewise from the milk or the colostrum of rabbits and the milk of goats inoculated with Eberth's bacillus.⁵

The serum of *edematous infiltration* in typhoid cases agglutinates powerfully. In a case of grave typhoid recently reported (Etienne), which provoked abortion in a pregnant woman, the blood of the patient agglutinated typically, but that of the fetus was negative. In rabbits, however, inoculated by Widal and Sicard six hours before, the fetal blood agglutinated from birth, although less powerfully than in the mother, proving that the agglutinating substance passed into the fetal circulation. The reaction can be obtained from the human biliary secretion. Negative results were obtained from the cerebro-spinal fluid and that of the vesiculæ seminales. Negative results were obtained from the saliva, but Achard and Bensaude have demonstrated the reaction where the sub-maxillary or parotid secretions were collected within the gland ducts. The *aqueous humor* and the secretion from the *lacrimal gland* will also in typhoid

³ It may be possible, however, that these cultures result from a few cells which, enclosed in the mass, escaped the action of the agglutinating agent. [We found also that the bacilli, after agglutination, stain readily with the anilin colors. Where doubt exists, fibrin particles may thus be easily differentiated from masses of bacilli.]

⁴ In a physician who happened into the laboratory while we were examining blood specimens.

⁵ Journal Académie de Médecine, Sept. 26, 1896.

cases give the reaction of agglutination. The tears constitute a secretion always easy to obtain. The fact that they give the reaction is important. From the internal angle of the eye, with a fine pipette, a drop sufficient for an extemporaneous examination can always be aspirated. A distinction is made by the French observers between the secretion naturally present and that provoked artificially, as by ammonia or menthol. They find in the latter case the reaction often fails. Examining in both ways cases giving the blood reaction typically, our results confirm the observations of Widal and Sicard, who found the reaction in the tears of ten out of fourteen cases examined with the natural secretion, but when provoked artificially it persisted to a slight degree in but three. In two immunized rabbits the reaction appeared typically in a mixture of two drops of secretion to ten of culture. The lachrymal secretion of persons never having had typhoid, and of normal rabbits, was negative. In immunized rabbits the aqueous humor gave the reaction in seven out of nine cases. In normal rabbits the aqueous was negative.⁶

From these results, showing the agglutinating property in the tears, the aqueous and the serum of edema the conclusion is reached that the leucocytes play no part in the secretion of the agglutinating substance. Duclaux has shown that the greater part of the casein of milk is separated from the filtrate, after passing through a Chamberland filter. Achard and Bensaude demonstrated that milk thus filtered, in parting with this albuminoid, loses its power of agglutination previously possessed. In blood serum thus filtered the power is also greatly diminished. In fluids poor in albuminoids (as the cerebro-spinal and saliva) the reaction fails. The inference is therefore logical that for the production of the agglutinating reaction the albuminoids are essential.

The albuminoids existing in the blood include serum-albumin, serum-globulin and fibrinogen, the latter existing in the circulating serum, but in the act of coagulation under the influence of the fibrin-ferment, separating into fibrin (which forms the clot), a globulin and probably other substances. To separate the serum-albumin from the serum-globulin, they add magnesium sulphate to saturation to a tube of typhoid serum. The globulin is precipitated and separated by filtration. Mixing now two or three drops of the filtrate deprived of globulin to ten drops of culture, it is found that the bacilli retain their independence and motility. The serum deprived of its globulin seems to have lost its agglutinating property. The globulin remaining upon the filter, from which possible remaining traces of serum-albumin is removed by again washing the precipitate with a concentrated solution of magnesium sulphate until the filtrate will no longer coagulate by heat, mixed with an equal part of distilled water is found to possess the agglutinating property in a high degree. The phenomenon is still further intensified if less water is added, showing thus that the agglutinating property is definitely associated with the globulin.

Arthus and Pagès, in order to study the fibrinogen as it exists in the blood, prevented coagulation by adding potassium oxalate, about 1.5 to 1,000, to the blood as it issued from the vessels. In the plasma thus obtained the fibrinogen is retained. To precipitate this they add 15 parts to 100 by weight of sodium

chlorid, dissolving the precipitate in distilled water. The solution of fibrinogen thus derived from typhoid blood agglutinated the bacilli. Treating now the plasma, deprived of its fibrinogen, with a saturated solution of magnesium sulphate and filtering they obtained the same result as in the serum of coagulated blood; the filtrate containing the albumin had lost its agglutinating power which was retained by the globulin remaining upon the filter.

The other body fluids experimented upon, the serum of blisters, of the peritoneum, of the pericardium and of edema in typhoid cases, react in the same manner as the blood plasma. Fibrinogen and globulin apparently possess the agglutinating property.

Dieulafoy, Widal and Sicard have made an analysis also of the milk, which contains an albuminoid not found in solution in the blood. A goat inoculated with typhoid furnished, seven days afterward, milk possessed of a high degree of agglutinating power. By adding an excess of magnesia sulphate, the casein and lacto-globulin are precipitated together with the fat globules. The filtrate containing but the albuminoid lactalbumin, shews but slight agglutinating capacity. Adding a solution of sodium chlorid to saturation, the casein is precipitated with the fat globules, while the lacto-globulin remains in solution in the liquid with the lactalbumin. The filtrate gives the reaction typically, even though the whole milk is but feebly agglutinative. The phenomenon could not be due but to the presence of the lacto-globulin, for, on now adding magnesium sulphate to saturation the power of agglutination in the filtrate disappeared entirely. By coagulating the milk with rennet, the lacto-serum obtained was powerfully agglutinative, which property again disappeared upon precipitation with magnesium sulphate to saturation. To determine the presence of this property in the casein they now add to the milk acetic acid in the proportion of 1 to 2 parts per 1,000, to precipitate the casein, washing with water to get rid of the acid and of traces of lacto-globulin. Dissolving the precipitate, after filtration, in sodium hydrate, 1 to 100, they found that the solution, containing no other albuminoid but the casein, strongly agglutinated the bacilli. It is thus shown that the albuminoids contained in the blood of typhoids do not alone possess the power of agglutination, but that casein and without doubt other albuminoids can also acquire it, imparting this power to their solutions and regaining it upon precipitation.

The practical bearing of these experiments lies in the fact that the whole blood, containing *all* the albuminoid elements, instead of being less sensitive to the typhoid reactions, as Widal and others first supposed, is in fact *more* so than the serum alone: we therefore obtain incomplete or pseudo-reactions from typhoids years after recovery and perhaps other conditions from solutions of the whole blood, fluid or dried, which are not observed when the serum alone is used, and which may be misleading: the agglutination observed being at times equal to that of true typhoid fever in the active stage of the disease. In these cases, however, there is not observed the same progressive loss of motion that is found in true typhoid, and herein lies the differentiation: more stress must be laid upon the *loss of motility* of the bacilli than upon their clumping. In fact, in pseudo cases the latter is sometimes more complete and often more quickly exhibited than in true typhoid. Where doubt still exists, the differentiation is more readily accomplished after

⁶ Ibid. The chemic analyses and experiments upon the fluids of the body are translated from Widal and Sicard's paper quoted.

twenty-four hours, the specimen being meanwhile kept at blood temperature.

While the clumping for the most part persists there are at the same time numbers of individual bacilli in the clear spaces that retain their active motion, this activity being much greater than we find in true typhoid cases. Their number also increases upon longer exposure, thus definitely making the distinction from typhoid blood. Clumps once formed we have never seen break up again in true typhoid; the reverse often happens in pseudo-reactions. There still remains, however, a number of cases, especially where the history shows previous typhoid, in which the agglutination and loss of motion is so marked and so closely resembles the reaction of typhoid in its active febrile stage, that errors in diagnosis might still readily be made when dried blood is tested with virulent cultures of the bacilli.

As already stated, pseudo-reactions are rare with the serum alone separated from the clot. But when *all* the albuminoids are present, as in the dried blood, the agglutinative property, intensified, is readily excited when brought in contact with a very virulent culture, even where there are no present symptoms of the disease.

The "quantitative" test, under such circumstances, affords a valuable means of guarding against error. By diluting, with sterile water, the specimen to be examined, a point is reached where the reaction becomes negative; but where a control specimen from an undoubted typhoid case, with equal dilution, still gives a typical reaction.⁷

Still more reliable conclusions may be obtained by discarding entirely the very virulent culture, using instead one the virulence of which has not been increased by successive seedings, but instead is transplanted from a month-old growth upon agar into bouillon and incubated twelve to twenty-four hours before use.⁸ Thus grown, the bacilli are still measurably active, but their rapid, darting motion is absent; they exhibit but gliding, serpentine movements across the field.

Reexamining with the culture thus obtained blood specimens in which agglutination occurred with virulent cultures, we were able to completely eliminate the troublesome pseudo-reactions, and by this technic therefore obviate much of the confusion and error resulting from the examination by the dried blood method. The conclusion seems indicated, that given a case of acute pyrexia of some duration, in which the blood gives the reaction of agglutination with a culture thus prepared, *and where there is corresponding loss of motility in addition to the clumping*, we may safely decide that we are dealing with a case of typhoid fever.

Where active motion persists with clumping, the specimen must be kept at blood temperature for twenty-four hours. In typhoid cases the reaction is *progressive*, clumps once formed do not again separate; immotility becomes more complete and the clear spaces between the clumps of bacilli more defined. The reverse obtains in pseudo-reactions, when, after twenty-four or forty-eight hours, the hanging drop may perhaps be swarming with active bacilli.

In dried blood specimens from fifty cases examined, in nearly all of which the clinical symptoms were more or less typical and sufficient to make the diag-

nosis of typhoid fever, we were able to obtain the reaction upon cultures thus attenuated, even when the blood was diluted until the color was scarcely discernible; while in cases, as above noted, in which we had obtained the reaction with *virulent* cultures from blood in health a number of years after recovery, the reaction, under the same conditions, was constantly negative.

Another point of distinction may often be found in the *time* required for agglutination to take place, it often occurring in pseudo-reactions *more quickly* than in typhoid. The rapidly formed, oscillating, swaying masses of bacilli are not, as a rule, the effect of typhoid blood. With the latter, more often, especially with largely diluted blood, the *motion* is first arrested, clumps not forming until later.

To determine the differential *character* of the reaction we made a large number of comparative examinations of the action of typhoid blood upon other motile organisms, especially of those closely allied to Eberth's bacillus in morphologic and biologic characteristics. Of these the "colon" bacillus is the most important, closely resembling Eberth's bacillus, always associated with the latter in typhoid discharges, and believed by many observers to be one and the same organism, an evolution from saprophytic existence to pathogenic potency taking place in cases of typhoid fever. In the operative procedures recently successfully undertaken for suture of perforations of ulcerated intestine in this disease, it is remarkable that the "colon" and not Eberth's bacillus was found upon bacteriologic examinations of the scrapings of the ulcerated surfaces.

Both the typhoid and the colon bacillus vary considerably as a result of conditions relating to their environment, and it is difficult to determine whether certain bacilli of this group, sometimes found in river water, etc., are to be regarded as varieties of one or the other species mentioned, or as distinct species. Cesaris-Demel and Orlandi concluded (1894) that animals immunized against the "colon" bacillus furnish a serum which has protective and therapeutic value against infection by the typhoid bacillus, and the reverse.⁹

But in regard to their response, in artificial cultures at least, to typhoid serum, they differ widely. No matter how powerfully and quickly the serum used agglutinated the bacillus of Eberth, we were never able to observe the least effect upon the "colon."

Among other motile organisms tested in pure culture, the behavior of the *B. pyocyaneus* with typhoid serum is also of interest. It is but recently that the use of sterilized cultures of this bacillus was tested in the treatment of typhoid fever—it having been shown by experiments upon animals that sterilized cultures of *pyocyaneus* exercised an immunizing influence against typhoid infection, similar to its known antagonism to the bacillus of anthrax. The results we obtained in a measure confirmed these observations, although Kraus and Buswell concluded from their observations in twelve cases treated with sterilized *pyocyaneus* cultures, that this method of treatment "has no specific curative value." By inoculating guinea-pigs with *pyocyaneus* we secured a serum from the abdominal cavity containing the bacilli in large numbers. Active typhoid serum had a slight agglutinating effect upon these bacilli, rather more in the serum thus obtained than in artificial culture. When,

⁷ Widal; Greenbaum.

⁸ Report Board of Health Province of Quebec, Johnston and McTaggart, Jan. 17, 1897.

⁹ Sternberg: Immunity and Serum Therapy, 1895.

however, the blood serum from the same guinea-pig (a control containing no bacilli), or the diluted dried blood, was inoculated with a virulent bouillon culture of Eberth's bacillus, the latter were quickly agglutinated and immobilized as by typhoid blood serum; showing, as well as by their immunizing influence, that an undoubted antagonism exists between these organisms. The normal blood serum of the guinea-pig gave negative results.

The effect of the typhoid serum upon a number of other motile bacteria found in water, the *B. fluorescens*, *Indicus*, *subtilis*, *violaceus*, etc., in each case was negative. They continued their motion as freely and independently in the serum as in their normal habitat.

Little or no antitoxic effect could be observed upon the pathogenic organisms causing, like typhoid, notable intestinal lesions, as the spirilla of Asiatic cholera (which are agglutinated promptly by cholera serum), or of Metchnikoff or of Finkler-Prior, or upon the bacillus of hog cholera, closely resembling the "colon" bacillus morphologically.

The essential etiologic organisms of malignant edema and tetanus also retained their separate existence and motility in the serum.

Excepting, then, the reaction with virulent culture of the *B. pyocyaneus*, we were unable to find that other motile organisms, saprophytic or pathogenic, were at all affected by typhoid blood.

Regarding the action of blood from pathologic conditions other than typhoid upon the Eberth bacillus, it has not been possible for us to compare the result of blood examination in many of the obscure forms of continued fevers above described, which often offer such great difficulty in diagnosis. From such affections, however, as we have been able to examine, fairly definite conclusions were obtained.

In addition to the fifty cases of more or less typical typhoid, our conclusions are based upon the study of about twenty-five cases in which the clinical symptoms were more or less doubtful and suggestive of typhoid, of miscellaneous affections, and of many specimens of normal blood of man and the lower animals.

The examinations made included blood from acute and chronic rheumatism, gout, aseptic (surgical) fever, mumps, malarial fevers (intermittent and remittent), influenza, cystitis, acute bronchitis, acute enteritis, catarrhal pneumonia, appendicitis, acute pericarditis, syphilis, etc.

At times we obtained from apparently normal blood, and from that of miscellaneous affections in which there was no suspicion of typhoid fever, an unmistakable reaction, resembling that of typhoid blood; confirming the experience of Stern (1894), who concluded therefrom that a protective influence was exercised, in some cases, upon animals, with blood from individuals who had never suffered from typhoid fever, although larger doses were required. He suggested that this antitoxic power is possibly due to mild or unrecognized previous infection.

The agglutinating effect has been found in diabetes. The normal placental serum is said to possess marked destructive power for the *B. typhosus*.¹⁰

The presence of the reaction in such cases may occasion errors in the diagnosis, which must be guarded against. In a case of influenza, with nervous symptoms, headache, prostration, fever, bronchitis, we found

a decided reaction with a virulent culture. It was learned that the patient had had an attack of "typho-malarial" fever some eight years before. We established the diagnosis of influenza in this case by culture test, isolating the influenza bacillus from the blood, cultivating it in nutrient agar and examining in stained preparation.

Such difficulty is not confined to the blood of the human subject. In testing the blood of an apparently normal rabbit, not immunized, we were astonished to find that it possessed a high degree of agglutinating power upon the bacilli of virulent cultures, resembling in every respect that of typhoid serum. To determine whether this property was a normal attribute of rabbit's blood generally, we tested in ten other rabbits, but with negative results.

The blood of the horse, as stated by Bordet, often produces a clumping and granular appearance in typhoid culture, not distinguishable from typhoid blood except that it produces a similar agglutinative effect upon the "colon" bacilli, which typhoid does not.¹¹

We observed also, in testing hen's blood, that one specimen (of a number examined) produced marked effect upon the typhoid bacilli, agglutinating them in the same manner as typhoid serum.

We could not find it in the blood of other animals, that of the ox, sheep, calf, deer, dog, cat, pig, guinea-pig, mouse, pigeon, all acting in the manner of normal blood. Rabbit No. 1 was repeatedly examined, a number of specimens taken upon several different days, with a like result.

What causes the phenomenon in these particular animals? Although the numerous attempts to communicate typhoid fever to the lower animals have given a negative result in every instance, so far as producing the characteristic lesions as found in man, the fact is well established that Eberth's bacillus will multiply abundantly in many of them, and can be obtained from the spleen exactly as in the human subject, and that although infection is often fatal, a large proportion survive artificial inoculation.

A reasonable hypothesis might thus be drawn to account for the occurrence of typhoid fever in previously uninhabited districts, upon the prairies or in the depths of the woods, where the source of the infection can not be traced to human importation.

Descazals¹² reports an epidemic of "psittacose," a disease which Peter characterized as "typhus of parrots," recording the cases of forty-seven persons affected, with fifteen deaths. The disease is traced to the importation of parrots. An infected individual seems capable of transmitting the infection to others. The infection closely resembles typhoid, but the onset is often marked by local manifestations about the mouth.

But from whatever other cause this agglutinating substance may be present in the albuminoids of the blood, whether in lower animals or in man, the effect upon the typhoid bacilli may be distinguished from that obtained from typhoid fever blood. Upon dilution of the specimen examined, discarding the virulent for attenuated cultures, the bacilli in the latter will still become typically agglutinated with typhoid fever blood when diluted to a degree in which the pseudo-reactions entirely disappear.

Regarding the possibility of obtaining the diagnos-

¹¹ W. H. Jamieson: Brit. Med. Journal.

¹² Gazette des Hôpitaux, No. 111.

¹⁰ Flexnor: Jour. Exp. Med., July, 1896.

tic reaction in the early stages of typhoid, Case No. 16 of our series warrants especial attention from the fact that it was elicited upon the third day of the fever. A copy of the temperature chart, in this case received by mail from the neighboring city of Rochester, with the specimen of blood, we pass around for your inspection. The subsequent clinical history of this case confirmed the diagnosis. If further experience proves the practicability of recognizing the disease thus early, the value of the test, especially in justifying prompt adoption of precautions for the prevention of future infection, will be very great.

Five of the specimens of blood examined elicited from us a report contradictory to the clinical diagnosis. To these cases great interest also attaches—as their subsequent histories all tended to confirm the bacteriologic rather than the clinical diagnosis.

In Case No. 22 of our series the blood examination was made upon the fifth day after admission to the hospital.

The temperature record in this case; the significant clinical symptoms: Enlarged spleen (common, however, in many conditions in children), diarrhea, semi-stupor for several days; some doubtful rose-colored spots upon the abdomen, and finally, the fact that the child was taken from a typhoid-fever infected house (a sister occupying the adjoining bed in the hospital with a typical attack); certainly strongly suggested the clinical diagnosis of typhoid fever, which in fact had been made.

But note the result of the blood examination: The reaction was entirely negative, while that of the sister was prompt and decided. An opinion in accordance with this examination was therefore given. Naturally, the further progress of these two cases was watched with the greatest interest, and the hospital records, which we here also present, can be fairly assumed to be confirmatory evidence of the reliability of the test; the temperature of the boy falling to 99 degrees two days afterward, and not going above this again during the remainder of his stay in the hospital—some ten days.

In Case No. 34 of our series, the “typhoid state,” was especially marked; dry fissured tongue covered with a brownish-black fur, sordes-covered lips and teeth; temperature ranging between 102 and 104; diarrhea; no rose spots; hebetude; early epistaxis. Repeated examinations failed to reveal any agglutinating property of the blood. The subsequent history of this case was not that of typhoid, the grave fever symptoms disappearing two or three days after the examination. This patient, it may be interesting to note, developed instead a mild form of insanity, which persisting, he has since been committed to the State Asylum in this city.

In case No. 41, in which the typhoid condition and symptoms were also very suggestive; examined on the fifth day of the disease, the reaction was negative and our opinion, rendered in accordance, elicited the counter-opinion from the attending physician, a gentleman of wide experience, that he *knew* his patient had typhoid fever, notwithstanding. The subsequent clinical history of the case, however, did not justify his diagnosis, the joint lesions of rheumatic fever developing a few days later, typically. While many, especially of the etiologically obscure continued fevers, remain still to be submitted to the test, such work as has thus far been done seems in a remarkable degree to confirm its great value in diagnosis.

Widal concludes, as the result of his admirable work upon this subject, that: “A negative result obtained with the serum of a case of suspected typhoid, affords a presumption against the diagnosis of typhoid fever; but it is only a probability, especially if the examination has been made in the first few days of the disease. The examination should then be repeated in the next few days. The presumption that a case in which a negative result has been obtained is not typhoid becomes correspondingly stronger as the disease becomes more advanced.”

As supplementing investigations regarding the diagnosis of typhoid fever by means of the typhoid organism in the blood, we have made experimental observation upon the reverse problem, to wit: The detection, by means of the serum, of the typhoid bacillus in water, an important problem usually attended with much practical difficulty and often of doubtful result. The bacteriologic examination of drinking water resolves itself, ordinarily, into a search for the bacillus of Eberth and its differentiation when presumably found from the bacilli coli communis and other allied motile water organisms.

Miquel's scale for the classification of the purity of water, ascending from the “exceptionally pure,” containing from 0 to 10 bacteria per c.c., to the “very impure,” containing 100,000 and upward per c.c. while affording an excellent standard limit of comparison, is practically valueless from the standpoint of pathogenesis; water classed as “very pure,” containing but 100 bacteria per c.c., may be more dangerous than the very highest of this scale.

We demonstrate under the microscopes upon the table, the results obtained from an analyses of a specimen of ordinary hydrant water, infected with the bacilli of Eberth from a pure culture, and at the same time with “colon” bacilli and a number of other motile water bacteria.

Mixing in sterile tubes each containing 10 c.c. of beef tea, a few drops of this water, adding Parrietti's solution (ac. carboli., 5 grams; ac. hydrochlor., aq. dest., grams 100) and incubating at 40 degrees C. to eliminate most of the ordinary water bacteria. The tubes were plated (using agar) and these were maintained at 40 degrees C. for twenty-four hours, when we could distinguish with dry lenses, colonies suggestive of the typhoid bacillus by their landscape appearance.

With the sterilized needle these colonies were fished and after proper dilution active typhoid serum inoculated with the organisms. The specimens upon the table are hanging drops of the serum thus prepared. The colon and other motile organisms in the same serum are seen independently and moving in the field. The typhoid bacilli, proved to be such by animal inoculations and other tests, in striking contrast are agglutinated and motionless.

These results indicate that typhoid serum affords a simple and apparently certain means of differentiating the typhoid from similar organisms found in water, or at least, of corroborating results obtained from other methods of analysis.

Tincture of Moringa as Remedy for Icterus.—Dhargalker of Bombay, has secured remarkable results with the bark of the root of the *Moringa pterygosperma* in eight cases of catarrhal icterus, administered in a tincture prepared from the bark of the root, 2 to 4 grams, three times a day for adults, and 15 drops for children.—*Semaine Médicale*, December 23.

FAILURES OF MIDWIVES IN ASEPSIS.

Read at the Meeting of the Obstetric Staff, Chicago Health Department, November 21, 1896.

BY C. S. BACON, M.D.

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The need of this movement, that we now assist in inaugurating, which contemplates the control of the practice of midwives, is generally acknowledged. The credit for its origination belongs wholly to our experienced Assistant Health Commissioner, Dr. Reilly. It is the first practical and promising attempt in America to regulate midwife practice. I believe that we, the members of the staff, have an unusual opportunity to do a valuable service to the community.

Our work is humanitarian and based upon humanitarian motives. I believe that the chief consideration that induced each of us to enter into this work was that of benefiting the community. No doubt the legitimate desire to enlarge our experience through the observation of unusual and interesting cases had its influence on all of us; also the advantage to be gained through association with others interested in the same specialty. Yet back of all was the fact which our observation and experience have shown to exist, that the health and lives of many helpless and innocent people are jeopardized through the illegitimate practice of midwives. Just as the medical profession is always ready to unite in any well-digested effort to stamp out or prevent an epidemic of disease, so, when once a chance was given us, we were all ready to engage in the effort to reduce the well-recognized dangers to which thousands of poor women were exposed through the unrestrained ignorance of their attendants during childbearing, as well as through their unlawful practices to interfere with pregnancy.

These remarks do not imply that our attitude is one of hostility toward the midwives. On the contrary, it is our aim to assist them in their legitimate work. There are about 900 midwives in Chicago, and they attend from 20,000 to 25,000 cases of labor annually. Moreover, a large share of our population is composed of immigrants from Europe who are accustomed to employ midwives. If it were desirable to do away with midwife practice it would be absurd to attempt a thing so impracticable. But it is not desirable. A well-trained midwife can care for a poor woman and her child in a case where the employment of a nurse is an impossibility, better and much more cheaply than a physician. If she confine herself to her proper duties, and if she be trained to perform them and to recognize when she should call for assistance, she is a valuable member of the community.

The objections to midwives are that they are ignorant, especially of the principles and practice of asepsis, that they are prone to usurp functions not belonging to them, and that they often advise and produce abortions. It is the especial object of this movement to correct the abuses in their practice. In the June Report of the Health Department Dr. Reilly calls attention to the criminal practice of midwives, and mentions the fact that the recent records of the coroner's office show thirty-four cases of deaths of unfortunate women and girls from this cause. If in so many cases the responsibility is fixed, how many cases are there where the responsibility is unknown? A recent investigation of the puerperal mortality statistics of Chicago¹ shows that during the last ten years abor-

tion has been assigned as the cause of death 161 times. This does not include cases of death assigned to uterine hemorrhage, septicemia, etc., which, as we know, often result from abortion. It is probable that a great many of these deaths were due to criminal practice. How many were performed by midwives we have no means of knowing, since the physicians called in and in attendance at the death issue the certificates. The common observation of all of us and the facts just cited from the coroner's report, show to what an extent the mortality depends upon criminal midwife practice. We must also remember that not only the great mortality is due to this cause, but a vast amount of sickness likewise results. It is one of the most important objects of this movement to stamp out this criminal practice. In none of the thirty-four coroner's cases was any punishment inflicted on the perpetrators of the crime. Our criminal laws can therefore have little or no effect in preventing the continuance of these crimes. The rules and regulations which will control midwife practice in the future provide that under no circumstances shall any midwife have in her possession . . . any drug or instrument or other article which may be used to procure an abortion. In the enforcement of this provision, as well as in those regulating the scope of their practice, we hope to see these crimes abolished.

Midwives usurp the functions of physicians not only by performing obstetric operations, but also by trying to treat and manage medical and surgical cases. The law-makers of all the States are gradually coming to recognize the importance to the community of a well educated and well trained medical profession, and are insisting upon a four years' special training based upon a thorough preliminary general education, as a requisite to a license to practice. We all know the necessity for a thorough training in anatomy, physiology and bacteriology to a comprehension of the principles of surgery. How then can a woman of limited education in four to six months learn to appreciate the indications for operative interference, to say nothing of the technic of difficult and dangerous operations. The most she can learn is to know the progress of normal labor and to recognize such deviations therefrom as to require her to call for assistance, and to ground herself thoroughly in the details of antisepsis and asepsis. Therefore our rules, following those of all countries whose experience has formulated these restrictions, specify when a physician must be called. Any violation of these specifications shall be considered as proof that the midwife practices medicine, and makes her subject to the penalties prescribed by the medical practice act.

So far the State goes in defining the functions of midwives and in controlling them. It does not directly propose to educate them. However, we must admit that their ignorance of asepsis and antisepsis is practically a very great objection to them. There is much danger from this source, which is forcibly illustrated by the study of the mortality from puerperal infection in Chicago. In the tables already referred to I have obtained the average annual mortality rate from puerperal infection for the decennial periods 1866 to 1875, 1876 to 1885, and 1886 to 1895. In the first period there were 127 deaths from puerperal infection for every 1,000 deaths from all causes of women of childbearing age, namely, women from 15 to 45 years old. In the second decennial period there were ninety-seven deaths, and in the last period seventy-three

¹ See "The Mortality from Puerperal Infection in Chicago," by C. S. Bacon, *Amer. Gyn. and Obst. Journal*, April, 1896.

deaths. The rate based on the number of confinements shows about the same rate of decline. In the three periods, for every 1,000 confinements the rate was 7.6, 5.5, and 4.1 respectively. These figures show indeed a decline, and so far are encouraging. The decline corresponds in time to the spread of the teachings of Lister, and is no doubt due to the excellent teaching of asepsis and antisepsis in our medical schools. The fact remains, however, that the mortality rate from puerperal infection is still very much too high, and indeed has increased during the last four years. In 1891 it was 62 per 1,000 deaths of women of childbearing age, in 1892 it was 60 per cent., in 1893 65 per cent., in 1894 71 per cent., and in 1895, 69 per cent. In other words, puerperal infection still kills more women in the prime of life, women of the greatest worth to their families and to the State, than any other cause except consumption.

Who is responsible for this large continuing mortality, physicians or midwives? While it is impossible to answer this question from the imperfect records of the registrar's office, it seems very certain that the improvement for the last decades is due to the better training of medical students, and that the bad results of the last few years are largely due to midwife practice, which has not made corresponding advance.

Hence I claim justification in presenting to this staff the subject announced on the program. The scope of our duties is yet to a certain extent indefinite and will be left to natural development. We are called on by midwives to treat childbed fever. Is it not reasonable that we should try to prevent its development? I look forward to the growth of our organization in such a way that each member of the staff shall have practical charge of the midwives in his district. Like the commander of a company in an army, he shall inspect the records and outfits of the members of his division, and he shall come to feel so far responsible for the practice in his district that he will try to keep the mortality and morbidity records as low as possible. This is the condition in some of the German provinces where the best obstetric results are obtained. It is impossible for us at present to exercise such control. As Dr. Reilly pointed out at the last meeting, it is important that we go slowly at first in order not to wreck the movement at the start by over-zeal. The first thing to do is to secure a complete registration of midwives. So long as a certain number defy the authority of the City Board and the State Board of Health they would defy us and we would accomplish nothing. It will probably take some weeks or months longer to bring the defiant midwives to terms or to revoke their licenses to practice, and until then we must confine our efforts to advice to those who call on us. Yet in this way we can, if we will, accomplish very much of value, and for this reason it seems to me timely that we begin to study the mistakes and failures of midwives and consider the means to correct and prevent them.

The gravest mistakes midwives make in their legitimate practice are in the aseptic management of labor. Their most important mistakes in this direction are the following: failure to secure cleanliness of person and surroundings of patient, failure in subjective cleanliness, use of improper lubricants, making unnecessary internal examinations.

Concerning cleanliness of patient.—Many patients who employ midwives regard the hemorrhage accompanying labor and the amniotic fluid as a kind of filth,

and consequently find it proper to collect these discharges in filthy cloths. To them it would be absurd to put on clean bedding before labor, and one finds dirty rags and dress-skirts used for pads. They have, moreover, a great fear of cold, and use feather beds and keep the windows carefully closed. The same fear leads them to avoid the use of water about their bodies. To manage a labor properly under such conditions requires a thorough belief in cleanliness and considerable energy to exert the necessary authority to overcome ignorant prejudice. A midwife, even if she have an idea of the importance of cleanliness, finds it much easier to put up with the surroundings than to improve them. Any one of us who has had any practical acquaintance with the conditions present in such cases will not condemn a midwife too severely for not securing a state of surgical cleanliness. We will also allow for the fact that she can not exert the same authority as a physician. For her assistance it is well that she have very definite and detailed directions to aid her, and to fall back upon in case of opposition on the part of the patient. Such I would formulate as follows:

Have the patient prepare beforehand a piece of white oil-cloth $1\frac{1}{2}$ yards square and at least six clean sheets, and plenty of old pieces of sheets or cloths thoroughly boiled and washed. All should be put together with the baby-clothes in a clean drawer and not handled with dirty hands. At the beginning of labor remove all bedding from the bed, cover the mattress with the oil-cloth and put over it only the clean sheets and the cloths for pads. Under no circumstances use old blankets or cotton comforters, or dirty skirts as pads. Have the patient take a tub or sponge bath with soap and water, put on a clean night-shirt and give her an enema. Do not let her touch the clean bed with dirty or everyday clothes.

Before each internal examination wash the outside genitals thoroughly with soap and the antiseptic solution which is used for disinfecting the hands, but do not give a vaginal douche either before or after labor. If there be a purulent discharge or if the vulva look sore, call in a physician, for these conditions are dangerous and apt to cause fever in the mother or sickness of the child. When the afterbirth comes away remove the sheet and pads, wash the patient with the antiseptic solution, wash and wipe off the oilcloth, and spread over it a clean sheet and clean cloths for pads as before. For a napkin for the patient use only absolutely clean cloths and do not fasten them tightly against her. Afterward change the sheets and pads as often as necessary, and wash the patient every time with clean soap and warm water.

Concerning subjective cleanliness.—Keep the clothes and hands clean. A midwife would better wear light-colored wash-dresses. Under any circumstances she should have a number of large white aprons with sleeves which cover the entire dress to protect the patient and her bed from contamination by the street dress. In cases of emergency she should cover her dress with a sheet.

Great care should be taken to keep the hands free from cracks and from sores about the roots and sides of the nails. If a midwife have any ulcer or running sore on her body she must not attend any labor until the sore is healed. In short, she must avoid all infection of the hands, for it is very difficult and takes much time to clean them again. Before making an internal examination she must disinfect the hands

and arms. This process consists in the following steps:

1. Washing with soap and water as hot as can be borne for ten minutes, using the brush and paying especial attention to the folds of the nails. All finger rings must be removed. A midwife should not wear rings.

2. Cleaning around the nails with a steel nail-cleaner or with a knife until no dirty particle can be seen.

3. Washing another minute with soap and hot water.

4. Scrubbing the hands and arms three minutes in a disinfecting solution. A midwife may use a sublimate solution (1 to 1,000), creolin or lysol 1 per cent. or carbolic acid 3 per cent. The sublimate is the most efficient, but chaps the skin of some people, who may find lysol the best to use.

After disinfection the hands must not be contaminated again by touching anything before making the examination. Hence the patient must uncover herself and flex the thighs so that the midwife need not touch the sheet. Then, with the thumb and fingers of one hand, she should separate the lips of the vulva so that the examining fingers do not carry into the vagina any impurities from the outside.

Concerning a lubricant for the examining hand.—Vaseline and oil, which are generally used as lubricants, are dangerous, for they are good collectors of germs. Even carbolized vaselin, if contained in boxes or jars into which the fingers are dipped or which are exposed to dust and dirt, may contain living germs, for the oily substance protects them from the action of the germicide. The importance of a proper lubricant was well illustrated by a recent report of Dr. Weichardt, the medical officer in charge of midwifery practice in a district in the Duchy of Sachsen-Altenburg in Germany (see *Monatschrift für Geburtshülfe und Gynäkologie*, June, 1896). During the year 1895 there were in his district 1331 labors attended by the thirty-five midwives, with no deaths. The mortality in previous years had been 5 to 6 per cent. Dr. Weichardt suspected the cause of this mortality to be the boxes of carbolized vaselin used by the midwives for lubrication, so he had them provide themselves with collapsible tubes filled with carbolized vaselin. This change alone brought about the ideal result shown in the report. I have ordered from Sharp & Smith such tubes, which will probably be the most practical and safe lubricant for midwife use. Such tubes are also put up by Johnson & Johnson. In a woman who has borne children and also in a primipara, after rupture of the membranes, when the vaginal canal is bathed in the amniotic fluid, there is generally no need of any lubricant. Ordinarily I use soap when any is needed. The collapsible tubes of soft soap are well adapted to this purpose. To use either soap or vaselin in tubes, a little should be squeezed out on to a clean plate or saucer, and with the tips of the sterilized fingers a little is taken up and rubbed over the fingers mixed with the disinfecting solution. Otherwise a piece of hard soap whose surface has been well cleaned can be thoroughly washed in the sublimate solution and then serves very well to lubricate the fingers.

Concerning unnecessary internal examinations.—Professor Leopold has shown in hundreds and even thousands of cases in the hospital in Dresden, that it is possible to conduct labor without any internal

examinations. With very little practice it is much easier for any one to determine the position of the child by external than by internal examination. The progress of labor can also be determined by the rate of the descent of the head. Internal examinations are always somewhat dangerous. Germs are almost inevitably carried into the vagina, where they may infect the tears in the cervix or vaginal walls made by the head of the child. The danger increases with the frequency of examination. It is well proven that the chance of fever increases proportionately with the number of internal examinations. Any ordinary case of labor lasting only six to ten hours rarely requires more than one examination to be made. Patients sometimes think that a midwife or doctor assists them by making long or frequent internal examinations. This foolish idea should be dispelled. Let the rule be, examine only when there is a good indication, such as uncertainty as to the position, fear of prolapse of the cord, delay in the labor, or when it may be advisable to learn the degree of dilatation of the cervix. In making the examination do not introduce the fingers into the uterus, and be careful not to rupture the bag of waters.

In this hasty summary of the chief mistakes of midwives in asepsis I have aimed to indicate where they fail by insisting with considerable attention to detail upon the rules of practice which should govern them. While I have not aimed at a complete discussion of aseptic midwifery, I believe that a careful inspection will show that no important detail has been omitted and no unimportant direction included.

426 Center Street.

CLEANLINESS THE FIRST PRINCIPLE OF HYGIENE.

BY WILHELM HOTZ, M.D.

CHICAGO.

Hygiene, the science of health, is undoubtedly the first foundation of therapeutics, the science of restoring lost health, because without knowing the laws which maintain health, no physician can tell his patient the right way that leads him to health and give him the proper advice how to regain it. Hence disease, as we call lost health, must be in one or the other way the consequence of departure from the natural path of life, or, in other words, disease is the indication of the loss of the vital equilibrium; its symptoms are the manifestation of the vital force to regain the normal state.

By studying such abnormal conditions and the way by which nature is seeking to lead the organism back to the prior state of health, we will find out not only the proper way of cure, but learn also how to keep up our health, *i. e.*, the principles of hygiene.

Hygiene is as old as the history of mankind. Its highest development has always been found in the most civilized countries, today as well as several thousand years ago, not because they have the highest civilization—nothing in the world develops without necessity, its motive power—but because the more a people has advanced in so-called civilization the more are the natural laws of life usually neglected, so that it may be doubted whether the high development of science, technics and industries of the modern world is really the result of mental progression, or is not rather the necessary effect of reduced vitality and lessened resistance to morbid influences, accord-

ing to the law of self-preservation. Such *facts* induced man to find means to preserve his species and to study the laws of health to that end.

Hygiene is therefore as old as the history of mankind, but wherever we find sanitary measures, in ancient or modern times, they always relate directly or indirectly to cleanliness. Today we admire the magnificent structures that have been built many thousand years ago by the old Egyptians only for the purpose of securing a pure and abundant water supply. Greeks and Romans built luxurious bathing houses for public use, knowing already that proper care of the body is a potent factor in preventing disease. Had not Hippocrates already taught that prophylaxis is the best part of the science of medicine?

The first hygienic measures in regard to personal health which man recognized are physical cleanliness and abundant exercise. Soon after followed the acknowledgment of moderation in eating, drinking and general manner of living. From the individual experience in relation to personal health resulted, in larger communities, the public health, viz.: general sanitary measures, as, for instance, the regulation of water supply and the securing of pure food by the erection and supervision of public slaughter houses and bakeries, the disposal of the dead and of the excreta, etc. Hence the more the human family developed their faculties in the direction of modern civilization, the more new measures and precautions have been found necessary to protect the public health, till finally the whole affair became a matter of governmental supervision. In brief: All hygienists, from the ancient Egyptians down to the modern scientists, recognized cleanliness as the first principle of health and believed in realizing it by endeavoring to secure pure air, pure water and pure food for the people at large.

The notion, however, of what cleanliness means, its correct definition, was never perfectly clear the same to every body, because the effect of the contrary condition is also not always alike. The man of a good constitution who can stand great extremes, for instance, offers a stronger resistance to injurious surroundings and stands in less need to take care for his physical welfare than a man of more delicate constitution; his idea about cleanliness in regard to his body, food and surroundings, will therefore be not as clear and exact; consequently the conception of *pure* or *impure* is a matter of individual agreement, so long as no certain scientific definition can be given of it. Such a definition can not yet be given in every respect, but it can be very evidently and without doubt in regard to septic materials.

Pasteur, the late French scientist, discovered that all putrefaction is caused by microbes. Other scientists found that in almost all diseases microbes are present, that disease is consequently a process of putrefaction started by certain microorganisms which found their way into our system. But the action (or better), the existence of said microorganisms is fortunately limited, as well as of other living organisms and depends on suitable food; without the proper nutritive elements they are not able to exist beyond a certain length of time, or at least not to propagate themselves. Since Pasteur's discovery we know that no putrefaction of organic matter can take place without the presence of microbes; we know further that all microbes need organic material as a first condition

of their existence and that dead organic substance is a more suitable soil for them than living organisms, because the latter offer a natural resistance to all noxious influences. So we find microbes most numerous wherever dead organic matter exists—the primary enemy of health. Hence the quick and complete destroying of all dead organic matter, which is and can not be well protected from putrefaction, would be the best method of preventing the spreading of pathogenic microbes, those species which we have chiefly to deal with in health and disease. If microbes were necessary in nature's economy to decompose all dead organic matter in order to set free the latent energy which is stored up in all the higher compounds the organic world represents, it would be different; such seems not to be the case, however, since there are other much more efficacious factors by which dead organic matter can be reduced into single inorganic elements, than by the mediation of organisms, and which force would be better to that end than fire? Why do we not make use of the same wherever it is advisable, instead of allowing the ground on which we live to be soiled by waste and refuse of organic nature of every kind? Why is it that, in contradiction to our modern progress and our knowledge about the origin of disease, we still let the ground get infected by following the old method of burying corpses of men and animals and letting nature take care of them by the way of the most slow and unwholesome process we know of, the action of putrefaction, the same one which we know to be the starting point of almost all diseases? I consider the microorganisms, apart from their fermentive power, as ideal watchmen of health, because their presence and action is quite often the first indication that something must be wrong, or that our body is in an abnormal state of health. Without the prompt action of microbes on diseased tissue it would be extremely difficult to discover the lesion and its origin soon enough to prevent further injury to the system. I can not believe that the pathogenic microbes are the direct cause of disease, but rather think that about in the same way as pure chemical poisons affect the system, disease is originated either by toxic materials, as the products of our *own* metabolism, poisoned air, impure food and bad surroundings, or as in cases of inoculation of specific microbes by *their* products of metabolism. If this view, as given above, should prove to be correct the hygienist has only to deal with poisonous or non-poisonous substances man is liable to come in connection with; while he should consider all the pathogenic, saprophytic and fermentive microorganisms as useful agents and as our natural guardians which protect us from disease. So the deductions from the bacteriologic propositions point again to cleanliness as the first factor to maintain our health.

But not bacteriologic researches alone and their practical demonstrations, show the truth of cleanliness as the first principle in hygiene; still more is this assertion proven by the study and observations made on the human body under circumstances of great sensitiveness to all unfavorable influences.

In cases of direct injuries and wounds, for instance, where the natural protective organs are entirely excluded from action, we notice the influence of any infectious matter first of all and in the most marked way. Thereupon is based, as you know, the aseptic method in surgery. The least carelessness in this respect may be followed by ill effects and shows evi-

dently how careful we ought to be in introducing foreign substances into our system.

Next to the effect of direct infections by wounds, we notice a high sensitiveness of the system to all kinds of impure influences in case of disease. The first thing nature tries to do in case of disease usually is to clean the system from foreign substances and to prevent further supply. Such symptoms as loss of appetite, nausea, vomiting, diarrhea, profuse sweat, etc., tell us very distinctly in what way the body will regain its normal state, and also where the origin of the abnormal condition lies. In nine out of ten cases I am sure that the cause can be traced to carelessness in regard to cleanliness, that there is a lack somewhere, either in reference to cleansing, dressing and general surroundings of the body, or that the internal system has been neglected, the secretory and excretory organs are out of order; so that the poisonous products of metabolism cause a kind of auto-intoxication; but as I said, the practice of cleanliness alone may prevent at least nine out of ten cases of disease.

The first and most important advice, therefore, the physician gives to the sick refers to general hygienic measures based upon good ventilation of the sick room, pure and easily digestible food and proper care of the body.

What the physician *does* and the only thing he *can* do for the sick is certainly to assist nature in its efforts to restore health, and, as far as the symptoms indicate the need of the system, the physician has to be only a true student of nature in order to be also a successful physician. Is the surgeon who uses the scalpel to remove, or to reach the diseased part, doing more than assisting nature in its endeavor to get the pus and impure matter out of the system? No; both medical practitioner and surgeon correspond in so doing to the first principle of hygiene.

Cleanliness in every respect is a vital question in infancy. Nothing, I believe, is more fatal for the new-born than neglected nursing, unsufficient cleansing and impure food. The immensely high death rate, especially among the lower class of people, is certainly due to the carelessness with which children are nursed and left to themselves, growing up in filth and fed on impure food, more like animals than like human beings. Indeed, there is still a great field of action for the physician, where he can realize the simplest hygienic measures without having to fear that the health of the people will reach such a high state, and the people itself will become so well educated that every one may be able to be his or her own physician while the practitioner will have to starve! No matter how far off that time may be, it would certainly be better and more honorable for the profession, than is our age of progressive physical degeneration, where almost every one believes himself to be able to act as his own adviser in illness, but in his ignorance swallows drugs and so-called patent medicines in astonishing quantities, according to his fallible judgment, instead of following the natural laws of hygiene, or in case of disease calling for a competent physician.

I think the more man progresses in regard to general civilization and special culture of the mind, the more stress he must lay on general health, if he does not want to endanger all that he has gained through pain and difficulties of every kind for centuries past. And if experience and science clearly teach us that cleanliness in its fullest extent is the first principle in hygiene, as I have tried to prove, then we should

strive not only to acknowledge, but still more to apply this axiom of health in all respects. The deeper we go into this matter the more we realize the great truth there is in the well known quotation: "Cleanliness is next to godliness."

1318 Masonic Temple.

THE ADVANTAGES IN THE TREATMENT OF SYPHILIS AT THE HOT SPRINGS OF ARKANSAS.

Read before Arkansas Medical Society in May, 1896, at Fort Smith, Ark.

BY EUGENE CARSON HAY, M.D.

PRESIDENT OF HOT SPRINGS MEDICAL SOCIETY; MEMBER ARKANSAS MEDICAL SOCIETY, MISSISSIPPI VALLEY MEDICAL SOCIETY AND AMERICAN MEDICAL ASSOCIATION.

My object in selecting this subject for my paper to be presented for your discussion today was for a twofold purpose: First, to endeavor to correct many of the fallacies and erroneous ideas in regard to the Springs that exist in the minds of our profession who have never visited the valley. And, secondly: To outline the methods we use in the treatment of syphilis and endeavor to give valid reasons why the Hot Springs of Arkansas enjoys the reputation of being such a Mecca to all syphilitic subjects.

Physicians abroad (at least a preponderating majority) claim that the only virtue the Springs possess lies in the change of climate and removal from business cares, the devotion of the patient to his treatment and care of his health while there. These they claim are the sole reasons why we have such excellent success in the treatment of these cases. And should the same régime be adopted at home, with the institution of ordinary warm baths, equally as good results would be attained.

I will admit that these are very important factors in the handling of these cases, and I will speak of them later. But they are not the primary ones. The true secret of the good results attained at the Springs in the treatment of syphilis lies mainly in the positive clinic fact that *these waters exert a pronounced tonic effect on all syphilitic subjects*, and one that is a daily clinical observation of every active practitioner residing at the Springs. Whether it is because the waters possess more solvent and eliminative powers than ordinary hot water, or that there is some unknown element in allotropic form possessing superior healing virtues, can not be positively stated. Their use is eminently empirical and our reasons for the clinic facts we daily observe are theoretical.

Some of our physicians think that the heat is the sole property, others electricity, others the method in which it is heated beneath the earth's surface, as they think the heat is generated by chemic reaction. And others believe the water contains elements in allotropic form, as I previously referred to. Again others attribute the benefit to the silica held in solution. The heat is of course important, because as soon as the water is cold all its therapeutic value is lost. As to the mineral constituents, to my mind, they are of no significance, averaging about eight grains to the gallon, consisting mostly of silica, sodium, potassium and chalybeate salts.

My own ideas are that the solvent and eliminative powers of the waters are so far superior to all others that it enables the patient to tolerate larger administrations of mercury and iodid potassium with less constitutional distress than can be borne at home, and that the water by its great eliminative powers relieves,

through the pores, the blood of all effete material more rapidly than could be done by any other water.

Before proceeding further I will speak of some of its physical properties. The water comes from the earth through fifty-eight different springs, at a temperature varying from 140 to 158 degrees F., as clear as a crystal, free of all odor and pleasant to the taste, as it is carbonated. If stood in the cold, by ordinary water of the same temperature, it retains its heat from two to three hours longer. This experiment I have tried repeatedly and verified. When cold it makes a pure and most delightful drinking water, but slightly constipating to some people on account, I presume, of the iron it contains.

The bath can not be tolerated at anything like as high temperature as when bathing in ordinary hot water; 100 degrees F. is generally the highest temperature prescribed, 110 degrees F. absolute maximum, and only permitted exceptionally when the subject has a very strong heart and blood vessels free of all signs of degeneration.

In Europe the "Roman bath" is given as high as 150 to 170 degrees F. from 20 to 30 minutes. And I likewise will insert here that tubercular patients grow progressively worse while bathing in these waters.

With these remarks I will pass on to the other advantages I spoke of above, which the profession abroad claim is our sole stock in trade and I concede of great importance. Because, in the first place, when a patient comes here he or she comes for treatment alone and has nothing to attend to but follow the doctor's instructions. When a patient realizes he has acquired a syphilis I do not know anything more pathetic than to witness this poor creature's mental anguish, especially if he is a gentleman. He feels that he is afflicted with a loathsome disease and ruined for life. Hence he must conceal it from even his most intimate friends and, like a criminal at large, using every subterfuge to escape detection, he watches every little blemish that appears upon his body, feeling convinced that should they be noticed his friends or relatives will immediately suspect or recognize his curse, the result of which would be disgrace. This anxiety, combined with his own secret remorse, precipitates him into a most deplorable mental condition and interferes to a large degree with his physician's efforts to effect a cure. Now, gentlemen, what is the result if you send him to Hot Springs? The first is immediate and magical. This mental anxiety is immediately dispelled and his mind is at last at rest, because upon his arrival he finds so many fellow sufferers, and a number whose condition is so much worse than his own, that he consoles himself with the thought that it could have been worse. His unfortunate associates give him their moral support, resulting from a bond of brotherhood and sympathy that exists between them all. He has come to a "haven of rest," where his trouble is treated as an accident instead of disgrace. He sees that it is a disease that is not confined to any certain class. The rich enjoy its "ear marks" as well as the poor; and he starts in upon his treatment with a heart relieved of its burden. As he is there for treatment, and treatment alone, being relieved from all business cares, he becomes a very plastic patient in his physician's hands. He is first instructed as to his diet, which is to stop eating all sweets and acids; his mode of living, which is to keep regular hours; stop smoking and chewing if addicted to the use of tobacco, and abstain abso-

lutely from the use of all intoxicating liquors. The next step is prescribing his medicines and baths. The inunction method is used almost exclusively by the physicians at the Springs, taking the official 50 per cent. ointment and usually dividing an ounce into eight, six or four papers, and rubbing in the contents of one paper each day, according to the exigencies of the case.

The bath is then prescribed, and the general routine for the day is as follows: The patient arising at 7 A.M., breakfasts at 8, then allowing from two and one-half to three hours to elapse so that digestion is thoroughly established, goes at 11 A.M. to his bath, which consists of immersion in the hot water contained in porcelain lined tubs from six to twelve minutes at a temperature from 94 degrees to 96 degrees F.; at the completion of which he is thoroughly rubbed down by his attendant until the skin glows from the stimulation of the peripheral circulation. He is then wrapped in his bath robe and passes into a lounging room that is kept at a temperature of 90 degrees F. He remains there from thirty to sixty minutes; and it is while in this room that the inunction of mercury is applied while the skin is active and the pores open, in the following manner: The patient sits astride of a straight back chair with arms folded over chest and back exposed; the attendant with his hand encased with rubber mitten spreads the ointment over the entire surface of the back, and standing by the patient's side commences with a long sweeping motion exerting an equable pressure distributes the ointment evenly, and continues until the back seems to become quite dry, which takes generally ten to twenty minutes depending on size of inunction. The patient then puts on a light gauze shirt called the "mercury shirt" which is worn constantly under his other garments and is never washed or discarded until he has finished his course. This naturally in course of a week or so becomes quite well saturated with the ointment and is the source of constant absorption. The patient then passes into another cooling room kept at a temperature of 80 degrees F., and after remaining thirty to forty minutes returns to his room and lies down before luncheon for about one hour, and he has finished for the day. If iodid of potassium is administered it is generally given in the saturated solution or 50 per cent with some adjuvant like essence of pepsin. I myself prefer the 50 per cent. solution, and use Fairchild's essence of pepsin as it protects the stomach, aids digestion and you do not witness any of the disagreeable gastric symptoms like these produced by the saturated solution alone. Diaphoresis is not encouraged in the bath during the inunction course, because as the emunctories are filled with mercury any excessive sweating would expel what we want absorbed. After saturation is produced the mercury of course is discontinued, at least until the symptoms all subside. About five or six days before the patient takes his departure for home he is instructed to take about as many vapors in addition to the plain baths, which I will detail briefly as follows: Plain bath ten minutes at 100 degrees F., then placed in vapor closet for five minutes standing in a vapor arising from water about 150 degrees F. He is then released and passes into the hot room kept at 120 degrees F. and remains from five to ten minutes. While in the bath and hot room he is instructed to drink the hot water freely. After passing through this you can well imagine the perspiration must be flowing quite freely. He is then removed to the first

cooling room I above referred to, kept at 90 degrees F., wrapped up thoroughly in his bath robe and allowed to cool off. The day before departure, especially if the patient lives in a cooler climate, a plain warm bath is administered and followed by an alcohol sponging to close the pores.

This is a complete synopsis, as briefly as I can state, of our methods.

Before closing I wish to say a few words in regard to the administration of mercury and iodid of potassium. There is no place on this continent where such enormous doses of either of these drugs can be given and produce such slight and mild constitutional disturbances as at the Springs. Patients frequently come here who can not take specific treatment at home and tolerate both mercury and potassium while taking the baths without suffering any inconvenience. When I make the statement that as high as 1000 grains of iodid of potassium has been given in a day at the Springs possibly some of my hearers will be incredulous; but to verify this assertion I will refer you to the remarks about Hot Springs in Dr. Keys' excellent book on syphilis and genito-urinary diseases, page 553, edition of 1890. I recently had a case of cerebral syphilis in which I administered 600 grs. a day. The patient's appetite remaining good, bowels regular, and the drug producing only the ordinary weeping of the mucus surfaces.

That these waters do possess superior solvent and eliminative properties I contend. It is a common experience to have patients present themselves suffering from the baneful effects of mercury, gums tumified, eroded and bleeding upon slightest pressure, when by the administration of a few vapor baths, the inunction course can be instituted and continued without any distress. But a great many of these cases are not due to saturation, but to their former physician's neglect of observing the condition of the teeth before starting them on a course of mercury, and the stomatitis is of local origin caused by the accumulation of tartar or a decayed tooth. Their system is not under the influence of mercury at all, and can instantly be relieved by sending them to a dentist. The reason why such large doses of mercury and potassium can be tolerated at Hot Springs is due to the important part the skin takes in the elimination of these drugs. This is a fact discredited by a great many physicians and ridiculed by not a few; but I believe is equally as important as the kidneys.

Ronovitch,¹ in 1895, made a series of experiments upon a number of patients to whom mercury was being administered in some form. "A Roman hot bath was used for twenty minutes to induce perspiration and equal quantities of sweat and urine were used for examination. He concluded that the elimination of the drug through the perspiration is much greater than has hitherto been supposed. A relatively larger quantity was excreted by the sweat than by the urine, but this only in cases in which mercury was introduced into the system by friction. This the author explains by the retention of the drug in the sudoriparous glands, friction causing it to be pushed into the glands before it had time to enter the circulation; but the quantity was the same in the sweat and urine of patients treated by injection."

In conclusion I wish to be understood that I do not even insinuate there has ever been a case of syphilis cured by these waters alone. But I do claim emphat-

ically that they act as a tonic when bathed in by syphilitics as no other water will in this country. The mercury and iodid of potassium is received more kindly into the system and all the physical accidents will disappear more rapidly than by any system of treatment that could have been instituted at the patient's home.

CONGENITAL TEETH.

BY E. S. MCKEE, M.D.

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The following case was presented by the writer to the Cincinnati Obstetrical Society at its April meeting Feb. 22, 1896. Mrs. L. 2-para, bore at eighth month gestation, twins. Both were male and were soon delivered, the first presenting a vertex and the second a shoulder necessitating turning. One was immediately observed to have two inferior incisor teeth presenting. The children were small and poorly developed. The mother was a very small woman. The teeth were both very loose and in continual danger of dropping out. One disappeared at the tenth week, probably being swallowed; the other remained *in situ* until the death of the child, which occurred at the twelfth week; it died in convulsions away from home and the physician who was sent for ascribed the cause of death to meningitis. Premature labor in this case, as that of Crausius, occurred at the eighth month. Helwig at the seventh, and also that of Lann, which is reported as occurring prematurely. The extraction of teeth in the mother during pregnancy was reported by Flesh. In the writer's case two teeth were extracted during the third month. The tooth remaining at the time of the child's death was removed and was exhibited by the writer to the Cincinnati Academy of Medicine. None of the gentlemen present at either of these societies had ever seen a case of this kind. The child was shown soon after birth to about 100 students of the Medical College of Ohio and a number of medical men.

These cases serve as a curiosity for doctors and students and are a sight many do not behold in a lifetime. Some writers claim the possibility of no milk teeth appearing to fill the vacancy left by exfoliation or removal.

The important writers on this subject are Jacobi, Forcheimer, Pliny, Bartholin, Magitot, Schuerig, Ballyntyne, Pierce, Vargas, Buist and Mackenzie.

Congenital teeth are very rare. Paris maternity reports from 1856 to 1863 out of 17,573 births there were only three cases of congenital teeth, or about one in 6,000. Ballantyne in the *Edinburgh Med. Journal*, May 1876, reports 70 cases gleaned from the literature.

Dr. C. C. Surber of Independence, Kansas, writes me that six years ago he delivered a lady of a fine boy, who had two central inferior incisor teeth $\frac{1}{2}$ inch long, very sharp but loose. He removed them at four weeks because of the cutting of the upper gums. He has not seen the child since it was 4 years old but the incisors had not then made their appearance.

Dr. Geo. W. McCoy, Columbus, Ind., reports to me by letter that Dec. 27, 1874 he delivered Mrs. M. of a male child, natural in every respect except two teeth in the upper gums; one full length and size of temporary teeth, the other small and about half through the gums. Both teeth were exfoliated about the fifth week. The child is a hearty and strong man.

This freak of nature has been noticed at wide inter-

¹ Journal Universal Medical Science, November, 1895.

vals and with great rarity for a long time. Shakespeare has frequent references to it. In Richard III the Duchess of York says: "Marry, my uncle grew so fast that he could gnaw a crust at two hours old. 'Twas full two years ere I could get a tooth."

Queen Margaret: "That dog had his teeth before his eyes."

King Henry VI: "Teeth hadst thou in thy head when thou wast born to signify that thou camest to bite the world."

Richard: "For I have often heard my mother say: I came into the world with my legs forward. The midwife wondered and the women cried: O, Jesus save us, he is born with teeth; and so I was, which plainly signified that I should snarl and bite and play the dog."

In English and French history we have mention of Richard III, Louis XIV, Richelieu, Mirabau and Mazarin. Inheritance is shown in some cases. In the instance of Mattei, the infant's mother had been born with a tooth, and in Limerick's the mother had two congenital teeth, as did also her second child and a child of her sister.

The etiology of the premature eruption of the teeth is considered due to some abnormal development of the bone; probably most cases have some connection with rickets. In some children who cut their teeth young, the fontanelles close early, but not so in those cases where the teeth are congenital. The enamel is usually very thin or absent. The etiology of congenital teeth is in some instances described as the premature occurrence of the processes which normally lead to the cutting of the milk teeth, in a few cases it is probably due to a true ectopia of the dental follicles and its tooth. Such premature eruptions are usually found in children suffering from improper nutrition or other abnormal systemic conditions.

Treatment: A tooth dangling uselessly and aimlessly in the mouth should unquestionably be removed; otherwise inaction is preferable. The teeth are sometimes so situated as to prevent closure of the mouth, or to make nursing painful and futile, and endanger the nourishment or life of the child. The danger of hemorrhage is probably magnified by Magitot, having lost one child in which the hemorrhage recurred on four separate occasions and proved fatal despite all treatment. He lays down the rule to never extract the teeth. If the child is puny and delicate perhaps syphilitic, hemorrhages are possible.

MOVEMENTS OF THE MANDIBULAR CONDYLES AND DENTAL ARTICULATION.

Read in the Section on Dental and Oral Surgery, at the Forty-seventh Annual Meeting of the American Medical Association, at Atlanta, Ga., May 5-8, 1896.

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This paper is a continuation of the line of thought and investigation indicated in my paper entitled "The Glenoid Fossa; the Movements of the Mandible; the Cusps of the Teeth," read before the Southern Dental Association in November, 1895.¹

Up to that time I had not been able to find mention of the facts that, in the movements of mastication, the mandibular condyle moves "not only forward but also downward, causing the ramus to drop, in the anterior and lateral movements of the mandible"

and that the condyle on the side toward which the jaw is advancing, in the lateral movements, does not merely "rotate on its axis," otherwise "remaining stationary" as we are taught, but that it also moves both upward and backward, very slightly in many subjects, and not at all in some, but considerably in others.

I enlisted the services of men who have access to libraries not within my reach, but even with their assistance, I had been unable to learn of any description of the temporo-mandibular articulation and the movements of the mandible corresponding with my observations. I had therefore concluded that the observations were original.

My paper having been placed in the hands of Dr. E. C. Kirk, as editor of the *Dental Cosmos*, with the request that he would refer me to anything bearing upon these points, he later directed my attention to the report published in the *Boston Medical and Surgical Journal*, July 4, 1889, by Dr. Chas. E. Luce, of the Harvard Dental School, of certain original investigations in the movements of the lower jaw, conducted in the physiologic laboratory of the Harvard Medical School.

It was very gratifying to me to learn that these distinguished investigators, working by widely different methods from my own, had reached the similar conclusion that "certain errors exist in all descriptions of this articulation given by eminent anatomists and physiologists;" a partial explanation of some of the inaccuracies being assigned by Dr. Luce to "the fact that they have made too much use of the cadaver to demonstrate the actions of the articulations, whereas it may be that the contraction of the various muscles coöperating with and antagonizing each other, is the important factor in determining the exact movements of the jaw."

Another cause is in the failure, in studying the temporo-mandibular articulation, to make due allowance for the fact that "in the dried skull the glenoid fossa is emptied of its intra-articular fibrocartilage, double synovial sacs and membranes, forming altogether a thickness of two or three millimeters, which space will be found, in the dried skull, between the upper surface of the condyle and the roof of the glenoid fossa" making it impossible to reproduce the normal play of the condyle in its socket, and consequently the true movement of the mandible. The published report of the Harvard investigations antedates my own studies by several years, but does not appear to have attracted the attention of the dental world.

Dr. Kirk at the same time directed my attention to the Transactions of the International Medical Congress (Berlin), in which appears an illustrated paper by Dr. Schwarze (of Leipzig), giving an account of his attempts to improve upon Dr. Bonwill's anatomical articulator based upon the study of these Harvard investigations.

Dr. Schwarze failed, however, to grasp the idea of the relations existing between the line traced by the condyle movement and the planes of occlusion and articulation, and the plane of the alveolar process, and therefore missed the essential point, viz., that to secure normal articulation in each individual case, it is necessary to reproduce in the articulator the exact angle formed by the intersection of these lines in the subject.

While, in his experimental modifications of the Bonwill articulator, Dr. Schwarze used a movable

joint, it was all haphazard work. Not having recognized the existence of a definite angle, varying widely in different individuals,¹ he naturally made no effort to secure any definite angle in the articulator, and finally abandoned his attempted improvements with the remark that the nearer he approached nature the further he found himself from practical results.

In the words of Dr. Luce "the first requisite in the study of jaw movements is to move the jaw," and the second "to get a permanent record of the movement."

light, a profile view was photographed, the bright spot reflected from the bead during the motion of the jaw in opening and closing the mouth being continuously photographed, and recorded on the negative as a line, giving the actual movement of the place upon the jaw to which the bead was opposed.

As recorded by this device, the mouth being opened to its greatest extent, the movement of the condyle is traced "as a curved line with the concavity upward," the beginning of which, or that portion traced in the

| CASES. | EXTREMELY OPEN. | HALF OPEN. | SLIGHTLY OPEN. | RIGHT LATERAL MOVEMENT. | LEFT LATERAL MOVEMENT. | ANTERIOR PROTRUSION. |
|--|-----------------|------------|----------------|-------------------------|------------------------|----------------------|
| Case 10; male, aged 60. Right condyle | | | | | | |
| Left condyle | | | | | | |
| Case 11; female, aged 50. Right condyle | | | | | | |
| Left condyle | | | | | | |

| CASES. | EXTREMELY OPEN. | HALF OPEN. | SLIGHTLY OPEN. | RIGHT LATERAL MOVEMENT. | LEFT LATERAL MOVEMENT. | ANTERIOR PROTRUSION. |
|---|-----------------|------------|----------------|-------------------------|------------------------|----------------------|
| Case 12; male, aged 28. Right condyle | | | | | | |
| Left condyle | | | | | | |
| Case 13; female, aged 60 Right condyle | | | | | | |
| Left condyle | | | | | | |

TABLE OF CONDYLE MOVEMENTS.

In the Harvard school investigation the photographic method of recording the movement of the jaw, was employed. A light frame-work was constructed, reaching around the face from the lower incisor teeth (to which it was securely fastened) nearly to the ear. By adjustable devices bright beads were placed directly opposite the condyle, gonion and symphysis. The subject being placed in strong sun-

"short openings" of the movements of mastication being in the "forward and downward" direction, and—as shown by a study of its illustrations—at about the same incline to the facial line that I had noted as the average in normal articulation.

After the reception of the report of Dr. Luce, in order to more thoroughly study the subject, and to confirm the results of these different methods of observation, I constructed an apparatus somewhat

¹ See Dental Cosmos, Jan. 1, 1896, p. 88.

similar to the one used in the Harvard laboratory, and obtained the photographs which I present for your inspection. The white spots show the location of the "beads" and the lines made by this change of position in the movements of the mandible.

No. 1 shows the right side, with extreme mouth opening, showing the distance traversed by the head at the symphysis, one at the region of the first molar and one over the condyle.

No. 2 is the left side, showing the same points.

No. 3 is the right side, showing the distance traversed by the three beads in moving the mandible from right cusp contact to occlusion and over to left cusp contact. The ink mark which was placed on the side of the face before photographing, shows where the bead rested in occlusion, the trace forward being the left lateral movement and back of it the tracing of the right.

No. 4 is the left side, showing the tracing of the beads in moving from occlusion to incisive contact.

No. 5 is a front view, showing the movement of the bead from right cusp contact to occlusion.



No. 1 shows the right side with extreme mouth-opening, showing the distance traversed by the bead at symphysis, one at the region of the first molar and one over the condyle.

To further verify these observations, in another series of experiments I replaced the "bright beads" by a small point of pencil, which traced the movement of the condyle on a sheet of stiff paper, held against the side of the face with the edge parallel with the facial line.

By this method the movements in a large number of cases can be traced in the time required to photograph and develop the negative of a single case.

In edentulous cases I fastened the appliance to the handle of an "impression tray," in which I used Teague's impression compound, additionally securing it by clamping to the mandible when necessary.

By this method I obtained tracings from a large number of individuals, but failed in a single instance to obtain so great a curve, or proportionately to the size of the illustration, so long a line as shown in the Luce report. However, his curve was apparently derived from the movement of the condyle when the mouth was opened to a very extreme degree.

The Luce illustrations are given as a correct reproduction of the photographs, with the relative propor-

tion observed between the width of the face and the extent of mouth-opening.

Assuming this to be the case, the subjects opened the mouth much wider than I have been able to obtain. I have measured the mouth-opening compared with the width of the head sighted from the front and find that the mouth-opening is less than one-third of the width of the head, while in the illustration showing a front view it is more than one-half as great.

These tracings are spoken of by Dr. Luce as being "interesting to dentists, as they show what has to be contended against in taking the bite preparatory to the insertion of an artificial substitute."

But a far greater interest attaches to the correlation of the line traced by the condyle in the movements of the mandible and the facial line.

There is a certain definite correlation between the morphology of the morsal surfaces of the teeth and the angles made by the intersection of the functional portion of the condyle path² with the facial line, which I call the condylo-facial angle; also the angle



No. 2 shows the left side with extreme mouth-opening, showing the distance traversed by the bead at symphysis, one at the region of the first molar and one over the condyle.

made by the intersection of the condyle-path with the plane of occlusion (or the alveolar plane in edentulous subjects), the condylo-occlusal, or the condylo-alveolar angle, as the case may be.

I show the tracings in two cases, taken:

1. With the mouth opened to its fullest extent.
2. With the mouth half-opened as in admitting food to the mouth.
3. Short openings as in biting and grinding the food.
4. Right lateral, and
5. Left lateral movements of the mandible.
6. Anterior protrusion.

Only the first of these were recorded by Luce, and that seemingly exaggerated.

The cusps and incisive edges of the teeth come in contact only in the short openings represented by the straight portion of the upper end of the line traced in the lateral and protruding movements, and it is that portion of the tracing only that bears any relation

² I mean that short straight portion of the condyle tracing forward and downward made in the movements of mastication, extended till it intersects the facial line.

to the cusps of natural or artificial teeth, the angles formed by the intersection of the extension of this portion of the line with the facial line and the oral planes mentioned being the angles in which we are interested in our studies of the movements of the mandible in connection with dental articulation.

In the paper before referred to³ I gave the conclusions which I had deduced from my experiments in the articulation of the models of natural teeth, and the great variations found in the condylo-occlusal angle of different subjects—ranging as I there stated from 22.5 degrees in one case to 45 degrees in another, those being the greatest extremes noted up to that time. More extended observation, however, has shown an even greater range.

Having proven to my own satisfaction the fact of this variation in the condylo-occlusal or condylo-alveolar angle, I constructed an articulator with an adjustable angle to reproduce these variations—with degree gauges to record the measurement of the angle, which varies not only in different subjects but also very considerably in the movements of the two condyles of many individuals.



No. 3 is the right side, showing the distance traversed by the three beads in moving the mandible from right cusp contact to occlusion and over to left cusp contact. The ink mark, which was placed on the side of the face before photographing, shows where the bead rested in occlusion, the trace forward being the left lateral movement and back of it the tracing of the right lateral movement.

I have also constructed an apparatus which I have called a facial clinometer.

This device registers the direction of the condyle path, and of the plane of occlusion (or the alveolar plane of edentulous subjects) as compared with the facial line, and measures in degrees the angles formed by the intersection of these lines, also the "classic facial angle," the mandibulo-facial angle, etc.

It also measures in millimeters the distance that one condyle moves forward with the synchronous backward movement of the other condyle, in the function of mastication.

I quote from Holden's Human Osteology: "In masticating we can readily feel that one condyle advances toward the anterior margin of the glenoid cavity, while the other recedes to the posterior."

The authorities are not in accord on this point, but

the clinometer shows it very plainly; it is true that in some subjects the condyle does not move back at all, while in others it recedes considerably, and often one condyle recedes more than the other.

The ratio between the forward movement of one condyle and the synchronous backward movement of the other varies greatly in different individuals, and even in the same individual the ratio often varies in the left lateral movement as compared with the right.

This distance-measurement is registered in millimeters by the clinometer and also on the articulator, where it serves to correspondingly regulate the distance at which to place the bite-correcting fulcrum-screws from the condyles of the articulator.

The importance of being able to recognize the extent to which, in any given case, one condyle recedes as the other advances, and of being able to utilize the observation is shown by the following diagram:

The mandible, as we know, is based on the equilateral triangle, the sides measuring four inches.

In the diagram, A and B represent the condyles, C the point between the central incisors.

If we imagine that the mandible is thrown to the left, and that the left condyle A does not recede, B,



No. 4 is the left side, showing the tracing of the heads in moving from occlusion to incisive contact.

the condyle of the right side takes the position of B', while C, the median line of the incisors, travels to C'. In the molar region F travels to F' on the left and H to H' on the right.

But in a case in which the right condyle, B, advances the same distance as before, while the left condyle, A, recedes one-third of that distance, moving to A'', we will find that the entire triangle acts as though turning on the fulcrum D.

C instead of moving to C', will reach C'', while F will have moved to F'', and H to H'.

In constructing a set of teeth for a subject in whom, by reason of the condyle receding on the grinding side, the fulcrum is at D, as shown, instead of at A, if, by reason of the construction of the articulator the fulcrum is immovably fixed at A, instead of being movable to suit the case, we would find the articulation at fault to the extent of the difference between the points F' and F'', H' and H'', C' and C'' respectively, causing inevitable interference of the cusps, necessitating

³ See Dental Cosmos, January, 1896.

either the sacrifice of the cusps or the reconstruction of the set.

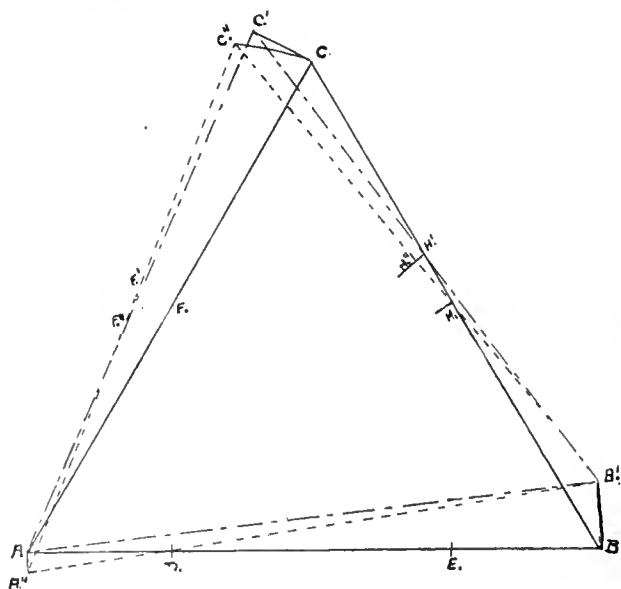
There are two reasons why teeth mounted upon plates should have cusps.

Dr. Bonwill points out that it is necessary in order that there may be a reciprocating or balancing articulation; that is, that when the incisors are brought in contact the molars will also touch to balance, and that when the buccal cusps of one side are brought in contact for the purpose of grinding food, we may have a balancing contact on the opposite side, the upper lingual cusps resting upon the lower buccal.

This "balancing articulation" I have illustrated on pages 39 and 40 of the January, 1896, *Cosmos*.

Dr. G. V. Black, in his recent experiments with the dynamometer, has shown that the subject wearing plates can not exert nearly so much force as those having the natural teeth.

He also found, in studying the physical characteristics of foods, that it requires very much less force to comminute food with a cusped crusher than when placed between plane surfaces.



This is the second reason why cusps are necessary to artificial teeth, and in fact, even more essential to teeth inserted upon plates than to the natural teeth.

It is much to be regretted therefore, that so many of the unfortunate people who have to wear plates which deprive them of a portion of the crushing power, should also, from lack of an adjustable articulator, be deprived of cusps upon the artificial teeth, thus still further diminishing their masticating force.

In my work thus far I have used only a heavy, clumsy working-model of the clinometer, made of brass in order that it might be altered as found necessary in the test of actual use. I hoped to have it here in its perfected form, made of aluminum, but have been disappointed.

Photograph No. 6, however, represents the head-piece of the clinometer in position (the jaw-piece, which is secured to the lower jaw to indicate the movement of the condyle, being here omitted).

An adjustable frame surrounds the head, resting upon it at the points A and B. A slender, dependant piece C, not very clearly shown in the photograph except on the forehead and just at the base of the nose, indicates the facial line. The piece D set par-

allel with C by the set-screw E, and held rigidly in position by the brace G, carries the adjustable transverse piece H, the degree gauge I registering the angle formed at the intersection of D and H.

In this position it serves to register the condylo-facial angle when H is placed parallel with the condylo-path indicated by the jaw-piece when the latter is in position and the jaw moved as heretofore described, a point over the condyle traveling freely in the slot of the loosely adjusted transverse piece H, the latter being fixed by a set-screw when its direction has been determined by the movement of the condyle pointer. The position of the transverse piece H can also be changed so that it will register the "classic facial angle," the maxillo-facial angle, etc.

The same dependant piece D, when placed in front of the face supported by the projection J and the brace K, and placed parallel with the facial line indicator C, and using the same transverse H and degree gauge I, serves to register various other angles.

Photo. No. 7 shows a modification of the transverse H, which enters the mouth and indicates the plane of



No. 5 is a front view, showing the movement of the bead from right cusp-contact to occlusion.

occlusion—not from the incisive edges and cusps of the upper teeth with the mouth open, but the morsal edge of the lower incisors and the summit of the cusps of the lower first molar when in complete closure.

To obtain this plane, points are affixed to the device which enter the sulcus of the upper molars to exactly the depth of the overlap of the incisors when the incisors are in occlusion. This function of the transverse H is also seen in the photograph No. 8, where it serves by other slight modifications to measure the plane of occlusion as described, also the plane of articulation, the alveolar plane, etc.

The angles and measurements thus recorded by the facial clinometer not only fully confirm the deductions from my experiments with models of the natural teeth, but show an even greater range of variation in the angles in question, not only between different individuals, but in the movements of the two condyles of the same person.

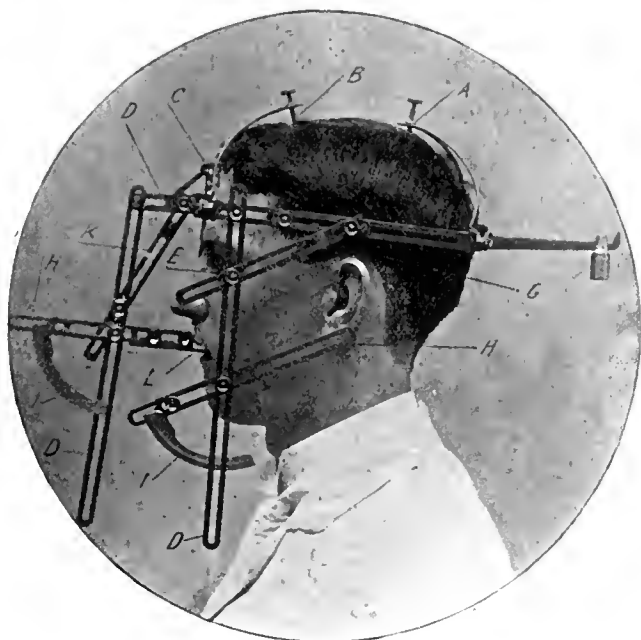
It has been said: "In the domain of organic life

there is rarely perfect symmetric correspondence in the two halves."

This condition was therefore anticipated, but not to the remarkable extent demonstrated by actual measurement.

I will cite two remarkable illustrations of this great variation:

One, a gentleman of 60 years, for whom I made full upper and lower sets. He had never worn plates before. The clinometer recorded the condylo-alveolar angle as 1 degree on one side and 10 degrees on the other, with which angles in the articulator a reciprocating articulation was obtained. This case was the lowest angle I have ever encountered, but it is largely due to the fact that his molars were lost some years ago, while a pair of bicusps and the incisors have only been removed a few months. Thus the alveolar process is greatly absorbed at the rear but scarcely any at the anterior portion. When absorption takes place in front the angles will undoubtedly become greater.



No. 6. The facial clinometer in position.

The second case is that of a lady 70 years of age. She has natural teeth below but has worn an artificial set above for over twenty years, having had different sets made but not with satisfaction, not having been able to bite.

The condylo-alveolar angle in this case was 22 degrees on one side and 44 degrees on the other. The variation was so great that I doubted the correctness of the record. Not wishing to trouble the patient with a repetition of the measurements, in placing the case in the articulator I made a compromise, taking 5 degrees from one side and adding 5 degrees to the other.

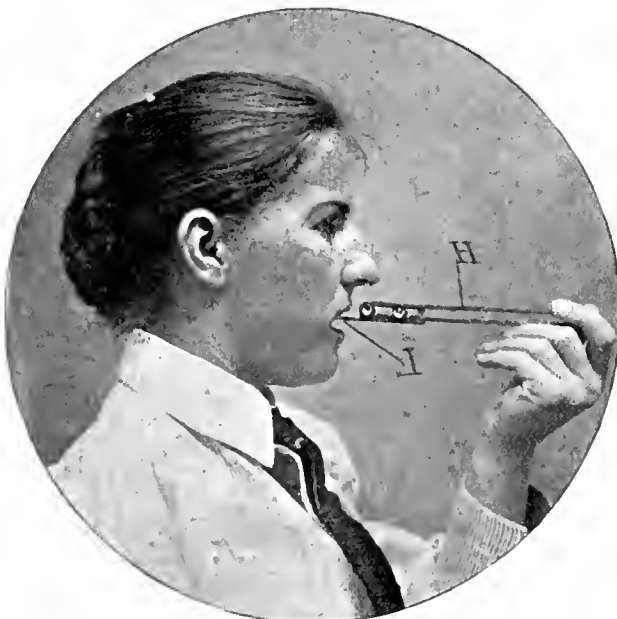
But I found it impossible to get a reciprocating articulation until I had restored the angles to the clinometer record. This was a peculiarly difficult case, not only because of the extreme angles but because the lower molars were worn by contact with porcelain teeth above, and the lower incisors having been relieved of all work were long, and the patient was unwilling to have them shortened.

The articulators devised by Drs. W. G. Bonwill, E.

T. Starr, W. W. Westmoreland and more recently by R. H. Antes, have both a lateral and a protrusive movement, but inasmuch as they fail to reproduce the drop of the ramus due to this hitherto unrecognized combined forward and downward movement of the condyle, they do not reproduce the true movement of the mandible, and therefore do not permit the normal articulation of the cusps of models of the natural teeth. Consequently they can not be relied upon to produce a correct articulation of artificial substitutes.

The physiologic articulator, with its adjustable angle, its degree and millimeter gauges for recording the measurements taken by its adjunct, the facial clinometer, will probably appear too complex for some, especially as compared with the dental articulators heretofore in use, which, with few exceptions, have been mere occluders.

But to those who desire to give their patients the best results possible, and who are not satisfied with anything short of scientific accuracy, the study of the



No. 7. The plan of occlusion.

mandibular movements as measured and recorded by the clinometer, and reproduced by the adjustable articulator, will be found not only instructive and interesting, but also of great practical value in their application.

As I have said in the article before referred to: "The movement of the condyles constitutes an important factor in many departments of our work, as in its bearings upon the articulation of the teeth, in the study of the cusps of the natural teeth with a view to bettering the articulation, either in orthodontia or in the treatment of the disease commonly known as pyorrhea alveolaris, in the shaping of artificial cusps, whether in fillings, crown, bridge or plate work; in the treatment of diseases of the facial muscles, of the glenoid fossa, or of plastic adhesions, etc."

The Vogt Prize.—The pupils of Professor Vogt of Moscow collected 2,000 roubles on the occasion of his recent twenty-fifth "jubilee," the income of which is to be awarded each year to the last work on general pathology by a former student of the university.—*St. Petersburg Med. Week.*

DEFORMITIES OF THE NASAL SEPTUM.

BY J. H. McCASSY, M.A., M.D.

DAYTON, OHIO.

But little success in the treatment of diseases of the upper respiratory passages and the ear can be attained while occlusion or partial occlusion of one or both nostrils exists. It is essential, therefore, that deflections of the septum nasi and other intranasal abnormalities be removed at the outset, so that the ingoing current of air may pass through the nasal chambers and be properly warmed and moistened therein. Physicians will not question the soundness of these conclusions, yet they too frequently let patients thus afflicted go the "rounds" without offering them advice and suggestions as to the necessity of primarily removing intranasal abnormalities for the ultimate success of the management of these cases. Mouth breathing, headache, epistaxis, sneezing, frontal neuralgic pains, insomnia and total or partial deafness are common symptoms of nasal obstruction. Chronic nasal catarrh and septal deformities go hand in hand.

Classification—1, osseous; 2, cartilaginous; 3, osseo-cartilaginous (Jarvis). This is the best and most natural classification. The seat of the deformity is found in the cartilaginous septum in two-thirds of the cases.

Causation—Civilization seems to be a factor of nasal deformity, for the American and European races are prone to them. Collier says about 80 per cent. of the savages are exempt from them. During early life falls or blows on the nose or rough wiping of it, sets up a low grade of inflammation—the perichondrium is over-nourished, new cells are deposited and the cartilage within its unyielding framework bulges to one side from excessive growth. Usually considerable thickening occurs at the eminence forming enchondroma and at the junction of the cartilage with the bone, bony deposits occur forming exostosis.

Case 1.—Deflection of the cartilaginous septum with enchondroma. Mr. M., aged 30 years suffered for many years with chronic nasal catarrh, pharyngitis and deafness. He complained of fullness in his head, sneezing, frontal neuralgic pain and insomnia. Examination revealed deviation to the left and great thickening of the cartilaginous septum. The enchondroma was situated about half an inch back from the nasal outlet. This exerted considerable pressure against the outer wall of the left nostril, giving rise to such reflex symptoms as sneezing, headache, frontal neuralgic pain and lachrymation.

An 8 per cent. solution of cocaine was applied for eight minutes, which produced anesthesia and shrunk the spongy tissue enabling the writer to view the contour of the parts. A scalpel with a narrow blade was used to excise the redundant tissue. Commencing at the floor of the nostril, the incision was carried inward three-sixteenths of an inch, then curved upward about half an inch. An assistant kept a close watch in the other nostril to warn against cutting through the septum. This precaution precludes the possibility of such a mishap. This operation was completed in a few seconds. A full view of the parts being cut is the safeguard in this operation. Delay will result in obscuration of the parts from hemorrhage. A sharp, narrow-bladed knife will remove cartilaginous outgrowths readily. It being impossible to determine beforehand the presence or absence of bony tissue the writer usually begins the operation with the knife, only using the saw and alligator forceps when absolutely necessary. A 12 per cent. solution of the nitrate of silver was brushed on the cut surface to aid in arresting hemorrhage. In a few minutes bleeding ceased. The nostril was then washed out with Dobell's solution. The patient was directed to blow the clots out. The nostril was then packed with cotton saturated with carbolic vaselin. This dressing was used for two weeks, being changed once or twice daily for the purpose of cleansing. As a result of this operation a good patulous nostril was secured

and septum straightened considerably. The naso-pharyngeal catarrh yielded kindly to astringents of nitrate of silver and chlorid of zinc and alkaline and albolene sprays. The reflex symptoms complained of soon disappeared.

Case 2.—Exostosis and enchondroma with deflection of the septum. Mr. S., aged 45 years, a bookkeeper, was referred to the writer by Dr. Ensey in July, 1896, for naso-pharyngitis, and on-coming deafness. Examination showed that the septum was but slightly deviated to the right, but a large exostosis and enchondroma, located about half an inch back from the nasal outlet, occupied the floor and septal side of right nostril, shutting off the passage of air. This precluded the possibility of using the Eustachian catheter in the right ear.

Under cocaine anesthesia, with the scalpel an elliptical portion of the mucous membrane was removed from the eminence of the outgrowth. A mastoid curette was used to separate and push back about a quarter of an inch the mucous membrane toward the base of the tumor. The knife failing to cut the exostosis the saw was used for a while, but owing to the shape of the tumor the saw could only be used to outline the cut both above and below. Then the alligator cutting forceps was used and the growth cut or twisted off in five pieces. Hemorrhage was pretty free for a few minutes. The parts were cleansed with Dobell's solution and the mucous membrane was coapted as nearly as possible without stitches. The nostril was packed with cotton saturated with carbolic vaselin. The after-treatment was the same as in Case 1. Healing was uneventful; a good patulous nostril was secured and the catarrhal symptoms soon diminished.

Case 3.—Deflection of the nasal septum without exostosis or enchondroma. Mr. T., aged 35 years, was referred to the writer by his family physician in March, 1893. He was a mouth-breather and had copious secretions from his naso-pharynx and from his right nostril. As long as he can remember he has suffered with headache, sneezing and frontal neuralgic pains. He said he had taken a barrel of medicine without getting any relief from his trouble. Examination revealed an enormous hypertrophy of his right inferior turbinate and the cartilaginous septum was curved to the left nostril so as to press against the outer wall of the left nostril, completely occluding it.

The hypertrophy was removed by two linear incisions to the bone drawn from the back to the front with the cautery knife heated to a white heat. This was done under cocaine anesthesia at two sittings.

Then under cocaine anesthesia an operation was made in the septum with an old cataract knife. An incision an inch long was made horizontally from before backward; another incision one-eighth of an inch in the middle was made below the first one, which tapered to nothing at either end. This permitted an elliptical portion of the cartilage and mucous membrane to be removed. By means of two vertical incisions a similar but shorter elliptical portion of the septum was removed. This made a stellate opening in the cartilaginous septum. (Max Wocher of Cincinnati had made to the writer's order a clamp with the blades over an inch long by three-fourths of an inch wide. When the blades were clasped firmly they were held in place by a set of screws, each blade had a hole in the center of it one line in diameter for the purpose of drainage.) After the hemorrhage had ceased the parts were cleaned and the clamp applied firmly by a pair of long forceps. The firm pressure straightened the septum and coapted the cut edges nearly. The clamp was worn for three days, being removed daily and the parts cleansed. A few doses of morphia were given to allay the pain and uncomfortable feeling arising from the pressure of the clamp. At the end of the third day the clamp was displaced by a perforated hollow rubber splint which was worn for two weeks, being removed daily for cleansing purposes. Healing occurred without interruption. The case remained under treatment for three months, during which time the naso-pharynx was brushed every second day with a 2 to an 8 per cent. solution of nitrate of silver and sprayed with Dobell's solution, each treatment being concluded with a spray of albolene containing a grain to the ounce of both carbolic acid and menthol. At the end of this time the naso-pharyngeal catarrh was practically cured and the headache and neuralgia had disappeared.

These cases are not reported here for uniqueness but because they represent fairly well the prevailing types of deformities of the cartilaginous nasal septum, not including spurs. The line of treatment adopted is simple, but successful. No clamp or reasonable amount of pressure will straighten simple deflection

of the septum while too much tissue remains in it. The redundant cartilage or bone must be removed. Fortunately simple deflection of the septum is rare. Not many cases will require the operation described in Case 3. In the great bulk of cases if the redundant cartilage or bone is pared off and the septum thinned thereby, the tissue in healing contracts and helps to straighten the septum and a good breathing space will be secured. The writer usually adopts the simpler operation first, leaving the clamp operation as a last resort. Indeed it is difficult to get patients to undergo the clamp operation. In cases having no manifestation of syphilis or scrofula little fear need be entertained for perforation or ulceration; delayed healing may occur but not the former. It is not necessary to be too penurious about the loss of a little mucous membrane. It will readily reform and produce a healthy secreting surface.

32 West Fifth Street.

FOLLICULAR OR CROUPOUS TONSILLITIS.

Abstract of a paper read before the Falls City Medical Society, December, 1896.

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Follicular tonsillitis usually begins with a temperature of 102 to 104 degrees, accompanied by chills and rigors, a full bounding pulse, throbbing headache, aching of the bones of the extremities and loss of appetite. The tonsillar symptoms do not become prominent until six to twelve hours later. Fulness is felt on deglutition, and a sensation as though a jagged foreign body was projecting from the tonsil; the anterior and posterior pillars and tonsil will be swollen, the follicles will be larger than normal and filled with a gray exudate and coagulated lymph.

At the end of twenty-four hours, the throat symptoms will be markedly exaggerated; the inflammation will have extended to the pharynx, and probably to the larynx; the soft palate will be edematous, the uvula elongated, and the feeling of fulness and stiffness of the muscles of the throat will be increased. There is dryness of the pharynx and greater swelling and edema of the pillars. The deposits in the follicles have become profuse and may be continuous over the surface of the tonsil. The pain has greatly increased and is continuous, being extreme in deglutition; the lymphatics about the neck are usually involved. The attack lasts from seven to ten days, but may be prolonged by the infection attacking first only one tonsil and later the other.

Cause.—The predisposing cause is enlarged tonsils with open crypts and follicles with ragged edges. That it is due to a specific organism is unquestioned. A number of organisms have been found in the exudate, but just which one produces the disease has not been determined.

Treatment.—The temperature, throbbing pain in the head and aching of the limbs can best be controlled with quinin and some of the coal tar derivatives, preferably phenacetin. I get the best results from 2½ grains each administered every two hours until distressing symptoms are relieved. Gargles of very hot water will increase the patient's comfort and lessen edema.

The tonsils, being the seat of the disease as well as

the point of infection, demand the greatest attention. The exudate upon the surface of the tonsil can be easily wiped away with a probe armed with dry cotton. Usually, any attempt to dislodge it with the probe from the follicles results in its being pushed deeper into them.

For the last eighteen months, I have adopted a method which renders it easy to thoroughly cleanse the tonsil and which shortens the duration of the attack, and in many cases, seen early, completely aborts it. I use a blow pipe made of soft silver about seven inches long, curved at the smaller end, resembling a long, curved Eustachian catheter; in fact, the catheter can be used very nicely as a substitute. After wiping away with the probe and cotton all exudate from the surface of the tonsil, I then attach this blow pipe to the cut-off from my air receiver, just as I would a spray tube. The curved end should be placed about one inch from the tonsil, the air turned on at about twenty pounds pressure, and the current of air passed rapidly from follicle to follicle, which will completely remove all accumulations.



The follicles are then washed with a solution of bichlorid, 1 to 3,000, with an angular Saas spray tube held very close to the follicles, after which the tonsil and sometimes the surrounding mucous membrane is painted with a solution of nitrate of silver, 40 to 60 grains to the ounce. The application of the silver solution will have a decided anesthetic effect and your patient will experience great relief. Other applications may be substituted for the silver solution, but I have found it serves the purpose best. This treatment should be repeated twice or thrice daily according to the severity of the attack. Iodin should be avoided in all acute stages.

To abort this disease the case must be seen during the first twenty-four hours of the attack, the earlier the better. Even when seen too late to abort the attack, this treatment materially lessens the severity.

Incidentally, I have successfully used the same blow pipe to remove soft accumulations and small foreign bodies from the ear.

THE DIAPHRAGM AND CENTRUM TENDINEUM.

WITH TEN ORIGINAL ILLUSTRATIONS BY THE AUTHOR.

BY BYRON ROBINSON, B.S., M.D.

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(Concluded from page 207.)

The membrana limitans is a very fine, thin connective tissue layer on which the endothelia rest. It is finely granular, or better, a finely fibrillar or striped membrane. It contains no cells. It has a watery or glass-like transparency, which is plainly observed when the endothelia are fallen off or very lightly brushed off. As Bizzozero and Salvioli have shown, the membrane is not exactly alike over all the parts of the peritoneum, but is perforated over the diaphragm. They say that the perforations of the membrana limitans are situated on the zona tendinea, and the zona peritendinea of the diaphragm. Bizzozero and Salvioli assert that the pores of the membrana limitans have a diameter from four to sixteen mm. and

a round or oval circumference. They occur in groups of fifty to sixty, of irregular egg-shaped form; the pores correspond to the meshes of the fibrous connective tissue. I have examined this glass-like membrane, the membrana limitans, in various parts of the peritoneum, as the diaphragm, omenta, mesenterium ligamentum latum, and there is no doubt about one's ability to see the membrane when the endothelial layers have been carefully brushed off, but we can not always be sure to find it, and it is not easy to isolate. Again, to find the pores of the membrana limitans which Bizzozero and Salvioli say exist only on the zona tendinea and the zona peridendinea of the diaphragm is not at all easy, at least so far as my researches are concerned. It is rather to be said that it is an uncertain process to find the pores. Muscatello made examinations of the membrana limitans on the ligamentum latum of the serous covering of bowel, stomach, liver, spleen, pancreas, uterus and anterior abdominal wall and the diaphragm. He found that the membrana limitans, as Bizzozero and Salvioli has asserted, is perforated on the diaphragm. In no other place could he find pores in it. The method Bizzozero recommends to isolate the membrana limitans is to place large pieces of serous membrane several days in Muller's fluid and then 12 to 24 hours in equal parts

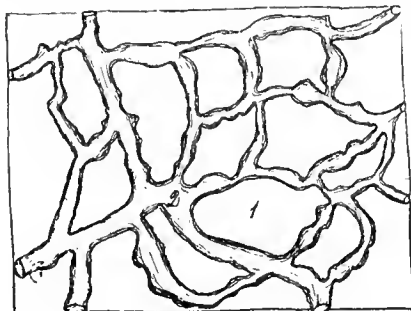


Fig. 9.—Lymph vessels of a man about 30 years old, twenty-four hours after death, pleural side of diaphragm. Oc. 4 oh. 8 R. The diaphragm was pencilled. Silver nitr. applied one hour $\frac{1}{4}$ per cent. Ground substance, 1, not drawn. The larger vessels show quite elongated spindle-shaped endothelia but many of the smaller show very sinuous shaped endothelia indicating that they are capillaries; 2 indicates the confluence of six lymph vessels; 1 shows the ground work of the lymphatic net work. 2. Note the irregular bulging of lymph vessels.

of water and alcohol. Now the endothelia are brushed off with a pencil or washed off with a stream of water. One then tries to seize the membrane with a forceps so it may be isolated. The membrane is then spread out and colored with eosin or acid fuchsin, when one can examine it in glycerin and water. Muscatello notes as all others who have examined the membrane that it is a fine fibrillar structure. It is a membrane of a continuous uninterrupted surface with no pores except on the diaphragm. In my examinations of the membrana limitans I will here record a phenomenon, which few authors note, and that is if the endothelia are brushed off very lightly, or better, washed off, one can occasionally observe small pits or depression in the membrana limitans. These pits or depressions are simply the places where the endothelial cells once were.

The only other author known to me as mentioning the fact, is Muscatello. The membrana limitans is generally thicker over solid organs, such as the liver and uterus. However, one generally finds the membrane on the diaphragm with as much certainty as anywhere. Still, I agree with Muscatello, that one can often find it on the bowel as well. By careful observation one can often see endothelial cells, con-

nective cells of fiber clinging to the membrana limitans at points where it was forcibly torn away. Again, in places it is so intimately associated with the underlying connective tissue that it can scarcely be separated, and a little too strong penciling ruptures it in various directions.

The membrana limitans is a thin sheet of tissue, a continuous membrane on which rests the protoplasmic portions of the endothelial cells. According to Bizzozero, Salvioli, Muscatello and my own researches it is perforated only on the diaphragmatic serosa, and hence arose the explanation of the fact that the diaphragm is the chief point of absorption of the peritoneum. The reason that the mesenterium will remain distended with air when blown up, as Bichat recorded it, is because the membrana limitans is not perforated on the mesenterium.

From considerable research and quite a number of experiments on the peritoneum of rabbits (and other animals) it appears that there is a current directed toward the diaphragm.

So far it appears the diaphragmatic membrana limitans alone possesses pores and is the chief locality of the peritoneum which possess the power to absorb and deposit the colored granules into the subjacent lymph channels. Dubar, Remy and Maffucci assert that there are other localities of the peritoneum for rapid absorption, but this has not been extensively confirmed. I have noted absorption of colored granules in the centrum tendineum, gastro-splenic omentum and about the omentum of the pylorus. The strange reason for the diaphragmatic membrana limitans being the only portion perforated has received no adequate explanation so far. But the diaphragm is an organ of motion and a bed of lymphatics and perhaps the pores are a remnant of the original aperture between the pleuro-peritoneal cavity.

The significance of the perforation of the diaphragmatic membrana limitans and the stream of fluid in the abdominal cavity directed toward it is a practical matter in peritonitis, for it is very suggestive of drainage.

1. In my experiments on animals it was distinctly evident that the region of the diaphragm (including to some extent the omentum minus and root of the omentum majus), was the chief region of physiologic (and ultimate pathologic) activity. The swarm of leucocytes told the story. The particles of Berlin blue almost entirely passed into the vast lymph bed of the diaphragm. With time the particles pass into mesenteric glands and viscera, but this is entirely secondary to the passage into the lymph channels of the diaphragm.

2. It has been found that in puerperal peritonitis the serosa and lymph channels of the diaphragm are intensely inflamed as first demonstrated many years ago by Recklinghausen.

The centrum tendineum is a vast system of lymphatic channels. The credit of making the foregoing views known is due to Dr. Daniel Von Recklinghausen, now professor of pathologic anatomy at Strasbourg. He demonstrated this fact by vast personal labors and many experiments, aided by his introduction of the use of silver salts. Ludwig, Schweigger-Seidel, Dybkovski, Klein and others perfected his labors. The very reason that the centrum tendineum has had so much attention is because it is a bed of lymphatics and through it peritoneal fluids will pass carrying with them various kinds of solid particles.

The following are the methods to demonstrate the diaphragmatic lymphatics:

1. By placing a very thin piece of the centrum tendineum of a small rabbit stained with silver nitrate and mounted in glycerin under the microscope we may be able to observe the valvate trunks and the non-valved capillary lymphatics. The serosa is sufficiently transparent to allow the lymphatics to be noted beneath it.

2. By brushing or penciling the abdominal serosa, but especially the pleural serosa of the centrum tendineum with a piece of cotton on a tooth-pick or a camel's hair brush and then subsequently pouring on the brushed surface .25 per cent. solution of silver nitrate for a few minutes one can observe in specimens mounted in glycerin well defined lymphatic vessels and capillaries.

3. To inject into the abdominal cavity of a living animal (rabbit) fluid holding in suspension solid colored granules, subsequently (from 10 minutes to 24 hours) killing the animal, carefully cutting out the diaphragm, brushing its surface and silvering it. Mount small pieces in glycerin when the valvate lymph trunks and capillaries are plainly visible containing the colored granules.



Fig. 10.—From guinea-pig's pleural surface of diaphragm, penciled, stained with silver nitr. and drawn to oc. 4 ob. 3 and reduced $\frac{1}{3}$. The object of the cut is to show how the juice canals in the ground substance flows into the lymph capillaries, *i. e.*, the lymph canalicular system and the lymph vessels are directly connected with each other; 1, 2, 3, lymph vessels; 4, 5, 6, denote juice canals in the ground substance which is marked 7, 8, 9, 10. At 11 and 12 observe the juice canals in the ground substance blend with the lymph vessels; 13 and 14, valves of the lymph vessels; 15, 16, endothelial cell and nucleus in the ground substance. This guinea-pig had been injected with a solution of Berlin blue, fifteen hours before death; 17 shows lymphoid corpuscles in the vessel; 20, endothelium of lymph vessels. One can observe the particles of Berlin blue free in the lymph vessels as noted by +. One can see the leucocytes in the lymph vessels and some have enclosed in the bodies particles of Berlin blue. One can occasionally observe particles of Berlin blue scattered in the juice canals. By fifteen hours of peritoneal irrigation are more prominent, and at 11 and 12 is seen the most typical transition of the cells of the lymph canalicular system, into the lymph capillary vessels. With 1-15 oil immersion lens one can discover vast numbers of colored granules overlooked by low power. At 18, 19 and 20 may be seen lymphoid canalicular systems which do not nearly fill the space.

4. The lymphatics may be demonstrated by carefully cutting out a diaphragm of an animal dead as long as twenty-four hours, silvering it and allowing it to remain one-half to several hours in a solution containing colored granules of Berlin blue. Mounted in glycerin it shows the lymphatics containing the colored granules.

5. Inject into a recently dead animal (rabbit) a fluid containing Berlin blue, in half an hour cut out the diaphragm, silver, mount in glycerin, whence one may observe the lymphatics, capillaries and valvate trunks.

6. The lymphatics of the centrum tendineum fill better if artificial respiration be kept up for ten to fifteen minutes. The peritoneum of the just killed dog and rabbit absorb fluid and solid particles about as rapidly as that of the living animal.

In every method one may expect frequent failures

from trauma, *i. e.*, dragging or too much brushing and occasionally too little brushing. After very many trials and experiments to demonstrate the lymphatics of the centrum tendineum, we would give the following simple directions. Kill a rabbit, open the chest and abdomen with as little trauma as possible. Wind a little cotton on a tooth pick and brush the abdominal side of the centrum tendineum with the cotton, wet in the animal's serum or distilled water, gently two to three times. Then pour over the tendon *in situ* .25 per cent. solution of silver nitrate for three to five minutes. Serve the pleural surface of the tendon exactly similar. Now, with the most exquisite gentleness, cut out the diaphragm and place it in distilled water in the sunlight for a few hours. Snip off small bits with sharp scissors and mount them in glycerin. Preserve the whole specimen in Müller's fluid, or 10 per cent of formalin. For preservation the specimen should be dessicated with alcohol, however, a very short time—one minute—or it will dissolve out the silver lines, a half minute in oil of cloves and mount in zylol balsam. If one desires to have a clear nucleus, the specimen should be colored with hematoxin for one or two minutes, and if a beautiful color is desired for the ground substance, the sub-endothelial tissue, a very dilute alcoholic solution of eosin for about a minute will perhaps be sufficient.

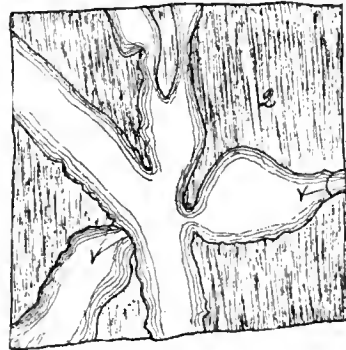


Fig. 7.—Lymph vessels of pleura serosa of diaphragm of rabbit. Ob. 4 oc. 3 R. The surface was well penciled and then stained with a $\frac{1}{2}$ per cent. solution of silver nitr.; v. v. valves. Note the irregularity of outline of the vessels. Ground substance dark. The lymph vessels are dilated.

A curious but significant feature of the centrum tendineum is that where the pericardial sac lies on the tendon, lymphatics fail. There would be no particular physiologic object in having the centrum tendineum sieve-like immediately under the pericardium where it is adherent to the tendon, for the peritoneal fluids would then only pour into the pericardial sac.

The recognition of the lymphatics in the centrum tendineum after the application is easy and perfectly certain. We notice two kinds, 1, lymphatic trunks with distinctly visible valves, and 2, various kinds of capillaries and lymph spaces. By far the most typical location is on the pleural serosa of the tendon. It does not appear that the dog's lymphatic system is so well developed as that of a rabbit or guinea pig, hence, for the purpose of demonstrating, the lymphatics of the latter animals should be chosen. Under the microscope the lymphatic trunk consists of a distinct wall, composed of sinuous or spindle-shaped, nucleated endothelium, which is beautifully brought out by the silver stain. The individual endothelial cell forming the lymph vessel wall may be enormously long, perhaps its major diameter may exceed its minor diameter by ten-fold, showing a very narrow and long spindle-shape, or the endothelia may be very

irregular in shape and possess a sinuous outline similar to the cranial suture. The vigorous emptying and filling of the lymph vessels give elongated shape to the endothelia, as it does in blood vessels. It appears that the endothelia of the lymph vessels possess stomata vera and spuria similar to the peritoneal serosa; however, this is denied by some investigators. The interendothelial space is just the same as that of the peritoneum, *i. e.*, consists of two dark parallel lines crossed transversely by anastomotic protoplasmic processes. But the most significant and characteristic feature of the lymph trunks are the valves which appear on the vessels at very short intervals. The valves are a fold of the vessel wall and pass generally entirely across the wall. Frequently at the valves the endothelia change their course from a longitudinal to a transverse direction. Behind the valve the lymphatic trunk bulges out and one can observe a succession of such dilatations and constrictions of the vessels. In fact, on the pleural surface of the centrum tendineum the lymph vessels have so many valves that they resemble a succession of flasks placed one after the other. Sometimes the valves have a beautiful curve and where the valve exists the vessel is enormously dilated. Vast numbers of lymphatic trunks exist in the centrum tendineum. The lymph trunks are very much wider than blood vessels and if

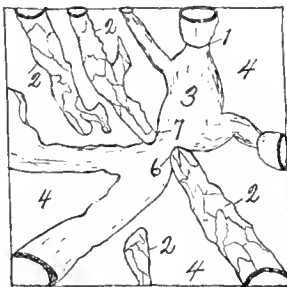


Fig. 8.—Lymph vessels of pleural surface of diaphragm of rabbit. Pencil and silver nitr. $\frac{1}{2}$ per cent. applied; 1, valves; 2, 2, 2, 2, lymph capillaries with endothelia delineated; 3, lymph vessel trunks whose endothelium is not marked. Note the irregular bulging of the walls; 4, 4, 4, ground substance not drawn. Oc. 4 ob. 3 R. 7 and 7, valves of capillaries opening into the main trunks.

one is puzzled to decide whether the vessels be for blood or lymph, all that is necessary is to trace the vessels to a valve which will decide in favor of a lymph trunk. Again, in blood vessels as large as an ordinary lymph trunk one is able to observe longitudinal or circular muscular fibres; beside the contour of a blood vessel is even while that of the lymph trunk is usually irregular.

The lymphatic spaces or capillaries of the centrum tendineum cover vast areas; in fact, in some specimens which happen to be well silvered and quite transparent, it appears that the whole of the centrum tendineum except where the heart rests and the periphery of the tendon or peritendinea is simply a bed or space of lymphatics. The lymph capillaries or spaces in the central tendon are characterized by sinuous spindle-shaped, or irregular nucleated endothelia. The word sinuous generally best expresses the shape of the endothelia. The capillary lymphatic system of the central tendon is vast and one may frequently note the lymphatic capillaries by looking through the transparent endothelia of the pleural or peritoneal serosa. The lymphatic capillaries and trunks are seen to be connected and all stand in open communication with the peritoneal cavity. Several layers of lymphatic vessels lie in the centrum tendineum, such

as the capillaries immediately under the pleural or peritoneal serosa, the vast intertendinous lymph spaces, the straight lymphatics, the deep lymphatics and those straight lymphatics which pass between the tendon bundles to connect the systems of lymphatics of the pleural and peritoneal side of the central tendon.

The distribution of the lymphatics in the centrum tendineum requires some time to determine experimentally and microscopically. The latter method I practiced extensively and found the trunks of lymphatics to pass, 1, toward the costal periphery of the tendon, 2, toward the mammary vessels ventrally, and, 3, toward the dorsal part of the tendon to reach the thoracic duct. The chief field for the lymph capillaries is toward the central portion of the tendon and the vessels gradually widen toward the periphery, finally terminating in four large lymphatic trunks, two dorsal-ward to the thoracic duct, and two ventral-ward to the mammary vessels.

In the physiologic method of demonstrating the lymphatics of the centrum tendineum we injected into the peritoneum of rabbits especially (sometimes employing dogs and guinea pigs) a solution holding in suspension particles of Berlin blue, killing them from a few minutes to fifteen hours later. Shortly after such an injection into a rabbit's peritoneum, say ten to fifteen minutes, the centrum tendineum presents a brilliant display of radiating blue lines passing from the dorsal region of the tendon toward its periphery in the intertendinous spaces. If the tendon is placed between the eye and strong sunlight the blue lines are very apparent. With a strong lens the lines are still more visible. It must be remembered that in some experiments unaccountable failures arise, as we have to do with factors of peritoneal absorption not yet understood. For example, I took a dog of about seven pounds weight and injected 100 cubic centimeters of fluid (composed of NaCl, 2 per cent.; 2 cubic centimeters of a 5 per cent. solution of ferrocyanid and H_2O) into the peritoneal cavity. Killing the dog in fifteen minutes, I found 130 cubic centimeters in the peritoneal cavity, while the same dog dead a few minutes absorbed 25 cubic centimeters in fifteen minutes. I found that dogs and rabbits just dead absorbed fluid almost as fast as they did while living, and also quite a similar standard prevailed in the same dog, dead or alive. It may be noted that the anterior efferent system of lymphatic vessels pass toward the posterior surface of the xiphoid cartilage and eventually along the mammary vessels to the retro-sternal glands, while the two posterior trunks of the central tendon empty into the thoracic duct just anterior to, or above, the point where it emerges from the diaphragm. The lymphatic vessels of each half of the diaphragm can communicate with each other. The lymph trunks of both systems are characterized by possessing spindle-shaped endothelia, many valves and by lying chiefly between the two tendineous layers and the pleural serosa. The lymphatic capillaries emptying into these lymph trunks are characterized by sinuous endothelial walls which possess no valves and have very irregular excavations in different localities and directions. Now, since we have a circular layer and a radiating layer of tendon bundles in the centrum tendineum, we will have straight or radiating lymph capillaries in the intertendinous space of the radiating bundles of tendons. Also straight or circular lymphatic capillaries between the circular ten-

don bundles. We may call them together, intertendinous lymphatic spaces or capillaries. These have quite a uniform breadth with lateral sinuses or bulgings at various intervals. We also have another kind of lymphatic capillaries which lie chiefly under the pleural serosa and are of irregular and variable breadth. Hence we have two kinds of lymph capillaries. 1. The intertendinous, which run straight in a radiating direction and in a circular direction corresponding to the directions of the tendinous bundles of the centrum tendineum. These two systems of deep and superficial lymphatic capillaries communicate generally where they cross each other by short straight vessels; sometimes a large lymph vessel will suddenly become narrowed and pass between two tendon bundles to gain the other side of the tendinous layer. 2. The lymph capillaries which lie mainly under the pleural serosa, of variable breadth, with sinuous endothelia and provided with excavations.

Peritoneal injections holding coloring matter will demonstrate the various kinds of lymph capillaries in the centrum tendineum. The mechanism of the diaphragm is wonderfully constructed for the purpose of acting like a sieve, as a great and rapid absorbent. The chief aid to this absorptive capacity is the motion given to the centrum tendineum by respiration. The narrowing and widening of the tendinous bundles, due to contraction and expansion of the diaphragmatic muscle in respiration urges onward the lymph current. The motion of respiration acts on the centrum tendineum like a pump. The deep and superficial straight lymphatic capillaries aid especially in forcing onward the lymph stream through the spreading and closing of the intertendinous bundles. Again, as persistent anatomic exactness is not characteristic of the lymphatic system, we find peculiar deviations, spiral lymphatics, outside of the various systems mentioned.

Whatever may be the functions of the superficial straight lymphatics of the centrum tendineum, they absorb a wonderfully large amount of coloring matter from the peritoneal cavity in a very short time, both in the living and dead animal. So far as my experiments are concerned, no place in the centrum tendineum is so active in absorption as are the superficial, straight or radiating lymphatics. It appears that respiration dilates and contracts the radiating intertendinous spaces to a very marked degree. The straight, deep and superficial lymphatics seem to me to be the very important lymph channels of the centrum tendineum. In respiration the straight lymphatics are widely dilated, while in expiration they are narrowly contracted, thus allowing them to fill and empty during the motion of inspiration and expiration. The straight, deep and superficial lymphatics connect the anterior and posterior systems of lymph vessels of the centrum tendineum, becoming in this manner an important factor in the onward progress of the lymph through the sieve-like tendon. Perhaps in this respiratory motion lies its evolutionary process, its gradual steps toward its present condition in mammalian life. With the acquisition of more and more lung tissue the diaphragm assumed a wider range of activity. The wider range of diaphragmatic activity brought with it a necessity of considerable separation of musculo-tendinous bundles at the maximum point of diaphragmatic expansion, because the origin and insertion of the diaphragmatic muscles, musculo-tendinous bands are very various and arranged in an

irregular circle, *i. e.*, on the irregular costo-vertebral internal circumference. As all tissue spaces are the recipients of variable quantities of lymph the intertendinous spaces of the centrum tendineum from their periodic narrowing and widening, not only become lymph receptacles but important channels for lymph currents, whose extent and rapidity of flow rests on the regularity of diaphragmatic activity. Ages on ages of mammalian life with increasing pulmonary tissue and power only tend to fix and increase this peculiar but significant function of the centrum tendineum. Again, during expiration the large liver presses upward on the musculo-tendinous bundles of the diaphragm, tending to increase the intertendinous spaces and enhancing the lymph flow. An examination of a rabbit or other animal's diaphragm will quickly reveal the vast intertendinous spaces and the enormous amount of fluid they may contain when the tendon bundles are widely separated from each other and how very much fluid would necessarily be forced out by their tendon bundles approaching each other and closing up the vast spaces. One can not assert, perhaps, that all the tendinous bundles are sep-

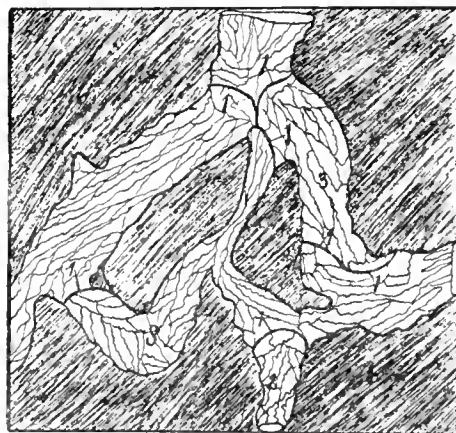


Fig. 11.—Lymphatics of the peritoneal serosa of a rabbit drawn under Oc. 4 ob. 3 R; 1, 1, 1, 1, 1, valves. Note how the endothelia of the lymph vessels becomes directed transversely to the vessels at the valves. The ground substance is simply drawn black to show the vessels plainer. Silver nitrate, $\frac{1}{2}$ per cent. is applied for fifteen minutes after penciling; 2 shows the endothelium passing into capillaries by its sinuous outline. In the lymph channels it is elongated and spindle-shaped; 3, lymph channels and trunks. The lymph vessels are dilated.

arated during expiration, now that all approach each other during inspiration, but that in all probability the musculo-tendinous bundles separate and approach each other once during one respiration, *i. e.*, a complete act of inspiration and expiration. Therefore, we may assert that the chief absorptive power of the centrum tendineum is due to its straight, deep and superficial lymphatic spaces and the rapidity of the absorption is due to respiratory movements. It must not be overlooked, however, that the quiet diaphragm of a just killed animal will absorb almost as fast as the living one. Death (in non-septic cases) probably does not alter the diaphragmatic structure for four to six hours. In one case I found Berlin blue particles absorbed in the human diaphragm seventy-two hours after death. The experimental physiology of the centrum tendineum will be reported in detail in another place, but in some thirty carefully planned and executed experiments we learned some salient physiologic features of the tendon, which may be summarized with the conclusions of research on the centrum tendineum.

1. The diaphragm is the characteristic muscle of

mammalian life, beginning imperfectly in crocodiles and birds.

2. The centrum tendineum consists of four layers, two of serosa, abdominal and pleural, and two layers of tendinous bundles, the radiating and circular.

3. The characteristics of the serosa are stomata vera and spuria and the interendothelial space. The interendothelial space is divisible into two parallel lines and crossed by anastomotic protoplasmic processes, resembling a railway with its ties. The endothelial cells are held together in colonies by transverse protoplasmic processes.

4. The characteristic of the tendinous layers is that they possess the deep and superficial straight lymphatics between the bundles, and that these straight lymphatics connect the anterior and posterior lymph system of the diaphragm.

5. The intertendinous lymph spaces between the radiating bundles of the centrum tendineum are covered by a sinuous endothelia of smaller dimensions and more irregular than covers the adjacent bundles of tendons, and possess numerous stomata vera arranged quite regularly in rows.

6. The centrum tendineum is a bed of lymphatics consisting of valved trunks and capillaries of variable width possessing sinuous and spindle-shaped endothelia, lateral excavations and no valves.

7. The rapidity and extent of absorption of the central tendon is due to the widening and narrowing of the intertendinous lymph spaces depending on the motion of respiration. In expiration the radiating intertendinous spaces widen and thus span the lymph space between the tendinous bundles. In inspiration the intertendinous spaces narrow and this forces the fluid onward.

8. The lymphatics of the centrum tendineum stand in open connection with the peritoneum through vertical canals lined by granular, polyhedral cells, whose dilations and contractions regulate peritoneal currents.

9. There is a fluid current existing in the peritoneum directed toward the centrum tendineum.

10. The diaphragm or central tendon is the chief place of peritoneal absorption for colored granules. (I formerly thought it the only place of absorption, but experiments showed a slight absorption in the gastro-splenic omentum of colored granules in the region of the pylorus, and perhaps others will be found by search.)

11. The membrana limitans, so far as my researches extended, is perforated only on the centrum tendineum, which gives a physical explanation of rapid absorption of colored granules through the centrum tendineum.

12. The colored granules wander through the central tendon mainly in a free state and to a less extent enclosed in leucocytes.

13. I can not observe any macroscopic, microscopic or physiologic differences between the centrum tendineum of man and other animals.

14. Lymphatics almost fail when the pericardium and central tendon coalesce. Blood vessels are not constant in location in the centrum tendineum; they are mostly found on the pleural, and sometimes on the peritoneal side, often in the intertendinous spaces.

15. The peritoneal serosa absorbs more rapidly than the pleural serosa.

16. The respiratory movements of the diaphragm act like a pump on its lymphatics.

17. Since the dead centrum tendineum absorbs sim-

ilar to the living, the so-called "vital" process of the endothelial cells must be questioned.

18. It is the lymphatics that play the rôle of absorptive in the central tendon, and not the blood vessel.

19. The best coloring matter to place in the injected peritoneal fluid to test the physiologic action of the centrum tendineum is Berlin blue.

20. The particles of Berlin blue may be traced in the centrum tendineum in two directions: *a*, toward the posterior surface of the xiphoid appendix to accompany the many arteries; and *b*, toward the vertebral column to empty into the thoracic duct just above where it emerges from the diaphragm into the thorax. This places the non-valved lymphatic capillaries of variable breadth and possessing excavations in the middle portion of the centrum tendineum, with the valvate lymphatic trunks toward the costal periphery.

21. The vast absorptive capacity of the centrum tendineum depends on its direct connection by means of stomata vera with the peritoneal cavity, on its great extent of lymphatic vessels and spaces on the perforations of the membrana limitans, and on the respiratory motion of the diaphragm.

22. The force of gravity, intra-abdominal pressure and contact of fluids against the centrum tendineum enhances the rapidity of the absorption of colored granules. For if an animal is hung up by the hind legs the absorption is more rapid than if he be made to sit up. Also movements, manipulation, massage, kneading of the abdomen, etc., hasten the deposit of colored granules into the lymph spaces of the centrum tendineum. So far experiments do not indicate to me that starving the animal hastens absorption to any considerable extent.

23. I can not observe in the experiments that tying one or both thoracic ducts (*i. e.*, the two innominate veins), retards absorption of the colored granules into the centrum tendineum. But the experiments have shown that if the thoracic duct (*i. e.*, the left innominate vein) be tied, the injected peritoneal fluids appear in the bladder about twenty minutes later than if the duct be left untied. The test is made by injecting fluids into the peritoneum containing 2 to 6 per cent. of potassium ferrocyanid subsequently every five minutes, squeezing the urine out of the bladder and adding ferric chlorid, producing a beautiful blue reaction if any potassium ferrocyanid be present. The test is so delicate that the blue reaction will occur at about 1 to 30,000.

24. The vast and active absorptive capacity of the centrum tendineum with the consequent fluid stream directed toward it is a strong argument against peritoneal irrigation, as any fluid in the peritoneal cavity will quickly stream with its contained germs toward the diaphragmatic tendon, the dangerous grounds of peritonitis. I have frequently observed inflammatory products on the peritoneal serosa in pleuritis and pneumonia. Recklinghausen found violent inflammation on the peritoneal serosa of the centrum tendineum in septic puerperal sores.

Cause of Accidents from Tincture of Iodin.—The hydroiodic acid which develops spontaneously in old tincture of iodine, and is found in the impure article, is the cause of the nausea, vomiting, tympanism, pain, etc., that have been known to follow uterine injections. If present no precipitate forms when water is added to the alcoholic solution of iodine.—*Gaz. méd. de Liege*, December 31.

PECULIARITIES OF THE SURGICAL DISEASES AND INJURIES OF THE NECK.

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(Continued from page 203.)

Tumors of the neck.—The gaseous tumors of the neck are represented by emphysema resulting from some wound of the air passages or of the lungs in the supra-clavicular fossa; it may be due to fracture of the base of the skull extending to the mastoid cells; it may include all the layers and spread over the whole body; the crepitation of emphysema is characteristic.

Aeroceles (laryngoceles, tracheoceles) are tumors formed by air filling an adventitious pouch; this excludes pneumatocele. The predisposing causes are weakening of the tract and emphysema. The occasional causes are strains (cough, labor). Some are congenital dilatation of the laryngeal ventricles, abnormal prolongations; some are traumatic and due to wounds of the trachea, rupture of the intercartilaginous spaces; some are pathologic, due to dilatation of the glands of the mucous membrane, to ulcerations, syphilitic or due to former disease of the cartilages, or to abscesses; they may consist in a single hernia of the mucous membrane through a rent in the walls, or to rupture; they may consist of all the coats with the penetration of the air in a cavity preëxisting, such as an abscess, or of air into the tissue condensed all around. The symptoms are changes in the voice and resonance upon percussion. The course varies; they are usually persistent. The palliative treatment consists in compression. In some cases extirpation is possible. They present the following forms, varieties and complications: *aerocele* with brusque development, which may cure of itself; *aerocele* stationary; *aerocele* with slow development; *aerocele* with an irregular course, alternately slow and fast; *aerocele* simple, due to the rupture of all the coats of the walls, except the mucous membrane; *aerocele* due to the opening into an abscess; *reducible aerocele*, which refills by straining; *irreducible aerocele*, when the orifice of communication has become obliterated; *aerocele* with alterations of the voice; *aerocele* due to previous or still existing disease; *aerocele* with suffocation and dyspnea, calling for tracheotomy. *Pneumatocele* is due to hernia or great protrusion of the lung into the supraclavicular region; it is recognized by percussion and by its disappearance upon pressure and quick reproduction by forced respiration; *pneumatocele* follows the respiratory movements.

The liquid tumors of the neck are the following: *Liquid hematoma* following blows or contusions, or punctured wounds, or incised wounds, when the lips have lost their parallelism; they may result also from a cured aneurysm. *Angioma* is not very rare; it should be left alone if it does not grow; if otherwise, the removal is indicated, but with all sorts of precautions against the bleeding, which is so profuse here especially; provisional or permanent ligatures of the large vessels above and below should be placed as soon as possible after the skin and fascia are traversed. The tissues are to be divided only between the two artery forceps or two ligatures; injuries to the common carotid or internal carotid necessitating their ligation are grave lesions, also those of the jugular

vein especially when divided high up. Aneurysms are frequent on the neck, but their location so influences the diagnosis, prognosis and treatment, that they will be more profitably studied with the regions where they specially belong.

Cysts of the neck are of several kinds and are known under the following names: *mucoid cysts* (*Lanne-longue*), *branchial cysts*, *deep dermoid*, *deep atheromatous tumors*, *congenital hydrocele of the neck*, *hygromata*, *atheromatous cysts of lymph nodes*. They are almost all rare and congenital, but they are not all branchial; their size varies; they are situated along the course of persistent obsolete tracts lined with epithelium, in the neighborhood of the pharynx and larynx and along the larger vessels; they often have prolongations adherent to the muscles, the vessels, the thyroid cartilage and hyoid bone, and even the vertebral column; they are single, or multiple resembling a bunch of grapes. Their walls are sometimes thick or sometimes thin, or sometimes absent altogether. The walls and their contents vary according to their forms or varieties; their shape is globular or oval; sometimes they present independent masses; they are lobulated, which is due to fibrous or muscular bands crossing them and binding them down; their consistence is more or less soft and fluctuating. They may take a sudden and unexplained rapid course and become very large; they may remain stationary; sometimes they become inflamed and hardened or present intracystic hemorrhage, or undergo spontaneous cure; they may burst externally or in the pharynx; sometimes after having become inflamed and burst they leave fistulous openings; this may occur also when they have been opened. Their forms and varieties are as follows: *Branchial cysts* are those which possess a dermoid or a mucoid lining membrane, which form presents two varieties. The mucous or mucoid cysts are lined with ciliated epithelium; they are usually median cysts.

Serous cysts have been confounded with dermoid, mucous or branchial cysts, although they do not, like those cysts, occupy a definite region corresponding to the branchial fissures. The neck is their seat of predilection, and they serve as a type of their description; when they are single or unique, they are almost always on the median line and on the left side; they occupy principally the antero-lateral surface of the neck; they are never as large on the median line, but may be of the size of an orange. Median cysts sometimes spread on both sides, but one side is noticeably larger; sometimes they descend on each side of the chin like a long beard, giving the little patient the strange appearance of an old man. These cysts may exist on both sides; when multilocular they have no special site; when multiple they resemble a bunch of grapes; sometimes their walls are so thin as to be actually absent. They differ from the pure dermoid cysts of the region by containing no hair and no sebaceous substance. Some are lined with ciliated epithelium; they are usually median cysts; they contain water or thick yellow matter. *Dermoid* or *sebaceous cysts* or *atheromatous cysts* are only truly such when the dermoid structure of the cyst walls can be well demonstrated. They may attain the size of a fist; when lateral, they occupy mostly the region of the sternomastoid; when median, they occupy mostly the supra- and infra-hyoid regions between the hyoid bone and the thyroid cartilage; the median cysts are sometimes a little to one side. They are often subcutaneous,

although Langenbeck says that in the neck dermoid cysts are more frequently deeply seated than in other regions and are often adherent to the muscles, ligaments, nerves, cartilages, and even to the vertebral column. They are uni- or pauci-ocular cysts; they sometimes contain hairs, seldom cartilage or osseous tissue; when they discharge they often leave fistulous openings. The sanguineous cysts at times are connected with the anterior jugular vein; they contain a reddish fluid which characterizes them upon exploration; occasionally they remain in connection with vessels. They are emptied by pressure, but they refill rapidly; they must not be taken for aneurysms when the vessels impart pulsations to them. Hemorrhagic sanguineous cysts are due to intracystic hemorrhages. Punctures and incisions are sometimes followed by intracystic hemorrhage, which may ultimately end fatally. The lateral serous cysts are the worst, because they become the largest and send more and deeper processes. Polycystic cysts, when extensive, are beyond treatment. Hydatid cysts are not so necessarily congenital as the serous. Bursal cysts call for the same remarks; they are usually over the hyoid bone, the thyroid and cricoid cartilages. Purulent cysts or chronic abscesses of the neck may be due to lesions of the glands or of the surrounding bones and cartilages; although slower in their development they are subject to all the changes presented by the acute abscesses above described; they sometimes originate in the sheath of the sterno-mastoid.

The solid tumors of the neck are the following: Deep hematoma with clotted blood due to violent contusions, to punctures and ruptures of the deep blood vessels or to a cured but non-absorbed aneurysm, are occasionally met with. They can be diagnosed by their history, by the exploring needle; they are to be treated by incisions or by gradual dilatation on a guide if they occupy dangerous regions. Sebaceous cysts may so invade the deep tissues as not to be easily separated by the fingers from the deep parts; they are sometimes comparatively rather hard from high tension: the contents are almost fluid, yet the fluid is too thick to run through an ordinary exploring needle. Dermoid cysts present the following features: Branchial dermoid cysts of the neck are almost always of the simple type, *i. e.*, sebaceous matter and little hair, sometimes oil. The complex cysts containing osteo-cartilaginous masses are not really true cysts. Median branchial dermoid cysts of the suprahyoid region belong more properly to the floor of the mouth; these are often attached to the symphysis by a hollow or solid pedicle. Median branchial cysts are the most common mucoid cysts of the neck; their epithelium is cylindric and sometimes ciliated. Dermoid cysts are frequent here; the cyst may be attached to the trachea. These cysts are not bursal cysts; the epithelial lining shows they are congenital; they are all congenital, but they may not become manifest except at a later period, especially at puberty. Lateral branchial cysts usually occupy the region of the sterno-mastoid. Median branchial suprasternal cysts sometimes penetrate into the mediastinum. Median thyro-hyoid cysts often take on a rapid growth at puberty or after a confinement: they are often opened by mistake, and this is followed by persistent fistula with mucous secretions. Lipomata are not uncommon; they usually send fibrous prolongations between the muscles and the vessels, extending sometimes to the bones, hence the difficulty and danger of their removal. Simple adenoma or

pure hypertrophy, is not rare. Strumous adenoma is not rare. Adenoma of Hodgkin's disease or multiple adenoma should not be extirpated except to relieve pressure symptoms. Syphilitic adenoma is of frequent occurrence and is found most commonly along the sterno-mastoid or in the posterior region. Syphilitic gumma is not rare. Encephaloid, colloid and melanotic are rarely primary; when primary, they are perhaps developed in the sheath of the vessels and not in the glands; they are almost always due to infection secondary to lesions on the face or the internal cavities. Pulsating encephaloid is extremely rare on the neck. Solidified hematoma resulting from contusions or punctures or ruptures of the deep vessels, or from solidified but non-absorbed aneurysms, are not very uncommon. Simple adenoma or lymphadenoma is the only incontestable primary tumor developed in the neck. Strumous adenoma and tuberculous adenoma are very common; usually they are secondary and the original lesion is found about the face, neck, mouth, nasal cavities or throat; they usually form a chain and sometimes a long solid tumor; they usually ulcerate the skin by a granulomatous infiltration; recurrences are frequent. Schüller recommends for them eight or ten drops of guaiacol after each meal in milk.

Primary syphilitic adenopathy of the neck is seen in cases of chancre of the lips and tonsils; it is usually submaxillary. It is peculiar in that it rapidly acquires a large volume, which is an important diagnostic point. Secondary syphilitic adenopathy is common, especially at the nucha; that is the place to feel the pulse of syphilis, says Ricord. They are usually in the groove between the trapezius, in the fossa of the nucha and in the mastoid region, and are usually due to a lesion of the scalp, but may develop under the influence of the poison in the blood. Tertiary adenopathies are rare; they assume the sclerotic or gummatous form. Syphilitic adenoma presents the same features also, especially in elderly people. Lipoma of the neck presents the following forms and varieties: superficial or deep, the deep have been observed near the large vessels, near the carotids, also in the peripharyngeal connective tissue: congenital lipoma, diffuse and adherent, or not, to the bones; lipoma with a broad base; lipoma with a narrow base, pediculated (one weighed twenty-nine pounds). Diffuse lipoma affects the nucha specially and may encircle the neck; congenital and symmetric lipomata have a neuropathic origin. Fibroma is rare; it rises from the fibrous layers, bones, sheath of vessels, sometimes is embryonic. Congenital branchial fibrochondroma of the neck is seen in all regions of the branchial arches. It occupies almost always the external orifice of a congenital fistula, a little above the sternoclavicular articulation. Myxomata and myomata are rare; one case of chondroma is on record, following chondroma of the scapula; those independent of parotid and lymphatic glands are very rare; some tumors are very large; they may adhere to the vessels and to the deep structures. Cutaneous plexiform neuroma is frequent in the neck. Osteoma is also frequent. Carcinoma, primary and independent of larynx, pharynx and glands, is rare; it may develop in the aberrant lobes of the thyroid. Some are deep, having developed from the branchial arches. Epithelioma is usually secondary to epithelioma of the face, larynx, tongue, pharynx, esophagus, tonsil, pleura, lung or breast. One or two enlarged ganglions, hard, without pain, appearing toward the age of 50, are likely to be an epithelioma.

Sarcoma of the lymphatic glands is very rare, because sarcoma is propagated through the veins. Scirrhus is rarely primary; it is oftenest secondary to other affected parts. *En résumé*, the infectious granulomata of the neck are tuberculous, syphilitic, leprous, glanderous, actinomycotic. Actinomycosis and glanders first show in the submaxillary and cervical glands.

(To be continued.)

SOCIETY PROCEEDINGS.

New York Academy of Medicine.

The New York Academy of Medicine held its semi-centennial celebration on Friday evening, January 29, at Carnegie Music Hall, under the Presidency of Dr. JOSEPH D. BRYANT. The following were the officers on the occasion referred to:

Committee on Arrangements.—Dr. William M. Polk, Chairman; Drs. Robert F. Weir, Charles McBurney, D. B. St. John Roosa, Wm. T. Lusk, A. Alex. Smith, Edward G. Janeway, Landon Carter Gray, Edward D. Fisher.

Committee on Invitation.—Dr. John H. Girdner, Chairman; Drs. Egbert H. Grandin, Clarence C. Rice, Charles Inslee Pardee, Prince A. Morrow.

Committee on Entertainment.—Dr. Daniel Lewis, Chairman; Drs. M. Allen Starr, Clement Cleveland, Nathan E. Brill, H. Holbrook Curtis, Arthur M. Jacobus, T. Mattack Cheesman.

The feature of the evening was an address by the President of the United States, the Honorable GROVER CLEVELAND, which we reproduce verbatim. The President, it would seem, has a very clear idea about the functions of a physician in general as well as of a citizen. It is worthy of reproduction here as a very wholesome tonic to those who hold that the moment a man enters the profession he should forego his citizenship and thenceforward be a political enunch.

PRESIDENT CLEVELAND'S SPEECH.

President Cleveland spoke as follows:

"I have anticipated the share assigned to me on this occasion with considerable trepidation for various reasons. I have been chiefly disturbed, I believe, because of my inability to discover satisfactory grounds for my right to join those who celebrate the semi-centennial of a medical association.

"If, in passing through that period in boyhood when the desirable choice of future activity seemed to rest between running away from home to be a sailor and staying at home to be a doctor, I inclined toward the more quiet and orderly of these pursuits, this surely furnishes no basis at this late day for a claim of relationship to the medical fraternity. Nor do I forget that less than seven years ago I was accorded the privilege of participating in the exercises when the corner-stone was laid of the building which is now the home of the organization which tonight celebrates its half century of useful and honorable existence. But this incident, which aroused an interest still undiminished in the welfare of the Academy of Medicine, hardly entitles me to a share in the felicitations of those who have since borne the heat and burdens of its work while I have enjoyed the ease and happiness surrounding public station.

REPRESENTS THE LAYMEN.

"In confessing, therefore, that I have no right to even standing-room within the inner circle of the profession, I have boldly and without the least authority determined to speak to you as a representative of the vast army of patients and laymen.

"At the outset, I desire to remind you that you owe us much. Though largely in the majority, and with plenty of members to spare, those who are well conducted among us do not vex you with hurtful competition. Instead of making life hard for you by an observance of the laws of health, we assist you by indulging in all sorts of irregularities. We are obedient and submissive to your commands—that is, when we are sick—and we sometimes pay your bills even after a recovery to health, which we are always certain would have resulted without your interference.

"In these circumstances, if when in perfect health we venture to assert ourselves and tell you what is in our minds, it is not fair to liken us to a certain personage who when sick a saint would be, though very differently inclined when well.

"We begin by conceding most heartily and without the least reservation the learning and skill of those now constituting the medical profession, and the wonderful advance that has been made through their untiring labors and investigations in the alleviation of human suffering and the saving of human life.

TRIBUTE TO THE VILLAGE DOCTOR.

"It may be this seems to you an acknowledgment so much your due as to be hardly worth making. You should, however, value it because it is sincerely made by those who were not born yesterday, but who hold in lasting and tender memory the ministrations of the village doctor of fifty years ago, and are now the living monuments of his faithful care. He, too, alleviated suffering and saved human life. We know that it was not given to him to see the bright lights that now mark the path of medicine and surgery, but you can not convince us that he groped entirely in the dark. We remember without abhorrence his ever-ready lancet and the scars of his blood-letting found in every household. We endure with complacency the recollection of his awful medicine case containing bottles, powders, and pills, which, whatever might be thought of them now, seemed then to be sufficient for all emergencies—to say nothing of the tooth-pulling tools and other shiver-breeding instruments sometimes exposed to view. If he was ignorant of many of the remedies and appliances now in use, he in a large measure supplied the deficiency by hard-headed judgment, well-observed experience and careful nursing. Besides, it was in his favor that he did not have to bother his head with many of the newly invented and refined diseases that afflict mankind today. He had no allotted hours for his patients, but was always on duty; and we knew the sound of his gig as it rattled past in the night.

"Your ways are better than his; but we desire you to regard this admission as all the more valuable because it is carved out of our loyalty to our old village doctor, who brought us through the diseases of childhood without relapse, who saved from death our parents and our brothers and our sisters in many hard combats with illness, and who when vanquished and forced to surrender was present in the last scene to close the eyes of his dying patient and sympathize with those who were present.

FAITHFUL IN ALL TIMES.

"I hasten to say that we do not for a moment suppose that advancement in the science of medicine and surgery has smothered the faithfulness and tender consideration which characterized the practitioner of former days. If we seek charitable service to the sick and suffering, a noble appreciation of obligation to humanity and self-abnegation in the discharge of professional duty, we must look for them among our physicians and surgeons of today.

"If we have now arrived at an understanding, you are, I hope, prepared for a suggestion quite in keeping with the extremely moderate and reasonable disposition that characterizes the patient and layman. You have invaded our benighted contentment and led us out into broad fields of scientific discovery. This has inspired us with a new-born spirit of wisdom and criticism which demands that new and larger fields be opened to our complacent gaze. You have penetrated the places where the germs of disease are hidden. We are quite certain that you should be required to destroy the origin of disease and ultimately usher in the day when the only escape from the world will be through a passageway marked: 'Old Age. Exit.' If this has the appearance of exacting too much, or if business considerations present obstacles to its accomplishment, I think we ought, perhaps, to reduce our claims, or at least give our doctors time to find other employment.

WORK FOR THE FUTURE.

"In the meantime, those of us who are conservative must be allowed to hope that further investigation will continue to point the way to the prevention of disease. For this investigation we must still rely upon the efforts of those who have already done so much in that direction, encouraged and stimulated by such effective organizations as the Academy of Medicine. We are sure that this work, having arrested the attention of the world's brotherhood of medical science, will not be neglected; nor need we fear that America's contribution to splendid results will be deficient.

"In some instances, however, investigation has performed its part and only effective action in other quarters is necessary to supply needed remedies. In such cases, of course, you are absolved from all responsibility in your professional character by exhibiting dangers and warning against them. Thus certain diseases which you deem contagious yet remain imperfectly isolated. You have demonstrated the peril to health of unwholesome water and noxious surroundings; and yet much remains to be done by way of protecting our people against these dan-

gers. You have established a code of ethics which condemns charlatanism in all its forms, and yet ignorant pretenders roam over the land offering to perform miracles, or are located in our towns and cities, preying upon the weakness of the sick and afflicted, while men and women are allowed to lie without medical attention, deluded with the hope that faith will save them in their last extremity. Within the limits of your professional power and influence you seek to restrain any approach to criminal malpractice; yet newspapers disgustingly though covertly advertise the way to such crimes and startle their readers with sensational tales of death and misery to which they are directly accessory.

PHYSICIAN AS CITIZEN.

"I need not suggest that such evils are allowed to exist by reason of the insufficiency of our laws or a laxity in their execution. I have intimated that for this condition you are not responsible in a professional sense, but are you sure you are doing all in your power as citizens to remedy the situation?"

"The village doctor was not only our physician, but he was a man of influence in all neighboring affairs. In every matter that concerned the good of the community he was at the front. He was president of the village or represented his town in the County Board of Supervisors, and if he was ever late in visiting a patient it was because he lingered at the postoffice to discuss the political situation. Thus he joined with the performance of professional duty a discharge of the obligations of citizenship.

"We can not but think that the discoveries and improvements in medical practice which we now enjoy are dearly bought if the members of the profession, in their onward march, have left behind them their sense of civic obligation and their interest in the general public welfare. We can not accuse you of utter neglect of your duty to your country; and yet we can not keep out of mind the suspicion that if your professional work in exposing evils were more thoroughly supplemented by labor in the field of citizenship those evils would be more speedily corrected.

URGED TO TAKE PART IN POLITICS.

"If laws are needed to abolish abuses which your professional investigations have unearthed, your fraternity should not be strangers to the agencies which make the laws. If enactments already in force are neglected or badly executed you should not forget that it is your privilege and duty to insist upon their vigorous and honest enforcement. Let me also remind you of the application to your case of the truth embodied in the homely injunction: 'If you want a job well done, do it yourself.'

"If members of your profession were oftener found in our National and State legislative assemblies, ready to advocate the reformatory measures you have demonstrated to be necessary and to defend your brotherhood against flippant and sneering charges of impracticability, the prospect of your bestowal upon your fellowmen of the ripened results of your professional labor would be brighter and nearer.

"While thus suggesting the need of your influence in legislative circles for the accomplishment of reforms related to your profession, you will, I hope, permit me, in conclusion, to enjoin upon you the duty of an active and general interest and participation in public affairs for the promotion of your country's good in all its phases. Our government was founded in the faith and anticipation that those who loved it most and were best able to hold it steady would be at its helm. Without this it will surely go astray. Never did patient need your medical treatment more than the body politic now needs the watchful care of your patriotic and disinterested citizenship.

"No object or personal ambition and no activity of professional life should be permitted to withhold from our government the tithe of devotion and service due from its thoughtful, intelligent and educated citizens. The reward of a willing recognition of our obligation to watch and protect our free institutions and preserve them from weakness and decay, will surely come when a just government supported by the patriotism of a loving people shall bestow with equal hand upon us and all our countrymen the blessing of national peace, contentment and happiness."

SELECTIONS.

The Tribulations of the Medical Profession in France.—We are all more or less dissatisfied with the state of things in the medical commonwealth in these realms; it is interesting, therefore, if not particularly comforting, to note that our brethren in some foreign countries are even as we are in this respect. There is

France, for instance, where it is sometimes said the profession occupies a more fortunate position. If we are to believe a distinguished journalist—M. Hugues Le Roux—we have no reason to envy our French *confrères*. M. Le Roux has recently discussed in the *Figaro* the question, Shall our sons be doctors? He answers it, implicitly, with an emphatic negative. In the first place it is not easy to become a doctor. M. Le Roux estimates that, reckoning in the expenses of preliminary education, it costs something like £1,600 to get the diploma. Then comes a weary period of waiting for patients, entailing further expense. If a practitioner starts in a country district he has to face the local "vet.," the *curé*, the bone-setter, and the blacksmith; and he is called in only hopeless cases, so that, with a confusion between cause and effect natural to the untutored mind, he comes to be looked upon with suspicion as a kind of Angel of Death. In towns there are the hospitals, which not only give indiscriminate relief to people of the working class, but take paying patients at charges varying from 2 to 12 francs a day; in these receipts the medical staff has no share. Then there are the clubs, which can always get doctors to serve them at 2½ d. a visit. There is also the competition of unqualified practitioners. In spite of the law—on paper—against the unlicensed practice of medicine, Paris swarms with herbalists and "curers" of all kinds, and the vilest quacks advertise their wares in the newspapers without let or hindrance. M. Le Roux states that there is in a certain town a priest who professes to have a secret remedy for incurable diseases. His door is thronged with patients from 5 A.M. to 8 P.M., and appointments have to be made two or three weeks beforehand. This clerical healer is said to hand over £4,000 each year to his archbishop for the purposes of the Church; what he keeps for himself is not stated. The pharmaceutical chemists, with their various "specialities" and plausibly written pamphlets vaunting their efficacy, are also formidable rivals to the legitimate practitioner. The attempts which have been made by medical associations of different kinds to remedy these evils have so far failed; and, indeed, it is not easy to see how there can be any real betterment in the state of the profession so long as it is overcrowded. If M. Le Roux's article deters any considerable number of parents from making doctors of their sons, it will have served a useful purpose. It might not be amiss if some popular journalist were to enlighten the mind of the British *paterfamilias* on the same subject.—*British Medical Journal*, December 5.

Treatment of Heart Troubles. Schott's *Gymnastics and the Nauheim Baths*.—The *Therap. Woch.* of January 3 contains a comprehensive, practical and theoretical article on this subject by Sir T. Grainger Stewart, Professor of Clinical Medicine at Edinburgh, in which he describes the fine results he has seen accomplished at Nauheim, with directions how to secure the same at home. He states that there is no group of diseases in which so much can be effected by the physician in relieving and restoring the organs to their normal condition, as in disturbances due to functional derangements of the heart, but that the secret of success is careful discrimination of the appropriate treatment for each individual case. The Nauheim methods will not supplant the traditional treatment with rest, diet (especially the change to the dry diet recommended by Clark and Oertel) and medicines, in which digitalis takes the lead. But they supplement them with advantage, and used alone or in combination, are of great assistance in the task. Tobacco should be entirely avoided, or only used to a very slight extent after a meal. Alcohol taken regularly, in small amounts and with the meals, is beneficial in cases of heart weakness, especially those consecutive to diphtheria, etc., or caused by old age. The best form is whisky, from 6 to 60 grams once to three times a day, never exceeding 220 grams; the slightest excess is particularly injurious. If taken between meals it should be combined with milk, or better, with milk

and the beaten white of an egg. The importance of exercise is becoming more generally recognized, and benefit is derived from passive gymnastics (Swedish, massage, etc.), which he ascribes to the improvement in the circulation of the lymph in the tissues, as also to the mechanically increased flow of blood through the muscles. Patients are able to stand this form of exercise who would be injured by active gymnastics. But in almost every case the active gymnastics with limited resistance, devised by Dr. Schott of Nauhaim, prove wonderfully effective. They consist of a series of carefully regulated movements, performed slowly and moderately; no movement of any member or set of muscles is allowed to be performed more than once at a time and absolute rest follows each single or combined movement. The movements are not to be such as to accelerate the breathing, and the physician in charge is on the watch for the slightest distention of the nostrils or contraction of the corners of the mouth, change of color in the lips, yawning, perspiration or palpitation. If any of these symptoms appear, it is a signal for the immediate cessation of the movement in course of performance, and the member is at once supported, or otherwise brought into repose. The patient is instructed to breathe regularly and without interruption and in case this is difficult for him, or he holds his breath for any reason, he is reminded to continue breathing and during each movement to count in a whisper. The clothing must be loose so as not to interfere with the circulation. By observance of these rules there is no disturbance of the respiration or heart action, and auscultation and percussion before and afterward convinced Professor Stewart that in a large number of cases the heart sounds grew more distinct, while the area of dulness was perceptibly decreased; the rhythm of the pulse was much improved and the beat stronger. This immediate effect passes away after a while, but the heart seldom returns to its previous dilated condition and remains smaller than before the gymnastics. One case was a Russian official, who came to Nauhaim with debilitated heart action, anasarca, some ascites, slight hydrothorax and in all probability also hydropericardium. The left border was 7 inches from the median sternal line and the right more than 1 $\frac{3}{4}$. Dr. Schott did not hesitate an instant to order the active gymnastics for him, although the case seemed too advanced for this in the writer's opinion. He was present when it was carried out. The patient displayed considerable nervousness at first, and for moment a disposition to faint, but quickly recovered, and the gymnastics were continued. The seance lasted twenty minutes, and examination afterward showed that the apex beat and the left limit of the dulness had receded $\frac{3}{4}$ of an inch toward the center, the right $\frac{3}{8}$ and the upper border $\frac{7}{8}$. In one month from the commencement of the treatment the patient was completely restored and could climb quite high eminences. The apex beat was in the mamillary line. When seen a year later he was constantly improving, with no trace of hydrops, although he had taken no heart tonics nor medicine of any kind. Similar results were observed in so many cases that Professor Stewart has introduced the system into his own hospital and private practice, with much better results than from passive gymnastics. He ascribes the benefit derived from it to the chemical and physical changes it accomplishes. The circulation is mechanically accelerated and the exercises stop just short of the point at which any extra effort is required of the heart itself. The Oertel mountain climbing exercise is adapted to less severe cases, or to those which have graduated, as it were, from the passive and active gymnastics, but the writer has no personal experience of the method.

A very important factor in the Nauhaim cure are the baths. The waters are saline, 28 to 35 degrees C. in temperature and the patients find them very refreshing. They can be artificially prepared by adding 1 $\frac{3}{4}$ kg. of salt and 250 grams calcium chlorid to 250 liters water. This corresponds to the bath first given,

when the duration is eight minutes. Another is given in two days, after which they are given twice in three days, then three in four days, increasing the length to twenty minutes or half an hour and the strength of the bath by more salt, while the temperature is raised to 30 degrees C. After twenty or twenty-five of these baths a "sprudel" or effervescing bath is given, containing a quantity of free carbonic acid, or a "sprudel" bath in flowing water. This effect can be obtained artificially by adding to the bath described above one package of "Sandow" powders and tablets for a "sprudel" bath and two for a "sprudel" flowing bath. Examination of the patients before and after the baths demonstrated the same decrease in the area of dulness, increased energy of the pulse, etc., as after the gymnastics, while tests of baths in ordinary Edinburgh water produced no such effect, nor even in salt solutions at the same temperature, but as soon as the "Sandow" powders were added to the water and carbonic acid liberated the same results were secured as at Nauhaim, showing that it is the combination of these substances that produces the favorable results, probably owing to some action on the nerves. The Nauhaim cure commences with the baths, which require less exertion of the patient than the gymnastics. He is dried carefully with warm towels by the attendants and protected from taking cold, the feet being kept especially warm. He then takes slight refreshment and rests an hour or more.

Professor Stewart concludes by stating that he finds puncture of the pleura of surprising benefit in many cases of hydrothorax which diuretics have failed to relieve, with even the removal of only a small quantity of the fluid which has been causing dyspnea by its pressure on the heart. In many cases the fluid was found in much larger quantity than the dulness indicated. Ascites required puncture also, but is less satisfactory than the pleural operation. Successful drainage with the Southey canula will often prolong life, but he only resorts to it in extreme cases, on account of the low vitality of the punctured skin. Complications in the digestive apparatus are treated with suitable medication, massage of the abdomen, etc. Torpidity of the liver is often cured by purgatives and external stimulation, acid bandaging and the internal administration of mineral acids and taraxacum. The alteration in the blood requires appropriate iron or arsenic medication, and it is important in every case of cardiopathy to investigate the number of red corpuscles and the amount of hemoglobin, so as to meet any alteration with the proper remedies. The condition of the lungs must also be carefully watched, especially for indications of edema, which must be dispelled by more or less powerful external applications, if possible. Bronchitis also affects the heart action. The patient is sometimes waked up in the night with dyspnea, due either to the condition of the heart or lungs. The best remedies here are whisky in hot water, milk or soup, Hoffmann's drops (ether); in extreme cases subcutaneous injections of ether, strophanthus or strychnin. Counter-irritants in the lung or heart region and cupping are also often useful. In extreme dyspnea and cyanosis from inflammatory disease of the respiratory organs venesection is indicated and the resort to this in time often saves the patient's life. Cutaneous edema is treated as usual, supplemented by massage of the lower extremities and bandaging the limbs, beginning at the toes. Torpid action of the kidneys is treated with non-irritating diuretics, energetic heart treatment and counter-irritants over the kidneys. Sleeplessness is often cured by taking a few ounces of beef tea with a little whisky or brandy just before retiring. Opiates must be avoided that exert a depressing effect on the heart, but benefit is derived from chloral and large doses of potassium bromid, morphin, paraldehyde, sulfonal and trional, and even chlorodyn in some cases. One patient has been taking the latter every day for a year with good results and no inconveniences. Pains in the region of the heart are relieved best by nitrite, but also by opiates and local

applications. The same treatment is indicated no matter what the lesion may be to which the enfeebled condition of the heart is due, except when there is reason to suspect that an inflammatory valvular lesion is in an advanced stage with degeneration of the cardiac musculature, in consequence of lesions of the coronal arteries. In this condition extreme circumspection in the use of gymnastics and tonics is required, and the main dependence must be on absolute rest with the administration of arsenic and potassium, the latter, combined or not, with ammonium carbonate. He has never seen unfavorable results follow the administration of digitalis in lesions of the aorta.

PRACTICAL NOTES.

Surgical Treatment of Deafness.—When deafness is due wholly or principally to some disturbance in the transmitting apparatus, it can be cured by an operation, according to Garnault, consisting of the excision of the tympanum, ablation of the hammer and incus and mobilization or extraction of the stapes, performed through the mastoid. Rinna's test allows the cases that would be benefited by the operation to be distinguished from those that would not. Garnault states that every case of the kind in which the cranial perception of the diapason is superior to the aerial perception, should be operated.—*Bulletin de l'Acad. de Méd.*, December 29.

Acute Otitis of the Middle Ear, Complicated with Mastoiditis, Cured with Antistreptococcus Serum.—A girl of 8 was brought to Wodon for treatment, with a temperature of 39.5 to 41 degrees C., pulse 140, intense headaches, insomnia, tendon spasms and agitation, with numerous streptococci in the pus from the ear. Twenty cubic centimeters of antistreptococcus serum were injected in the inside of the thigh and an improvement was evident the next day. The temperature fell; the discharge from the ear gradually diminished and finally ceased; the mastoid region lost its inflamed appearance, and in ten days the child was entirely cured. The disfigurement from trephining was avoided, and as Wodon remarks: "Our conduct is henceforth traced for us."—*Presse Méd.*, from the *Presse Méd. Belge*, No. 44, 1896.

Morphino-Cocain Anesthesia.—Ceci has used a combination of morphin and cocain in 544 cases, and recommends it in high terms as invariably successful. He administers a maximum dose of 2 centigrams of morphin fifteen minutes before operating on adults, and half this amount for children, and cocain at 2 per cent., warmed. Contrary to Reclus' method, he makes deep injections. He considers this method of anesthesia indicated in all cases when the field of operation is not too extensive or vague. He does not use it for children or easily excited, intractable persons. But in operations on the bladder, urethra, foot, leg, etc., it renders especial services, and lasts from thirty to fifty minutes. There are no accidents from its use, merely a dryness of the throat and thirst after maximum doses, with slight psychic excitement.—Reported at the Italian Surgical Congress, *Presse Méd.*, December 19.

Serum Treatment in Chronic Rheumatism. A curious fact, observed by Cassin, is quoted in the *Journal de Médecine*, August 10, which refers to a case of chronic rheumatism treated by injections of Cheron's serum. The patient was a man, aged 49, who had been suffering from chronic rheumatism since he was 37, all the joints being successively affected, and where no result was obtained by any therapeutic method, arsenic, salicin, etc., proving useless. Cheron's serum was then tried, 5 to 10 c.cm. being injected daily either into the deep muscles of the back or the tissues round the affected joint according to the part affected. The result was surprising, the patient being able to resume the movement of the joints. It would seem that the rheumatic condition continued, but its effects were kept in abeyance by the regular use of the injection.—*British Medical Journal*, December 5.

Etiology of Infective Diseases.—Numerous facts have demonstrated that contagious diseases can originate without contagion. We know that the germs can live normally in various ambient media, the cavities of the human organism included, until some unknown cause rouses them to virulent action. Kelsch states that it should be the task of science to determine the causal circumstances, cosmic, hygienic, telluric or whatever they may be, as much as to determine the germ themselves. All prophylactic measures should aim to improve the media until they become unfavorable for the development of the germs, the cavities of the human organism included, and local and individual hygiene should supplement the preventive isolation, etc., which now constitutes our prophylaxis of infective diseases. His study of the subject is an interesting contribution to epidemiology; it is published in full in the *Bulletin de l'Acad. de Méd.* of December 22.

The Bicycle and the Kidneys.—The *Gaz. degli Osp. e delle Clin.* of December 24, describes some recent investigations of the urine of healthy subjects before and after bicycle riding, which showed in half of the cases such an abundance of albumin and cylinders of various kinds that the diagnosis of acute or chronic parenchymatous nephritis would certainly have been made by anyone unacquainted with the circumstances. It is evident that the condition is what Leube designates as physiologic or functional albuminuria, with the difference that Leube and Senator state that there is no traces of cylinders in physiologic albuminuria, while in eight riders examined, members of a bicycle club, tube casts of all kinds were found in abundance in all but two, with more or less albumin in all. Four other riders gave out after an hour and a half or three hours ride, and in two of these the urine was normal; in the other two it was moderately albuminous, with no casts. Five healthy boys also showed albumin in the urine after riding. The writer concludes that the frequent repetition of such experiences can scarcely fail to terminate in chronic nephritis sooner or later.

When to Operate in Appendicitis?—The surgeons now claim this trouble exclusively and do not hesitate to assert that intervention is always necessary to prevent immediate or future dangers. Immediate operation is indicated in diffuse peritonitis from appendicitis as cases have been known to recover with it, and it offers the only chance. Aside from these acute cases, the moment for intervention is, in children as early as possible after the diagnosis has been made. In adults the third or fourth day, during which time medical treatment should be employed, ice, opium, caffeine, serum and calomel in fractional doses, with constant surveillance to operate promptly if alarming symptoms occur. If the pus does not issue with gentle manipulations, it is exposing the patient to grave dangers to prolong them. The pus will flow in two or three days if a loose mèche of iodoform gauze is inserted. The appendix is easily removed in children. In adults if it is not visible and can not be felt with the finger, it is not prudent to prolong the search, and the operator should not hesitate to leave the appendix imbedded in its false membranes.—L. Beurnier, *Journal de Méd. de Paris*, December 27.

Electricity in Obstetrics.—O. C. Sudlow announces that he has found faradization useful in promoting delivery, arresting hemorrhage and assisting in the expulsion of the placenta. Its principal effects are: 1, its sedative action, enabling it to take the place of chloroform and chloral; 2, its oxytocic action, hastening parturition by increasing the strength and the effectiveness of the natural uterine contractions; 3, it favors the expulsion of the placenta and arrests uterine hemorrhage. The sedative effect was obtained eight times in twelve and the oxytocic nine times. In twenty cases out of twenty-seven the expulsion of the placenta was materially assisted, and hemorrhage was promptly arrested in three cases out of four. The best abdominal electrode is the hand of the operator, but a flat.

sponge covered with a sheet of rubber can be substituted. The positive electrode is placed on the sacro-lumbar region and the negative on the abdomen, or they can be applied on each side of the uterus, with the precaution that the current does not pass through the child's head. The sedative effect is obtained with ten to fifteen minutes of the current, gradually increasing the force until it is felt without pain. When an oxytocic effect is desired, the current should be applied stronger and intermittently, stopping just short of actual pain. To favor the expulsion of the fetus a feeble current should be applied as soon as the child is delivered.—*Presse Méd.* from the *Revue Int. d. Electrothérapie*, August and September, 1896.

The Sound in Diagnosing Renal and Ureteral Calculi.—The symptoms of calculi in the urinary passages are often deceptive, presenting sometimes the picture of intestinal occlusion, etc. But if purgatives are used as indicated for the latter, fatal collapse may be the result. For this reason Kolischer advises using the sound, as the presence of a solid body is easily recognized by its resistance to the instrument. It can also push an imbedded stone along into the pelvis of the kidney as indicated in reflex total anuria. (Hohenegg's case.) It may also possibly reduce the size of the concrement (Casper). Kolischer has also succeeded in causing the descent of the concrement into the bladder three quarters of an hour after injecting 3 grams of vaselin oil through a hollow sound. Injections into the pelvis of the kidney are easily made, but it does not seem practicable to irrigate it. He concludes his review of the subject in the *Wien. klin. Rundschau*, of December 27, by recommending repeated cystoscopy in the lull after an attack to prevent growth of the concrement. Mainzer also has been recommending cystoscopy in the *Berl. klin. Woch.* of December 7, especially for the female. It renders an exact diagnosis of urinary fistulas possible, helping to decide the three questions: 1. Are the ureters intact? 2. Where is the hole in the bladder located? 3. Is there such an opening? Cystoscopy is also valuable in helping to diagnose troubles in neighboring organs, perforated dermoid cysts, extrauterine pregnancy, etc. Landau combines the use of Casper's and Brenner's cystoscopes, after filling the bladder with sterilized water, and dipping the instrument in glycerin.

The Cure and Prevention of Curvature of the Spine in Pott's Disease.—Thirty-seven hunchback children have been relieved of their deformity without danger or serious complications by Dr. Calot, who recommends his method as absolutely without injury to the general health of the child. In the gravest cases he removes the posterior bony wedge that prevents the straightening of the spine. In two cases he was obliged to resect a wedge-shaped piece of the rachis. In the other cases the correction was accomplished by external maneuvers alone, preceded in some cases by the removal of the projecting spinal apophyses. The child is placed on its belly, under chloroform, and the spine is restored to its normal position by means of traction exerted on the ends of the vertebral column, while strong pressure is exerted on the hump at the same time. Two assistants pull at each end of the trunk, while Dr. Calot presses without fear and with all his might on the hump. The two segments of the vertebral column are thrown out of gear and straightened; the hump no longer exists! To maintain the correction a very tight and large circular plaster cast is applied at once, still under chloroform, to the trunk, descending from the head, as far as the pelvis, both inclusive. He ascribes the success of the operation to the care with which this cast is made and applied. The first cast is left three to four months, the second the same length of time, and occasionally a third. At the end of five to ten months there is no trace of the deformity left in most cases, while the health of the child has not suffered in the least. Dr. Calot exhibited several of his cases at a recent meeting of the Paris Académie de Médecine. From the farewell number of the *Union Médicale*.

Recent Surgery of the Stomach Abroad.—Angerer of Munich has performed twenty-nine operations on the stomach, among them pylorotomy six times (three for cicatricial and three for cancerous stenosis). All died in three weeks except one, who recovered but succumbed to a recurrence of the cancerous affection seventeen months afterward. His twenty-three gastroenterostomies were more successful with the Hacker than the Wolfier method (one recovery in six operations by the latter method and nine in seventeen by Hacker's). Five patients gastroenterostomized for cicatricial stenosis resulted in two recoveries. One died from hemorrhage from a large ulcer in the pylorus and two from shock. The necropsy of one of the latter showed that the stenosis had been produced by the head of the pancreas, which had forced itself into the stomach through a perforation in the posterior wall. The seventeen operated for cancerous stenosis all died (three in one day: four in two; one in five, and the rest in from nineteen days to seven and one-half months). All the patients received liquid food from the very day of the operation, beside rectal alimentation. (*Presse Méd.* from *Munch. med. Woch.*, Nos. 42 to 45, 1896.) We notice that Obalinsky reported at the recent Polish Surgical Congress that he had resected the pylorus and part of the colon on account of cancer, with complete recovery of the patient in ten days. Schnitzler recently performed an exploratory operation on a patient (female, 35) for a tumor of the stomach which could be distinctly palpated, and had been causing great pain and vomiting of blood. When the stomach was exposed it was found in absolutely normal condition, but as he was inspecting it a tumor suddenly formed under his eyes in the pylorus region, 6 to 7 cm. long by 4 to 5 cm. in width, hard and completely obstructing the lumen. It was evidently a hysteric phenomenon or some reflex spasm from an ulcer or erosion of the gastric mucosa. The tumor was opened with a straight incision, but no deviation from the normal was discoverable and the opening was closed with an oblique suture to prevent the recurrence of the muscular contractions. The desired effect was attained, as the patient has been free from her troubles since. A similar "phantom tumor" in the abdomen is described in *Il Morgagni*, No. 10, cured also by an exploratory laparotomy.—*Wien. klin. Rundschau*, December 27.

Hematoma of the Dura Mater.—A very interesting but somewhat mysterious case is published by Dr. Munro in a recent number of the *Glasgow Medical Journal*. The patient was a cooper about 50 years of age, who was admitted to the wards of the Victoria Infirmary in January, 1895. He had been in his ordinary health a few hours before when he suddenly fell down in general convulsions. The seizures followed each other very rapidly, but after a time it was noticed that the convulsion became almost restricted to the right side, although the left leg was still slightly involved. Consciousness was not regained, and on admission it was observed that the mouth drooped to the right. Each fit commenced with conjugate deviation of the eyes and head to the right side, and then tonic, followed by clonic, spasm affected both legs and the right arm. No cardiac lesion was detected and the urine was not examined. The temperature rose to 106.8 degrees F. before death ensued. The condition of the brain found at the necropsy is of much interest. No significant abnormality was found in any other organ. When the dura mater was removed it was found to be lined on the left side by an adventitious membrane about as thick as itself, firm and adherent, although it could be stripped off. It was reddish in color and was not adherent to the pia-arachnoid except in the region of the left olfactory bulb. There was no evidence of hemorrhage to the naked eye and the membrane appeared to be of recent development. It clothed the inner surface of the dura mater, above, below and laterally. It was, however, absent from the left side of the falx and from the superior surface of the tentorium. Microscopic sections showed it to be much less transparent than the

dura mater. It consisted of several layers and its deeper half contained more pigment than the half next the dura mater. The pigment was reddish-yellow and was distributed in round or oval clumps of considerable size within cells. The basis of the membrane was a vascular and cellular fibrous tissue. The dura mater was not abnormally adherent to the bone on the left side. No other intracranial abnormality was discovered. Dr. Munro, in discussing this case, directs especial attention to the occurrence of what was apparently a hematoma of the dura mater in a patient not an inmate of an asylum. It is undoubtedly rare, and that this false membrane was the result of repeated hemorrhages is probably indicated by the fact that it could be easily separated from the dura mater and by the presence of pigment almost certainly derived from the blood, in the membrane. Such a condition has been described in connection with general paralysis of the insane. It has also occurred in infantile scurvy, but we are not aware of any other condition with which it is associated, unless we include a similar if not identical condition in syphilis. There was apparently no recent change in the condition which would account for the status epilepticus leading to the fatal issue.

Benzosol in the Treatment of Intestinal Tuberculosis, Secondary to Pulmonary Phthisis.—Dr. Kofron of Cleveland, in the *American Therapist*, December, outlines the case of a musician, aged 21, whose tuberculous affection appeared to date back two years. For five months, diarrhea with pain in the abdomen, flatulence and tenesmus had progressed so that he had often found it necessary to cancel engagements on this account, and because of the feverishness that came on in the afternoon, lasting until 11 or 12 o'clock at night. In January, 1896, he had a severe hemorrhage from the lungs, losing at least a pint of blood; this recurred in about two weeks, when he lost about two pints of blood, and was obliged to stay in bed for three weeks. After leaving his bed he found that he had lost 30 pounds in weight; was very weak, and was unable to follow his occupation. The annoying diarrhea and severe cough also continued. The physician previously in attendance examined the sputum and stated that tubercle bacilli were numerous. He took a good many creosote capsules, which had but little effect on the diarrhea: each movement was still accompanied with the passage of flatus and some tenesmus. Benzosol was begun in April, in four grain doses every four hours, and continued with apparent results for one week. He reported on May 8th, and thought he was somewhat better, as he did not pass so much gas when his bowels moved, although loose passages still continued. He then ordered benzosol, five grains four times a day, for one week, and after that five times a day; he had to report in about three or four weeks, or if worse to return sooner. He reported June 19, and said that he was getting along well; it had not been necessary to come before. Now his bowels move once or twice a day, and almost a natural movement without pain and very little gas; his appetite was greatly improved and his cough had become less severe, and he expectorated very little; the powders of benzosol four times a day, were continued. In July he was able to resume his work at playing the violin, filling four engagements each week, and stood the work very well. In September, he complained that his bowels were again loose, and wanted to know if he could not take some other medicine instead of the benzosol powders. To satisfy him, and as a control-medication, this remedy was discontinued and an emulsion of cod liver oil was prescribed. He returned October 1, saying that the diarrhea was even worse, as the movements were frequent, and the pain, flatulence and tenesmus had returned. He reported one week later, that he was decidedly worse, his bowels being looser than ever. He was again put upon benzosol, four grains four times a day, Dover's powder, 5 grains at bed time and a strict diet. He reported in October and November that he was again improving, and as well as he was before, being able to fill his musical engagements, with either violin or trombone, every evening, in some weeks. The writer is persuaded that the treatment by benzosol has been the agent effecting the marked improvement in his patient's condition.

Phloridzin Diabetes.—Phloridzin is a crystallizable glucosid obtainable from the bark of the stem and root of the cherry and some other rosaceous trees. That the sugar excreted by the urine after its administration was not derived from the glucose of its molecule was, however, clearly established by two facts, either of which would be sufficient: 1, that the quantity of sugar passed in the urine is far greater than the total amount of phloridzin administered; and 2, the complementary part—phloretin—left after the sugar is removed from the glucosid produces glycosuria. Phloridzin, it was to be remarked, produces a very severe form of glycosuria, the quantity of sugar in the urine being 40 to 50, or 80, or even over 100 per 1,000, according to Dr. Pavy, before the November meeting of the Physiological Society of London, as reported in the *Lancet* for December 26. Phloridzin causes glycosuria whether administered by the mouth, or by subcutaneous or by intravenous injection. When given by the mouth the glycosuria lasts until the next or even until the third day. When administered by subcutaneous injection the effect is produced more quickly, but ceases sooner, the glycosuria frequently being found to have passed away by the next day. This more rapid disappearance of sugar from the urine after subcutaneous injection was a point of importance in interpreting the results of experiments. On the strength of certain experiments by Von Mering it had been asserted that phloridzin produces glycosuria without glycohemia—sugar in the urine without an increase of sugar in the blood. In three experiments made by Von Mering the estimate of the amount of sugar in the blood brought it within the normal range. It was pointed out that Von Mering made use of a mode of analysis attended with the employment of a large quantity (2 liters) of water. Coagulation was effected by heat, and after filtration the filtrate had to be evaporated down to a small bulk before the sugar was estimated by Fehling's solution. In another recent communication to the Physiological Society Dr. Pavy showed that a very large loss was liable to occur when a solution of sugar is subjected to prolonged ebullition. In one experiment in which 0.595 gram of sugar from honey was simply boiled in a flask with a liter of water for twelve hours, the loss amounted to 54 per cent. In another experiment with sugar from diabetic urine the loss was 57 per cent. Again, it was important in order to ensure that all the sugar shall be extracted, to get a coagulum which can be readily and effectively washed. Both requirements are fulfilled by the alcohol process. The experimenter must be alive to the fallacies which lurk in the analytic methods. If he be properly on his guard against these, very accurate results might be obtained. Thus, in a series of experiments brought to the notice of the Society, sugar was added to the blood in known quantities and afterward estimated. The error never exceeded 5.5 per cent. and was usually much less. In addition to the fallacies connected with the mode of analysis, there were others connected with the circumstances as regards the state of the animal at the time of collection and the manner in which the collection was made which must be guarded against. Both chloroform and ether led to the presence of an abnormally large amount of sugar in the blood. This, unless taken into account, would form a seriously vitiating factor. Speaking of some experiments of Levene on phloridzin glycosuria it was pointed out that he had neglected to give consideration to this source of fallacy, and that he had also delayed taking the blood supposed to be under the influence of the subcutaneous injection of phloridzin till the following day, when the opportunity was given for the effect of the drug to have passed away. Guarding against the various sources of fallacy enumerated, Dr. Pavy, experimenting on the cat, subcutaneously injected 0.5 gram of phloridzin and examined the blood and urine taken at times of killing from one to five hours afterward. The table of results placed before the Society showed that sugar was found to be present in abnormal amount in the blood, and that, therefore, it was not correct to say that there is no glycohemia in connection with phloridzin glycosuria. As in other cases where sugar is found in increased amount in the blood, the amylose carbohydrate obtainable from the blood coagulum presented itself in notably larger quantity than usual.

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It would greatly facilitate the prompt delivery of the JOURNAL to those members of the Association living in large cities, if they would kindly furnish this office with their street address in those cases where it is omitted from the wrapper of their JOURNAL, as we have been notified by the postmasters of the larger cities that second-class mail matter not having street address, would be placed in the general delivery to await call.

SATURDAY, FEBRUARY 6, 1897.

SACREDNESS OF PROFESSIONAL CONFIDENCE.

The Playfair violation of professional confidence met with practically unanimous condemnation by the medical profession, which therein but reiterated ethics it had taught for more than twenty centuries. Nearly seven decades ago, the American medical profession viewed with equal severity a similar breach of confidence by DELPECH, although there were much greater extenuating circumstances and although he was assassinated therefor. The *Medical Magazine* (March, 1833, published at Boston) remarked anent the assassination of DELPECH:

"This tragical event while it cost the profession a most distinguished member, has also left an impressive admonition on a point which can not be too strongly addressed to the awakened attention of medical advisers. M. DELPECH was a victim to an atrocious act of professional infidelity and without attempting to justify the deed in the agent of it we are free to declare our opinion that, as a retribution on the offender it is most just and salutary.

It is essential to the value and the responsibility of the medical profession that the intercourse between the physician and his patient should be strictly confidential and no penalty can be too severe for a violation of it. The physicians first, and as we maintain, his paramount duty is to his patients. So deeply is the whole community interested in the inviolability of his professional fidelity that while on the one hand neither courtesy, friendship nor bribery should tempt him to communicate any matter which his patient may confide to him as a physician, society is bound on the other to protect him from any attempt to extort them under the forms of legal proceeding.

This point of honor and duty is well understood and, as we believe, rarely if ever violated of intentionally by the physician of our community; but there is an undignified and mischiev-

ous kind of tattle in which some gentlemen indulge generally for the purpose of magnifying their own business or skill, that is always liable to run into disclosures which are not intended by them at the outset nor even perceived at the time. Such talk is always an offence against good taste and indicates a mind not only destitute of materials for valuable conversation, but too regardless of the obligations incurred by confidence reposed.

The homicide had been a patient of DELPECH some time before. He was treated for varicocele. The case was attended with circumstances that rendered it imprudent for him to form a matrimonial engagement. DELPECH having been consulted by the family into which the patient wished to marry, gave them some intimation of his patient's condition. The patient met DELPECH at the theater the night before the fatal deed and demanded a retraction of what had been said to the family. This was refused. The assassin stationed himself in the balcony of a house and watched the approach of DELPECH's cab, when with one shot from a double-barreled gun he killed the servant and with the other DELPECH. He then retired into the house and blew out his brains with a pistol. DELPECH expired in a few minutes. He was in his 60th year. He was a chevalier of the Legion of Honor, professor of clinical surgery in the University of Montpellier and surgeon-in-chief to the principal hospital.

The mental status of the homicide was doubtful. Victims of varicocele are but too apt to have as a result suspicious mental states which are a fruitful source of baseless jealousy and ideas of marital infidelity. DELPECH however in revealing the patient's physical condition went beyond his duty as a physician and violated the French civil code. Censure by the *Medical Magazine* of the results of medical gossip is as valid now as it was seven decades ago.

THE LEGISLATIVE CONTROL OF VIVISECTION.

We again call attention to the question of vivisection, which has been given especial prominence during the past year by an organized attempt to limit by legislation, and thus virtually prevent, the useful pursuance of this valuable procedure in experimental physiology and therapeutics.

In order indirectly to gain national condemnation of vivisection, the District of Columbia was chosen as the ground for action, and a measure to this effect was introduced into the United States Senate, entitled "A bill for the further prevention of cruelty to animals in the District of Columbia." This attempt to enforce legislative control of vivisection was accompanied by documentary evidence so replete with misstatements, distorted statistics and unreliable opinions, that the casual lay-observer would at first sight believe that a great system of cruelty was in vogue in the scientific and educational institutions of this country.

Happily for the best interests of the nation, a vigorous resistance has been offered to the passage of

this bill. A joint committee from the various medical and other scientific societies and educational institutions of the District of Columbia was appointed to prepare a memorial to refute the allegations and show the erroneous statements made in advocacy of the bill, and in behalf of those truly interested in the relief of suffering humanity, to protest against the proposed legislation. The result of the work of the joint committee is published in Document No. 31, issued from the Senate during the second session of the 54th Congress; and no one can gainsay that they have dispassionately and effectually accomplished their mission.

The committee verify their statement that no amount of "patient research" or "experience," without experiments on living animals, could possibly have secured the same results as have been obtained by the application of the experimental method to biologic problems, by carefully enumerating the numerous discoveries directly due to methods analogous to vivisection. Starting with the investigations of DAVINE in 1850 proving the anthrax bacillus to be the cause of the infectious disease known as anthrax, the progress is reviewed down to the most recent research in immunization and serum therapy. These facts are well known to the medical profession, as are also the hundred of physiologic truths, discovered by vivisection. They can not be denied.

Not only humanity, but also the lower animals have been benefited by the very methods which the "cruelty-to-animals" fanatics seek to suppress. Means have been developed to prevent infectious diseases in our beloved domestic animals. The ravages of sporadic pneumonia, tuberculosis, glanders, anthrax, hog cholera and many other animal-diseases are fast diminishing in civilized communities. As a result of Congressional legislation and appropriation for instituting methods believed to be suitable for the eradication of contagious pleuro-pneumonia, every trace of this disease was removed from the United States within a brief period of less than six years, and at a cost (\$1,509,100.72) that was trifling in comparison with losses likely to occur annually as soon as the disease had obtained a foothold among the cattle on the Western plains. There is promise of a similar result in infectious swine-diseases, from which, according to Dr. SALMON, the loss has been from \$10,000,000 to \$25,000,000 annually. In 1894 CHAMBERLAND reported that a total of 1,988,677 animals had been inoculated in France, and the loss from anthrax had diminished from 10 per cent. in sheep and 5 per cent. in cattle to less than 1 per cent. in sheep and one-fourth of 1 per cent. in cattle, a saving of over \$2,000,000.

Let the friends of the animal and the antivivisectionists ponder over these facts and carefully consider the whole question before they rush headlong in their ardor to prevent cruelty and suppress the very methods

that will render the condition of the domestic animal more comfortable. The humanitarian, the scientist, and the economist are working toward a common end, and narrow-minded bickering and selfish reasoning can never prevail. We do not say that there never have been abuses, but we believe that they have generally been in the hands of private experimenters. We feel sure that the laboratories of our scientific institutions will always permit unlimited inspection of their methods. Secrecy can only serve to increase the antipathy of the opponents of vivisection.

There is no doubt that the majority of persons capable of expressing an unbiased opinion are overwhelmingly opposed to the legislative restriction of vivisection. Sixty-eight medical and scientific associations from all over the country, and including the most liberal-minded and humane men of the day, have adopted resolutions to this effect.

With the joint committee we unhesitatingly affirm that,¹ "The voice of science and medicine, so far as it receives authoritative utterance, is overwhelmingly opposed to legislation of any kind which would take in any measure the direction of experimental medicine and physiology out of the hands of those who, on account of their special fitness, have been chosen by the authorities of our higher institutions of learning and of research to convey instruction and to conduct investigations in these departments. Unnecessary and offensive in the highest degree would it be by any system of official inspection, such as that proposed in this bill and which might readily be used as a system of outrageous espionage, or by legislation of any kind, to attempt to dictate or control how and by whom, and for what purposes, and under what conditions, and upon what animals in the laboratories and the institutions of the higher learning, experiments shall be made. The decision as to these matters should be left wholly to those in charge of these institutions, who are the ones most competent to judge of them."

"BUSINESS" METHODS OF QUACKS.

One perennial newspaper jeremiad bewails the alleged lack of "business" ability on the part of the regular profession as contrasted with the redundant "business skill" of the quack. These quack "business" men have shown of late tendencies to "business" of a type which is usually rewarded, in ordinary mortals, by a sojourn in a penitentiary. One Chicago institution, incorporated under a most alluring title, placed advertisements in all the Chicago dailies, for which it paid. It thereupon proceeded to insert in country newspapers similar advertisements on credit, for which it gave the Chicago dailies as reference. The newspapers, in country and city, fulsomely lauded the skill of the advertisers. The bills for country advertise-

¹ Quoted from the Memorial of the Association of American Physicians.

ments not having been paid, inquiry was made which resulted in the discovery that the concern first incorporated had sold out to its own members incorporated under another title. The United States postoffice authorities thereupon arrested the members of the last corporation for misuse of the mails. Such changes of title have long shielded the quack against malpractice and other suits. It is to be hoped that the United States authorities will succeed in putting a check on these procedures. The credulity of the press in the present instance is closely akin to that gullibility arising from blunted moral sense which makes countrymen such ready victims of the seller of counterfeit money. An Indianapolis instance of similar "business" skill seems to indicate the necessity for an examination by the United States comptroller of the currency, of an Indiana national bank. Among the old dodges of quacks is the "no cure no pay" guarantee concerning which CRABBE ("The Borough") years ago sang:

But now our quacks are gamesters, and they play
With craft and skill to ruin and betray;
With monstrous promise they delight the mind,
And thrive on all that tortures humankind,
Void of all honor, avaricious, rash,
And twenty names of cobblers turned to squires
Aid the bold language of the blushless liars;
And then in many a paper through the year
Must cures and cases, oaths and proofs appear,
Men snatched from graves as they were dropping in.

From time immemorial "no cure no pay" guarantees have turned up as judgment notes. MENECRATES the charlatan (B. C. 300) had such guarantees for "sacred" (incurable) diseases. These were usually the so-called "nervous diseases" of the advertising quacks, and of course included an enormous number of cases of hypochondriasis. According to ATHE-NÆUS ("Banquet of Savants") MENECRATES signed a written "no cure no pay" guarantee with these "incurables," who found they had engaged themselves to serve as slaves after being cured. MENECRATES sometimes renamed them with a cognomen of the Grecian gods and took them with him in a species of temple chariot. He called himself Jupiter (WITKOSKI: "Le Mal qu'on Dit des Medecins"), wore a purple robe, a crown of gold upon his head and a scepter in his hand, and paraded about with his conclave of spurious divinities. He once wrote to PHILIP, King of Macedon, as follows:

MENECRATES Jupiter to King PHILIP, greeting. Thou art King of Macedon and I am King of Medicine. Thou canst make men in health perish when thou desirest. I can save the sick, guarantee to cure all diseases up to the extremity of old age. Those who are well, if they follow my orders, live forever. If thou hast soldiers to guard thy person and life, I have for protectors those I have snatched from the jaws of death. For it is I, Jupiter, who giveth life.

King PHILIP responded in fitting terms:

PHILIP to MENECRATES, greeting and better sense. Go to Anteyra and drink hellebore for thy brain.

MENECRATES wrote in about the same terms to

ARCHIDAMUS, King of Sparta, and other rulers, always employing his self-given title, Jupiter.

PHILIP one day invited this quack to dinner together with his retinue of so-called "gods." The quack was placed upon a throne ornamented in the greatest magnificence and with all the mock ceremony possible. A table was placed before him on which were all the first fruits of the season and delicious cooked meats, but these were served only to the King's convivial companions who were in the joke; the servants merely allowed MENECRATES and his troupe of "gods" the odors from empty cups used in libations. Jupiter MENECRATES, finding himself the laughing-stock of the company, flew away from the repast with his "gods."

Despite this early exposure of the "no cure no pay" dodge, it still flourishes in full luxuriance. A most outrageous case of this kind lately occurred in Indianapolis. It throws light alike on the source whence many quacks obtain capital and on the lack of care with which certain banks give discount. Suits have just been filed against an Indianapolis medical institute and a local national bank to recover \$300,000 obtained from residents of the Mississippi Valley through the "no cure no pay" dodge. The "institute" claimed to be an Indiana corporation with a well organized hospital having a staff of consulting specialists. Agents of this institute gave guarantees all over the Valley that it would cure all chronic diseases. These guarantees were purchased and discounted as notes by the bank to the amount stated. As in many instances the diseases, for the cure of which a guarantee was given, were of a kind that the patient shrank from being exposed to public view: hundreds of dollars were paid on these notes. Aside from these \$300,000 was obtained on guarantees which would bear inspection, and for this amount suit has lately been brought. Against such "business" methods the medical profession has made that protest for thousands of years which first found formal expression in the Hippocratic oath and later in the Code of Ethics of the AMERICAN MEDICAL ASSOCIATION. It certainly will not abandon its ethical principles at this late day at the behest of sensation-mongers for antique confidence operations of the type described.

MINING FATALITIES.

During the year 1896 there were 497 men killed in the coal regions of Pennsylvania. This last annual contribution to the mortality record shows the awful regularity with which the destruction of life among miners proceeds. The total number of outright deaths for the past three years was 1,327. In addition 4,780 miners were maimed, many so seriously as to be incapacitated for future work. As a consequence of these sad happenings, 633 women were left widows and 1,752 children became orphans, and in nearly

every case were dependent on poor-boards and charity-organizations for their future sustenance. The compensation of coal miners is woefully small in view of their obnoxious and hazardous occupation. Few of them are able to save any money; and their only hope lies in mutual relief-organizations, and among the penurious aliens, even these are sometimes disregarded.

It is only when some terrible catastrophe like the tragic Twin Shaft disaster occurs, that the fearful accident-mortality among miners is brought to public view, and measures for relief advocated. Such events soon pass out of mind, and agitation for reform subsides; but the grim hand of Death goes on unmolested. Despite the laws for systematic inspection and improved means of ventilation, there seems to be no diminution in the death rate.

According to a writer in the *New York Herald*, Mr. WILLIAM CONNELL, a recently elected member of Congress from the Lackawanna district, and one of the largest individual operators in the region, expressed himself in favor of a tonnage tax to maintain a fund for the helpless and poverty-stricken families, whose fathers have yielded up their lives to the insatiable greed of the unscrupulous mine-owners.

This proposition seems to ameliorate the effect, but leaves untouched the cause. To the mine-owner it is simply an extra price paid for the human life sacrificed; and moreover the increased expenditure in mining will be compensated for in some other way. Either the miner or the consumer will indirectly pay the tax, and the mine-owner will sit in his office and still count the plentiful proceeds of his deadly operation.

If the money expended for miners' hospitals and relief funds could be paid outright for the preservation of the necessary life-preserving pillars that are now ruthlessly undermined, these calamities would soon cease, and the actual money saved, outside of the value of the lives preserved (for each life has a definite money value), would far overbalance the worth of the paltry tons of coal, the mining of which is the root of the evil.

The only sensible manner for a legislature to proceed in these cases is to destroy the cause, by passing laws requiring rigid mine-inspection, and appropriating a sufficient sum of money to render these laws fully operative. Make a life-tenure of office for the mine-inspectors, and fix the salaries sufficiently large to induce capable and conscientious men to accept the positions. The capitalists would howl and the lobbyists bribe; but a few years of persistent agitation would convince the legislators, and we would witness the triumph of humanity over political trickery and mercenary greed.

THE DOMESTIC ANIMALS AND CONTAGIOUS DISEASES.

The fact stated in the public press that the bubonic

plague now devastating Bombay and threatening Europe largely owes its extension to that household vermin, the rat, is significant enough to suggest some serious considerations.

Various animals, in their domestication, have been and are recognized as agents of contagion, though the extent of the danger has been, as usual, both underestimated and exaggerated, according to the special circumstances of the time. Ordinarily no one troubles himself as to the dangers of hydrophobia, but at certain seasons of the year there is almost an annual massacre of the innocents for the fear of this rather rare and, possibly in many cases, somewhat questionable disorder. Then the public returns to its old equanimity and the affectionate brutes slobber over their human friends and whilom foes with impunity. The danger of this practice seldom seems to suggest itself to zoophiles and yet it is a very possible and probable one when certain diseases are prevalent. Even if the animals themselves are immune to certain diseases the chance of their conveying the contagion in their hairy coats constitutes a danger to be considered, and renders caution advisable. Dogs have been said to carry scarlatinal infection, cats and fowls are claimed to be especially liable to diphtheritic disease which is directly communicable to man, and rather recently a particularly fatal infection has been traced to parrots so often kept as domestic pets, and its bacillus has been isolated by a French physician, M. NOCARD. It has been found to be pathogenic to many other domestic animals, and they, it is probable, can also transmit the disease. It appears to be not at all rare in parrots, in France at least, and is very readily transmissible to the human species, in whom it is very fatal. It is suggested that by this infection a number of hitherto unaccountable local epidemics can be explained.

The moral of all this is, not that we should encourage any unreasonable fears of the domestic animals, they are generally harmless enough, but that physicians should cultivate a habit of observation of their condition and health as involving that of their masters. In times of epidemics of diphtheria and scarlet fever a dog or cat with prominent social instincts should be at least under surveillance as a domestic pet, and it is desirable in any event to use precautions against such animals undergoing exposure to diseases which they can themselves transmit. A little attention to this particular line of observation may aid also in the detection of the origin of many isolated cases of disease that are otherwise not easily accounted for. In fact it is a not unworthy function of the physician and sanitarian to attend more than is perhaps done at the present to the health conditions in the lower animals, more especially those that have generally escaped this supervision, the dogs, cats, fowls, and even the semi-domesticated vermin, the rats and mice

in certain cases, with special reference to the welfare of his human clientele. This is not a particularly new recommendation, it has been made before, but it is one the repetition of which is occasionally timely.

THE PLAGUE TO BE INVESTIGATED.

We notice by a syndicate letter in the daily press (we have not seen it in any medical journal) that Dr. WALTER WYMAN, Supervising Surgeon-General of the Marine-Hospital Service of the United States, has put his powerful mind on a "special study of the bubonic plague," and that we will very shortly hear something in the way of some important discovery which will electrify the scientific world. We know that this must be so, for the female correspondent who filled two or three columns of the syndicate letter has solemnly assured us that this is a fact. If the veracious correspondent had informed us that Dr. KINYOUN of the laboratory was about to develop something it might have been credited in scientific circles, but if any human being ever heard of the much advertised WYMAN in any scientific capacity it would be a pleasant surprise to know of it. In the meantime, Germany has sent Prof. KOCH to Bombay to study the plague where it exists. Kitasato, when he discovered the microbe of the plague, discovered it in China, where the disease was prevailing; YERSIN, when he confirmed it, did so in the field of its ravages; but the American method of investigating diseases at long range is of recent invention and seems to be confined in its application to the head of the Marine-Hospital Service, who cleverly confronts an epidemic by gazing at the dispatches through the bottom of his glass at a "high tea," and giving the results of his highly original investigations to the admiring society reporter. Great are the results produced by the proper distribution of the products of the Washington florists; and tremendous the effects brought about by careful attention to the social functions of the Capital!

The code of morals which prevents country practitioners and obscure members of the profession in the city from advertising, does not seem to invade the sacred precincts, nor penetrate that luminous halo which surrounds the bureau officer at Washington, and in consequence we have syndicate letters galore, as a rule written a few weeks before the incoming of a new administration.

CORRESPONDENCE.

"Chloroform and Ether."

FREEMPORT, ILL., Jan. 17, 1897.

To the Editor:—In the JOURNAL of January 2 Dr. Galloway publishes a communication with the above title, in which he criticises an article of mine that I read last September before the Mississippi Valley Medical Society and which was published in this JOURNAL a few weeks ago.

When I sent out my questions contained in that paper unfortunately many prominent surgeons of the eastern cities

were away on their vacations and their answers came too late to be embodied in that article. Later, however, I received many replies, some of them quite lengthy, including replies from such men as McBurney and Bangs of New York, and these men without an exception prefer ether to chloroform as a general anesthetic, because they consider the former immensely safer than the latter.

Nearly all of them give chloroform in exceptional cases, which they distinctly specify.

The words in italics which the Doctor quotes from my paper are the words used, not by me, but by the most eminent men on our continent, who were kind enough to answer my questions, knowing they would be put on record as holding the views they expressed. The Doctor concludes from the tenor of my paper that: "Any student, laborer, messenger boy or member of the patient's family may safely give ether, but chloroform requires a careful and experienced man, therefore he concludes chloroform should not be given."

I have only one answer to make to this quotation, that is, that there is nothing in my paper to warrant any such interpretation of its contents, and I will wager that of the thousands of readers who have read my paper, Dr. Galloway is probably the only man who so misinterprets its meaning. On the contrary I hold that all general anesthesia is accompanied by a certain amount of danger, and I prefer ether to chloroform because the latter is the far more dangerous agent of the two.

I believe with Dr. Penrose of Philadelphia, whom I quote, that the best man among those present to assist at any operation should be generally chosen to give the anesthetic.

Apropos of this subject, I had a little episode in my practice a few years ago that came near resulting in the death of a patient of mine, in whose case I intrusted the giving of the anesthetic to a lady friend who happened to be present. It was a case of secondary hemorrhage following a bone operation on the tibia. The patient had not lost a very large quantity of blood, and her condition was fairly good, but as she was extremely nervous I concluded to anesthetize her before attempting to arrest the bleeding. I had both ether and chloroform in my satchel, but I chose the latter, and why? Simply because it was so easy to give, and acts with such wonderful rapidity. I poured about a drachm of this liquid on a folded napkin, and in three minutes my patient was in a condition of complete insensibility. I now poured about another drachm on the cloth and showed my lady assistant how far from the patient's face she should hold it. I then rapidly opened up the wound and found three small arteries spurting; I put the forceps on the largest of these, ligated it, and when I looked for the others all bleeding had ceased. I turned to examine the patient and found her face was as pale as if dead. Her respiration had ceased and no pulse was perceptible at the wrist: the only sign of life still remaining being a feeble contraction of the heart at long intervals. I had no one present to assist me, save two women, and no time to lose in loading a hypodermic syringe with heart stimulants. I stood my patient on her head, used artificial respiration, dilated the sphincter ani, and in fact worked with the desperation of a drowning man for twenty minutes before my patient showed the least signs of returning animation. I shall remember the terrible agony of that half hour as long as I live, and would not repeat it again for a small fortune. Had that patient died I should have always blamed myself for not putting on a tourniquet as a temporary expedient and sending for a physician to assist me.

In this case, however, if I had been a little more thoughtful, a little less careless, a little less lazy and used the safer anesthetic I sincerely believe I should not have had the terrible experience I had in this case. However this may be, it taught me a valuable lesson which I shall heed for all future time, and that is not to trust the administration of an anesthetic of any kind, whether ether or chloroform, to "lady friends,"

laborers or messenger boys," or any one else, except the best physician whose services I can get.

My only variation from this rule is in cases of child birth, where, by the way, I generally use chloroform, believing it to be safer in this class of cases than any other.

I take a napkin large enough to fill a common tumbler about half full, when well packed in. I drop chloroform on this napkin in about drachm quantities at a time, and the irregularities of the patient's face render it impossible for my lady assistants to shut out entirely atmospheric air, should she hold the glass down close over the patient's nose and mouth. If I am using forceps I only use traction on my instrument for a minute or a two at a time, and in the intervals I scrutinize carefully the action of my anesthetic upon my patient. If I am performing version, that is a procedure which is soon ended and I can anesthetize my patient before I begin, and insensibility will continue long enough to finish the operation.

I quite agree with Dr. Galloway on the great importance of having a proper man as an anesthetizer, and believe with him further, that many of the untoward events that follow the major surgical operations are the result of an improperly administered anesthetic.

The only place where I have seen anesthetics given by men who did nothing else is in the hospitals of London, and they generally begin the anesthesia with nitro-oxid gas, and follow it immediately with ether. My experience, however, which is considerable, has led me to believe that men who are so chary of human life as to go to the expense and trouble of employing no one but a professional anesthetizer never employ a man who gives chloroform. There may be exceptions to this rule but if they exist I have never seen them.

Besides I quite agree with the Doctor that he has been treated in a most pennurious manner by those to whom he has administered an anesthetic, and if he would only adopt an anesthetic that is, if figures and statistics are worth anything, from five to twenty-five times as safe as the one he uses, he, if skilled in its use, would be able to give a new record to some of the great operators who are now so fond of giving us their statistics, for I believe, Dr. Galloway, your position is often one of greater responsibility and more onerous than that of the man who wields the scalpel. W. S. CALDWELL, M.D.

The Rubber Nipple on the Infant's Bottle.

BELOIT, WIS., Jan. 30, 1897.

To the Editor:—In your Editorial in today's JOURNAL on "Sanitary Trivialities" as a commendation of Dr. Ernest Wende of Buffalo for securing an ordinance prohibiting the use of rubber tubes on nursing bottles. At the last meeting of the Wisconsin State Medical Society I called attention to this crime (as it really is a crime), as follows: "The first thing a new father does when he finds the mother has no milk, is to go to the drug store for a nursing bottle. For some unknown reason the druggist is nearly always sure to give him one of these abominations, with a tube six inches long and a brush with which to wipe it out. I have often wished the druggists and manufacturers could take their food for life through such tubes. Somebody spoke about sterilizing bottles; but you can not sterilize these tubes, and the tubes are nearly always sold. If proper, I would like to make a motion that this society condemn most emphatically all these tubes, and that nothing but a pure nipple be used."

Dr. C. F. Dougherty of Muscoda, Wis., then said: "I am an advocate of common sense ounce bottle and nipple, but no rubber tube, because I think the milk can be more contaminated with germs through the long rubber tube than where they are not used, and I second the motion."

Several members spoke against this form of nursing bottle, but the discussion was ruled as out of order and the motion

was laid on the table, though Dr. Dougherty earnestly protested and said that "to lay this motion on the table would result in laying many babies on the table in a coffin."

For the past three years I have carefully watched my cases of cholera infantum and acute milk infections, etc., and every case has occurred in bottle-fed children, and in children using these long tubes.

In our later days of asepsis and cleanliness it seems criminal to permit the sale of long hose nursing bottles, for it literally causes a "slaughter of the innocents." All honor to Dr. Wende for his course! Yours truly,

ERNEST C. HELM, M.D.

Testimonials.

NASHVILLE, TENN., Dec. 18, 1896.

To the Editor:—As an editor you must be a very wise man, and as a wise man you must be possessed of all knowledge, therefore I write to you for information. I have just finished reading a neatly gotten up little pamphlet, a reprint from an article that lately appeared in one of the New York journals, sent me by the firm whose widely advertised tissue-former it advocates, and written by a "professor of anatomy and histology," with the title "F.S.S.C., London, etc.," and he hails from a place that would almost touch a line drawn between Chicago and here. "In Bright's disease," he says, "the administration of — will often temporarily increase the number of casts in the urine, but it must be remembered that Bright's disease is not in itself the disease, but the result of albuminous deposits in the kidney resulting in ulcerations. A moderate use of —, however, has in most instances even controlled the ulceration."

Do you think, Mr. Editor, that he came over here from England because they would not allow him to stay in that country any longer, or is this the latest pathology from London, with Dr. "F.S.S.C." right up to date and I away behind?

Yours very truly, ERNEST B. SANGREE, M.D.

About Diploma Mills.

BENTON HARBOR, MICH., Jan. 22, 1897.

To the Editor:—I understand the charter of the Illinois Health University has been annulled, but you will see that the same J. Armstrong, Mary E. Sellers, Demuheller & Co. are in another "mill" of the same sort, and have supplied their graduates here with diplomas from the "Independent Medical College," which is run on exactly the same rules as their other "mill."

It seems that your State officers will allow this same company of confidence men to carry on their nefarious business regardless of anything or anybody; in fact it appears as though they were aids and abettors in their transactions. What can be done about it? Very respectfully,

W. RYNO, M.D.

Reviewers.

MINNEAPOLIS, Jan. 22, 1897.

To the Editor:—Permit me to thank you for your editorial on "The Reviewing of Medical Publications" in the Jan. 16, 1897, number of the JOURNAL. It is not long ago that I put upon the market a text-book (Outlines of Materia Medica and Pharmacology). It had its weak points and no one would recognize these facts sooner than the author. One reviewer dwelt upon a typographic error in the spelling of one word, that was, however, properly spelled in many places throughout the book. In this same review the book was severely criticised because of its weakness in therapeutics when the preface distinctly stated that it was *not* a work on therapeutics.

Another reviewer who signed himself "R. W. W." and who is the American editor of an English work on materia medica, made the most vicious criticisms. At the same time they dis-

played ignorance and injustice on their part. The book was open to criticism but not the kind of criticism it got. Very truly,
H. M. BRACKEN, M.D.

Advertising.

January 20, 1897.

To the Editor:—It has for some time appeared to me that a few otherwise reputable physicians in the community in which I reside, have been guilty of flagrant wrongs in the way of allowing their names to be placed about in an advertising manner. The matter of which I have complained has been mentioned to some members of the profession and a few of them take the position that I am not correct. An expression on these points from the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION would be appreciated. The matters to which I wish to direct your attention are, the placing of physicians' names and addresses on large placards to be hung up in hotel rotundas and other public places, page advertisements in city directories of private infirmaries for the treatment of diseases of a certain class, physicians' names on a piece of glass to fit on the telephone box, and the sending of notices of a physician's removal of his office to families on whom he has never practiced. As before stated, I have contended that these instances are palpable and gross violations of the spirit of the Code of Ethics. Please give your reply through the JOURNAL.

M. D.

ANSWER:—Your own ideas relative to such conduct, as quoted in your query, are correct. Such things are frequently done in thoughtlessness, but more commonly are the result of a desire to obtain notoriety. Upon nothing is the Code so explicit as this. "It is derogatory to the dignity of the profession to resort to handbills, private cards or public advertisements, inviting the attention of individuals affected with particular diseases, publicly offering advice, etc." The methods mentioned are certainly equivalent to public handbills, etc. Skilled and reputable physicians do not need these methods to obtain practice, and others are better without it when they are compelled to resort to such schemes; or rather the profession would be better without them. (See Code, page 9, section 4.) Recently such an advertisement was observed by a prominent layman, who estimated the author of it justly as "One not possessing the requisite skill to obtain the confidence of the community." The sending of one's card, or notice of removal, to families on whom they have never practiced is very improper, a true bidding for practice.

PUBLIC HEALTH.

Smallpox in Germany Chiefly Imported.—Smallpox in Germany destroyed 65,000 lives per year a century ago. Now the average number is 114 per annum, and most of these are immigrants from those countries "over the border," where less stringent laws regarding compulsory vaccination exist.

Experimental Tests of Preventive Inoculation of Cholera.—Some interesting experiments have been made in Berlin recently with the results that inoculation of seventeen healthy men, most of them physicians whose names are well known to science, a guarantee of the accuracy of the observations, confirmed in every respect the results obtained by Dr. Haffkine in India. The experiments were carefully studied with control tests, and are described in the *Deutsche med. Woch.* of January 1. They show that the effect of inoculation lasts a year, and therefore if a cholera epidemic should gain foothold in any country, it could be stamped out by this means. It also refutes the objections raised by some physicians in India to Dr. Haffkine's work, which was described in this JOURNAL, Dec. 5, 1896.

Length of Period of Contagion.—According to the circular recently sent to the principals of all the educational establishments in France, the period of isolation after smallpox, scarlet fever and diphtheria must be forty days after the first day of invasion, sixteen days after chickenpox, measles and mumps, while after whooping cough attendance at school should not be allowed until thirty days after the coughing spells have entirely disappeared. Tuberculosis is added to the list of contagious diseases, and the principals are instructed to inform the parents if a pupil's bronchitis, enteritis, etc., persists after a certain length of time, as hygienic measures are required in these cases, life in the open air, etc., impossible to secure in educational establishments, where the crowded rooms, etc., are distinctly injurious to the patient, while exposing others to contagion.

New Rules in Pennsylvania Regarding the Contagious Dead.—At a recent meeting of the State Board of Health of that State, Dr. Lee secured the adoption of the following new regulation: When a body, dead of a contagious disease, is to be disinterred, the following precautions shall be strictly observed: "1. No one shall be present at the disinterment except those necessary to perform the labor and one adult male relative of the deceased. 2. A hermetically sealed zinc-lined box, sufficiently large to contain the box, coffin or casket already in the grave, shall be in readiness to receive the latter. 3. When within six inches of the top of receptacle containing the body, the earth shall be saturated with one-fifth per cent. solution (1-500) of bichlorid of mercury. 4. The receptacle containing the remains shall on no account be opened, but shall be at once placed in the box provided as above and hermetically sealed, and said box shall not be opened on arriving at the place of destination." This was adopted.

Good Results from Antidiphtherial Serum in Vienna.—Professor Paltauf of Vienna reports upon a year's experience with the *heilserum*. In 1,100 cases of diphtheria in various parts of Austria treated by antitoxin, 970 recoveries took place, a mortality of 12.5 per cent. The report furnishes strong evidence as to the great value of the treatment in the diminished mortality, and also when it shows that the earlier the treatment is used the more effective is its action. In the cases where the injections were used as early as the second day of the disease, the mortality was 6.7 per cent., while in cases first treated on the third day it amounted to 19 per cent., and those treated on the fourth day to 24 per cent. On and after the sixth day it was upward of 33 per cent. When it is remembered that in previous years the mortality seldom was under 40 per cent. it is clear that we have in the antitoxin a measure exceeding all others in usefulness.

Anti-expectoration Regulations at Brooklyn and Boston.—In the spring of last year the presidents of all the surface and elevated railways of Brooklyn were notified by the Commissioner of Health to conspicuously post in all passenger cars a notice reading as follows: "Spitting on the floors of public conveyances is a public nuisance and a source of danger to the public health. It is hereby prohibited. So ordered by the Commissioner of Health." The employees of each company were required to enforce that order. As certain of the roads had not fully carried out that regulation, on Jan. 25, 1897, a peremptory notification to their officials was issued. The following notice has, by order of the Boston Board of Health, been posted in all the cars of the West End Street Railway Company, Boston: "The Board of Health adjudges that the deposit of sputum in the streetcars is a public nuisance, source of filth and cause of sickness, and hereby orders that spitting on the floors of streetcars be, and hereby is, forbidden." Above this order is posted a copy of the statute stating that the fine for infringement of an order of the Board of Health is \$100. The Chicago Health Department has issued a similar notice.

The Quarantine Board of Pennsylvania.—The third annual report shows an increase of work and efficiency on the part of this commission. The constitution of the Board is now as follows: Richard A. Cleeman, M.D., president, appointed by the College of Physicians of Philadelphia; Benjamin Lee, M.D., secretary, ex-officio member, as secretary of the State Board of Health; Henry C. Boenning, M.D., quarantine physician, appointed by the Governor; Thomas Winsmore, appointed by the president of the Philadelphia Maritime Exchange; Theodore B. Stulb, ex-officio member, as health officer of Philadelphia; Henry M. Duhois, appointed by the Mayor of Philadelphia, and Ernest Laplace, M.D., appointed by the Governor—four out of the seven being physicians. The executive officer of the station is the quarantine physician, Dr. Henry C. Boenning. The deputy physicians residing at the station are Dr. Alfred R. Seymour and Dr. J. B. M. Ward. The Board's function for the present is one of observation or "inspection" only, there being no provision for detention or disinfection. If sickness of a communicable nature is discovered on a vessel, or if circumstances lead to the suspicion that the vessel is herself infected, she is simply remanded to the Federal quarantine down the Bay. The Chief Executive of the State, however, may at any time, if in his judgment the public welfare requires such action, reestablish a fully equipped quarantine station with modern appliances for disinfection, hospitals and barracks. The new station, twenty miles below Philadelphia, is upon leased property in the old borough of Marcus Hook. The leased steam-tug by means of which the boarding of vessels is done is unsuitable; a new boat should be built expressly fitted for the service. There are three comfortable residences on the property. The grounds are tastefully laid out and shaded by fine old trees. The central building, opposite the head of the pier, is set apart as the administration building, and also contains accommodations for the captain of the boat. The residences on either side are occupied by the deputy quarantine physicians. There are also three good barns and stables on the place. By the courtesy of the Maritime Exchange, telegraphic communication with the city office in Philadelphia is maintained during the day through the exchange station immediately adjoining. During the night the general office is at Linwood. In removing the new station, and resigning its function as a quarantine of detention, many of the old rules and regulations for the government of the Board and of the station became obsolete. The Board has, therefore, deemed it wise to revise them and harmonize them with the present conditions.

BOOK NOTICES.

Leprosy and the Charity of the Church. By Rev. L. W. MULHANE. 12mo, cloth, pp. 155. New York and Chicago: D. H. McBride & Co. 1897.

This little book is a compilation of facts, showing the heroic work of charity accomplished by the sons and daughters of the Holy Church who are engaged in the care of lepers in various parts of the world, from Canada to the islands of the Pacific, and from Iceland to the regions of India.

The reverend author mentions the cases reported by Dr. McDougal in this JOURNAL, Feb. 3, 1895, and quotes the opinion of Dr. A. W. Hitt of Louisville that the cases were genuine leprosy. He sounds a note of warning about the increase of leprosy in this country, and makes some practical suggestions regarding the exclusion of persons affected with this disease.

The editor of this JOURNAL, Dr. Hamilton, when supervising Surgeon-General, issued a circular which was approved by the President of the United States, which forbade the entry of any vessel into any port of the United States until the master of the vessel filed a declaration that there was no leper on board the vessel. This declaration was a part of the ship's papers.

A suggestion was also made by Dr. Hamilton in his report looking to the segregation of all lepers in the United States, but the weakness or incompetence of his successor has prevented the fulfillment of the suggestion. The State authorities and the church must do the work unless the Government takes hold of it.

The Sequels of Disease. BEING THE LUMLEIAN LECTURES DELIVERED IN THE ROYAL COLLEGE OF PHYSICIANS, 1896, TOGETHER WITH OBSERVATIONS ON PROGNOSIS IN DISEASE. By Sir DYCE DUCKWORTH, M.D., LL.D. 8vo, cl., pp. 227. London, New York and Bombay: Longmans, Green & Co. 1896.

These lectures will be of substantial aid to those engaged in the study of prognostics and the sequels of disease. Their pleasant style and keen insight make them interesting, and their instructive character constitutes them contributions of real value to medical literature, useful alike to the practitioner and the examiner for life insurance. The work is not an exhaustive one, its size prevents that, but in typhoid fever and syphilis the sequelæ are fully mentioned. We regret that our limitations of space will not permit us to quote from the work *in extenso*, but we venture the assertion that few medical men, having once commenced its reading, will stop until they shall have finished.

Diseases of the Stomach. By MAX EINHORN, M.D. New York: William Wood & Company. 1896.

This work by Dr. Einhorn forms a valuable addition to the "Medical Practitioner's Library." Written by one who is thoroughly acquainted with the subject, it gives all the information regarding methods of examination, diagnosis and treatment, that can be gathered from the scattered literature of gastrology. The author does not appear to be an enthusiast, but is gifted with a goodly amount of common sense, enabling him to guide the beginner through the shoals of laboratory experimentation and fanciful therapeutics to the solid ground of practical utility. This book is a valuable handbook for reference regarding everything that is needed in the treatment of gastric diseases, presenting in a convenient form all the fruits of recent investigation in this important field of medical research.

The Diseases of Infancy and Childhood, FOR THE USE OF STUDENTS AND PRACTITIONERS OF MEDICINE. By L. EMNETT HOLT, A.M., M.D. With 204 illustrations, including seven colored plates. 8vo, cl., pp. 1117. New York: D. Appleton & Co. 1897.

In the last year we have had some notable works on diseases of children. The volume under consideration compares favorably with other recent works and in some respects it is in advance. The work is well illustrated and is very comprehensive from a medical standpoint, the strictly surgical topics in connection with pediatrics being omitted. The discussion of nutrition and foods is very complete.

The old-fashioned dosage by "apothecaries" weight, long since abandoned in the Pharmacopeia, mars an otherwise valuable work.

Swedish Movements or Medical Gymnastics. By Dr. T. J. HARTELIUS. Translated by A. B. OLSEN, M.D., with Introduction and Notes by J. H. Kellogg, M.D. 8vo, cl., pp. 162. Battle Creek, Mich.: Modern Medicine Publishing Co. 1896.

Dr. Hartelius is recognized as the leading authority on Swedish movements, and we have his certificate conspicuously printed to the effect that the translation correctly interprets his treatise, which was founded upon the principles of Ling's system.

The comments of the editor, Dr. Kellogg, are wise and judicious. The illustrations are clear and concise.

Artificial Anesthesia, A MANUAL OF ANESTHETIC AGENTS AND THEIR EMPLOYMENT IN THE TREATMENT OF DISEASE. By LAURENCE TURNBULL, M.D., Ph.G. Fourth edition, revised and enlarged. With Illustrations. 8vo, cl. Philadelphia: P. Blakiston, Son & Co. 1896. Price \$2.50.

The three previous editions of this book were published in

1878, 1879 and 1889 respectively, and it will be seen that the work has steadily increased in bulk and amount of information.

The author is a firm and consistent advocate of ether as the safest systemic anesthetic. The book has been brought up to date and is one of the most valuable on the subject.

A Guide to the Clinical Examination of the Blood for Diagnostic Purposes. By RICHARD C. CABOT, M.D., with colored plates and engravings. 8vo, cl., pp. 405. New York: William Wood & Company. 1897.

This work, the first of its kind in America, shows the swing of the pendulum in the direction of the humoral pathology as modified by modern bacteriology. As a laboratory guide it will be of immense value, and to the painstaking clinician it will be a labor-saver. We predict a wide field of usefulness for the book, which is of interest to all practitioners. The illustrations are fine, although we must be permitted to doubt the necessity of going to Leipzig to have them made.

The Retrospect of Medicine, A Half Yearly Journal containing a retrospective view of every discovery and practical improvement in the medical sciences. Edited by James Braithwaite, M.D., Lond., assisted by E. F. Trevelyan, M.D., Lond., B.Sc., M.R.C.P. Volume cxiv, July to December, 1896. (Issued January, 1897.) London: Simpkin, Marshall, Hamilton, Kent & Co., Ltd. 12mo, cl., pp. 440.

This volume is fully up to the high standard of its predecessors and should find a place in libraries of those who desire a brief synopsis of current medical literature.

Transactions of the American Surgical Association, Volume XIV. Edited by De Forest Willard, A.M., M.D., Ph.D., Recorder of the Association. Printed for the Association. 8vo, cl., pp. 742. Philadelphia: William J. Dornan. 1896.

If the American Surgical Association had no other claim for existence than the publication of this volume, it would be a sufficient justification. We undertake to say that no previous volume surpasses it, nor do the published transactions of foreign surgical societies show any better work. It is true that the topics are different and that as a rule the light travels westward, and we are found discussing the topics which interested Europe a few years ago. We were wonderfully belated on the subject of tuberculosis (so were the English), but we have made up for it by the practical way in which the subject is now taken up. In a year or two we suppose we will see the wounds, injuries and diseases of the liver occupying the attention of the Association as it is now in France. However, we still adhere to our faith in American surgery, that it is the most practical and life-saving of any. The interesting address of Dr. Tiffany on Gasserian operations for trigeminal neuralgia gave rise to an interesting discussion. The mortality was 21 per cent. and the exact location of the lesion doubtful. Notwithstanding this fact, the opinion was marked in favor of operation after exhaustion of all proper therapeutic measures.

It is with some surprise that we read the discussion on trauma of the kidneys, and the unchallenged opinion that all cases of injury to the kidney followed by hematuria should be subjected to operation. In two cases under our personal observation recovery took place without unpleasant incident under rest and abdominal support with internal administration of opium and gallic acid. Neither case would have done better by operation. In penetrating wounds of the kidney the conditions are different, and there can be no question of the propriety of early operation. We have nothing but praise for the volume, which is in all respects creditable to American surgery.

Transactions of the American Orthopedic Association, Tenth Session held at Buffalo, N. Y., May 19, 20 and 21, 1896. Volume IX. 8vo, cl., pp. 276. Philadelphia: Published by the Association. 1896.

This book is one of the most attractive volumes published by the Society. Beside the papers and proceedings, it contains several excellent Roentgen ray plates exhibited by Dr. De Forest Willard. An interesting paper by Dr. Harry Sherman of

San Francisco, on iodoformization of bones and joints in tuberculosis, led to an interesting discussion, the burden of which was to the effect that iodoform emulsion was negative in its results in these cases. One of the speakers with charming naïveté asserted that the standards of general surgeons were different from those of the orthopedic surgeons! As the dead and the absent are always wrong, the "orthopedic" surgeons had the best of it.

Transactions of the Medical Society of New Jersey, 1896. 8vo, cl., pp. 448. Newark, N. J.: L. J. Hardham. 1896.

This volume contains the papers read at the annual meeting of the Society, and also obituaries of the following: George Taylor Robinson, Emma W. Edwards, Charles F. J. Lehlbach, Luther F. Halsey, C. H. Dunham, W. W. I. Phillips, Alexander Betts, Levi D. W. Miller, Job Symes Crane, David H. Miller, J. J. Daly and Thomas L. Hough. The New Jersey brethren show by their admirable papers that they are *au courant* with the best medical thought of the time.

NECROLOGY.

H. R. KELLY, M.D., of Galion, Ohio, died Jan. 4, 1897, after an illness of only six days. He was 62 years of age. Dr. Kelly was born Feb. 7, 1835, in Shamokin Township, Northumberland County, Pa. He received his early education in the common schools until reaching the age of 13, serving then as a clerk in a store for two years. At the expiration of that time he began teaching school and continued until 1853, when he removed to Ohio. Upon arriving he settled in Perry Township, Morrow County, teaching school one year. In 1854 he became a student of the Ohio Wesleyan University at Delaware, pursuing his studies until 1856, when he went to Cincinnati, where he attended a course of medical lectures, after which he came to West Point, Morrow County, and engaged in the practice of medicine until 1865, when he went to Columbus and attended another course of lectures at Starling Medical College and graduated. He practiced medicine at West Point until 1870, when he removed to Galion. The deceased was married in 1858 to Miss Matilda Emma Keech of Chester County, Pa. One son survives, Webb J. Kelly, the well-known Secretary of the American Academy of Railway Surgeons. In addition to attending to a large practice Dr. Kelly has been foremost in many local affairs and has held a number of positions of honor and trust. He was a member of the Ohio State Medical Society and in 1878 was appointed a trustee of the Girls' Industrial Home at Delaware. For twelve years he was a member of the board of education. He was connected with the medical and surgical department of the Erie Railway for twenty-seven years and was the oldest surgeon on the road. He was a member of the Knights of Pythias, and its first representative to the grand lodge. With one exception he was the oldest Odd Fellow in Galion and was a Mason thirty-five years. He enjoyed a large practice and as a citizen he was most highly esteemed.

THOMAS T. JANEWAY, M.D., of New York city, a relative of Professor Edward Janeway, M.D., and son of Colonel John H. Janeway, the well-known army surgeon who was retired about four years ago, died January 15. He was born in Princeton, N. J., in 1860 and educated at Andover, Mass., until the time of taking up the study of medicine. His preceptor was the late Dr. Willard Parker, under whose guidance he graduated from the New York College of Physicians and Surgeons in 1883. He became associated with Dr. Daniel M. Stinson, the associate and son-in-law of Dr. Parker, and so continued until last year. He was a physician of wide reputation and was highly respected by members of the profession. His death took place in Bermuda, whither he had gone for a respite from overwork. Close application to work brought on a condition of ill health, and it was hoped a trip to Bermuda would set him on his feet again. He was accompanied by a friend and was expected back early in February. It is supposed heart disease caused his death. He leaves a widow.

GEORGE CONNER, M.D., of Cincinnati, aged 53 years, died at his old home, New Richmond, Ohio, January 12, after a brief illness. Dr. Conner had practiced medicine in Cincinnati

several years, having graduated at the Miami Medical College in 1872. He married Miss Elizabeth Archard, the well-known New York journalist.

SAMUEL H. CHARLTON, M.D., of Seymour, Ind., died January 12 in his 70th year. The Doctor held many prominent professional positions and was a member of the ninth international medical congress.

B. B. ADAMS, M.D., Washington, D. C., died suddenly January 25. He was a practitioner in the District for upward of twenty years.

ASSOCIATION NEWS.

Section on Ophthalmology.—Members of the AMERICAN MEDICAL ASSOCIATION interested in ophthalmic medicine or surgery, and desiring to read papers before the Ophthalmic Section at its next meeting in Philadelphia, June, 1897, are earnestly requested to forward not later than March 1, 1897, the titles of such papers either to Dr. G. E. de Schweinitz, Chairman, 1401 Locust St., Philadelphia, or to Dr. Horace M. Starkey, Secretary, 70 State St., Chicago. There is every indication that the meeting will attract a large attendance of American ophthalmologists, and those desiring to contribute to the scientific business of the meeting, and who have not yet indicated either to the President or to the Secretary the subject which they will present, are particularly invited to comply with the request contained in the above notice, as it will not be possible to keep open the list longer than March 1, 1897.

'SOCIETY NEWS.

New York County Medical Association.—The annual election took place on the 18th ult., when Dr. J. E. Janvrin was elected president for a second term; Dr. J. B. White, vice-president and Drs. M. C. O'Brien and N. G. Bozeman as secretaries; Dr. J. H. Hinton, treasurer; Dr. N. J. Hepburn, executive committee for four years. This, the largest local society of the country, has 977 active members on its list. In the year previous the total was higher yet, 1068.

New York State Medical Association.—The thirteenth annual meeting of the Fifth District Branch of the New York State Medical Association will be held in Brooklyn on Tuesday, May 25, 1897. All Fellows desiring to read papers will please notify E. H. Squibb, Secretary, P. O. Box 760, Brooklyn.

MISCELLANY.

Gift to the Institut Pasteur.—The Baroness de Hirsch has announced her intention of bestowing two million francs upon this institution, as a memorial to her late husband.

Vicarious Renown.—The Health Commissioner of Chicago, Mr. Wm. R. Kerr, is now engaged in booming himself for Mayor of the city, on the strength of the excellent sanitary work performed by that well-trained sanitarian, Dr. Frank W. Reilly, the Assistant Commissioner of Health.

Chloroformed Bromoform.—The alcohol solution of bromoform mixes readily with water if chloroform is added to it as follows: bromoform, 1.20; chloroform, 0.80; rum, q.s. to make 120 c.c. One teaspoonful contains 0.05 bromoform and 0.33 chloroform. —*Jour. de Méd. de Paris*, January 3.

Dr. Edward Kershner.—Dr. Edward Kershner, late of the Navy, has received the important appointment of Chief Physician at the Randall's Island Hospitals, New York, going on duty there on January 4. This item of news will be gratifying to many who watched the fight put up by Dr. Kershner on behalf of what he believed to be a sanitary principle against his sanitarily ignorant superiors of the "line." His friends will

congratulate him that now he has nothing more malignant than the ward-heeler to fight against for the maintenance of his position.

Stepdaughter Entitled to Compensation as Nurse.—The stepdaughter is not bound, by the ties of consanguinity, to render her stepfather gratuitous services as a nurse and attendant during illness and decrepitude; but for such services, the supreme court of Louisiana holds, *Succession of Stuart*, Nov. 16, 1896, she is entitled to compensation.

Values a Laborer's Leg at \$15,000.—The appellate division of the supreme court of New York holds, in *Tully v. New York and Texas Steamship Company*, Dec. 1, 1896, that \$25,000 is too much to allow for the loss of a leg to a person 28 years of age, presumably in good health and strong, but who had no established business, and earned about \$12 a week at such employment as he could obtain; yet it holds that \$15,000 would not be out of the way.

International Honors.—The Emperor of Germany has conferred the decoration of the Kronen Orden of the second class upon Professor Roux of the Paris Institut Pasteur, and the French Republic has inscribed the names of Behring and Löffler upon the roll of the Legion of Honor. The Royal Society of London has also bestowed medals on Roentgen and Gegenbaur the anatomist (Heidelberg), and the Humphrey Davy gold medal upon Moissan of Paris, distinguished for his chemic researches.

Kinetographic Photography of the Heart.—Lechner's kinetograph allows twenty-five, thirty or more photographs to be taken in the course of a second, and is of great assistance in studying the activity of the heart. Braun has been using it to photograph the movements of the heart of a dog that was still continuing its beating. They were reproduced with absolute fidelity, and when enlarged showed certain details in the cardiac transformations that have always escaped the eye on account of the rapidity of the movements. —*Bulletin Méd.*, December 20.

Bellevue Hospital Medical College.—On January 20 this institution suffered a considerable loss by fire, which is believed to have originated from a defective electric lighting wire. The upper floor, containing the dissecting room, was entirely burned out and the lower floors were badly damaged by water. The laboratories were not seriously injured and the college records were for the most part spared. No serious interruption in the lecture courses has resulted from the conflagration, the rooms of the Carnegie laboratory and the Bellevue amphitheater having been put to use by the lecturing faculty.

The Obstetric Staff of the Health Department of Chicago met at the Auditorium Nov. 21, 1896. This staff, with Dr. Charles S. Bacon as president, is composed of physicians residing in the various quarters of the city and represents practitioners from the regular, homeopathic and eclectic schools. The object of this staff is to aid regularly licensed midwives in cases of difficult labor, to compel the registration of all midwives and to assist in the prosecution of those occupied in illegal practices. The staff holds meetings on the second Saturday of alternate months for the purpose of discussing the progress of the work and the reported cases. The registrar will record and tabulate all cases reported to him.

The Lee-Metford Bullet.—It is pretty well known that the troops in the Chitral campaign were not altogether satisfied with the "stopping power" of the Lee-Metford bullet. This has led to a number of experiments and a new bullet has now been devised in India for the Lee-Metford rifle which is stated to be admirably adapted to its purpose. Experimental trials have been made with it on an extensive scale at Meerut and elsewhere in the presence of a large number of officers, troops and medical officers, with most satisfactory results. The new bullet, while requiring no increase of caliber in the rifle or alteration in the charge of powder, retains the present range

and makes excellent shooting and inflicts the desired "stopping wound." It is the invention of Capt. Bertie-Clay, R. A., superintendent of the DumDum ammunition factory. Colonel Hill, in the course of a lecture to the troops at Meerut, said as the result of his personal experience that the Lee-Netford rifle with the new bullet was the most perfect weapon in existence. —London *Lancet*, December 26.

Nitrogen Monoxid in Obstetric Anesthesia.—The expense of the apparatus required to generate nitrogen monoxid has prevented its general adoption. But A. N. Rakhmanov recommends it in high terms in consequence of his experience with it in thirteen cases. The pains were absolutely abolished; the contractions of the uterus were normal and much more regular than before its administration, while there were no accidents for either mother or child. He urges the installation of the necessary apparatus in every large maternity institution, as nitrogen monoxid is the most anodyne and the easiest to manage of all our anesthetics. —*Bulletin Médical*, January 6.

Ranvier's Theory of Cicatrization.—Some recent experiments on rabbits have confirmed Professor Ranvier's assertion a while ago, that the union of wounds is not due necessarily to a multiplication, a proliferation of the epithelial cells, but to the fact that they become hypertrophied and slide down into the V-shaped space left by the incision, and in this way the union of the two edges of the wound is effected. Incisions in the cornea of rabbits show the process in the most interesting manner, and owing to its simple structure the various steps in the process can be watched and closely followed. As he remarks, the deeper cells of the corneal epithelium are like soft elastic balls compressed in a sack. If the wall of the sack is cut open at any point the balls will escape. When an incision is made into the epithelium of the cornea the cells are at first pushed back by the entering knife and then slip back again into their places, seeking the lower level until the wound is entirely closed by them, while the adjacent tissue is correspondingly depleted. They frequently show a number of nuclei in the course of twenty-four hours. The *Bulletin Méd.* of January 6 contains a detailed description of these interesting experiments.

Study of the Renal Circulation with the Roentgen Ray.—By injecting preparations with metallic substances the circulation can be studied with cathode photography to an extent and with a precision never before attained. If the photographs are then mounted to examine through the stereoscope, wonderful exactness can be secured. Poncet and Destots of Lyons announce the following results of their study of the renal circulation in this way: 1. The arterial circulation of the kidney is lobar and terminal. It divides the kidney into an independent anterior and posterior kidney. The one exception is the artery of the superior lobe which sometimes divides into two branches, so that in injecting it the whole of the upper end of the kidney is injected. 2. The intra-pyramidal artery divides by false dichotomy at the level of the cortical substance, but it does not anastomose with the collateral; there are no true arterial arcades. 3. A multitude of capillaries issue directly from the arteries and proceed to the glomeruli without passing through the multiple intermediaries. In incomplete injections the capillaries are seen emerging directly from the arteries, like needles on a pine bough or hear frost on a branch. 4. The pyramidal arteries proceed from the glomeruli. 5. The veins anastomose readily so that the entire kidney can be injected through one single small vessel. —*Bulletin de l'Acad. de Méd.*, December 29.

The Mussulman Member of Parllament in France.—It seems that the new member from Franche Comté is not only a devoted Mussulman, but a popular and skilful physician, Dr. Grenier. Interviewed for the press he declares that he is charged with a prophetic mission, and hopes to see converts to his faith. The

Journal de Méd. de Paris asks: Why not? The two principal features in which Mohammedanism differs from other religions are polygamy and the daily ablutions. It remarks that these would not be bad innovations in France. Polygamy would increase the birthrate, while rendering many people happy and reducing the number of old maids, and if every Frenchman were obliged to wash his face and feet morning and night, there would be a transformation, a regenerescence of the race, and Dr. Grenier would have accomplished more for hygiene than all the rest of the scientists.

Non-expert Can Testify as to Existence of Hymen.—The objection was made, in a prosecution for an attempt to commit rape, that a female witness who was asked as to whether, when she made an examination of the child on the Friday after the offense was alleged to have been committed, there was any hymen there, was not competent to testify in relation to a matter of this kind; that it was a matter connected with the anatomy of a human being and that, to be competent, a witness should possess the same intelligence and knowledge that a physician or professor of anatomy does. The witness testified that she thought she knew what the hymen was and that, if it was what she thought it to be, it was not there. The overruling of the objection, the supreme court of California holds, in *People v. Barney*, Oct. 20, 1896, was not error. Certainly, it says, it can not be necessary that a witness should be a physician or a skilled physiologist in order to be competent to testify as to the existence or non-existence of any part of the human body, when the matter can be determined by ocular inspection.

Cincinnati.

DR. CHARLES A. L. REED has opened an office at No. 32 Garfield Place.

DR. GILES S. MITCHELL has been appointed gynecologist to St. Mary's Hospital, to succeed Dr. George E. Jones.

THE SUIT for \$25,000 against Dr. George H. Goode for malpractices has been decided in favor of Dr. Goode in the United States Court of Appeals.

A MAN appeared at the City Hospital last week with the following conditions: A silver plate 4 x 6 inches in the occipital bone, phlegmasia alba dolens, knee cap dislocated to posterior surface of leg, five ribs resected, his heart on the right side and a bullet in his pectoral muscle. These were all chronic conditions of several years' standing.

DR. G. I. CULLEN has been appointed on the surgical staff of the M. & C. Railway.

Philadelphia.

A STRONG SENTIMENT is abroad in the community in favor of increased accommodations for the insane and especially for the treatment of the criminal insane. By order of the court all of the insane convicts in the Eastern Penitentiary have recently been removed to the State Hospital at Norristown, where, by the way, one of them has since died under circumstances pointing to brutal treatment by the attendants, the case being now under investigation by the trustees. It is mentioned because it affords apparent support to the claim made by the prison authorities that the insane convicts could be treated as well in the prison as in the hospital. Judge James Gay Gordon, who has especially interested himself in this matter, appointed a commission consisting of Drs. S. Weir Mitchell, Thomas G. Morton, Charles K. Mills, F. B. Janney, and Assistant District Attorney Thomas W. Barlow to examine the insane prisoners at the penitentiary and the commission unanimously favored their removal to the hospital. On January 23 Judge Gordon and a party of invited guests paid a visit to the institution for the criminal insane at Matteawan, N. Y., under the charge of Dr. Alison. Their impressions were very favorable. It is thought that a strong appeal will be made to the legislature to make an appropriation for an institution of this character in Pennsylvania, as, indeed, has been recommended by Governor Hastings in his annual message.

THE SUPERIOR COURT has decided that the drug store act of 1887 as amended by act of 1891 is unconstitutional and reversed the judgment of quarter sessions court of Philadelphia in a case where a man was convicted of carrying on the business of an apothecary without being registered or having a certificate from the State Pharmaceutical Examining Board. The defendant owned several drug stores in Philadelphia, employ-

ing qualified assistants to carry them on. Personally he neither filled prescriptions nor sold drugs. Judge Reeder of the superior court gave his opinion that the law referred to came under the head of "objectionable class legislation" and declared it unconstitutional on this account. The act of 1891, amending the first section of the act of 1887, prohibits unqualified persons from engaging in the business of retailing drugs, etc., and provides a penalty for its violation which the section amended did not provide, and the amending act also excepted the "widow or legal representative of a deceased person who was a manager or registered pharmacist" from the provisions of the act, and declared it to be lawful for such person to carry on the business of such deceased persons, provided that the actual retailing, etc., "be done only by an assistant, qualified and registered" as required by the act. The reversal of the lower court is based on the ground that this is unconstitutional class legislation.

IT IS HOPED that a pay hospital for contagious diseases will soon be opened in this city. The Women's Health Protection Association in conjunction with the County Medical Society recently gave an entertainment in aid of this object, consisting of a concert, progressive euchre and dance at the Academy of Fine Arts, January 7, and realized a handsome sum. Twenty-three hundred dollars were subscribed previously, as a nucleus of the fund, by the Woman's Edition of the Press.

AN ANNEX to the diphtheria pavilion and an administration building for the Municipal Hospital have just been completed. The new pavilion contains two wards, each 40 feet long and 25 feet wide, and four private rooms, two of which are 13 by 13 feet, located at the west end and separated from the wards by a vestibule which opens upon a large porch, 25 feet long, enclosed in glass, which may be removed in the summer season. On the east end of the new pavilion is a porch and corridor 9 feet wide and 38½ feet long connecting the pavilion with the administration building, which separates the large and small pavilions. The space between each pavilion and the administration building is twelve feet in length and nine feet in width—all enclosed in glass, which may be removed during the summer season. The new pavilion is supplied with fresh air drawn from a stack some fifty feet from the building and conveyed under the ground through a tunnel to a chamber, where it is heated by steam coils and then propelled by a fan into the wards and private rooms. The foul air is driven out of the apartments by a fan drawn by an electric motor.

Washington.

TO SELL MEDICINES TO SOLDIERS.—The Vice-President has laid before the Senate a communication from the Secretary of War transmitting a letter from General Miles, president of the Board of Commissioners of the Soldiers' Home in the District of Columbia, recommending that Congress authorize the medical department of the United States army to sell medicines and hospital supplies at cost price to the Soldiers' Home in the District of Columbia. General Miles says that as the medical department of the army does not pay any internal revenue tax on whisky and alcohol, it can furnish these articles to the Soldiers' Home at a much less price than that for which they can be purchased of private parties. The law does not permit the medical department to sell these articles to the Soldiers' Home, and Congress is asked to enact legislation necessary to permit it to do so.

HOSPITAL INCORPORATED.—Articles incorporating the Episcopal Eye, Ear and Throat Hospital were filed January 26, by Bishop Satterly, Thomas H. Looker, Redford W. Walker, Gilbert M. Husted, A. D. Van der Veer and Susan Ladd Johnston. The free treatment of all diseases of the eye, ear and throat is the purpose of the institution. The consulting physicians are Drs. W. W. Johnston, J. Taber Johnson, J. W. Bayne, J. Ford Thompson, S. C. Busey, and N. S. Lincoln. The attending physicians were named as follows: Drs. T. M. Murray, J. H. Bryan, E. O. Belt, Frank Hyatt, W. H. Wilmer and W. H. Fox.

A MEDICAL APPOINTMENT.—Dr. B. F. McGrath, formerly resident physician at the Central Dispensary and Emergency Hospital, has resigned from the resident staff of the Home for Incurables and been appointed by the directors a member of the House Staff of Columbia Hospital for Women.

THREE IMPORTANT MEDICAL BILLS PASS THE HOUSE. Three bills effecting the sanitary condition of the District passed the House on January 25: A bill for the regulation of cemeteries and the disposal of dead bodies; a bill to regulate privies, and a bill to prevent the spread of contagious diseases in the District of Columbia.

A HOSPITAL FOR CONTAGIOUS DISEASES NECESSARY.—There is the greatest necessity for Congress to act promptly and pro-

vide a hospital for the care of contagious diseases prevailing in the District. Hardly a day or week passes that some unfortunate person suffering with diphtheria or scarlet fever is not going the rounds, to the different hospitals, seeking admission and being invariably turned away because of its absence of proper facilities for their care. The recent legislation regulating contagious diseases will help reduce the number of such cases, but Washington will never be a modern city until Congress appreciates the serious situation and protects themselves and our citizens by providing a suitable hospital for the care and isolation of contagious diseases.

TWO SCIENTIFIC POSITIONS VACANT.—The Civil Service Commission will hold examinations in this and other large cities where there are applicants, on February 20, for the purpose of securing eligibles for the positions of preparator of specimens and assistant biologist, Department of Agriculture.

THE PUBLIC SERVICE.

Army Changes. Official List of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from Jan. 23 to 29, 1897.

Major Philip F. Harvey, Surgeon U. S. A., is granted leave of absence for two months, to take effect on or about Jan. 18, 1897. By direction of the Secretary of War.

Capt. William O. Owen, Asst. Surgeon (Ft. Bayard, N. Mex.), is granted leave of absence for one month, to take effect about the 1st proximo. Major Clarence Ewen, Surgeon, having served over thirty years in the Army, is on his own application, by direction of the President, retired from active service this date, Jan. 26, 1897.

Major James C. Merrill, Surgeon U. S. A., is granted leave of absence for one month.

Capt. Robert B. Benham, Asst. Surgeon U. S. A., retired from active service by reason of disability.

Capt. Eugene L. Swift, Asst. Surgeon U. S. A., has been granted further extension of sick leave of absence of two months.

Change of Address.

Boyer, E. N., from 303 Jersey St. to Franklin House, Quincy, Ill.
Binkley, J. T., from Columbus Memorial Bldg. to 492 49th St., Chicago, Ill.
Barrett, E. J., from 12 Harrison St. to Palmer House, Chicago, Ill.
Beebe, Brooks F., 117 E. 4th St. Cincinnati.
Chapel, V. P., from Irvona to Newberry, Pa.; Cross, G. D., from Philadelphia to 618 Edgemont Av., Chester, Pa.
Jones, George E., from Cincinnati, Ohio, to Connersville, Ind.
Johnson, C. W., from St. Louis, Mo., to Litchfield, Ill.
McBride, J. H., from Wauwatosa, Wis., to 1761 Q St., N. W., Washington, D. C.; Murdock, E. P., from 571 W. Adams St. to 601 Washington Boul., Chicago.
Ramsey, R. T., from London to Danville, Ky.; Rigdon, R. L., from Market and 3rd Sts. to 1615 Brodrick St., San Francisco, Cal.
Silver, H. M., from 39 7th St. to 5 E. 43rd St., New York, N. Y.
Wood, E. S., from Fairmount to 524 Michigan Av., Leavenworth, Kan.

LETTERS RECEIVED.

Ayres, S. C., Cincinnati, Ohio; Allison, B. A., Decatur, Ill.; Atkinson, W. B., Philadelphia, Pa.; American Sports Publishing Co., New York, N. Y.; Appel, A. H., Fort Porter, Buffalo, N. Y.; Alma Sanitarium Co., Alma, Mich.; Adams, J. O., Washington, D. C.
Boehlinger, C. F., & Soehne, New York, N. Y.; Biddle, James G., Philadelphia, Pa.; Burr, C. B., Flint, Mich.; Betz, Frank S., Kelly & Co., Chicago, Ill.; Baker, Henry B., Lansing, Mich.; Beich, T. J., Port Carbon, Pa.
Carter, J. M. G., Waukegan, Ill.; Coe, Henry W., Portland, Ore.; Colburn, J. M., Richmond Center, Wis.; Casselberry, W. E., Chicago, Ill.; Chambers, J. H., & Co., St. Louis, Mo.; Cox, A. E., Milan, Tenn.; Columbus Phaeton Co., Columbus, Ohio.
Daland, Judson, Philadelphia, Pa.; Douglass, J. C., Franklin, Ky.
Ewing, Fayette C., St. Louis, Mo.
Felton, Howard E., Cartersville, Ga.; Fassett, Charles Wood, St. Joseph, Mo.
Graves, Marion L., Waco, Texas; Green, H. L., (2) Mt. Pleasant, Iowa; Gibson, Frank, Pittsburg, Pa.; Gardner, R. W., New York, N. Y.; Guild, C. H., Company, Boston, Mass.
Hektoen, L., Chicago, Ill.; Hummel, A. L., Adv. Agency, New York, N. Y.; Haldenstein, I., New York, N. Y.; Helfman, Joseph, Detroit, Mich.
Jenkins, R. H., Hogsansville, Ga.; Jackson, Edward, Philadelphia, Pa.
Jay, E. W., St. Anthony, Iowa.
Kocher, F. W., Louisville, Ky.; Kegan, Paul, Trench, Trübner & Co., Ltd., London, Eng.
Little, C. H., Piqua, Ohio; Love, I. N., St. Louis, Mo.; Louisville Sanitarium, Louisville, Ky.
Mountain Valley Springs Co., Hot Springs, Ark.; Modern Medicine Publishing Co., Battle Creek, Mich.; Morgenthau, Geo., Chicago.
Nutter, W. F., Newark, N. Y.
Perry, J. C., Portland, Ore.; Pilcher, James E., Columbus, Ohio; Pearse, H. E., Kansas City, Mo.; Putnam, B. H., North East, Pa.; Procter & Collier Co., Chicago, Ill.; Pugh, F. H., Bryan, Ohio.
Reeder, H., Aurora, Ill.; Randall, F. D., Malden, Mass.; Robbins, C. P., Winona, Minn.
Spencer, George A., Haverhill, Mass.; Squibb, E. H., Brooklyn, N. Y.; Seibert, W. H., Steelton, Pa.; Sullivan, G. M., Labelle, Mo.; De Schweinitz, G. E., Philadelphia, Pa.; Snyder, H. L., Old Zionsville, Pa.; Shotwell, A. N., Mt. Clemens, Mich.; Spiller, W. G., Philadelphia, Pa.; Smith, H. M., East Las Vegas, N. M.
Ten Broeck, W. H., Paris, Ill.; Tinsley, G. S., Wrightsville, Pa.
Wogate, U. O. B., Milwaukee, Wis.; Wilbur, Cressy L., (2) Lansing, Mich.; White Rock Mineral Spring Co., Waukesha, Wis.; Warner, W. R., & Co., Philadelphia, Pa.; Wagner, Carl, Chicago, Ill.; Weaver, W. G., Wilkes-Barre, Pa.; Williams, C. C., Brighton, Mass.; Walls, W. A., Washington, D. C.
Young, Arthur, Prescott, Wis.

The Journal of the American Medical Association

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CHICAGO, ILL., FEBRUARY 13, 1897.

No. 7!

ORIGINAL ARTICLES.

THE CLIMATE OF THE EAST COAST OF FLORIDA.

GENERAL HEALTHFULNESS, FREEDOM FROM FOGS, MUD
AND DUST; ATTRACTIONS FOR THE INVALID
AND TOURIST; NATURE'S SANITARIUM
FOR THE CONSUMPTIVE.

S. G. WORLEY, M.D.

ST. AUGUSTINE, FLA.

W. L. HUGHLETT, M.D.

COCOA, FLA.

If it be true that the Rocky Mountain region "is a land lifted up by nature into the pure serene for the invigoration of the race," it is equally true that the peninsula of Florida, jutting out into the southern seas, offers to the aged and invalid a most inviting climate for the comfort of advanced years and the prolongation of life. Much has been written and said of Florida. Some who have come to the State and fortunately regained health and otherwise prospered have painted a picture in glowing colors of Florida and her wonderful climate; others, less fortunate, have given the dark side. It is our purpose as medical men and residents of the section, to give the world reliable information regarding this, the American Riviera.

By the east coast of Florida we mean that section of the main land between the St. John's River on the west and the Atlantic Ocean on the east; St. Augustine on the north and Key West on the south, the entire length of which is traversed by the Florida East Coast Railway and Key West and Miami Steamship Company. This territory includes the Counties of St. Johns, Volusia, Brevard, Dade and Monroe. Along this section and within a distance of a few hundred yards to a mile of the ocean, there is a system of waterways making an inland route almost the entire distance of the State. These waterways are lagoons, arms of the sea; they have been given the names of rivers, lakes and bays, and thus we have along the coast, the Halifax and Indian Rivers, Lake Worth and Biscayne Bay. These waters are all a clear blue, are salt and abound with fish, oysters and water fowl in winter. The land, for the most part, is high and dry, the native forest is of oak, hickory, pine and palmetto, but this has given way in many places to orange groves and pineapple fields or to vegetable gardens. The soil is a rich, heavy sand; we have neither dust nor mud; no frozen ground or slush. The prevailing winds are from the east, and the resident population, living for the most part within a few miles of the ocean and directly on these inland waterways, enjoy excellent health. We believe this to be the most healthful section of Florida and the climate is certainly as near perfect as is to be found. Before this section of the State was opened up people got their ideas of Florida

from visiting at Jacksonville, St. Augustine and other places in the northern part of the State, and many of them not seeing in those places the tropical growth they expected to find, have been sometimes disappointed. While the climate of these places is very desirable and their hotel accommodations are excellent, yet they do not present the "land of flowers" appearance that the visitor wishes to see. Let them remember that these places are in the northern part of the State, that one can travel south from Jacksonville 400 miles, a distance greater than from New York city to Richmond, Va., and yet be on the main land of Florida. By reference to a map it will be seen that Florida extends through six degrees of latitude, or from about 29 degrees north to 24½ degrees going south, a distance of over four hundred miles on a due north and south line. Certainly traveling this distance in a semi-tropical country must bring one to a mild and balmy climate, and such is the climate of the lower east coast of Florida. We shall not take up space by giving comparative statistics with other favored sections, but will present a few tables showing the temperature at several Florida points where the United States government has kept observers.

Seven months of the year on the east coast of Florida is our summer, with a temperature ranging from 70 to 95 degrees. At Jupiter, a government station a little more than half way down the coast, the highest temperature of the summer months for eight years past was 95 degrees F. and the lowest 64 degrees F. So far, then, as the summer temperature is concerned this statement will suffice. The spring and autumn in Florida is simply delightful, temperate weather. What is generally understood as the Florida season or winter are the first four months of the year.

Our temperature table below will include three important points about equal distance apart. Jupiter is a little below a line equally dividing the mainland of the State north and south, but is about half way between Jacksonville and Key West, the latter cities being the northern and southern extremes. The figures are taken from tables furnished by the Weather Bureau of the United States Department of Agriculture:

TEMPERATURE TABLE—FAHRENHEIT.

| | JANUARY. | | | FEBRUARY. | | | MARCH. | | | APRIL. | | |
|------------------------|----------|----------|-------|-----------|----------|-------|----------|----------|-------|----------|----------|-------|
| | Maximum. | Minimum. | Mean. | Maximum. | Minimum. | Mean. | Maximum. | Minimum. | Mean. | Maximum. | Minimum. | Mean. |
| Jacksonville | 81 | 15 | 55 | 84 | 14 | 57 | 88 | 27 | 62 | 92 | 31 | 69 |
| Jupiter | 83 | 31 | 65 | 87 | 27 | 67 | 87 | 33 | 68 | 93 | 55 | 76 |
| Key West | 79 | 55 | 67 | 80 | 52 | 66 | 82 | 54 | 68 | 83 | 66 | 75 |

*These low temperatures are the record of the great freeze of 1895, the lowest temperature recorded in sixty years in the State. The lowest in eight years previous to this was 26 degrees in Jacksonville, 33 degrees in Jupiter.

From the foregoing table and also from another

submitted below, it can be shown that no other section of country in temperate latitude presents so equable a climate as the peninsular or southern portion of Florida. A perfect climate is only ideal; it is not a reality. In point of temperature a perfect climate would never fall below 70 degrees or rise above 75 degrees, as such a temperature would be more conducive to human comfort than any other. In no part of the world can such a climate be found. But if we extend this range ten degrees each way and say 60 to 85 degrees, we then have a climate that is obtainable for a considerable portion of the year. We say 60 to 85, because when it falls below 60 it is too cold for comfort, or above 85 it is too warm for comfort. From this it will be seen that the place that has, during the year, the largest number of days the temperature of which falls wholly within these limits, comes the nearest to a perfect climate.

The following table is compiled from the reports of the Signal Service of the United States Army. The headings of the lines and columns sufficiently explain their contents, bearing in mind that the figures indicate the number of days in that place for that month, no part of which the temperature was below 60 degrees nor above 85 degrees:

| 1879. | 1887. | | | | | | | | | | |
|----------------------|-------------------|-----------------|-------------|--------------------|-------------------|-------------------|------------------|-------------------|-------------------|-----------------|----------------|
| | Los Angeles, Cal. | San Diego, Cal. | Campo, Cal. | Jacksonville, Fla. | Punta Rassa, Fla. | Galveston, Texas. | New Orleans, La. | Charleston, S. C. | Wilmington, N. C. | Riverside, Cal. | Key West, Fla. |
| January | 0 | 0 | 0 | 0 | 14 | 5 | 3 | 0 | 0 | 0 | 23 |
| February | 0 | 0 | 0 | 0 | 10 | 1 | 1 | 0 | 0 | 0 | 25 |
| March | 1 | 1 | 0 | 11 | 21 | 23 | 17 | 11 | 14 | 13 | 31 |
| April | 0 | 0 | 0 | 12 | 23 | 25 | 17 | 11 | 14 | 13 | 28 |
| May | 0 | 0 | 0 | 20 | 27 | 25 | 17 | 19 | 14 | 13 | 19 |
| June | 6 | 5 | 0 | 10 | 3 | 6 | 10 | 13 | 12 | 13 | 13 |
| July | 10 | 22 | 0 | 4 | 3 | 0 | 10 | 13 | 12 | 13 | 0 |
| August | 9 | 28 | 0 | 7 | 3 | 0 | 16 | 11 | 10 | 1 | 1 |
| September | 5 | 14 | 0 | 19 | 12 | 21 | 20 | 24 | 13 | 2 | 5 |
| October | 1 | 3 | 0 | 26 | 20 | 21 | 22 | 20 | 19 | 0 | 19 |
| November | 0 | 0 | 0 | 13 | 21 | 18 | 13 | 11 | 7 | 0 | 30 |
| December | 0 | 0 | 0 | 5 | 30 | 16 | 7 | 2 | 3 | 0 | 31 |
| For the year | 32 | 73 | 0 | 128 | 193 | 170 | 147 | 124 | 98 | 14 | 227 |

*Near Rock Ledge on the Indian River, table by Rev. J. H. White, observer Weather Bureau.

While the highest average maximum temperature for the months noted varies very little along the entire east coast, it being 86 degrees at Jacksonville, 87 at Jupiter and 81 at Key West, it appears there is a decided difference in the average minimum temperature, it being 25 degrees at Jacksonville, 37 at Jupiter and 57 at Key West (these minimum figures being for the coldest winter on record). Thus, while the summer is very uniform the winter temperature varies about 30 degrees, or from 25 degrees in Jacksonville to 57 degrees at Key West, a distance of about five hundred miles. Going south then from Jacksonville one may expect for every 100 miles traveled an increase of temperature from 4 to 6 degrees, there being a difference of 12 degrees between Jacksonville and Jupiter and 20 degrees between Jupiter and Key West. Key West being entirely surrounded by water, makes the winter climate relatively warmer and summer cooler than on the main land.

For twenty-five years the mean or average temperature for Jacksonville is as follows: November 62 degrees, December 56, January 55, February 57, March 62, April 69.

For eight years past the mean or average temperature for Jupiter is as follows: November 72 degrees, December 67, January 65, February 67, March 68, April 72. These figures showing a general average difference of 10 degrees between Jacksonville and Jupiter, approximately bear out the previous estimate. We, therefore, have in the Jupiter station a good basing point for calculating the temperature along the coast, and it will work very satisfactorily. For instance, one wishes to know about the average temperature for the month of January at Rock Ledge and Miami. We find the average at Jupiter is 65 degrees for January, Rock Ledge is about 100 miles north of Jupiter and would have an average temperature of 61 degrees; Miami is about 100 miles south of Jupiter and would have an average temperature of 69 degrees. For the present we have to figure this way, as many of the resort places are new and have no regular reliable weather reports.

From other data at hand we observe further, that along the east coast of Florida the temperature is from 4 to 6 degrees warmer for every 100 miles going south than other portions of the State. This is accounted for in several ways. The waters of the gulf are shallow near the land, whereas on the east side the ocean is deep in near the shore; there, too, the cold waves or winds which come to South Florida come across the gulf from Texas—Texas “northers” as they are called—and although they are tempered in coming across the gulf by the warmed waters, yet they are our cold winds. In fact, these winds from the northwest bring what damaging cold we have on the east side. A greater factor, however, in moderating the cold of these northwest winds and in regulating the climate of the east coast of Florida is that wonderful ocean river, the gulf stream. It sweeps in between the west end of Cuba and Key West and flows close in shore along the southeast coast of Florida, and as its waters are considerably warmer than the ocean proper and our prevailing winds being east, the warmed air thus brought over materially modifies our climate, making the winters warm and the summers cool by winds fresh from the ocean. The regular “norther” which we have occasionally on the east side is a water wind and never brings frost. A glance at the map will show that Jupiter is nearly one hundred miles east of Fernandina, so that all of the due north winds that strike the coast east of Fernandina are water winds, always warmer in winter than those from the land: our cold, icy winds always come across the land and from the great northwest. Such then is a general review of the temperature of the east coast and its modifying influences. There are other things of great importance beside the range of temperature which should shape our judgment as to any climate; chief among these are humidity, fogs and dust.

The average humidity in Jacksonville for twenty-five years is 74, and for the last two years at Jupiter was 80; this is a fair average for the east coast. Now, as to fogs. One of the writers of this paper has lived twelve years on the Indian River, during which time he has not seen twelve foggy days, and here it rarely rains or is cloudy all day. From the weather bureau report from Jupiter station we make the following quotation: “Total number of foggy days, dense fog for over one hour, two in 1894, three in 1895.” This is, indeed, the land of sunshine. We have little or no dust, the soil along the east coast of Florida is a

rich heavy sand; it does not grind up into dust, consequently we do not have dust storms, prevalent in some sections; beside there is little open country and the wind has no chance even if it were dusty. There is but little clay in the soil; it is porous and furnishes an excellent filter for the rain that falls, so we have no mud. One hour after a heavy rain persons can walk in their shoes without getting their feet wet or shoes muddy. Think, then, of a country averaging three-fourths of the days of the year with clear skies, moonlight nights only rivaled in the tropics, no dust, no mud, no frozen ground or slush, no fogs to speak of, no unbearable heat or humidity, and an average winter temperature of from 65 to 85 degrees. These are the climatic conditions of the east coast of Florida.

Now as to the general healthfulness of this section. The Commissioner of Agriculture for the State of Florida has furnished us the following statistic data for the counties of the east coast of Florida, population and death rate according to the census of 1895. Population: St. John's County, 7,708; Volusia, 11,480; Brevard, 4,558; Dade, 3,322; total population, 27,068. Deaths: St. John's, 63; Volusia, 23; Brevard, 9; Dade, 7; total deaths, 102. Death rate less than 4 per 1,000. If there is any error about this statement, as some will no doubt suppose, the State officials are responsible for it. We present this table as an offset to many slanderous reports concerning the general healthfulness of this State and section, also for the purpose of directing attention to what is, so far as we can ascertain, the lowest death rate of any section of the United States. In the so-called sickly sections of the country and in nearly all of our cities throughout the States the death rate is four or five times as great as here.

From an interesting article on the climate of New Mexico, appearing recently in the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, we make the following sweeping quotation: "Statistics have proved that the West Indian Islands and the *Gulf States* are unfavorable for most lung diseases and rheumatic fevers, as well as abdominal disorders generally, being hotbeds of malaria." There are undoubtedly sections of the Southern or Gulf States, notably along the Valley of the Mississippi River, that are extremely malarious, but such a wholesale statement as the foregoing must be corrected. Grant that these sections do have malarial troubles, they are not, as a rule, fatal, and it can be shown by statistics that the death rate of the Southern States as a whole is less than any other grand division of the country and the climatic conditions are here more favorable for the prolongation of life.

In defense of Florida we quote as follows from a report by Surgeon-General Lawson, published just the last war: "The climate of Florida is remarkably agreeable, being subject to fewer atmospheric variations and its thermometer ranges much less than in any other part of the United States, except a part of the coast of California. (This report made before the east coast of Florida was settled up.) As respects health, the climate of Florida stands *preëminent*. That the peninsula of Florida is much more salubrious than that of any other State in the Union is clearly established by the medical statistics of the army. Indeed, the statistics in this bureau demonstrate the fact that diseases that result from malaria are of a much milder type in the Peninsula of Florida than in any other State of the Union. These

records show that the ratio of deaths to the cases of remitting fever has been much less than among the troops serving in any other portion of the United States. In the middle division of the United States the proportion is 1 death to 36 cases of remitting fever, in the northern division 1 death to 52 cases, in the southern division 1 to 54, in Texas 1 to 78, in California 1 to 122, in *New Mexico* 1 to 148, while in Florida (a Gulf State) it is but 1 to 287." It would be idle talk to say there was no malaria in Florida, people appreciate truth. Wherever there is heat, moisture and decaying vegetable matter there must be some malaria, but what of it, when it causes no deaths. Beside this, people, and physicians as well, are too often in the South disposed to call every trifling ailment, even biliousness and disorders of digestion, malaria. It frightens outsiders, it means nothing to us.

The east coast of Florida is fortunate in having little or no malarial troubles. For the most part the land is high and dry, the soil is sandy and water does not stand upon it. The people for the most part live along the banks of the rivers within a few miles of the ocean. There is almost a constant prevailing east wind fresh from the ocean, and the miasmatic vapors that form about the low lands and marshes west of us are blown away, so that our air is very pure.

A prominent physician of the Indian River country states "that in twelve years he has not seen a case of scarlet fever, diphtheria or true croup, has had only three cases of pneumonia, all sequelæ of la grippe and all recovered; has never had a death from simple malarial fever; that rheumatism is rare amongst those who are properly fed, and that most asthmatics do well and nearly all consumptives are benefited in this section."

Another prominent physician, in an article on the health of Brevard County (this county being 100 miles long, making one-fourth of the east coast), makes this statement: "For the last four years I have not used over four ounces of quinin or its kindred compounds in my practice annually. There is but little tendency for the remitting and continued fevers to pass into that state known as typhoid."

From the same writer (Dr. Geo. W. Holmes) I quote further: "The Indian River furnishes an unsurpassed asylum for the invalid from the chilly blasts of old winter. It is equaled by few sections of the world in its freedom from damp and foggy mornings. Its sandy soil swallows up whatever rainfall the passing showers may bring, leaving the surface free from redundant water, so that there is absolutely no mud for the pedestrian to chill his feet with.

"The invalid seeking recuperation from the ravages of that invincible destroyer of our race in northern latitudes, pulmonary disease, will meet in many of the resident population practical demonstration of its beneficent influence. The writer of this article came to this section in January, 1875, from central Ohio, suffering from pulmonary consumption. Improvement was definite the first winter, and a continued residence has resulted in confirmed good health, continuing to the present year, 1896."

Statements could be multiplied at great length setting forth the advantages of this favored section, but we think enough has been said to warrant physicians throughout the country in advising their patients who have incipient phthisis or are otherwise in feeble health to come to this section of Florida. Not only

may they be safely advised to come here for the winter months, but to make for themselves permanent homes.

The east coast is comparatively speaking a new section of the State. In other years, when a trip to Florida was the popular thing, the east coast was quite inaccessible. A journey from Jacksonville or St. Augustine to Rock Ledge or Lake Worth required many days and great inconvenience; this now is all changed. About five years ago Mr. Henry M. Flagler, a New York millionaire (and member of the Standard Oil Company) undertook what was and is a stupendous project—that of building and operating a railroad from St. Augustine south to the Keys, the present terminus being at Miami, 366 miles south of Jacksonville. Mr. Flagler has also constructed along this line of railroad at different points the most expensive and elegant hotels in the South, perhaps in the world. It is then no longer a question of expedition or comfort in travel or entertainment after reaching this section. There is much in this section to attract the tourist and invalid. There is no rough mountain scenery, the land in no place rising more than 100 feet above the sea level; but for broad expanse of water view, for evergreen tropical vegetation, for fine fishing and hunting, for balmy air in which the invalid can remain out of doors nearly all the time, we have a country unequaled. A few years ago the forest of palms and hard woods stood in its primeval glory. Now it is broken in many places, and here and there thrifty little towns dot the coast, where once stood the Seminole tent. The attractions of these little towns are varied, all now offering the comforts of life.

Going south from Jacksonville is St. Augustine, the first east coast town, noted for its antiquity and its magnificent hotels. It is said that the Ponce de Leon Hotel in St. Augustine is the finest structure of its kind on earth, and its service is unsurpassed. Going yet further south the next places of importance are Ormond, Daytona and New Smyrna, on the Halifax River and ocean front; these places are noted for their fine sea beaches, admirable for bathing, which, with beautiful shelled streets, make it very attractive for the bicyclists and for driving outfits.

Still further south, down on "the Indian River," we come to Rock Ledge, "the beautiful." No place in Florida presents more natural beauty than Rock Ledge. The shelled drive along the rocky front bordering the Indian River, overhung with moss-draped oaks and the evergreen palmetto, is something enchanting. Here too is the home of the famous Indian River orange. Rock Ledge has three excellent hotels and a number of boarding places suited to all classes of people. One hundred miles below Rock Ledge and we come to Lake Worth, in the midst of semi-tropical scenes and pineapple plantations. On the peninsula between Lake Worth and the ocean Mr. Flagler has erected the Royal Poniciama Hotel at Palm Beach, with accommodations (including "the Inn") for 1,000 people. Everything has been done here to make glad the heart of the visitor.

Yet further south nearly a hundred miles, down on Biscayne Bay, we come to Miami, and for the present "here we rest."

Miami presents a strictly tropical appearance. Its cocoanut trees, with profusion of vines and beautiful flowers, make a scene that can not perhaps be observed anywhere else in the United States. At this place Mr. Flagler is having erected another beautiful hotel,

the Royal Palm, which will be ready for guests the coming season. So much, then, for the country and its advantages.

In closing, we wish to present some views for the benefit of the consumptive. In the present state of our knowledge there is no specific cure for pulmonary tuberculosis; neither is there any climate or section where all can be cured. Patients have been sent in all directions. They have been advised to climb into "the blue serene" of the mountains where the air is light and pure, and where respiration could be carried on with less difficulty than at the sea shore; they have been sent to the wide plains to breathe the dry air (and likewise the dust); they have been sent to the far north where the air is so cold that the bacilli might be frozen out; they have been sent to the tropics where no pneumonia would aggravate. Alas! no place suits every case; some are doomed to disappointment. Now, we offer you the east coast of Florida as nature's sanitarium. In a paper read before the last meeting of the Florida State Medical Association, Dr. George Troup Maxwell stated that forty years ago pulmonary consumption was almost unknown in Florida, the disease now existing having been brought into the State by outsiders. To this statement we can add the testimony of many physicians now in the peninsula of Florida that, except in cases of heredity or clear infection, consumption is almost unknown among the resident population. This should give great encouragement for sending patients with pulmonary and catarrhal affections to this section. (Our health officials might profit also by this lesson, for in extending our hospitality we are inviting a foe.) Physicians in advising a change of climate must consider more than range, or variations of temperature. Sick people are sensitive, especially so are consumptives; although as a rule they are the most hopeful class of invalids, they are much affected by scene and environment.

Little benefit could be derived in a uniform temperature of 80 degrees, if there was nothing in sight to delight the eye or gratify the palate.

What the consumptive requires is a climate so mild that the tuberculous process is not aggravated by respiring chilled air. Congested conditions of the lungs and bronchial tubes deprive him of a certain amount of oxygen absolutely necessary for life and comfort.

They should be out of doors amongst the trees and flowers, breathing in nature's remedies. They should have the sunshine, which here they can have three-fourths of all the days of the year.

They should have fresh fruit, fish and vegetables, which here abound, the orange, pineapple, grape fruit and saw-palmetto berry growing here in their greatest perfection. They should have good beef, eggs, bread and milk, which can now be had anywhere along the east coast. Neither air, sunshine or drugs alone will cure a consumptive; they must be fed until we shall have discovered a remedy that will destroy and rid the system of tubercle bacilli without destroying life.

A country showing such a low death rate as ours must be healthful, and a healthful country is better suited to invalids than those sections where much sickness prevails. It will be difficult to find a climate better suited to the invalid class than that of the east coast of Florida. Here in midwinter he may bask in the sunshine or hie himself (or herself) to the shade of the beautiful evergreen trees. At night he is

soothed to slumber by the murmuring of the mighty deep. From his window he may look out upon a broad expanse of blue water, salt and pure; upon waving palms and beautiful fragrant flowers. At the table he may have the most nourishing food, the most luscious and healthful fruits.

Here there is no dust, no frozen ground, mud or slush; but few damp mornings, and the invalid's life is full of variety, and a pleasant existence rather than a weary fight for life.

Being ourselves thoroughly convinced that no section of our great country offers so mild and equable a climate, so low a death rate or so many advantages and conditions favorable for the prolongation of human life, we take pleasure in presenting these facts, and will gladly give further information if desired.

INFANT MORTALITY DURING LABOR, AND ITS PREVENTION.

BY Z. LINCOLN WHITMIRE, M.L., M.D.

URBANA, ILL.

The time was when women brought forth her offspring with pain and suffering, without the presence of midwife or physician; but from the beginning the process has been accompanied by dangers to the mothers and more or less mortality among the children. Although we lack full statistics it can safely be asserted that among the uncivilized peoples (those wholly uninfluenced by civilization) the rate of infant mortality is far less, during labor, than it is at the same time among the civilized peoples. This may seem at first a broad statement, but by comparing the two classes of peoples we can easily find sufficient causes to warrant the assertion.

Man, in the first stages of his existence, was semi, or wholly, barbarous. From that state of being he has gradually grown through the successive stages of civilization to the highest type of human possibility at the present time, a refined and civilized being. He left his footprints all along the way and today they may be found scattered throughout the world in the various civilized, half civilized and savage peoples that mark the different stages of his progress.

In order to get a better understanding of the existing circumstances let us examine the two extreme stages of his existence in respect to his life and characteristics in each stage, and judge of their influence on the mortality of the children of each class. Take, for instance, the wholly uncivilized races, those completely isolated from the influences of the civilized world; with them, like with the lower animals, it is a pure case of the survival of the fittest. Stout, robust, healthy people, living a life of activity and open air exercise, every muscle in their bodies is well developed; every organ is in a perfect state of healthy activity. Where anything is definitely known about them, history and science teach us that they are a perfectly healthy and happy people where civilization has not cast its baleful shadow upon them. Every man, woman and child is in a direct line of healthy ancestors. Each and every one is of good blood, is well developed and has an enduring constitution. They all dress in accordance to the demands of the climate in which they live. In warm climates, where most of them live, they are not encumbered with clothing to any great extent. In cold climates, where warm clothing is necessary, they wear thick fur clothing, but wear it loose; for experience has taught them

that thick clothing, loosely worn, will keep them much warmer than the same clothing worn with a tight fit. Hence, no matter in what latitude they may live, we find them wearing no restraining bands or no tight laced corsets; nothing, in fact, to retard their normal growth or to check the natural development of any part or organ of the body.

With pregnant women this is an important factor; but there is another, and perhaps greater, difference between these women and their civilized sisters. Child-bearing with them is a pleasure as well as a duty, for they have nothing to fear from the dangers of it, as compared to the civilized woman. Although the uncivilized sister is a hard-working woman and does all the work of the place, even up to the time of her confinement, she seldom has a miscarriage. Her good health and free and unrestrained development are guards against it. She neither fears the dangers of childbirth nor dreads the ordeal of pain. Her fine physique and her healthy ancestry reduce these to a minimum. Her children live and thrive and in time reproduce their kind, and people their country with types of robust, strong and healthy people, who multiply upon the face of the earth as God commanded.

Between the uncivilized and the ultra-civilized there is a class that have felt the influence of civilization without themselves being civilized thereby and are, in every such instance, losers by the contact. The American Indian is a good example of this class. Over them has civilization cast its shadow and upon them left its blight. Among them came the civilized Christian with the Bible in one hand, a flask of brandy in the other, the germs of tuberculosis in his system and a Hunterian chancre under his prepuce. He left behind him a degenerating race of miserable débauchés, suffering from the ravages of consumption and rotting with syphilis, whose path through the world is best marked by their graves.

Let us now consider a people upon whom the effect of civilization has been to improve them intellectually, to enfeeble them physically and, in far too many instances, to render them morally depraved, namely, ourselves.

Ease, luxury, indolence, licentiousness and intemperance, the creations of that corrupt offspring of civilization, fashion, are the sins for which our healths and the healths of our children have to suffer. For nearly, if not quite, fourteen centuries we have been inheriting and transmitting the vitiating effects of these vices, so that what wonder is it that today we are degenerated physically from what our earliest ancestors were, and what wonder is it that some of us are morally depraved? What wonder is it that we are a race of tuberculous syphilitics?

Our women are in a worse condition, if possible, than the men. How little are they prepared to bear children. Like their husbands, they are the offspring of a physically enfeebled race. Civilization has raised them mentally above the plane of their barbarian ancestors; but, being naturally of a frailer constitution than the men, the physical retrogradation that they have undergone, side by side with the male portion of the race, leaves them today but a faint outline as compared with the sturdy robust persons of their female progenitors.

They marry, like their mothers before them, for purely social and financial reasons; and seeing about them the fatal effects of reproduction, they shun that duty accordingly. Themselves the progeny of a

syphilitic degenerated ancestry, they dread the responsibility of reproducing their kind. The married life of one is almost the counterpart of that of each of the rest. Her physical development being probably imperfect, she may not have the normal sexual desires associated with a married life. But whether she complies with the wish of her husband through desire or through a sense of duty, she takes the precaution to avoid pregnancy. This precaution is often unnecessary because of some abnormal (and congenital) condition of her generative organs, but more often because of the pathologic condition of the generative organs of her husband (attributable to youthful indiscretions); but it is taken nevertheless, and the mode that is usually employed is one that of itself will soon render the woman sterile, to say nothing of its being apt to make her an invalid for the rest of her life. I refer to the practice of using a cold water douche (with some strong astringent dissolved in it) just after coition, and while the uterus and its appendages are hot and congested with blood. But society has too many demands upon their time to allow such a small matter as her health or her life to interfere and cause her to be laid up at home for a year or more with a baby to attend to; and business has too many demands for money to spend it in raising and educating a child. Nor can the woman have her beauty sapped out by a nursing child. If she becomes pregnant it is an accident; but even then she is not without hope. There is still another hope, abortion. And, though I blush to acknowledge it, she finds no trouble in securing a physician who can ease what few conscientious scruples she may have left by finding some excuse for producing premature labor. This again removes a stone from the foundation of her already frail constitution; and so they multiply. What wonder that the rate of infant mortality during labor is greater among the civilized races than among the uncivilized? It is only too true.

These are only the remote causes, and not those with which the physician has to deal in treating a complicated labor case. By carefully studying the immediate causes (of which there is a classified list below) it will be seen that a great part of them are the effects of the remote causes just mentioned. Their origin may be found in the inherited diseases, in the congenital or acquired physical defects, or defects in the physiologic functions of some organ of the body (caused by inherited or acquired disease); and last, but not least, they may be caused by a too faithful subservience to the demands of fashion, whose slave the woman is, as was her mother before her. The immediate complications of labor cases, from the effects of which the physician is called upon to protect the child's life, are as follows:

I.—Those located in the maternal tissues.

1. Deformed pelvis.
2. Tumors obstructing the passage.
3. Unyielding perineum.
4. Uterine inertia.
5. Ante-partum hour-glass contraction.
6. Displacement of the uterus.
7. Rupture of the membrane.

II.—In the cord and placenta.

1. Short cord.
2. Cord around some part of child.
3. Knots in the cord.
4. Prolapse of cord.
5. Placenta previa.

III.—In the child

1. Head presentation.
 - a. Head abnormally large.
 - b. Body abnormally large.
 - c. Face presentation.
2. Breech presentation.
 - a. Head pressing on the cord.
 - b. Arm thrust past the side of the head.
3. Twin labor.
 - a. Children wedged.
 - b. Head-lock.

There is no other case in which the physician's services are required, where he is so universally placed at a disadvantage, as in a labor case. He is not usually called to attend the woman till she has been in pain for some time, and then he is obliged to hasten to the scene of action lest, if the case be a normal one, the child be born before he arrives; and should it prove to be a badly complicated case, he finds himself there almost empty-handed, or at least without the very instruments and medicines that he needs; for, in his haste, he has left them at home. Such trivial circumstances make no difference to the people whose relative or friend he is to attend. No matter what may be the nature of the complication that exists, he is expected to meet it with skill and promptness.

I heard the late Professor J. S. Knox of Rush Medical College say that he never undertook the care of a labor case unless it was placed in his charge before the eighth month of gestation. If all physicians would make that a rule it would be better for the mothers and children, and of infinite benefit to our reputations as successful obstetricians. By doing that we would place ourselves in the most favorable position to meet the complications and would thus be more apt to secure a living child, and to prevent, in many instances, the death of the mother. For we would not be taken by surprise, but being forewarned would be forearmed, and that is no insignificant item in handling complications that may cause the death of a child.

Let us take a hypothetical case to which we are supposed to be called thirty to sixty days before labor is expected. We first inquire into the history of the case and its progress since conception, so as to be able to determine the probable date of its completion. Her family history and her personal history must be investigated, not omitting to question her as to the number of births, stillbirths and miscarriages she may have had. Should she report any we must use our best efforts to determine the probable cause of each. For this we will find her personal history of value, and a digital examination of her vagina (and of the uterus and its appendages) will be indispensable. If, during this examination, which should be thorough, any obstructions are found that are sufficiently large to endanger the life of the child in passing, they should be examined to ascertain whether their character is such that they can be reduced in size or removed. They should then be treated at once in the manner best adapted to their nature and to existing circumstances. Before departing word should be left for a sample of the patient's urine to be sent to your chemist for examination each morning for eight or ten days. This should be repeated at intervals till the patient is confined, and if albumin is found to be present each time and in large and increasing quantities, one may be certain that the patient is going to have

uremic convulsions if nothing is done to prevent it. It was for this examination more than any other one reason that Professor Knox insisted on having charge of his cases before the eighth month. Furthermore, this early examination makes one complete master of the situation, so far as surprises are concerned (in the way of complications that may be found or anticipated at this early time).

This brings us to the classified list of complications. Of the class located in the maternal tissues, the first is:

Deformed pelvis.—By this is meant a pelvis in which one or more of its diameters is so small that a normal-sized child can not pass through without endangering its life. It is true there are degrees of deformity, but to be classified with the complications that endanger the life of the child during labor, it must be as above stated. This narrowing of the pelvis may be due to various causes and it may be deformed in various ways: 1, it may be deformed by being misshapen or twisted; 2, it may be from a bony growth, caused by disease or by bone tissue being thrown out to heal some injury to the bones of the pelvis; 3, it may be deformed by being too small in every diameter, though perfectly regular in shape. This is usually called a contracted pelvis. The first two of these may be congenital in origin or may be the result of injury or disease. The last (when found in a large or medium sized woman) is due to a thickening of all the bones of the pelvis, or from an insufficient development of the whole pelvis; but it is most commonly found in small women, where the pelvic cavity is in just proportion to the other parts of the body but too small for the passage of a normal-sized child by a natural delivery.

A deformed pelvis is one of the complications that can be discovered at any time by an examination. In examining a pregnant woman, either before or at the time of confinement, the size of the pelvis and of the conjugate diameter in particular, should be noticed, and if it appears small it should be measured at once. In measuring, bear in mind that a conjugate diameter of three inches will allow a living child to be extracted, with or without forceps; three to two and a half inches, may be delivered by forceps or version; while two and a half or less, may be delivered by craniotomy. If, before the time of confinement, the patient's pelvis is found to be too small to allow the child to pass, we have to weigh the desire for a living child against the dangers of Cæsarean section or symphyseotomy at full term, and in accordance with our decision await for full term or induce premature labor. Unfortunately, we are not usually in a position to discover the deformed pelvis till we are at the bedside of the woman to attend her in confinement. Premature labor is then out of the question, and we have left four modes of procedure to choose from. We can secure a dead child by craniotomy or embryotomy, and a living one by Cæsarean section or symphyseotomy. In making our decision we must take into consideration the state of the patient's health and the probability of her being able to withstand the operation that we decide to perform. As to the severity of the operations themselves, statistics show us that symphyseotomy is not only far less dangerous than craniotomy, but it has the advantage of securing a living child. This is an important feature, for, where a woman is conscious of having a living child, she will recover much more rapidly (other things being equal) than where she knows the child to be dead. It may also be

stated that embryotomy is almost out of the question, for it seldom occurs that craniotomy will not do all that is necessary. As to the choice between symphyseotomy and Cæsarean section, statistics and observation will soon settle that. The child has a much better chance of living when symphyseotomy is performed, for the delivery is in every way natural, while it is a matter of record that the mother has a far better chance of recovery. This will seem perfectly clear when one stops to think of the greater amount of mutilating necessary to perform Cæsarean section; whereas in symphyseotomy there is very little blood drawn, the incision may be made subcutaneously and the abdominal cavity is not opened at all. Hence, under ordinary circumstances, symphyseotomy should be chosen to secure a living child in all cases where the choice lies between it and Cæsarean section, craniotomy or embryotomy.

Tumors obstructing the passage.—The word "tumor" is here used in the sense of the word from which it is derived, *tumere*, meaning to swell. That is, any swelling of the tissues of the mother from the uterus to the vulva, inclusive. These tumors may be the result of inflammation: they may be distinct pathologic growths of benign or malignant nature, or they may be caused by bony growths beneath pushing out the flesh, in which case they come under the class of deformities of the pelvis and are discussed there. Whenever tumors are found and are of sufficient size to be a serious impediment to labor, their exact nature must be determined at once. If they are the result of inflammation they may usually be reduced in a short time, a few hours, by the application of a hot water douche or more rapidly by lancing, according to the demands of the case and of surrounding circumstances. If they are distinct pathologic growths, the only means of freeing the passage is by extirpating them. This, of course, must depend upon the time you may have and upon the condition of the patient. When it is found to be impossible to reduce the size of the tumor, and at the same time the circumstances and conditions are such that it should not be extirpated, the physician is placed in the same position in which he would be if the case were one of deformed pelvis. That is, if the tumor is so large that it will prevent instrumental delivery, the physician would have to choose between symphyseotomy and Cæsarean section if he wishes to secure a living child, or he would have to perform craniotomy if he decides on a dead one; and the same circumstances must be taken into consideration that were mentioned under the treatment of deformed pelvis. Hence, where not especially contraindicated, symphyseotomy should be performed.

Unyielding perineum is the third in this class and is not a very common case. By that it is meant that it is very uncommon to see a perineum so non-elastic as to endanger the child's life. When the perineum is not elastic enough to allow the child to pass and at the same time is too tough to rupture, the pressure of the uterus is sure to destroy the life of the child. That is the kind of perineum that comes within the scope of this paper, though it is of uncommon occurrence, it is by no means impossible. When such a case occurs the physician is sometimes able to deliver with forceps and he should make an effort to do so, but he will not always succeed. It is not always possible to determine whether or not the perineum is going to rupture till it actually tears; and since the less yielding the perineum is the greater is the damage

when it tears, it is not always best to wait till it actually declares itself, but to wait only till it looks as though it will probably tear and then cut notches in the edge at each side of the median line, so that it will not tear down the center and involve the sphincter ani as well as the perineum, but will tear in the line of the notches and a short distance only, thus saving a very troublesome wound and allowing the child to pass by, with or without forceps.

As to the immediate closing of the perineum, nothing better could be mentioned than the teachings of both James H. Etheridge, M.D., Professor of Gynecology and Obstetrics, and the late Charles T. Parkes, M.D., Professor of Surgery, both of Rush Medical College, and in the words of the former: "I have taught for years that the perineum that has been pommelled for two hours or more by a delayed second stage of labor, where the head descends upon the perineum, stretching it a little and then receding till the perineum is almost black and blue from mechanical violence, should not be closed by immediate operation, but that the operation should be delayed for twelve weeks. In cases of labor where the violence to the perineum is not done, the immediate operation is highly proper. This was also the teaching of our old friend, Dr. Charles T. Parkes."

(To be continued.)

APPENDICITIS WITH PURULENT PERITONITIS.

Read before the Kentucky State Medical Society at Lebanon, Ky.,
June 11, 1896.

BY J. G. CARPENTER, M.D.
STANFORD, KY.

In presenting this subject the writer wishes to deal with its pathology and surgical treatment; and report successful clinics that have occurred in private country practice with the giants of the profession, viz., the general practitioners. There is no theme of more surgical importance than appendicitis, with or without perforation and gangrene. Whether we be physicians, general or abdominal surgeons, sooner or later we must confront suppurative appendicitis with purulent peritonitis.

As a rule the general practitioner is the first to see these cases. Upon his knowledge of pathology, early diagnosis, complications and surgical treatment, hangs the life and destiny of the patient; and it is incumbent upon him to give the danger signal, operate, or call a surgeon who will, and save life. Not an ideal, but life-saving, conservative surgery. It is not so much how many operations are performed, as how many lives can be saved? For a physician to let a patient die for want of clean skillful surgery, is nothing less than murder.

The time has come when one can no longer dilly-dally—batten the patient with opium, waste time with poultices and wait for tomorrow. No doubt many, many physicians today as they see and learn more of the pathology of appendicular lesions, illumined by the light of surgical science, lament over the "past and the might have been" and think of lost opportunities and patients sacrificed to timidity or want of skill.

Our knowledge of appendicular and peritoneal inflammation and successful surgical treatment, has not come from college professors; but from earnest, honest, skillful and wise general practitioners, who

have grown to be successful and ideal abdominal surgeons. Early diagnosis, early preparations, short anesthesia, quick skillful surgery, means the saving of a life, removal of dangers that daily menace health and happiness; a minimum of shock, and one or two per cent., mortality.

Today we will open the abdomen, give our attention to the appendix and cecum, and study their morbid anatomy and that of adjacent organs as it concerns our subject. Recurrent appendicitis is a constant indication for section and appendicectomy, suppurative or ulcerative appendicitis with or without perforation into the abdominal cavity or the appendix, enclosed in thick lymph walls and adhesions, is a most cogent reason for operation. Imprudence in eating, exercise, or a blow, or fall, carrying a heavy weight, straining at stool, a sneeze, colic, paroxysm of laughter, cough or emesis, is liable at any time to strain, stretch or rupture the abscess wall, or the latter from septic pus laden with microorganisms may become macerated, disintegrated, perforated, leak, rekindle the peritonitis, produce bands of lymph or an adherent appendix; and constrict the lumen of the bowel and cause intestinal obstruction or purulent peritonitis, and death—for death in a few hours or days will come unless early diagnosis, section, irrigation and drainage are done as life-saving measures.

Inflammation may extend from the cecum to within the lumen of appendix, or the appendix may be primarily the "*fons et origo*" of irritation, inflammation and perforation with abscess or gangrene and the cecum remain normal, or the latter in turn become violently inflamed, lacerated, or gangrenous and perforated, as was so beautifully shown in a case operated upon and patient saved by the writer.

The appendix may be adherent to the liver or gall bladder, broad ligament, ovary, tube, bladder, uterus or sigmoid; it may become twisted around the small intestine, finally causing obstruction, or become a part of an inguinal, umbilical or scrotal hernia. From repeated attacks of appendicitis lymph exudation is thrown about the appendix and upon and around neighboring structures. If upon the intestines, bowel paralysis may result or bands of lymph may cause destruction of tissue. Lymph may form in sufficient amount in all directions on the peritoneal surface and form a barrier more or less complete, sufficient to protect the peritoneal cavity from septic infection when abscess forms in the periceal regions; in other cases there forms a distinct abscess wall completely encysting the appendix, and constitutes the tumor so often observed in these cases. It is usually well defined, immovable, more or less dense and painful to pressure; although it may contain pus as a result of the perforation of the appendix there is no fluctuation until the tumor increases in size; as it approaches the surface, super-imposed tissue becomes edematous. Such an abscess may open through the abdominal wall and so establish a fistula between the bowel, the abscess cavity and external abdominal wall, over a point where the abscess should tend, with sufficient lymph wall to protect the peritoneum; ulceration and perforation may suddenly cause the gravest symptoms of shock and collapse, and death eventuate in twelve or twenty-four hours therefrom, unless section be done by a competent surgeon. A patient may have only one attack of appendicitis, recover completely and never have a recurrence, because the foreign body, appendolith, has escaped into the cecum, also sub-

sidence of inflammation and escape of appendicular secretion; the appendix may now undergo atrophy and be converted into a cord-like body, no longer a source of trouble or danger, "appendicitis obliterans."

The appendicular abscess may empty into the peritoneal cavity or into the super-imposed tissues and reach the surface, or in both cases by attachments and perforations. discharge into intestine, colon, sigmoid, uterus, bladder, vagina, become adherent to liver with abscess, and also cause abscess of omentum, tube or ovary. In perforated appendicitis with pericecal abscess and purulent general peritonitis, temperature 103 or 105, respirations 40 to 60, pulse 150 after section, with irrigation, drainage and rest, they have become normal within twenty-four hours, and patients made afterward prompt recovery.

It is most frequently impossible to differentiate between disease of the appendix and cecum, owing to their close relation. Both organs are covered by peritoneum through a portion of their extent and are liable to irritation, inflammation, ulceration and perforation. Perforation of the appendix is quite common, of the cecum rare and can only be settled positively by section. The diagnosis must be made between appendicular or cecal inflammation and acute intestinal obstruction, volvulus, intussusception, fecal impaction (obstruction may be simulated by the attending peritonitis, owing to the paralyzing effect on the bowels), also from spinal or perinephritic abscess.

Abscess of ovary and tube, abnormal pouch, or diverticulum of the ileum, is sometimes found in the right iliac region, also non-malignant and malignant tumors. Strangulation of the bowels, intussusception, volvulus, as a rule come suddenly; impaction of feces, psoas or iliac abscesses or tumors come on gradually; their physical characters and clinical history are usually sufficient to form a diagnosis. Abscess of tube and ovary and impaction may be diagnosed by the history, digital and conjoined manipulation. The final diagnosis must be made when the section is done.

Appendicitis may be complicated with an enlarged, elongated gall bladder, gangrene of the appendix vermiformis, with necrosis of mesentery and ileum, or pericecal abscess and fecal fistula. If the peritoneal cavity has been invaded by abscess, the intestine can be easily reached and cleansed through the lateral or median incision. The length of incision is from three to six inches, parallel with the colon and extending an inch or more above the middle of Poupart's ligament, upward and outward over the appendicular region to the outer side of the right linea semi-lunaris and continue downward until the peritoneum, cecum, appendix or pus-cavity is reached.

The appendix may be adherent and have to be separated, or have a mesentery of its own, its entire length; this must be tied in sections and cut away, the appendix ligated close to the cecum with silk or cat-gut, and cut off, and the peritoneum stitched over the stump with Lembert suture as a protective barrier to further infiltration of leakage; some operators invaginate the stump and stitch the peritoneal surfaces. The appendix has been found floating in the abscess, detached from the cecum; pericecal abscess may exist and the appendix seem normal; removal of the latter would be conservative and prophylactic against future mischief. An appendix with its cecal end closed, containing a foreign body or secretion, or enlarged, ulcerated, sloughing and perforated or adherent, should

always be excised, and the stump before being covered by peritoneum should be iodoformized. The abscess cavity and the peritoneal cavity should the latter be involved, must be irrigated with hot distilled water, 98 to 105 degrees.

A long glass drainage tube should be placed to the bottom of the pelvis in the hollow of the sacrum, the abscess cavity drained with a large rubber tube, the wound coaptated with the necessary sutures, supported by rubber adhesive strips and dressed aseptically, *pro re nata*. Dr. Nicholas Senn's conclusions are these, viz:

1. All cases of catarrhal and ulcerative appendicitis should be treated by laparotomy and excision of the appendix as soon as the lesion can be recognized.

2. Excision of the appendix in cases of simple, uncomplicated appendicitis is one of the easiest and safest of all intra-abdominal operations.

3. Excision of the appendix in cases of appendicitis before perforations have occurred, is both a curative and prophylactic measure.

4. The most constant and reliable symptoms, indicating the existence of appendicitis, are recurring pains and circumscribed tenderness in the region of the appendix.

5. All operations should be done through a straight incision, parallel to and directly over the cecum.

6. The stump after excision of the appendix should be carefully disinfected, iodoformized and covered with peritoneum by suturing the serous surfaces of the cecum on each side over it with a number of Lembert stitches.

7. The abdominal incision should be closed by two rows of sutures, the first embracing the peritoneum, and the second the remaining structures of the margins of the wound.

8. Drainage in such cases is necessary and should not be dispensed with.

We must know how to deal with adhesions, lacerations, necrotic spots, perforations and fistulae of the bowel and adhesion of appendix to other organs such as the liver, gall bladder, uterus, Fallopian tube, ovary, omentum and sigmoid; removal of pus tube: ovarian abscesses, omental and mesenteric abscess, ovarian cyst with twisted pedicle, and suppurating ovarian cyst. We may meet with one or more of the complications of ruptured extra-uterine pregnancy, psoas abscess, or foreign body, such as extra-uterine bone. Often in suppurative appendicitis with perforations and purulent peritonitis the indication will be to incise into the peritoneal cavity and abscess, evacuate the pus, wash out the cavity, drain and wait until a future time to remove the offending cause, or deal surgically with other complications. More surgery than this, will often mean death of the patient, and the aim of every true surgeon should be to save life; and then when the patient's life has been saved by the primary operation and he has recovered sufficiently the ideal or secondary operation can be done to remove the offending cause. Should the appendix have sloughed away nature may have hermetically sealed the stump and prevented fecal extravasation; should it be intact, then amputation with invagination of the peritoneal surface, continuous or Lembert suturing is the model way. First, however, antisepticise the stump with carbolic acid, mercuric bichlorid and iodoform applied locally before suturing.

If necrotic spots of cecum exist, they must be excised with scissors. If small or large rents of cecum

exist, the peritoneal coats must be turned in and sutured with Lembert suture. In addition to this the stump or traumatism of the cecum may be reinforced and strengthened by omental graft, or the meso-appendix or two inches of parietal peritoneum may be excised, the lips of the peritoneum sutured and the patch applied to stump of appendix or cecum. These measures will prevent frequent formation of adhesions, and should be done when necessary and possible, since denuded surfaces of peritoneum are liable to become permanently adherent to adjacent abdominal viscera.

Case 1.—Patient, male, age 12 years. Received a blow over head of cecum, worked several days after injury, no discoloration of skin or swelling. In two weeks pain returned, locomotion impaired, leg flexed on thigh, later on abdomen. Patient in this condition three weeks, with fever, one physician an irregular, "said he had hip-joint disease." Another "typhoid fever." When seen by the writer, the pulse was 130, and he was having two chills a day with copious perspiration; temperature 103.5 F., tumor over appendix; section, irrigation and drainage saved boy's life. Removed a quart of foul pus. Temperature and pulse normal in twenty-four hours. Boy's father and uncle—woodsmen, acted as assistants.

Case 2.—Patient, male, age 12 years old. Was hurt over the right side of abdomen. Ten days after began to complain of pain over McBurney's point, impaired motion and locomotion, leg and thigh flexed, pulse and temperature elevated, tumor size of a large orange outlined over appendix. Operation was advised and accepted. Drs. Joseph Pettus and Steele Bailey consultants. An incision one and a half inches long with evacuation of a quart of pus; irrigation and drainage, rest and asepsis saved patient's life. Remaining part of peritoneum cavity was fortified by plastic lymph and not disturbed. Appendix not found, temperature and pulse normal next day.

Case 3.—Male, age 25 years, former health good, engaged in farm work, mowing a few days after returning from college. From to and fro motion of right arm, with elbow over cecal region, pain with tenderness developed without redness of skin or swelling; temperature elevated in evening with recessions in the morning, simulating typhoid fever, gurgling also present about the eighth day; pain and tenderness became more intense, and swelling began to appear. Appendicitis was diagnosed by Dr. J. H. Parker, of Corbin, and confirmed by Dr. R. T. Ramsey, of London, both of whom advised surgical treatment and called the writer to operate. On examination a tumor the size of a cocoon could be mapped out over McBurney's point; section, irrigation and drainage, asepsis with rest saved patient. Almost or about one gallon of pus was removed from right half of peritoneal cavity, which was an enormous abscess extending from the liver to Poupert's ligament and medial line of abdomen to right lateral wall. The appendix could not be found, the adhesions were not disturbed, the abdomen was drained for two weeks, irrigated and dressed twice a day for this time; patient third week after operation dismissed. Had we hunted for appendix by breaking up adhesions and infected the other half of the peritoneal cavity we doubtless would have lost our patient. To do life-saving surgery we must know when to stop.

Case 4.—At Knoxville, Tenn., I was called in consultation with Dr. Jones to see a former Kentucky boy, for recurrent appendicitis and advised abdominal section and the family declined operation at that time, "said if our prediction was proven correct in the future, and another attack occurred they would submit to operation;" he did have a recurrence and was operated upon by Drs. Jones and James M. Black, both former Kentucky general practitioners, with section, drainage and irrigation. On account of the extensive suppuration and subsequent perforation of cecum, the abdomen had to be opened a second time, and resection of bowel done for perforation, and still the patient made a beautiful recovery.

Case 5.—In April, 1895, Dr. Eugene J. Brown, of Mt. Vernon, Kentucky, sent the writer a telegram to come and do laparotomy. As I was from home on another operation that day with Drs. Wesley of Middleburg, Kentucky, Dr. J. F. Peyton, responded to the call, and found a case of perforated appendicitis with purulent peritonitis. Abscess wall bursted and pus in possession of abdominal cavity. Drs. Brown and Peyton operated by section, irrigation and drainage, and saved patient. The appendix had sloughed and disappeared, the stump was sealed off from the peritoneal cavity by adhesive inflammation and finally by definitive healing. In two weeks patient was in

town on horse-back, hair parted in the middle, and pistol round his waist and drunk as the devil could wish for.

Case 6.—Mr. G., age 20 years; has had one or more attacks of pain over caput coli, indisposition for a few days; was unloading cross-ties and said he strained himself in lifting, by placing elbow against his right side; that night his former pain returned and increased in severity and was worse than ever before, incapacitated him for labor, and prostrated him in bed. Dr. Samuel Perkins, of Bee Lick was called, and found patient in great pain over McBurney's point with nausea and acceleration of pulse, increased temperature and respiration, legs and thighs flexed, abdomen tender to touch; and pain only slightly relieved by hypodermics of morphia; free purgation and hot applications. He diagnosed appendicitis; advised operation which was accepted, and sent for the writer to come and operate, and bring Dr. W. B. O'Bannon to assist; patient was beautifully prepared and on section there was found an omentum adherent to abdominal wall and a circumscribed abscess occupying the right lower fourth of abdomen with purulent peritonitis of this locality. The abscess was perforated, emptied and irrigated and a suppurative and gangrenous appendix found with large perforation at its junction with cecum, and containing an appendolith one by three-fourths inch in size. The latter was removed, the appendix enucleated, the meso-appendix carefully separated from it and a gangrenous portion of cecum excised with scissors; the lips of wound were approximated, serosa to serosa, and Lembert suture used; the length of wound was 2½ inches long after suturing was finished; the meso-appendix was turned over cecal wound to patch it and kept in apposition by a continuous suture; the peritoneum, was scarified to secure adhesive union, and hastened definitive healing. In two weeks the abdominal wound had healed without an unfavorable symptom. Recovery has been complete.

Case 7.—Miss —, age 8 years; former health good; ate freely of frozen apples; on last Sunday of January 1896, at night, was taken ill with purging, vomiting and pain in bowels which was taken to be colic by parents; and home remedies used for a day or two. When the writer was called he found patient in the throes of appendicitis with circumscribed peritonitis; for three days patient had high pulse, temperature and quick respiration; legs and thighs flexed; and suffering intensely. On the fifth day, the symptoms all greatly improved and the patient was better for two days, when former symptoms returned in severity—case much aggravated; operation advised, accepted and performed on the eighth day, a large globular mass was found over caput coli. Drs. Steele Bailey and J. F. Peyton present in consultation and assisted in operation. On opening peritoneal cavity with one and half inch incision, pus welled up into wound, the right lower fourth of peritoneal cavity was involved in one huge appendiceal abscess. The rest of the peritoneal cavity was protected by a lymph wall. The appendix could not be found and adhesions were not broken; section, irrigation, drainage, rest and aseptic after-treatment cured patient in three weeks.

Two cases of non-operative treatment of recurrent appendicitis at last accompanied with purulent peritonitis and death. Two patients who had had former attacks of recurrent appendicitis were treated for colic with opium, poultices and dirt by ignorant incompetent physicians and promptly died. Post-mortem showed clearly that both could have been saved by timely life-saving surgery in skillful hands.

The successful issue in these cases is due no doubt to hot water and soap bath before operation and also in most cases to free purgation, section, thorough evacuation, irrigation and drainage of pus cavity and abdomen, removal of the diseased organs, if not previously sloughed away, also of the pyogenic debris. The most complete irrigation with hot distilled water, dealing surgically and quickly with laceration, fistula and necrotic spots of bowel, complications of appendix and cecum *per se* and other organs. To these, with subsequent asepsis and rest, assiduous watchfulness and attention of nurses, general practitioners to assist in operations and give the after-treatment, we owe our success.

The conspicuous absence of meddlesome neglectful nurses and young internes, with holding of chemic antiseptic from the abdominal cavity, the avoidance of dirty antiseptics and dirty asepsis, so often seen in the general hospitals, and to total prohibition of opiates,

and the inestimable advantages of pure country air laden with ozone and sun-light also had their parts. With all nature in harmony the country gives the surgeon many, many advantages over our city conferees and enables these general practitioners to make diagnosis, assist in operation and give after-treatment.

We must constantly remember that our aim is to do life-saving and not ideal surgery; for ideal surgery is only done in the *deadhouse*. The tyro in abdominal surgery, the "pseudo-specialist" will get turned down oftener, do more incomplete neglected work in the abdominal and pelvic cavities than any where else in surgery. Stanley's "March through the Jungles and Exploration of Africa," "Travels up and down the Congo" are child's play when compared to the successful work of the skillful abdominal surgeon. Today the harvest is ripe and still first class abdominal surgeons are few, because too many of our present crop are "younglings"—graduates from second or third class medical schools and attend three or six weeks at some polyclinic, or go to Europe, live a kind of nomadic life for a month or six weeks, return, and call themselves special surgeons, before they have even vaccinated a baby, lanced gums of teething children, or had any experience in cholera infantum. Dr. J. Marion Sims and all other great and illustrious special surgeons, served a long apprenticeship in diseases of children and general practice before they began major surgery; and in the future, so must all successful surgeons do likewise—the greatest, noblest, most useful, purest, best and most skillful doctors beneath the canopy of heaven today are the general practitioners. They are the back-bone and sinew of our illustrious profession; they are our giants and the custodians and must be the final judges of our work and skill.

Professor Senn states in substance in his book on intestinal surgery that every county-seat or town of one thousand or more population should have a surgeon prepared and equipped to do the operations of abdominal surgery. Again he has stated you must be careful or you will have every cross-roads doctor doing an operation for appendicitis. The warning has been timely but not heeded.

Dr. Senn certainly could not mean the active wide-awake, equipped, thoroughly prepared country physicians, of large towns, who have served an apprenticeship in abdominal surgery under the great surgical lights of our profession, like himself, the Prices, Wyeth, McBurney, Ashton and others too numerous to mention. Abdominal surgeons have proven idiopathic peritonitis is a *myth* and that peritonitis is the surgical disease and should be treated surgically. Recurrent and suppurative appendicitis with or without purulent peritonitis is a surgical disease like gun-shot and stab wound of abdomen, and should be treated early with good first-class surgery. The surgeon knows what he can do by treatment—knows he has a cause and effect, and the physician when in doubt procrastinates; it should be, when in doubt send for a surgeon,—cure effect, by removing the cause. As a rule the average physician, or as Professor Senn terms them the "cross-roads doctor," would rather take their chances of escaping from the lion's den than try to do a laparotomy for appendicitis.

The writer most respectfully acknowledges the valuable information received at the operations and from literature of Drs. Joseph and Mordecai Price, William Easterly Ashton, and Professor Senn and Morton, Sr.

DISCUSSION.

Dr. J. N. BAUGHMAN, Flat Lick—I regret that I arrived a little too late to hear Dr. Carpenter's paper on this subject, but I want to speak in behalf of "scrub" doctors. I have noticed that in nearly all of the papers read before this and other societies that physicians tell us just how to do the operation in appendicitis, whereas the after-treatment is entirely left out. In cases of appendicitis, just as soon as we cut down we find there are inflammatory adhesions. We break these up, and if they were let alone in a great many cases the wound would unite. One of the nicest preparations to prevent readhesions is aristol or iodoform. Aristol has no poisonous effects, and when applied to inflamed tissue it forms with the lymph a thin film which acts as an impenetrable barrier between the white leucocytes on the healthy side, so that the few wandering bacteria by aseptic preparations are left on the other side in almost hopeless condition. They have no chance to get through. Aristol is perfectly innocent in its action. It will remain for an unlimited time and prevent readhesions. This is one thing that we should consider. We should aim to do work that will reflect credit upon ourselves, as well as save the patient.

Drainage is an important thing. I remember having a case to look after some time since in which I used a drainage-tube, but I do not think I shall do so again, for I think that pure aseptic gauze makes the best drainage we can have. Within twenty-four hours after the operation we can dispense with the drainage-tube, provided we have an ample supply of aseptic gauze on the outside to absorb all the products from this drainage-tube.

Another point struck me forcibly, and I do not know but that it is a new idea. In Halstead's operation for hernia a number of mattress wire sutures are introduced. Sometimes after operating upon a case of appendicitis we get hernia as a result in spite of all the precautions we take. Would it not be a good idea in some cases, where we have fear of getting hernia, to put in a lot of aseptic wire so that the abdominal contents could not possibly get through. I do not know whether this would work. I think it would. It does in hernia operations, and why would it not in cases where we perform laparotomy?

Dr. A. M. CARTLEDGE, Louisville—There are one or two lessons to be taught from the report of the cases to which we have just listened. We have had reported a case in which a patient had subsequent pyemia, metastatic abscess of the liver and rupture into the ileum an inch and a half above the ileocecal valve. The next lesson we have to learn is that 90 per cent. of the cases of suppuration rupture into the intestine. A patient who has had an abscess rupture into the intestine is not well, and such patients creep about for years and years. Many cases of supposed recurrent attacks of appendicitis are simply recurrent abscesses filling up and periodically discharging into the intestine. It is an extra-appendicular abscess. I think that it is the main lesson the papers teach, and it is a very important one.

Dr. H. H. GRANT, Louisville The profession perhaps do not think enough about the pathologic condition which exists in appendicitis. There is a foreign body in all cases of diseased appendix, and not only that, it has become now foreign material, inflamed, suppurating, and oftentimes gangrenous. This condition exists in a large proportion of cases of appendicitis which are severe enough to be attacked surgically. In a large proportion of cases the appendix is found either perforated or gangrenous. If it were possible for the X rays to show us the condition present in these cases of appendicitis which are supposed to get along well, in 95 per cent. we would see a condition which would encourage us to operate even if the patient is doing well. If we bear in mind that nearly all of the cases terminate fatally, while a few recover in spite of neglect, it would encourage us to demand early operative interference. The important point for us to remember is that the appendix

is a diseased, infectious foreign body accomplishing no possible good, and that its removal can be safely and easily effected under favorable conditions, and for this reason early operation should be instituted where the indications are sufficient to warrant us to believe it to be a surgical condition. Little harm can come if an operation is done too early, or if it is done even where it was not necessary. In a large proportion of cases fatal results follow the neglect of the golden opportunity. This has been impressed upon me by the observation of a recent case. If we bear in mind the fact that we have in these cases infectious material to deal with, and if we could picture in our minds the condition underneath the skin, we would be encouraged to operate in many instances where we perhaps postpone it from day to day until the time for satisfactory operative interference has passed.

Dr. ARCH. DIXON, Henderson—It is the duty of the surgeon or physician, as soon as he makes a diagnosis of appendicitis, to call in a surgeon and operate. I recall three fatal cases simply because the attending physician temporized about the matter, thinking perhaps the cases would get better. If they had been operated on promptly when the diagnosis was made they would have gotten well. I have been surprised to read some recent remarks by Dr. Hunter McGuire, of Richmond, in which he advised waiting to see what the patient is going to do. My experience teaches me that the very moment that a diagnosis of appendicitis is made we should operate. I believe it is the proper thing to do.

Dr. J. G. CARPENTER, Stanford—Pus in the abdomen or peritoneal cavity demands prompt surgery. That many patients recover from appendicitis without operation is a fact. I have had seven patients in my practice to recover without operation, and seven cases with suppurative appendicitis recover with operation. Two of my cases died from want of operation, as was proven by postmortem examination. They could have been saved by prompt surgery. Four other cases were complicated with pus tubes, ovarian cystoma, ovarian abscess and fibroids, and they recovered. I saw these last cases in the practice of Dr. Price of Philadelphia. Prompt surgery was resorted to, pus tubes and appendix were removed, and all made prompt recoveries. But where complications exist, where the patient is dangerously sick, I believe it is better to do conservative surgery. Open the abdomen, irrigate and drain, for if we go hunting around for the appendix and breaking up adhesions we will infect the remaining portion of the peritoneal cavity and lose the life of the patient. So it is a grand thing to know when to stop, and I believe most of our fatality occurs in these suppurative cases where meddlesome surgery has been done, the surgeon not knowing when to stop. There is no reason why the general practitioner should not operate himself. There is no reason why he should not be posted in the pathology after he has served an apprenticeship in abdominal and pelvic surgery. It is safer for him to operate for appendicitis than to send a hundred miles for a surgeon, for in doing this the patient may die before the surgeon gets there. It seems to me all folly for the general practitioner not to be able to operate on these cases. He should operate, and if he does not do so he is derelict in his duty.

As to the after-treatment, the general practitioner who is up to date is a safe man. No better man or physician can be found to administer the after-treatment. If he is the physician that he ought to be, the patient will fare as well at his hands as in those of the surgeon. We will find cases where it is best to use a drainage-tube, and in other instances we may use gauze.

Dr. R. D. PRATT, Shelbyville I must differ with my friend Dr. Carpenter. I do not think that there are many general practitioners scattered throughout the country who are expert as abdominal surgeons. I think there are few abdominal surgeons among general practitioners, and it seems to me that when we get these cases that require operation they should be

relegated to the specialist. We have a number of eminent abdominal surgeons who can do this work well, and therefore I would take the opposite view, that it is almost criminal for a general practitioner, when it is easy to get an abdominal surgeon, to go into the abdominal cavity.

I do not agree with Dr. Dixon that all cases of appendicitis are surgical. In the twelve cases that recovered and that were reported by me, I will acknowledge that two of them were probably surgical, but they got well in spite of medical treatment. One of them, a young woman, who had abscess which ruptured into the bowel, had perfect drainage take place, and as far as I can learn she has had no recurrence. This was three or four years ago. I think at least one-half of the cases of milder type will recover without operative interference, provided that there is not too much medicine given. This leads to the one point that I particularly desire to emphasize, and that it is the use of opium. I do not believe opium should be given except for the excruciating pain that some of these patients have, and then only in sufficient doses to make the pain bearable.

LARYNGO-PULMONARY PHTHISIS.

Read Before the North Chicago Medical Society, Dec. 28, 1896.

BY C. J. WHALEN, M.D.

INSTRUCTOR IN RUSH MEDICAL COLLEGE AND IN CHICAGO POLICLINIC.

In speaking of phthisis it is a fact that a large number of cases are complicated by a disease in the larynx, which we know is tuberculosis. It seems strange that, as tubercular diseases in the larynx so often accompanies a similar process in the lungs, it should not more frequently be encountered as a primary disease.

It has been questioned by many careful observers, whose names carry much weight of authority, whether laryngeal tuberculosis ever occurs primarily; they insist that the primary lesion was in the lungs, and that when the laryngeal disease developed, the lung disease was marked by it or that the tubercular process while present in the lungs was not recognizable by physical signs.

Most authors writing after improved methods of diagnosis and the use of the laryngoscope, seem to agree, that while it may occur primarily, clinical facts present a strong weight of evidence against such an occurrence. I have never seen tuberculosis of the larynx when I was not able to detect signs of similar condition in the lungs.

Personally I believe that the disease does occur primarily in the larynx, although it rarely if ever gets into the hands of the physician before lung symptoms are evident. In the light of our present knowledge of tuberculosis, it would seem inconsistent to state that the larynx, of all organs of the body, is exempt from primary deposit of tubercle. When it does develop in the larynx, it is as a new center, and not extending by continuity of tissue. The influence of primary laryngeal tuberculosis on the lungs is sooner or later to develop pulmonary phthisis.

The diagnosis of the disease in the larynx of the living subject is comparatively easy after extensive lesions in the lungs have taken place. Few of us have reached or ever will reach that degree of perfection in the auscultatory art that will enable us to recognize positively the incipient lesions of pulmonary phthisis.

A person would need to be extremely skilled to say assuredly in a case of laryngeal phthisis that there are no pulmonary lesions; although a physical examination of the chest may be negative, it ought not by itself to

be taken as absolute, when we remember how unsatisfactory often the signs and symptoms of incipient phthisis are.

Statistics show that laryngeal tuberculosis occurs in about 30 per cent. of cases of consumption. It is more frequently met with in the male, and like phthisis pulmonalis it is seen more between the ages of 20 and 30 years.

Etiology.—The discovery by Koch of the bacillus of tubercle in 1882 placed beyond doubt the specificity of the throat manifestations in tubercular patients. The tubercle bacillus, although being the essential cause of tuberculosis, is after all from a prophylactic standpoint a minor element in its many etiologic factors; every one of us at some time in life would take so many tubercle bacilli into our system that, were the other etiologic factors favorable, we would all die of tuberculosis.

The autopsy table shows that in a large percentage of cases examined where death was due to other causes, there is evidence discoverable of the conquered onslaughts of the bacillus. Decreased power of resistance and unhygienic influences are also to be mentioned as causes of phthisis, and in proof of this claim we have only to point to the high rate of mortality from tuberculosis in those confined to prisons and workshops.

It is a well established fact that a large percentage of all dairy cows, and especially those of the Alderney breed, die tubercular. It is the children of the rich and well to do that are brought up on this milk, and it is this class that contains the greatest proportion of tubercular children.

All other factors entering into the etiology of phthisis are grouped under the head of predisposition.

Symptoms.—Two forms of tubercular laryngitis are found clinically, acute and chronic. The early manifestations of the acute form are indicated by marked congestion of the mucous membrane. The chronic and much more frequent form is early manifested by marked pallor of the mucous membrane. Aphonia, dysphonia, dysphagia, stridulous breathing, dyspnea and cough and anemia of the larynx, are the symptoms usually met with. Infiltration of ary-epiglottic folds, is an early symptom, as is infiltration of the inter-arytenoid folds later on.

The dysphagia of laryngeal phthisis is terrible; indeed, there is no disease known to the practitioner of medicine in which the patient suffers more than in the later stage of laryngeal phthisis. These patients have the appearance of one suffering from pulmonary tuberculosis. The skin is sallow, hot and dry, or bathed with profuse sweat. Hoarseness is present in nearly all the cases. More or less dyspnea is early noticed, especially upon exertion. Symptoms of laryngeal obstruction occur late in the disease. In a large percentage of cases the act of swallowing is attended by so much discomfort that the patient prefers to suffer from hunger and thirst rather than swallow.

The disease in the larynx progresses in proportion to the disease in the lungs, but sometimes the laryngeal disease stops at a non-ulcerative stage and the swelling of the epiglottis and arytenoids with paresis and thickening of the vocal cords alone remain for months.

When there is ulceration over the arytenoids, parts that are never at rest, but move with every breath, at every effort in swallowing or speaking, they are con-

stantly irritated until they become the cause of indescribable torture.

Prognosis.—In 1880 Morrell Mackenzie in his classical work expressed the consensus of opinion of the laryngologists up to that time. He claimed "that the prognosis in laryngeal phthisis is always unfavorable, and is not certain that any case can ever recover."

The prognosis of sixteen years ago has been considerably modified by the results which have attended the efforts of laryngologists for the last few years. Indeed, cases of spontaneous healing of tubercular ulceration of the larynx have been reported by Heryng, Bauveret, Virchow and Jarvis.

J. Solis Cohen (*JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION*, 1883, page 261) "mentions a case as being alive and doing well eight years after the establishment of complete health."

Lennox Browne (*Jour. Laryng., Rhinol. and Otol.* London, 1894, page 185) says "he can only point out one case in his practice in which a cure was effected." In this case the larynx, pharynx and one lung were involved, tubercle bacilli being demonstrated in the scrapings from the granulations and in the sputa. Seven and one-half years after her first visit to him her lung remained healthy, she had gained in weight, and no bacilli could be found in the sputa.

In a large proportion of reported cases of cures of laryngeal phthisis, the time elapsing between their first visit and the report is too short to make them of great value as statistics, but it is satisfactory in this connection to note that healing of tubercular ulceration of the larynx does occur.

I find in looking over a large number of statistics that the proportion of recoveries are exceedingly small; perhaps not more than one-fourth per cent. if all cases of this disease were reported, but the fact of an occasional recovery under treatment affords sufficient satisfaction to indulge in the hope that with our constantly improving methods of diagnosis, the general practitioner who sees the patient first will recognize the laryngeal lesions early and will apply appropriate treatment, or refer him to a specialist, in place of devoting all his skill and knowledge to arresting the lung symptoms, forgetting that the secondary trouble in the larynx may be causing his patient more discomfort and weakening him more rapidly than the disease in the lungs.

In making a prognosis as to time it is well to remember that the very acute cases terminate fatally in from six to twenty-four weeks. Those showing a more chronic tendency run their course in from six months to three years. These patients do not die from the effects of the tubercular disease of the lungs, but from exhaustion caused by pain and starvation, dependent upon an ulcerated larynx, and where the ulceration was over the arytenoids, these patients have been known to suffer the pangs of starvation and die rather than endure the indescribable torture caused by attempts at swallowing. These cases are very rapidly fatal; they die of inanition generally before the lungs are very extensively involved.

In making a diagnosis of laryngeal phthisis it is well to remember that one of the first symptoms in point of time will be laryngitis. It will have all the symptoms of chronic catarrhal laryngitis including the exhausting cough. There is no disease of the larynx which is so easy of diagnosis when met with in its typical form as tuberculosis. "The clubbing"

of the arytenoids is generally looked upon as pathognomonic of tuberculosis. In the vast majority of cases the lung lesions begin at the apex and it is almost invariably so in laryngeal phthisis.

Treatment.—The chief modes of treatment are medical, surgical and climatic.

The medical treatment should be the same as in uncomplicated pulmonary consumption; namely, cod liver oil, oil of cloves, calcium chlorid, iron, hypophosphites, creosote, or better still, guaiacol, which possesses all the antiseptic properties of creosote and is free from many of the objections to that drug. It is essential that the guaiacol be perfectly pure, as otherwise it may cause dyspepsia, a symptom that is present in a large number of cases of phthisis. The guaiacol should be given at meal time and on no account whatever when the stomach is empty. It should be dropped into a capsule just before being taken, beginning with three minims and slowly increased until the patient is taking ten, fifteen or even thirty minims. I can recall two cases in which this mode of medication was pursued, in which I was able to administer forty minims three times a day without the slightest gastric disturbance.

Oil of caryophyllum is less irritating to the stomach than guaiacol and should be given under the same instructions, except that it can be taken oftener, and when administered between meals the patient should take a glass of milk with it if possible. Like guaiacol it should never be taken on an empty stomach lest it cause irritation.

It may be necessary to precede the meal by inducing anesthesia of the parts by means of local anesthetics. It has been found that these patients suffering from painful deglutition can swallow more comfortably by assuming the prone position as suggested by Morris Wolfenden (*Lancet*, London, July 2, 1887). The patient is to lie flat on his abdomen with his feet and body higher than his head, and by means of a tube sucks the fluid up and swallows it. By this method he is able to take plenty of nourishment, while in the erect position he could not take a swallow without suffering excruciating pain.

For producing local anesthesia, I find that a solution of guaiacol in olive oil in strength from 15 to 40 per cent. sprayed into the larynx fifteen minutes before eating will produce an anesthesia which lasts for many hours. In cases where this is disagreeable, a spray consisting of morph. sulph. grs. iv, acid carboic and acid tannic, one-half dram of each, glycerin and aqua dest. q.s. ad one oz., sprayed into the throat will temporarily relieve the dysphagia. This should be applied one-half hour before eating. This solution was recommended by Dr. Ingals as long ago as 1885 and the fact that such an experienced and painstaking operator as Dr. Ingals is using this solution in his practice at the present time speaks volumes in its favor.

The use of cocain as a local anesthetic is not to be advised except in very advanced cases, and toward the end even this will have to be given up, and codein and morphin will be our only means of preventing unnecessary suffering.

Under prophylactic treatment the early lesions of laryngeal phthisis yield promptly, but unfortunately for the patient, they seldom come into the hands of the laryngologist until extensive ulceration or destruction of the lungs renders the prognosis hopeless.

It is unfortunate that the laryngeal symptoms in

these patients should be treated by practitioners of medicine, without an inspection being made of the larynx, but is this so much to be wondered at when we think of the small number of physicians skilled in physical diagnosis who have any technical knowledge of the use of the laryngoscope?

The treatment of the larynx demands above all on the part of the patient complete silence, I admit that it is not always very easy to obtain this, but it should be observed as far as it is possible to do so.

For my own part I am convinced that of the different methods of topical applications for the larynx, all remedies are best administered in the form of spray under high pressure. The intra-laryngeal insufflation of powders has not proven satisfactory with me.

Dr. Lennox Browne claims to get the best results in the preulcerative stage from a spray of menthol, or menthol and iodol. I have used it faithfully in a limited number of cases and I must confess that I derived little if any benefit from its use.

Lactic acid seems to have stood the test of time admirably well, although it has been unfavorably reported on by so good authorities as Schnitzler, Massei and others. The consensus of opinion seems to be that as symptomatic treatment, it excels every other known. It has certainly retained the confidence of those who have had the largest experience. The patients gain in weight, the appetite improves, the night sweats diminish and the expectoration becomes less purulent.

The strength of the solution used should vary from 20 to 60 per cent., according to the toleration of the larynx and the necessities of the case. It should be applied with a probe wrapped with cotton, considerable friction being used.

A spray of tri-chlorid of iodine, varying in strength from $\frac{1}{4}$ to 1 per cent., seems to give satisfaction in the simple catarrhal form before ulceration has taken place.

In a case that had resisted the modes of treatment just mentioned above, I was able to promote healing of the ulceration by a solution of guaiacol in strength from 15 to 50 per cent. in olive oil, varying it according to the toleration of the patient; in one of my cases a solution of 50 per cent. gave little if any discomfort, cicatrization took place within six weeks, considerable infiltration however remaining for eight months.

Guaiacol is a local sedative and lessens the pain accompanying the ulceration, not being escharotic, it continues to be absorbed and its effects are much more lasting than other local anesthetics.

The surgical treatment includes extrinsic and intrinsic operations. Under extrinsic operations are to be considered extirpation of the larynx, which I believe has never been done for tuberculosis.

Tracheotomy, while it might seem suggested in some cases, should be done only for relief of dyspnea. In a few cases it distinctly reduced the swelling within a few weeks and death ultimately ensued from pulmonary disease.

Intrinsic operations on the soft parts consist of curetting the larynx, and it is only resorted to where the pulmonary conditions are favorable and the laryngeal infiltration is located at an accessible point in the larynx. A more satisfactory method is that advised by Professor Krause, who uses a set of double sharp spoon instruments made for the special object of cutting away portions of diseased tissues, applying after

the operation, lactic acid to the denuded part; this operation is claimed to be very painful even under cocain, and there will probably be considerable discomfort for a few days afterward; this method should not be thought of if there is much involvement in the lungs.

I do not think that these patients should be deprived of the one great chance to prolong their lives by change of climate. Patients who can afford the luxury of a residence in the South should be sent there, where no doubt spontaneous recovery is greatly favored. The choice of climate becomes a matter of importance in many instances. A location should be selected in which there is an absence of damp soil. A dry aseptic atmosphere seems to be most desirable to these patients. Fortunately for those afflicted with phthisis, a desirable climate can be reached in a few hours' ride. Mexico, New Mexico, Florida, portions of Alabama and Southern Georgia are desirable winter residences. During the summer months a suitable climate may be found in the Adirondacks in New York, Montana, South Dakota and portions of Colorado. It is especially desirable to have our patients in the more southern climates during the months of February, March and April.

In conclusion, allow me to outline briefly a few histories recording some good results from the local use of guaiacol in laryngeal phthisis.

J. H. B., lawyer, age 30, called on me in October, 1891, complaining of a hacking cough, which had begun to annoy him about eight or ten months previously. He attributed all his troubles to a catarrhal condition of his throat and nasal passages. I found upon inspection of these parts, the inferior turbinated bodies in both nares were greatly swollen, three-quarter filling the cavities. The uvula was greatly elongated, which together with a chronic pharyngitis was responsible for the continual effort at clearing the throat.

An examination of the chest revealed moderate dullness over the right apex as low as the second rib, harshness of respiration over the same side as low as the sixth rib, together with numerous subcrepitant râles heard over the same locality only as low as the third interspace.

After amputation of a portion of the uvula and a thorough cauterization of the nares, he was placed on large doses of maltine with hypophosphites, together with creosote in from 5 to 10 minim doses after meals. Under this treatment he improved rapidly and at the end of ten months all active manifestations of the trouble in the lungs had disappeared.

Patient remained well for one year, when on a damp, chilly day while sight seeing at the World's Fair, he contracted a severe cold which was accompanied by slight hoarseness that gradually increased in severity.

Six weeks later he came to consult me as regarding his hoarseness and the return of his lung symptoms. I found upon inspection of the larynx, the usual condition met with in chronic laryngitis. Physical examination of the lungs revealed practically the same signs as before, with an increase of subcrepitant râles. I advised a return to his former medicine, but substituting guaiacol in place of the creosote, as I found it to be less irritating to the stomach. He was advised to begin with 5 drops and gradually increase it to 20 drops, in capsules, after meals. At the same time I began a spray of acid tartaric, grs. 1, acid carbolie, zinc sulph. $\frac{1}{2}$ grs. 2, aqua dest. 1 oz. This I found could be substituted by a much stronger one, consisting of acid tartaric grs. 2, zinc sulph. grs. 15, and aqua dest. 1 oz.

In spite of these vigorous applications, at the end of two months his hoarseness was more pronounced. Examination revealed beginning tumefaction of the arytenoids and ary-epiglottic folds, with infiltration of the ventricular bands.

Being now convinced that I had to deal with a case of laryngo-pulmonary phthisis, I began the daily use of a spray to the larynx of a $\frac{1}{4}$ per cent. of the trichlorid of iodine, which I soon found could be increased to $\frac{3}{4}$ per cent., later to 1 per cent. without any discomfort whatever to the patient. This treatment was continued for two months, when ulceration of the left vocal cord warned me that more heroic treatment should be resorted to. I substituted lactic acid in varying strength according to the tolerance of the throat, but after three weeks the general condition of the throat seemed to be growing worse.

I resolved to try local applications of guaiacol (being the first time it was ever used in such cases), beginning with a 20 per cent. solution in oil of sweet almonds. A spray was made daily to the larynx, the strength being increased to 25, 30, 40 and ever 50 per cent. with very little discomfort. These applications were followed in a few weeks by a gradual but sure improvement, the ulceration healing completely in less than two months, some swelling remaining for about ten months. The general improvement of the patient, with arrest of lung symptoms went hand in hand with improvement of the larynx.

Examination of the lungs, March, 1896, four and a half years after his first visit to me, showed no extension of his lung trouble, although numerous tubercle bacilli were found in the sputa by Dr. Frank Jay and myself.

Status præsens: The larynx is apparently normal, except where the left vocal cord was partially destroyed, the remaining portion of the cord being much redder in color than its fellow. Some hoarseness still remains, but this has improved wonderfully during the last year. This is all the more remarkable, because he has been obliged to talk many hours a day, being employed as an attorney in the claim department of a large corporation, and he has not been absent from his duties on account of sickness during the whole time he has been under my care, except when taking his yearly vacation, when he has gone South during the month of March.

A microscopic examination, July, 1896, revealed only a very few bacilli on a number of slides examined, and at my last examination, three years after the beginning of his laryngeal symptoms, I was unable to find any bacilli after a very careful examination.

W. J. O., American, age 20, referred to me by Dr. J. B. Murphy. I found to be in the last stages of laryngo-pulmonary phthisis. Death from inanition seemed close at hand. Deglutition being so very painful, I resolved to try the guaiacol, in 25 per cent. solution as before, applying it by means of a Davidson's No. 59 atomizer, the applications being made three times a day, one-half hour before taking nourishment. This seemed to relieve the dysphagia in a marked degree, although he died two weeks after my first visit. I am certain that this short time preceding dissolution was rendered much more comfortable than such cases usually are by other methods of treatment.

F. O. R., machinist, age 22, called to see me in June, 1896, complaining of a cough, which had lasted for six months. He had lost gradually in weight and strength, had frequent night sweats, loss of appetite and gradually increasing hoarseness for four weeks, with slight dysphagia for one week. Temperature 103, with a full regular pulse beating 100 per minute.

A physical examination of the chest revealed decided dullness over the left apex as low as the third interspace, with harshness of respiration over the same region, together with very numerous subcrepitant râles. Inspection of the larynx revealed a clubbing of the arytenoids, much more marked on the right side than on the left. A small superficial ulcer could be plainly seen on the left ventricular band, and a microscopic examination of the sputa revealed numerous tubercle bacilli.

I made daily applications to his larynx of a 30 per cent. solution of guaiacol, which he claimed made his throat feel very comfortable and with marked improvement in his hoarseness. He discontinued his treatment at the end of three weeks, because of some intercurrent indisposition, and I subsequently learned that he died of acute nephritis ten days later.

To summarize, 1. We are still in need of a panacea in laryngeal phthisis. 2. Trichlorid of iodine, guaiacol and lactic acid are the best local remedies. 3. Good results have been reported from cutting away portions of the diseased tissues and applying lactic acid. 4. Guaiacol, or a solution of morphia, tannic and carbolie acid in glycerin and aqua dest., are most satisfactory to relieve pain. 5. Cocain should only be resorted to in extreme cases. 6. Surgical treatment should not be recommended in advanced phthisis. 7. Tracheotomy should be performed only for the promotion of euthanasia in cases of severe stenosis of the larynx.

I am indebted to Dr. B. M. Linnell of this city for the histories of the following three cases, which were treated by him in his private practice, and were read before the North Chicago Medical Society the same night as the preceding cases reported by me.

Case 1.—Mr. B., age 25 years, street car conductor, married. Family history good. Patient had pneumonia four years ago,

was ill for one month, but afterward felt well for two years. Two years ago he spit up a mouthful of blood. Has had two hemorrhages since, the last one three months ago. He has been coughing more or less ever since the first hemorrhage. In the morning he raises some thick yellow sputa and coughs up during the day about half an ounce. About three months ago he began to get hoarse, can not speak above a whisper at the present time. His strength is fair, appetite good, but has lost ten pounds of flesh. He did not expect to have his lungs benefited by treatment, but desired his voice back again so that he might be able to "call the streets" as a conductor.

On examination of larynx, I found the arytenoids swollen and congested. The cords were dull and did not meet at phonation.

The examination of the chest revealed extensive consolidation under the scapula of the right side posteriorly; some râles.

Treatment.—Began spraying the throat with a 25 per cent. solution of guaiacol in oil of almonds; made an application three times each week. The patient was taking creosote, so I had him continue that. In two weeks the swelling went down and the patient began to use his voice, but was still very hoarse. About December 1 taught him to use a Davidson's No. 59 atomizer with a spray of zinc sulph. 2 grs., boric acid 8 grs., menthol $\frac{1}{2}$ gr. to the ounce of distilled water. This he used twice each day and by December 15 was able to talk as well as ever. Now he uses his spray once a day and the swelling is almost gone. The cords meet perfectly at phonation.

Case 2.—Miss W., age 19. Family history negative. In September, 1895, had an attack of pleurisy. Has been coughing ever since. Began to get hoarse three weeks after. Was under treatment until Jan. 10, 1896, when the hoarseness was about gone.

In May, 1896, patient became very hoarse. On examination of larynx, July 11, 1896, the vocal cords were found thickened and remained 1-16 of an inch apart on phonation; congested. The arytenoids and the ary-epiglottic folds were swollen and congested. The patient was put on a spray of 50 per cent. guaiacol solution in almond oil and improved some. The swelling went down rapidly.

In September, 1896, after neglecting treatment for one month, an ulcer appeared on the posterior larynx, which has reappeared several times whenever patient was neglected, but always disappeared again with the application of a 50 per cent. guaiacol spray. At present the swelling is gone and vocal cords are clear, but the cords do not yet quite meet on phonation. Consequently she is still hoarse. Unfortunately, there are pulmonary complications, which are progressing rapidly and will probably be fatal.

Case 3.—Mr. S., farmer, age 26, unmarried. Family history negative. Had pleurisy nine years ago, left side. Has been hoarse more or less for two years. No cough, general health excellent, appetite good, weight 150 pounds, remains about the same, temperature 100 F., pulse 100. Had been hoarse since last February, constantly. Could hardly speak above a whisper at the examination. The arytenoids were badly swollen and with the swelling of the false cords the true cords were hidden entirely from sight. The larynx was swollen and tender externally, especially on the left side.

Patient's larynx was sprayed three times a week with 25 per cent. guaiacol solution in oil of almonds. Constitutional treatment consisted of carbonate of guaiacol, 10 to 20 minims, three times daily, with tonics. In six weeks the external tenderness had disappeared and the swelling reduced some. Internally the swelling had gone down one-half and one vocal cord appeared, the right. The patient was then sent home and given a spray of one-quarter of 1 per cent. trichlorid of iodine, to use twice daily. In December the swelling was still more reduced and the left vocal cord came into view for about one-half its length. The patient was then given a spray of zinc sulph. solution, about 15 grs. to the ounce of water. In this case the effect of the guaiacol was very marked, reducing the swelling very rapidly. So far I have not been able to find any pulmonary lesion, though the history of the case might lead one to suspect its presence.

All of these cases I believe to have been helped greatly by the use of the spray of guaiacol varying in strength from 25 to 50 per cent. I believe a constitutional treatment always helps and besides the forms of guaiacol and creosote, give a general tonic like nux vomica or cod liver oil.

36 Washington Street.

THE EXAMINATION OF THE RECTUM AND THE FEMALE GENITAL ORGANS WITH REFLECTED LIGHT.

BY W. F. MITCHELL, M.D.

LANCASTER, MO.

In the examination of the rectum or the female genital organs, it is the usual custom of the physician to introduce the speculum and cast the eye in proper range to view the parts exposed. In so doing, he proposes to have all the light in his favor by placing his patient on the chair with the light from the window to enter the cavity exposed. In making the examination, he must of necessity throw his head in such position to obscure to a degree the entrance of the full volume of light and beside his position is such he can take only a partial survey of the parts at one time. It occurred to me from the use of the laryngoscope a person could with ease and much more fully obtain an entire view of the rectal or vaginal passages by using the same plan as in the examination of the throat, which can be done with more ease and satisfaction than any other way. A person can use a window in his office, raise the curtain and allow the sun's rays in and turn the operating chair or bed in position with the patient's head toward the window and take a position in front of the patient, introduce the speculum, and having the mirror properly adjusted you throw the sun's rays into the rectum or vagina, giving you a full and clear view of the parts. The light from a window even on a cloudy day will give you a pretty fair view. Then when one has the advantage of the electric light, there can be no question as to the utility of the plan in the examination. Or you can use the ordinary student's lamp with pretty good satisfaction, giving the advantage you do not occupy a strained position in getting a proper view. In making an examination of the rectum, I introduce the speculum, having adjusted the head mirror and looking through the aperture in the center of the mirror, I am able to take in view all exposed surface, viewing the condition of the mucous membrane, whether there is undue discoloration, or whether there is any lumps or piles within the rectum, etc. Then withdraw the speculum and reintroduce it to give a view of each side of the bowel, which completes the examination. In the examination of the female, place her in the attitude usually occupied by such patients, in the chair in the same position to the light as in the case of a rectal examination. Let the sun's rays reflect into the vagina. You at once can see the condition of the os uteri, the condition of the walls of the vagina, and making treatments have the free use of your hands in the manipulation of instruments, having at the same time a full light upon the parts to be treated. The only thing required in this method of examination is the familiarity in the use of the reflecting instrument, always adjusting it to the forehead so that you see through the aperture in the mirror, and unless you use it in this manner, it will not be satisfactory. It has served my purpose for an examination in this class of cases much better than any other mode I ever tried. I don't remember of ever reading in any text book or journal of this method. It may be that others would prefer to examine by the direct light, but as for myself I prefer the reflected light, for it seems to give me so much clearer view than I am ever able to obtain by any other means. I use the bivalve speculum.

Let us have a Department of Public Health!

CLINIC.

BY E. FLETCHER INGALS, M.D.

PROFESSOR LARYNGOLOGY AND DISEASES OF THE CHEST, RUSH MEDICAL COLLEGE, CHICAGO.

Case 1.—Hypertrophy of the tonsils with frequently recurring tonsillitis.—Gentlemen: The first case I present to you is a girl 11 years of age who has been brought to me from a neighboring State on account of frequently recurring tonsillitis with which she has been troubled for several years. Her physician tells me that almost every time she takes cold she suffers from quinsy so that at least three or four times during the year she has this painful disease. He attempted to remove the tonsils, but was unable to do so. Upon examining the fauces I find that the tonsils are slightly enlarged. Neither of them is more than three-fourths of an inch long by half an inch broad and three-eighths of an inch in thickness. Both of them are covered by the anterior pillars of the fauces so that it would be impossible to engage the gland in a tonsillitome; this explains why the doctor failed in the attempted operation. Ordinarily, with tonsils no larger than these I should not recommend an operation, but in this case the glands become inflamed so frequently that something is necessary in order to reduce their size or to remove them entirely. Several times I have under similar circumstances caught the enlarged gland with a vulsellum forceps which had previously been passed through the fenestra of the tonsillitome; the tonsillitome was then slipped over the gland and the latter was speedily removed, but in the majority of such cases profuse bleeding has followed, which has sometimes lasted for many hours; therefore, I can not recommend this operation. Usually with tonsils as small as these, when it becomes necessary to do something to prevent frequent inflammation, I am in favor of cauterizing two or three points at each sitting with the galvano-cautery and repeating these sittings once in from four to six days until the glands have been sufficiently reduced to prevent further inflammation; but in this case the child lives at a distance and it would not be convenient for the doctor to use a galvano-cautery at home; therefore, he requests me to adopt some adequate measures for relief. It will be impossible to get these tonsils with the tonsillitome without first having separated the anterior pillar of the fauces from the gland and this would require considerable time and unnecessarily give the child very severe pain if she were not under an anesthetic. We will therefore give her chloroform and I will remove the tonsils with the tonsil forceps and snare as is my custom in young children.

The child having been anesthetized, I place a gag in the mouth to keep the teeth apart, and depressing the tongue pass a blunt hook between the anterior pillar of the fauces and the tonsil; with the forefinger of my left hand and the hook I have now separated the anterior pillar from the tonsil and have nearly enucleated the gland. The tonsil is now seized with tonsil forceps and a wire loop of the ordinary polypus forceps is passed over the forceps and down over the base of the gland, which is easily removed by tightening the milled wheel. I find that I have completely removed the gland and we need have no fear of hemorrhage after this operation. Turning the child with its face to the other side of the table I now remove the tonsil from the left side in the same manner. This is accomplished without difficulty. Having removed both of the tonsils I pass the forefinger into the naso-pharynx, which I am somewhat surprised to find filled with adenoid growth. Perhaps I should not be surprised because in the majority of cases where the faucial tonsils are hypertrophied the pharyngeal tonsil is also enlarged, but this child did not present the usual symptoms of naso-pharyngeal obstruction. The case illustrates very well how likely the surgeon is to fail who contents himself with removing the faucial tonsils without examining the naso-pharynx, as I would have been tempted to do in this case, had the glands been large enough to catch in the tonsillitome. I will now remove the adenoid growths with the bent forceps, of which I have spoken in a previous lecture. Having cleared out the greater portion, I find also considerable thickening back of the orifice of the Eustachian tube, which must be carefully removed in order not to injure the normal tissue. I will pass a nasal bone forceps through the nose to be sure that the posterior nares are free, and to remove some small masses that still remain at the upper part of the opening of the nasal cavities into the naso-pharynx.

The operation has been thoroughly performed without pain to the child and we may be confident that she will not again

suffer from tonsillitis. We will recommend that the throat be gargled once an hour for the next three or four days with a solution of a dram and a half of carbolic acid to a pint of water. We will recommend also that a mild antiseptic spray containing one-third of a grain of thymol and three minims of the oil of cloves to the ounce of liquid albolene be used through the nares several times daily.

Case 2.—Fracture of the nose with bending and thickening of the septum.—This young man has been sent here by one of our old alumni on account of deformity of the nose which resulted from a fracture that he sustained thirteen years ago. The patient is now 18 years of age and it is altogether probable that the deformity has increased considerably within the last few years. We find the lower end of the nasal bones bent about one-fourth of an inch to the left of their normal position, but the tip of the nose is again bent back to the right nearly the same distance beyond the median line. There is no depression of the nose, so that no building up will be needed in case an operation is performed. The patient is a good deal annoyed by obstruction of the nares; indeed he is unable to get any air through the left side, though he can breathe fairly well through the right much of the time. His principal anxiety is to have the nose straightened so that it may make a better appearance. Upon examination of the nares with a good reflected light I find that the septum has been bent so far to the left that the concavity of the right side reaches beyond the normal plane of the left side of the septum, but the partition has been thickened to nearly three times its ordinary size, and at the lower anterior part the edge of the septum has been crowded off to the right, causing the deformity of the tip of the nose in that direction. In this instance it will be impossible to get free breathing space without cutting away the redundant portion of the septum and then bending it back to its normal position; but this can not be done under a general anesthetic and straightening of the nasal bone could not well be done without it. We will, therefore, have to make two operations. The first will be done upon the septum under the influence of cocaine, and after this heals we will attempt to restore the nasal bones to their normal position. When the part has been well cocaineized we will cut away the redundant tissue with trephine knives or scissors as described in a former lecture, saving as much of the mucous membrane as possible, and taking care to cut through the upper portion of the septum sufficiently to destroy its resiliency. With nasal forceps we will then replace the septum in its normal plane and pack the left side with antiseptic surgeon's lint, which we will leave in position for five or six days. Subsequently we will have the patient wear a gutta percha tube to hold the septum in the normal plane. This will have to be worn four or five weeks, by which time the second operation should be made.

To correct the external deformity we will place the patient under the influence of ether and refracture the nasal bones so that they may be pushed over into their natural position. It is not practicable to fracture the nasal bones with the septum forceps, therefore, when the patient is anesthetized we will fold up a bit of cloth making a pad about a quarter of an inch thick. This will be placed against the nasal bone, the end of a spool placed against it, and the spool will be given several sharp raps with a hammer. The bone will thus be loosened until it can be easily pushed over. The septum forceps will then be introduced into the nostrils and the septum and nasal bones will be crowded over at least one-eighth of an inch beyond the normal position, where they will be held by packing the left naris with antiseptic surgeon's lint. If necessary we will at the same time place an external splint upon the nose. This may be made from a piece of gutta percha such as dentists use, shaped by the aid of a pattern first made of paper. This when dipped in hot water will become very pliable and can then be crowded down over the nose upon the cheek and held until it becomes cool and firm. A pad will then be placed upon each side of the splint thus formed and the whole will then be held in position by adhesive straps. This dressing should be worn about two weeks. It is necessary to crowd the nasal bones at least one eighth of an inch beyond normal, otherwise when healing takes place they will be drawn back too far to the left.

Case 3.—Syphilitic sore throat.—This woman is 32 years of age. She complains of sore throat which she says has been troubling her for the last seven months. Her general health is good and she gives no history of similar previous disease. She has not been able to eat with comfort for the last seven weeks, therefore has eaten very little and as a result she has lost thirty pounds in weight; nevertheless her complexion is good, her skin cool and moist and the pulse only 84 per minute.

Upon examination of the fauces, I find a large ulcer fully the area of a silver dollar involving principally the left tonsil, the

pillar of the fauces, the left side of the palate and the left side of the pharynx, though it extends also over a small distance to the right side. This is a deep ulcer with sharp-cut indurated edges and an areola of congested mucous membrane extending for nearly half an inch outward from its borders. There are several chronic diseases of the throat that may give rise to soreness, such as rheumatic sore throat and neuralgia of the pharynx, but there are only three that are likely to cause ulceration, viz., cancer, tuberculosis and syphilis. The principal points in the diagnosis of this case are the general good health, the nearly natural condition of the pulse and temperature, and the deep ulcer with indurated borders surrounded by a zone of congested tissue. In the early stage of cancer of the fauces we are likely to have a good deal of irregular induration and finally when ulceration takes place the granulations are of a fungus character and roll out over the borders; or if the base of the ulcer is free from granulation, the borders are apt to be thicker and more irregular than in this case and they are not surrounded by the distinct areola of congestion which is presented here. In cancer of the throat there is usually a great deal of sharp lancinating pain which occurs even before the advent of ulceration. Although the signs and symptoms are not typical we may safely exclude malignant disease in the case before us.

In tuberculosis of the throat we commonly have widespread but superficial irregular ulceration involving little more if any than the mucous membrane and attended by pain more severe than in this case, though in rare instances we do get the deep ulcer. In practically all such cases there is excessive pallor of the mucous membrane of the palate, the patient presents a cachectic appearance and there is a pulse of from 110 to 120 or 130 with a temperature two or three degrees above normal. In nearly all, we will be able also to detect the signs of pulmonary tuberculosis.

With this patient we have no history of cough or expectoration and there is nothing else in the personal history to suggest tuberculosis. On the contrary from the history we have every reason to believe that she has been exposed to the contagium of syphilis. The exclusion of other diseases, the history, and the peculiar appearance of the ulceration, leave no doubt as to the specific nature of this disease.

We will apply to the ulcer a strong tincture of iodine and each treatment will consist of carefully touching the spot five or six times with a small swab saturated in the iodine, the parts being allowed to dry before the mouth is closed. In this way we will color the whole surface of the ulcer of a deep brown and it will appear glazed and dry when the treatment is finished. This treatment should be repeated daily for about ten days, and once in two days for five or six days longer and once in three days for two weeks longer, by which time the ulcer will probably be healed. We are not likely to see any evidence of healing for four or five days, but after that the new tissue will be seen extending out from the borders and soon after the ulcer will rapidly close. If at any time when the patient returns the ulcer seems larger instead of smaller we will conclude that the last application was too severe, we will then make a lighter one, or if, as sometimes happens, the case should not progress favorably we will substitute the iodine by a 20 grain solution of sulphate of copper, which latter may be applied with the atomizer. At the same time the patient will be given the iodide of potassium in doses of from 5 to 30 grains after each meal. We will begin with 5 grains and have the dose made 5 grains larger each day until 30 grains are reached. Care will be taken that the medicine is always freely diluted. I usually tell the patient to put the medicine in enough water to make one swallow, to take several swallows of water before the medicine and to drink at least a glass full afterward. In this way irritation of the stomach can be avoided. If I find that the ulcer is healing properly I will not carry the dosage to the highest limit here recommended, but may be contented with 15 or 20 grains at a dose. The treatment will in all probability relieve the pain within forty-eight or at most sixty hours, and if then the patient has not a good appetite we will give the tincture of nuxvomica, 7½ minims at a dose, and if the iodine eruption should appear we will add to the medicine about 4 minims of Fowler's solution at each dose. Under such treatment as this, an ulcer as large as a quarter will nearly always heal within from two to three weeks and I have no doubt that even this large ulcer will be cured within four or five weeks. I have not recommended mercurials in this instance because in the tertiary stage the iodides appear to me preferable. I do not now recollect any similar case in which this method of treatment has not been followed by speedy recovery.

Case 4.—Chronic tuberculosis.—This boy is 17 years of age and tells us that he has been sick for the last four years, during which time seven abscesses have developed on the chest

and left arm and have finally been opened or discharged spontaneously. The patient complains today of soreness at the inner end of the second costal cartilage of the right side, where he thinks another abscess is forming, though he says that the area of soreness is not so large now as it was a few days since. He tells us that he is somewhat short of breath and that he expectorates about 4 ounces of yellowish sputum daily. He is 17 years old but is smaller than boys of this age generally. He weighs 101 pounds, which I think a fair weight for his height. It is probable therefore that he is not much emaciated. He gives no distinct symptoms of pulmonary disease in his past history, but says there has been some trouble with the right lung. Notwithstanding the expectoration he makes no special complaint of cough, his tongue is clean, the appetite and digestion fair and on the whole his general condition is very good, but I find the skin hot and dry and the pulse 127 per minute. Upon inspection I find three large scars each nearly three inches in length at the lower part of the right side. I find two smaller scars just above the left nipple near the left edge of the sternum and a scar four inches long at the upper part of the left humerus. There is also a scar in the region of the appendix which appears as though he had been operated on for appendicitis. He tells us that the trouble first appeared in the lower part of the right side as a distinct tumor, which was finally opened and which gave vent to a large amount of pus. I find decided dullness on percussion over the lower third of the right lung, in front, latterly and behind, but the upper part of the lung yields normal resonance as compared with the left side. Over the upper two-thirds of this lung the respiratory sounds are about half as intense as upon the left side, and over the lower third of the lung the sounds are very feeble and I suspect those that are heard are transmitted from the air cells above or from the left lung. The heart is in its normal position, its pulsations are rapid, regular and of good force and there are no abnormal sounds. As the boy is unable to give us an intelligent history we can not make a positive diagnosis, but from the history of an abscess developing early at the lower part of the right side and from the consolidation and retraction of the lower portion of that lung that still remains we have reason to believe that he suffered first from a circumscribed empyema confined to the lower part of the pleura, and it is probable that the cavity opened through the lungs and a bronchus and never completely healed, so that the secretions he now expectorates (to the amount of four ounces daily) come in the main from the pleural cavity. The respiratory sounds over the left lung are normal excepting a few indistinct subcrepitant rales.

There can be little doubt that this case is tubercular although the diagnosis has not been confirmed by microscopic examination. Even if it were not tubercular in the beginning, tuberculosis would probably have ensued by this time in the lower portion of the right lung, and the subcrepitant rales in the apex of the left lung indicate that the disease has now made its appearance in that organ. The treatment must be tonic and supporting. I will recommend for him 3 grain doses of the citrate of iron and quinine three times daily to be taken before meals, and from 10 to 20 grain doses of chloride of calcium to be taken after meals in from 1 to 4 drams of maltine with the hypophosphites. We will begin with the smaller doses and gradually increase the amount. Cod liver oil might be given in this case in place of the maltine, provided it agreed with his digestive organs. It is impossible at this time to discover any physical signs of a cavity in the lower part of the right pleura, therefore, no operative measures can be recommended, though possibly subsequent examinations may show us that the suspicion I have already expressed, that the sputum now being raised comes from a circumscribed cavity in the pleura is correct. If that should be proven then an opening should be made and free drainage established. We can not safely make a prognosis in this case until the sputum has been examined. If it should show the presence of numerous tubercle bacilli, as we suspect that it will, then the duration of the case would hardly exceed eighteen months. If on the other hand it should be proven that there were no tubercle bacilli present, we would not be surprised if the boy should make a fair recovery in the course of from twelve to twenty-four months and live thereafter for many years.

Case 5.—Hypertrophy and dilatation of the heart with fibroid phthisis.—The consulting staff have to present a patient 21 years of age, of whom they make the following report: The patient complains of pain in the region of the heart which has troubled him for the last two years; there is also a good deal of palpitation and considerable dyspnea, with cough and profuse expectoration. Notwithstanding these he says he is able to do a little work, but he has not been employed for the last nine months. They find no hereditary predisposition to tuberculosis, or indeed to other diseases that might account for his

present condition. The appetite and digestion are good and the weight normal. The pulse is 110 and his temperature 100. Upon examination of the chest the area over which the heart's impulse can be seen is found to be enlarged, being at least four inches in diameter; but the strongest impulse, indicating the position of the apex of the heart, is nearly in its normal position, though the extreme line of cardiac dulness as marked out by the consulting staff extends one and a half inches to the left and about as far below the normal position. Upon palpation I find the greatest force of the impulse half an inch to the left of the maxillary line. Upon auscultation I heard a distinct systolic murmur in the second intercostal space of the right side close to the sternum, and an impurity of the first sound of the heart is heard over a greater portion of the aortic area. This is due to some obstruction in the aorta or at the aortic valves, which condition is probably the main factor in the enlargement of the heart. Further examination shows that the left side of the chest is three-fourths of an inch smaller than the right, but the expansion is the same upon both sides. Dulness is found over the upper part of the left lung, extending down to about the fourth rib in front and to the fifth rib behind. In this region the expiratory murmur can scarcely be heard, but there are no râles. The vocal fremitus appears to be a little exaggerated over the whole of the left side. Over the lower third of the left lung there is also some dulness with a very feeble respiratory murmur, but over the middle portion of this lung the respiratory sounds are much more distinct. The sounds at the lower part of the left lung are about one-third as intense as upon the right side. Over the upper portion of the right lung the respiratory murmur is diminished in intensity, but the quality is normal. Over other parts of this lung the sounds are natural or slightly intensified. It has been suggested that the cardiac symptoms and signs in this case are due to simple hypertrophy, but with an uncomplicated hypertrophy we ought not to find a pulse of 116 and the patient ought not to be annoyed by palpitation: beside, the impulse would be considerably stronger than we find it in this case. The heart is evidently both hypertrophied and dilated and, as already stated, this condition is doubtless largely due to the obstruction in the aorta, but it is probable that the obstructed pulmonary circulation is partly responsible.

While there is no doubt about the condition of this man's heart and about the consolidation of his lung, there is still much reason for speculation as to the cause of his trouble. The patient tells us that the disease came on at first with a sharp pain in the side, and says that this pain lasted for a few days and then became less and less severe, but that it has continued to some extent ever since. It would appear probable that he suffered first from an acute pleurisy, but that it became chronic and that the effusion was not absorbed for several weeks or possibly months. During this time the inflammation of the pleura gradually extended to the lung itself, the intervesicular tissues being involved, and finally the new connective tissue contracted and obliterated most of the air cells in the apex and a considerable number of those in the base of the left lung. This is not an uncommon condition after pleurisy. The temperature in this case may be due either to the condition of the lung, or to endocarditis or myocarditis. The continuous pain from which the patient suffers in the region of the heart would suggest that inflammation may be still going on in that organ. The cough and expectoration, however, would suggest that the rapid pulse and increased temperature are the result of changes in the lung.

The sputum has not been examined, therefore we can not tell whether tuberculosis has set in, though as I have already told you, it is almost sure to occur sooner or later when chronic inflammation of the lung follows pleurisy. In the absence of a positive diagnosis we will prescribe for this patient 5 minims of the tincture of digitalis to strengthen the heart action, 30 minims of the tincture of hyoscyamus to lessen the cough, and 5 grains of the iodid of ammonium not only to lessen the cough but to diminish the cardiac pain. These will be given in syrup of glycyrrhiza three or four times a day. If a microscopic examination should reveal to us the presence of tubercle bacilli, the proper treatment for tuberculosis would be given in addition to that for the heart. It is so unusual for pulmonary tuberculosis to occur in connection with chronic cardiac disease that it is sometimes assumed that the two are antagonistic. If this man were 45 years of age, we might well inquire whether the pain and rough sounds over the aorta were not due to slight dilatation or to an aneurysm of that vessel, but as he is only 21, I think it more reasonable to attribute them to changes in the heart itself. The prognosis as to recovery is necessarily unfavorable, but unless some accident occurs, we believe that this patient may hope to live at least three or four years.

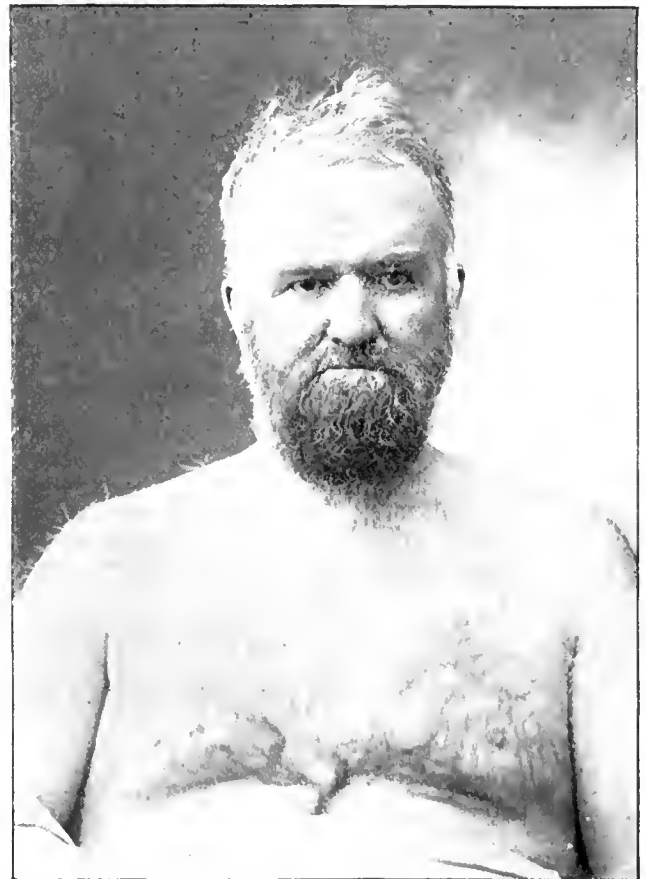
REPORT OF A CASE OF GUNSHOT WOUND OF THE CHEST.

BY J. F. JENKINS, M.D.

TECUMSEH, MICH.

In the evening between the hours of 8 and 9 o'clock of April 26, 1896, a messenger came to my office from Dr. O. N. Rice of Tipton, some six miles distant, requesting me to come to his assistance; that there were two persons in that hamlet who had recently received gunshot wounds.

Eugene C., age 50 years, weight about 200 pounds, was shot in the chest while his assailant stood some fifteen feet from him; after shooting C., the young man fired a bullet through his own head, dying within an hour afterward.



The revolver was a 32-caliber, and the bullet struck C., as the reader will observe from the photograph about two inches to the left of the right nipple passing through the lung, and although the missile has not been extracted, the present indications are that it is buried in the tissues on the anterior surface of the right scapula near its inferior angle. An hour after receiving the wound, the patient was breathing rapidly and was suffering from shock. A careful search was then made for the bullet by pinching up the skin and tissues beneath, but with negative results. The wound of entrance was neither probed nor examined by the finger, and notwithstanding considerable hemorrhage occurred from the wounding of the intercostal artery, yet the bleeding subsided spontaneously. The cutaneous surface about the wound was shaved and thoroughly cleansed, the wound dressed antiseptically, and the

patient placed in a semi-recumbent position; hypodermics of morphin were given occasionally, sufficient to relieve pain. A moderate hemoptysis took place which continued more or less until the fourth day. On the following day upon an examination of the chest, there was found a circumscribed pleuritis and traumatic inflammation of the lung extending downward from the second intercostal space on the right side.

Twenty-four hours after receiving the wound, the temperature of the patient was 100 degrees, respiration 40 per minute, and pulse 102. Absolute quiet and an expectant course of treatment was adopted; antiseptic dressing was applied to the wound, which healed without suppuration. On the eighth day the temperature was 99.4, pulse 84, and respiration 24 per minute.

In the following night the patient complained of severe pain along the posterior portion of the right leg below the knee, and when examined was found swollen, the skin was pale and cool; there was tenderness along the course of the external saphenous vein, which felt like a whip cord. The phlebitis of the external saphenous was doubtless caused by a septic embolism. During the succeeding ten days the temperature varied from 99 to 102 degrees, respiration from 20 to 26, pulse from 84 to 110 per minute. The limb was elevated, and warm applications were made to the extremity; frequently the limb was immersed in hot water from ten to fifteen minutes at a time. A supporting course of treatment was followed, and sufficient anodynes to control pain.

Four weeks after the shooting, the respiratory murmur could be distinctly heard over the greater part of the lung, excepting along the course of the bullet, the phlebitis had subsided, and the patient discharged by Dr. O. N. Rice, who skillfully conducted the case, and who has kindly given me his history after my second visit.

A CASE OF FLAT RACHITIC PELVIS; PROLAPSE OF THE CORD WITH THE HEAD; VERSION AND EXTRACTION.

Read at the Meeting of the Obstetric Staff of the Chicago Health Department, Nov. 21, 1896.

BY JOS. B. DE LEE, M.D.

Lecturer on Obstetrics, Northwestern University Medical School, Obstetrician to Mercy Hospital, to the Chicago Lying-in Hospital, etc.
CHICAGO.

Mrs. H., iv-para; two forceps deliveries: one craniotomy; one spontaneous delivery, child living.

Present labor at term, began Nov. 9, 1896, at 9 P.M. Dr. A. E. Coy was called before midnight and found the cervix admitting two fingers, cephalic presentation and a large loop of pulsating cord in the vagina. Pains were strong and soon dilated the cervix.

At 2 A.M. Dr. Coy kindly invited me to see the case.

Patient is a large, strong, apparently well-built Irish woman. Spines, 28½; crests, 31; trochanters, 31½; Baudelocque, 19; conj. diag., 11; conj. vera, estimated at 9 to 9¼ cm.

Position, O. L. A.: heart tones, 140 per minute, strong and regular; head freely movable above the inlet.

Internally—perineum torn deeply at some previous labor, cervix thick, os admits the hand easily, old scars in the vagina, head movable above the inlet, sagittal suture transverse, small fontanelle at left, large to right and lower than the other. Pelvis roomy below and at the sides, contracted in the conjugate diameter.

There were two methods of treatment open to us, first, reposition of the cord and bringing it over one leg; second, version and following this, extraction.

Usually it lies with the choice of the operator or

his individual skill, which one of these procedures he adopts, but in this case the presence of a contracted pelvis, as evidenced the pelvic measurements and the history of the case, decided in favor of the version.

The patient was put on the table, anesthetized and the parts sterilized. The anterior foot was now brought down, but the version could not be completed as the head could not be dislodged from the inlet. A maneuver known as that of Justine Sigmundine was now tried. A stout sling was put on the foot and while pulling on this with one hand the head was pushed up from below with the other. Version completed, after which the heart tones were rapid but otherwise good. We waited fifteen minutes and undertook the extraction, for which the patient was allowed to awaken from the chloroform. It required considerable traction aided by pressure from above to deliver the trunk, and the arms were thrown up alongside the head so that great difficulty was met in delivering them.

The head was arrested at the inlet, Smellie-Veit maneuver and strong pressure from above brought it down to the vulva, where it was found that the cervix had contracted tightly around the head. Chloroform was again given and the cervix slowly worked upward by the fingers. By separating the walls of the vagina and vulva and wiping the passage clear, air was allowed to the child's mouth.

After delivery the trachea was cleared with the tracheal catheter and the slightly asphyxiated child revived by the usual methods. It was a female, weight 7½ pounds, length 50 cm. The puerperium was entirely normal.

Among the many interesting points this case presents, a few may be touched on. The maneuver invented by Justine Sigmundine, "Royal Midwife to the Brandenburg Court," is of signal use in cases of difficult version. Where the head is held tightly against the inlet or in the lower uterine segment, enough traction may be put on the leg as to break it without dislodging the head, even when the traction is aided by upward pressure against the head from the outside. One may also bring down the other leg and try the turning on the two. The little maneuver just mentioned is simpler and the following extraction is rendered easier if the other limb be allowed to remain in place with the breech and thus dilate the cervix more (that is, if the extraction be made on one leg). In the hardest cases it may be necessary to put slings on the two legs and push up the head with the hand in order to complete the version.

Where, in the interest of the child, an extraction by the breech is undertaken before the cervix is completely dilated, it may happen that the cervix, irritated by the passage of the child through it or by many and hasty manipulations with the hands, closes down on the head of the child, button-holing or imprisoning it in the uterus. Under these circumstances the child is lost, if it is not given air, in a very few minutes. At the risk of tearing the cervix and of grave post-partum hemorrhage one may forcibly pull the head out. In these cases, traction brings the head to the vulvar outlet and the cervix may be seen. Under chloroform the fingers may slowly work the constricting edge over the face, and the mouth now being free, it is cleansed and air allowed to it by separating the labia and vagina with the fingers. In this way the child may breathe while the cervix is given time to relax and slip back off the head. Carl

Schroeder in this way saved a child whose head was arrested for twenty minutes.

In primiparæ where one is desirous of saving the perineum by slow delivery of the after-coming head, it is possible, where the mouth is in the vulvar outlet, to give the body to an assistant to hold and allow the child to breathe in this position. A longer time may now be taken for the delivery of the occiput.

PECULIARITIES OF THE SURGICAL DISEASES AND INJURIES OF THE NECK.

BY EDMOND SOUCHON, M.D.

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NEW ORLEANS, LA.

(Continued from page 269.)

Special tumors of the neck.—The neck sometimes presents hernial tumors, already described. Also salivary calculi developed especially in the submaxillary gland.

Diagnosis and treatment of the tumors of the neck.—Percussion discloses the nature of gaseous tumors; besides, pressure reduces them, violent respiratory efforts reproduce them; pneumatocele follows the respiratory movements. Exploring the swelling with needle and syringe will reveal the fluid or the solid nature of a tumor. The following are the liquid tumors which should not be extirpated: Liquid hematoma, and chronic abscess. Liquid hematoma follows blows or contusions, or punctured wounds or incised wounds, when the lips have lost their parallelism; they may be due to a cured aneurysm; they should be left alone unless they cause pressure symptoms or unless they are too long in dispersing; then they should be aspirated; they should be incised early, if they reproduce; they need disinfecting and a drainage tube with or without a supplemental opening at the most dependent point. Chronic abscesses may be treated first with injection of iodoform (etheral or mucilage), or by incision, disinfection, and proper drainage; when they resist this treatment, the mucous membrane of the interior should be curetted; when possible the membrane should be extirpated. Recent aneurysms should not be extirpated before trying milder means.

The following are the solid tumors which should not be extirpated: Comedones, clotted hematoma, recent strumous adenoma, Hodgkin's adenoma without pressure symptoms, recent tuberculous adenoma, recent syphilitic adenoma, recent gumma, solidified hematoma in dangerous regions, salivary tumor and calculus, hernial tumor, pulsating encephaloid.

Comedones characterized by small elevation of the skin with a black depressed center should be treated by squeezing or expression. Clotted hematoma is recognized by the same history as liquid hematoma, by the fact that very little liquid pours through the syringe and the tumor does not diminish in bulk: it should be incised away from the line of the important structures (vessels and nerves), properly injected, packed or drained. Recent strumous adenoma is recognized by its presence in strumous children without any symptoms of tuberculosis anywhere. It should be treated here as everywhere else. Hodgkin's adenoma is usually multiple; there exists also enlarged glands in the axillæ and groin; the spleen is enlarged, also sometimes the liver; the white blood corpuscles

are not increased. It should be treated internally by arsenic, ergot, iodid potassium in high doses. Recent tuberculous adenoma is suspected from the general condition of the patient or from the presence of the bacillus in a central gland removed for that purpose; tuberculin might assist; it is treated on the same principles as incipient tuberculosis of the lungs. Recent syphilitic adenoma is revealed by the presence of syphilitic lesions in the neighborhood, which may account for the enlargement, or at a distance, or by a syphilitic history; the specific treatment is the best diagnostic means. Recent gumma presents the same remarks. Solidified hematoma, resulting from the same cause as the liquid or clotted hematoma, when in a dangerous region, should be incised away from the line of the larger vessels and nerves and the fibrinous clots removed; then properly packed and drained. Salivary calculi are diagnosed by the needle of the syringe returning a sound as though striking a metallic body; they should be removed by incision, preferably from inside the mouth when possible. Hernial tumors have already been described. Pulsating encephaloid is characterized by pulsation with expansion and attachment to the bones; when the needle is not thrust too deeply into the cavity it may become filled with serum.

The following are the liquid tumors that should be extirpated: Angioma, varix, lymphangioma, persistent aneurysm, serous cysts, hydatid cysts, bursal cysts (hygroma), tendinous cysts, persistent circumscribed abscesses or tuberculous abscesses. The following are the solid tumors that should be extirpated: Warts, papilloma, xanthoma, mycosis fungoides, sebaceous cysts, dermoid cysts, solidified hematoma in non-dangerous regions, lymphadenoma (simple hypertrophy), Hodgkin's adenoma when causing pressure symptoms, persistent strumous adenoma, persistent tuberculous adenoma, persistent syphilitic adenoma, persistent gumma, lipoma, fibroma, myxoma, myoma, neuroma, chondroma, osteoma, encephaloid, melanotic, colloid, epithelioma, carcinoma, and scirrhous sarcoma.

In the case of the tumors which must be extirpated to be cured, the nature of the tumor can not be determined positively and safely until after their extirpation, when by a microscopic examination the prognosis is established.

The point of prime importance is to decide if these tumors can be removed and with what difficulties, risks and dangers.

Superficial or super-aponeurotic tumors are diagnosed by the possibility of isolating the tumor from the deep parts, by grasping it with both hands and trying to make the fingers join beneath it; when the tumor is too large to be grasped by the hand or the two hands, the radial border of one hand is placed under one side of the base and the other along the other side, the hands are moved toward one another and thus appreciate the thickness of tissue between the two. When very thick it is likely that the tumor has also grown toward the deep parts and must be studied as a deep tumor. There is absence of pressure symptoms in superficial tumors. Deep or sub-aponeurotic tumors are more interesting because of the greater danger of their complete removal. They are recognized by the fact of their incorporation with the deep structures; when large they become superficial and may come close to the skin or become attached to it. The condition of the skin is important to deter-

mine; when distended by large tumor a portion of it must be dissected along with the tumor to prevent redundancy of the flaps; when the skin is adherent, it should also be removed. The margins must be next delineated; when circumscribed or limited, it is a favorable sign, because the tumor will be easier to remove along a well determined line of dissection with safety and in its entirety, that far at least; when the margin is diffused, it is a most unfavorable feature, because of the uncertainty of the line of dissection and the absence of all assurance of removing all the diseased parts. By freezing sections of tumors on the spot and examining them there also under the microscope, is the only positive assurance. The non-adhesion or the adhesion of the tumor to the bones is important to determine; when the tumor is movable, it must be determined whether it is clear of the important structures, *i. e.*, of the vessels, nerves and special organs. When it is clear of the important structures, the extirpation will be easier and safer. When it is over or near these structures it is often impossible to determine the degree and nature of the adhesions until the operation has reached that stage. When the adhesions are loose and are easily torn all is well. When the adhesions are resistant then there is constant danger of cutting or tearing away some of the structures with all the possible risks and dangers. When those adhesions are also extensive the case may be hopeless. Double ligatures and double hemostatic forceps must be freely used, never cutting except between the two. It is prudent also in those cases to endeavor to locate the large vessels and to pass a provisional ligature under them before dissecting too close to the dangerous points. This provisional ligature is removed after all the bleeding has been controlled or it may be decided to convert it into a permanent one. When the tumor is adherent to the bone, if it is clear of important structures, again all is well, as it may be gouged out with little risk. When it is over or near important structures the risk is greater. When the attachment is extensive the risk is also much greater and complete extirpation may be beyond all our means.

It is always of the utmost importance to explore the regions of the lymphatic glands which receive the vessels from the affected regions. When the glands are only inflamed sympathetically they should be left alone. When the glands are enlarged in malignant diseases they should be removed; to leave them behind is a grave surgical mistake, since the disease will be reproduced and another operation will have to be performed, whereas it should have been done with the first.

Surgical operations of the neck in general.—The surgical operations for the relief of the affections of the neck in general has been described with the various diseases calling for them. However, the following remarks may be added. In operations on tumors in dangerous regions, split the capsule and enucleate contents first, if possible; then remove capsule, but this should only be done as a last resort. In some cases the pressure symptoms of tumors should be anticipated by tracheotomy, because they may be so sudden, that there is no time to perform the tracheotomy; there is less risk and less danger to life than to wait and risk a sudden death.

(To be continued.)

Let us have a Department of Public Health!

SURGERY ONE HUNDRED YEARS AGO.

AN HISTORICAL STUDY

BY DR. GEORGE FISCHER.

DEDICATED TO THE GERMAN SURGICAL ASSOCIATION.

TRANSLATED FOR THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION
BY CARL H. VON KLEIN, A.M., M.D.

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TRANSLATOR'S PREFACE.

It affords me great pride and pleasure to have been intrusted with the translation of one of the greatest historical works of the last quarter of this century. I only regret that the English language is inadequate to reproduce on the reader the same sentiment as the author has manifested in his own language; yet the English reader can but appreciate the wonderful and elaborate researches regarding the development of the history of surgery as promulgated for a period of one hundred years. The reader will be compelled to acknowledge in the work of Dr. Fischer the "genesis" of surgery. It is, I believe, just as essential for the surgeon to know the origin of his profession as it is for the theologian to know the origin of his creed. It is this that prompted the editor of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION to cause its translation and publication for the pleasure and instruction of the readers of the JOURNAL.

THE TRANSLATOR.

INTRODUCTION.

"That the historical information of matter diminishes with each generation of students is one of the worst phases of our present period of development in medicine. As a rule, it may be assumed that even the self active younger worker's knowledge at the best covers from three to five years. Publications of five years past do not exist for them."—*Virchow*, 1870.

The farther the milestones of the natural medical philosophy are moved asunder the more justifiable is the question: Is it possible for the practicing physician to keep pace with the progress of science? After the young doctor has left the university and entered upon the starving years of his practice with the firm purpose of continuing his studies, he will soon unconsciously find himself at a turning point, when an irrevocable resolution must be made. Character, not talent, decides the course to pursue; the choice is a very serious one, usually for life. Either he bids farewell to science and steers directly into the laboratory of the medical workman, sometimes by means of the narrow and crooked path, plucking the forbidden fruit by the wayside, or he works on in order to obtain and merit the name of a learned practitioner.

However, a short rest after the strain of the closing examinations would be very beneficial, inasmuch as the university instructions would suffice for a few years. The great danger, however, lies in being idle too long; one year being extended to two, and if five years should pass, the young physician is incapable of making a scientific examination independently. After five subsequent years of indolence he will be shocked to note that even the professional works, which depend more upon the judgment of colleagues than upon the approbation met with by the practitioner, have become unintelligible to him. These impressions are not only caused by the writings of the specialists, but medicine and surgery have become strangers to the young doctor. Full of anxiety he seeks help from his older co-workers. The routinist has no scruples, he contents himself with his experiences. That is, the number of visits he makes and his practical tact, with which he creates great mischief. For of what little benefit to science are the experiences of so many variously occupied practitioners and hospital physicians who lack the talent to put the same to account! No more than light aids a blind man. On the other hand, the honest colleague often looks vexed; he complains of the imperfections of knowledge and frowns at the increase of literature in the journals, which he can not master. But if there is no apparent cause for his sorrows the displeasure is more frequently the result of his inability to advance, as, of all things, the preliminary sciences are not controlled.

If the practical physician desires to preserve his enthusiasm for science the best diploma that a university can bestow and an untiring strife toward perfection until old age, and not to remain a blunderer in all the branches of the vast number of

various professions, then he must not study medicine in detail today, tomorrow surgery, and obstetrics the next day, for he will fail. He will only feel satisfied when he has mastered one branch, which he can accomplish alone, as the study of a single science is continuous. This is not, however, to further the nuisance of the body of specialists, who give their sole attention to one science, ignoring all the others. Although most practitioners, particularly the country physicians, are no specialists in the modern sense of the word, each one of them has chosen some favorite study since his departure from the university. In this he may carry on his researches in detail, while in all the other branches he accepts the complete whole, paying no attention to the laborious examinations necessary, to the stories of the sick, the temperature charts and official reports of the sections heaped up in the ponderous journal of medical science, nor to the minute discussions of professors. Only under such circumstances should a practical physician become a specialist, but never to seclude himself with his hobby. The temptation to do so is very great. Yet the several professions must not be torn asunder if the mutual understanding is to continue; what the one imparts the other must receive, the connection must ever be an animated one.

At the present time there is a decided tendency toward the study of specialties, which is not only manifested by the new branches of the medical profession arising every year, by the establishment of special journals for each new division and by the steady increase of sectional meetings of the naturalists, but also by the deeper penetration into each branch. The one seeks his knowledge principally by the pathologic-anatomic course, another by consulting the statistics, others by experimenting with animals, and various other methods by which they try to improve. The many different ways in which each profession may be begun has immensely increased the amount of work done. But it must ever be remembered that the progress made does not depend upon the number of writers nor upon the haste with which the work is despatched. But on account of the division of labor and the special studies of so many men, a vast amount of material has been added to each profession, which is being collected by more than a hundred medical journals in Europe alone. The best men of former times always bowed their heads before the princely extent of the several sciences. A hundred years ago A. G. Richter declared that it was barely possible for one man to master surgery in all its details, knowing each branch equally well. In our time A. von Graefe felt very uneasy that he was no longer capable of fully controlling the territory of ophthalmology, although then in the prime of his industrial days, and B. von Langenbeck stated that there were only a few surgeons who could boast of the ability of surveying the entire dominion of surgery. These confessions force upon us the question whether it is right to demand a certain amount of time for the study of the history of surgery. In nearly all the periods historic studies played a secondary part, seldom remaining on top for a long time; at the utmost they were tolerated, offering no interest in their behalf.

About the middle of the last century a few German professors arose, who, on account of their superstitious and servile reverence for antiquity, desired to bring about a revolution in the study of history by revising the medicine of the ancients. The smallest details of the writings of Hippocrates were commented upon and blindly admired, a deep hidden thought being sifted out of the most insignificant parts; the truths of nature were perverted so as to make them conform to his and Galen's opinion. Thus was produced a great quantity of ancient literature, which hampered the progress of science. The manner of introducing the Hippocratic spirit of the simple observations of nature into the study of medicine was not understood; therefore the real advantage was lost.

An epoch of comparatively valuable historical works extended from 1830 to 1840. The mania for systems in the past century had so confused and distracted the minds of men that all interest in the achievements of foreign countries was lost, and only a few enlightened ones desired a thorough reformation. In 1840, Stieglitz, then 73 years old, wrote: The German profession has so deteriorated and relaxed, that every effort to arouse it, even if fraught with errors and absurdities, would be wholesome. During this crisis many took to studying the history of medicine, it being thought absolutely essential that the young people should undergo an examination in it and especial teachers appointed. On its foundation was to be erected a temple of science of a thousand years' standing, while before its study scientific regeneration would have ended! But the project failed. The mere recollection of such names as Johannes Müller, Rokitansky and Virchow, of the medical science journals that were first issued in 1840 for rational medicine and for pathologic anatomy, proved that the

researches in detail undertaken in the various branches of medicine had caused a revolution, and not history, which consequently failed, having received unmerited importance as a special line of study!

Now very little interest is taken in the history of surgery. Works appertaining thereto are so rare that in the archives of clinical surgery, only two columns were published within fifteen years. Notices of lectures on surgical history are seen only in isolated parts of the German universities (Berne, Breslau, Göttingen, Graz); but it is a question whether they are always held, unless instituted by some of the more modern, prominent and practical surgeons. Baum, who knows everything, warmly advocates them and probably incited Professor Billroth's interest in them, as shown by the latter from the beginning and even now. After his treatise on gunshot wounds, Billroth wrote a brief abstract on historical surgery for the introduction of his work on general surgery, and with Pitha published a similar one in their manual. At the Vienna Exposition he exhibited a set of surgical instruments in connection with his work on the Extraction of Arrows and Bullets, which were in use years ago and are still used. Recently he published a large volume on historical culture, the methods of teaching and learning the medical sciences. From this we quote the following: "Regarding the lectures on historical medicine, it is very deplorable that they are continually growing less at the German universities, due alike to the scarcity of tutors and pupils.

I consider it an honor on the part of the higher medical faculties that they provide for lectures on the historical study of the medical sciences as shown in their catalogue, but I deem it not essential to insist on the students' attendance at these readings, the substance of which would not be heeded by a student having no desire for the historical studies. Where there exists a wish for genealogical investigation, a historical interest will also be manifested; inseparable thoughts, as it seems to me. All lectures ought to be permeated by historical genius, then not only the interest for a general contemplation of history would be awakened, but also special researches would be pushed on. I do not doubt that these lectures can be made very charming by associating more spirit and humor with the general history of nations. Such a discourse I would enjoy even today."

Mitteldorf, in company with his honorable colleague, Haeser, the great historical researcher, introduced one of the oldest German surgeons, Heinrich von Pölsprundt, who was famous for the unusual amount of historical knowledge that he possessed. Zeis wrote a treatise on Plastic Surgery and not long since Gürlt published an extensive work on the International Care of the Sick. The works of the ingenious Malgaigne are well known. Verneuil, one of the best modern practitioners of Paris, published a few of the unprinted documents of the old Académie de Chirurgie and arranged a course of lectures for the students, in order to awaken an interest in them for similar discoveries of history. Among those who assisted Verneuil, were the surgeons Beclard, Lefort, Follin, Broca and Trélat and seven other professors. Not long ago J. Rochard wrote a book on French Surgery of the Nineteenth Century. [Still more recently the works of Guy de Chauliac (A.D. 1360) and Henri de Mondeville (A.D. 1320) have been brought out by Naisse. The latter was published from the MS. in the Bibliothèque Nationale.—Ed.]

Von Hasner contends that for years only a few of the younger ophthalmologists get beyond the boundaries of the archives of ophthalmology and in 1869 an animated discussion ensued about the oldest writings on the operation of cataract and was carried on by Haeser and Hirsch and the practitioners A. von Graefe and von Hasner. These titles, although incomplete, belong to practical men, whose works are of greater importance to us than the book-learned, be they ever so excellent (Littre's colossal work on Hippocrates, René Brian on Paulus Aegineta, Daremberg on Oribasius). I am of opinion that every German professor of surgery will approve of the value of the study of history, even if he allows an opportunity of expressing his views to pass by.

The main objection to historical studies is that they are too learned, afford no use at the bedside of the sick and do not at all promote surgery, therefore are of no real advantage. At best they are suitable for an old gentleman who has withdrawn into his quiet little sanctum from the tumultuous noise of the crowds and there propounds a work from all the old timers; but this will not do for the young surgeon, he must keep pace with the times, and where the chances of immortality are greater for him than wrecking his reputation as a practical physician by his historical studies.

There is surely a great charm in taking part in questions up-to-date. But aside from this, that they fluctuate, are never stable and subject to fashion and by secondary circumstances

are for a time kept afloat, the one-sided preference given to a certain set of questions on one of the dominating auxiliary professions will ever leave loop holes in the other branches of surgery. It is not possible to organize an orchestra, when every musician wishes to play the first violin. Problems in surgery were greatly neglected by the cultivation of conservative surgery and the resection of the limbs was no longer a problem, until lately when doubts have arisen as to the capability of the amputated member to perform its functions properly after healing, and this operation again belongs to the most burning questions of surgery. But aside from the fact, that the difference between "learned" and "scientific" do not relate to the object, but to the cultivation of the same—for history can be treated so scientifically, on the other hand every practical question so learnedly—that the modern times consider everything with a touch of learnedness as old style. This idiosyncrasy was brought forth by the rightly repudiated book-learning, scraped together from the narrow confines of the study-room, heaping one citation on to the other, adding a piece or extract here and there until finally a literary work in mosaic results, which comprises everything; however, produces no life. It fills the mind with so much learned rubbish and instead of sharpening his faculties, stunts his reasoning powers and then produces a "learned professor" who can be outdone by the crudest practitioner. Such crippled personages rummage through the works of our greatest men, seeking a claim to priority, without having any interest in the true progress of science. At all times they have created much havoc, for the practitioner blinded by wisdom becomes confused in his studies; but when he has discovered that the gilded shell has no kernel, he sees that the learned man is of no use to his profession and condemns every kind of literary work. When the University of Göttingen was established in the year 1734, G. G. Richter was offered the chair of First Professor of Medicine. Richter, a scholar and strict follower of Boerhaave, read a collegium encyclopædium dieteticum pathologicum on materia medica and practice. His wonderful scholarship, his linguistic accomplishments, and his very extensive knowledge of ancient literature were astonishing. He was master of the ancient and the modern languages; when only a boy, he delivered an oration in the Syrian language and composed a poem in Chaldaic. Later on he wrote lyric poems in Latin on the war at that time. Over eighty treatises were published by him; among them were the following: The advantages of a sound sleep; The disadvantages of night study; The best position while sleeping; The power of habit; Working by light at night; and The horrible aspect of a dead body. He also strove to explain theological subjects and asked theologians to return the good deeds on behalf of the medical profession. Similar tasks he demanded of his pupils, one of which was a dissertation on the naked body which did not consider Adam's nakedness offensive on account of the few innocent ones that surrounded him. His learning was greatly appreciated at that time and greatly aided in spreading the fame of the young university. But he accomplished absolutely nothing in furthering the progress of medicine.

Another form of learning is the knowledge of literature, gathered from treasured volumes, yellow with age, and forgotten through the rapid flight of time, which, after revision, becomes most useful and forms a part of modern scientific education. For this learning literature is no graveyard, as it possesses the power to kindle the hidden spark needed to bring forth the treasures of literature, which the book-learned carry about with them, a dead, useless and splendid ballast. It proves that much which is being sought has already been discovered, and often saves some one, who is about to proclaim a newly found method, from the disgrace of having presented some old fact. Literature has somewhat been neglected in connection with our surgery, consequently there are many literary errors. Virchow considers the above neglect one of the worst phases of the present period of development. Those who renounce the direct use of history at the sick-bed, forget that they also reproach anatomy, the history of development and other auxiliary sciences, whose importance has been established beyond a doubt. Many think of abstract knowledge as Falstaff thought of "honor." "Can a leg be set with honor? No. Or an arm? No. Or can it quiet the pains of a wound? No. What is this honor? Air. I do not like it." One ought not to engage in the study of history until fully convinced of the real value of the same, but you must, first of all, be willing to be convinced. However, it is often very difficult to give up preconceived opinions, from which no one is exempt to depart from one's original principles and to confess one's error. And why? Because his egotism causes him to stubbornly cling to his false methods; his mistake he dislikes to expose before others, when an unsympathetic colleague censures him. No one sees what he does not wish to see, is incap-

able of standing a contradiction, suppresses the observation, which kills his own principle and which upholds the opinion of his opponent. Thus the lives of hundreds may be sacrificed for the want of magnanimity of one talented man. No progress is possible without the most rigid veracity. A man of character will acknowledge his mistakes, and nothing impresses a student more forcibly than his master's: "I do not know." Do not by means of mere words try to bridge over the loop-holes of science, nor assume things to be true, and do not give yourself the appearance of being omniscient, what in reality is not known at all. If the extent of a discovery is exaggerated and claimed before it has attained a certain degree of completion—it often happens that it is discredited and forgotten for a long time. By means of historical studies we learn to know the course of development of our sciences and their imperfections. They are the harbinger of great surgical discoveries, of which not one has dropped unprepared from the skies and often remind us of the saying: All these things have existed heretofore. They compel us to be modest and considerate, when we see that the great professionals were unable to enlighten us, and facts sworn to by every one today would be rejected ten years hence. The severity, which so deeply offends contemporaries, disappears by means of the scientific discussions, so that they rather view the inconsiderate writer, even if he be a genius, from afar—regardez mais ne touchez pas—and this is only noticeable in old age. Above all things they sharpen your judgment and guard against one-sidedness which are of inestimable value to our sciences, especially when the incentives for everything more modern are so powerful. The hunt for new methods and means has not yet ceased in our speedy times; we accept them with much enthusiasm when authorized by some great light, declare them infallible, and soon forget them again. The new always pleases only because it is new, and we would like to credit everything that we desire to be true. With these inclinations, in connection with which the tasks of yesterday were deemed old today, so that even the stationer prints the following year's date on the works of the last months of the old year, we learn by the way not to be deluded by deceiving appearances, nor to allow severe censure of the mistakes made. Our wits become more and more sharpened and we are soon able to readily select the cream of the literature contained in journals and exclude the chaff. The horizon of an eagle is not like that of a sparrow in the dusty air below. A knowledge of history will greatly aid in bringing about a more rapid progress in the science of surgery for our general benefit. The results obtained can be more correctly estimated by the education of the middle classes, to which most of the practitioners belong, than by the famous works of a few great men (geniuses). Of what avail is genius during an epoch when not within the comprehension of the practising physician? Not the least valuable part of history consists in encouraging the dejected practitioner and awaken new life, by the examples and great labors of prominent men. To know the history of his profession is a part of his general education and easily keeps pace with the study of the branches, so many grand and renowned men ever being ready to respond to our wants during our lives. An officer in the army can not rise above the routine of the daily tactics, if he does not become familiar with the strategy of Frederick the Great and Napoleon I: the musician may become a good performer, or a fine musical director, but he is no true artist without a knowledge of Sebastian Bach. The value of history must not, however, be overrated, and given the preference, for there is enough for us to learn in our own times and surgical studies would come to a standstill, if history were to redress the auxiliary sciences. Who will dare to prophesy which one is of the greatest importance to the future studies in surgery, experimental pathology, statistics or other things. Besides, this question is as indifferent to us, as the contest for priority of one or the other surgeon is absurd. Most appropriate is Goethe's answer: People should not discuss the point who was the greater, Schiller or he, but to be happy in the possession of two such men. It is very harmful to pit one branch against another in order to ascertain which one would be of the greatest value to the progress of science; whether a piece of work originates at the table of the microscopist, in the laboratory or at the bedside of some patient is all the same when something new is gained in a rational way. All pleasure in the study of natural philosophy ceases, when we pause to consider the question: Of what use at the bedside is the exact difference between a sarcoma and a carcinoma? We do not study the history of surgery for its sake alone, but for the results obtained by the remedies employed, and if I am exerting myself to awaken an interest in this auxiliary branch among practitioners do I hear some one laughing? I would not for worlds exchange my calling as a practical physician with a professional philosopher. That a historical work, when considered an imposition, would

not be in great demand, I knew; but who thinks of the consequences when working out an idea. I wrote with the conviction that the younger generation of German surgeons know but little of the history of surgery, and as much as nothing of the German historical studies of surgery. The lack of interest is rooted in our egotism which permits us to concern ourselves only in what occupies our minds momentarily--and no one has time to trouble himself with his neighbor's thoughts while he is at work himself. A national feeling for our own past not existing, it had to be roughly awakened from its slumbers. It is to be hoped that more sympathy will now be extended to the history of our sciences as the study of self-culture is growing steadily among the Germans. This was the main difference between German and French surgery: The French honor and remember their great men, the Germans scarcely know the names of their predecessors; the French surgeon looks upon foreigners with contempt, not so the German. Often the rank which a nation holds among the races, corresponds to the notice taken of its scientific works. The past century when France controlled the laws, the whole of Europe studied French surgery and not until after the wars of 1813-1815 did the German profession rid itself of the French influence. Everything from France and England was blindly accepted and revered by the Germans, neglecting their home talent. Of course it was very advantageous for the German student to profit by the good of any of the foreign countries, but thus it was that the development of our surgery remained behind the times, being too weak to stand its own ground. This is not at all surprising. On account of a certain amount of characteristic sluggishness of the German nature, they seldom take the initiative, but when roused to action possess great power of penetration. This is not the case with the French surgeons, who reigned supreme in the past century and have since been outclassed by the German, because they were incapable of following the progress made, having so completely neglected the foreign profession. Enlightened minds have often told them the truth. In 1814 Madame de Staël said that they did not do justice to German literature because so few of them understood the language. In the December session of the Académie de Médecine, in 1860, Verneuil severely criticized the views of his colleagues, who still adhered to French provincialism, in the following extract:

"A l'époque où nous vivons, nul homme, si habile, si érudit, si actif qu'il puisse être, ne saurait prétendre représenter à lui seul, par son enseignement ou sa pratique, l'art et la science en chirurgie; cette vérité incontestable, je crois, pour les individus, ne l'est pas moins pour les nations, car nulle d'entre elles ne peut se flatter aujourd'hui de tenir exclusivement entre ses mains le sceptre chirurgical. . . . les foyers scientifiques, ne se concentrent plus dans une terre privilégiée; ils sont multipliés et disséminés partout sur la vaste étendue du monde. . . . On cherche dans la littérature étrangère le complément de la science nationale. . . . les résultats qu'on atteint en suivant cette voie sont immenses; mais par malheur, en France, on en paraît moins convaincu que partout ailleurs. Soit indolence, soit confiance extrême dans leurs propres ressources, nos praticiens pour la plupart, restent indifférents au mouvement scientifique extérieur passé ou contemporain."

Perhaps as in former years, the great inventions and discoveries of the present age will be followed by an epoch of new developments in the medical sciences. The downfall of the French glory by means of German weapons was followed by a most promising institution in the month of November, 1872, erected at Nancy after the loss of the one at Strasburg. The medical faculty of the same subscribed for all the German medical journals, bought the German books, and even the dissertations, if at all valuable. The faculty had to arrange a specific German bibliography and make translations of prominent works, in short, aid the French physicians to become familiar with the German sciences. "Jusqu'ici nous avons trop vécu et trop pensé entre nous," said the president in his address to the new faculty. He said in a public meeting of the Institut de France, that her people had fallen so because they had lost all thought of truth by their selfish vanity and pride, they wanted to be deceived and imposed upon. This was the unanimous opinion of all her great men. France was crushed by the falsehoods with which her education of the young, her books and periodicals teemed. The French still read the works of their oldest surgeons and after fifty years or more, publish new editions, while the Germans ignore their famous predecessors and their achievements. No one remembers that Heister's Surgery was the most brilliant work of its time. A. G. Richter, who was Germany's greatest surgeon a hundred years ago, has now become a mythical character, even to our best educated physicians: his burial place in Göttingen can no longer be found, while Sir Astley Cooper, buried in the chapel of Guy's Hospital, has been honored by a memorial in Westminster Abbey. It will not be long before Dieffenbach's life is shrouded in obscurity. Every German student knows that Arnaud made a few suggestions on the crooked bone, that Dupuytren invented the enterotomy, although these are only

minor discoveries when compared to the great services rendered surgery by both men; but it is very doubtful if every student knows of Smucker's introduction of cold applications in treating injuries of the head, which course would be instinctively pursued by every peasant. In order to give a new impetus to the study of history, great works on that subject are essential; jeremiads are of no avail. At the present time it is more important to awaken an interest in the young student for the study of history in the universities, than to establish special professorships. The clinic instructor will most easily succeed in doing so. The practical physician clings to what he learned at the sick bed, but soon forgets things passed by on the part of his clinical teacher. Lectures should oftener be fraught with remarks on history, and even if his valuable time must not be spent in the pursuit of historical studies, a desire may be instilled and retained later on in his practical life. Although we can not wipe out the stain on history and literature, caused by our dearth of interest, let no one forget the enormous advantages to be derived from modern surgery in Germany, born about forty years ago during the great revolution in medicine. Only since that period has a national German surgery existed, having for its basis doctrines founded by Germany alone. It advanced so rapidly knowing just how to employ the auxiliary sciences and make the best possible use of all the results obtained in the natural sciences. With the increase in methods corresponded the growth of the number of students and each one, if master of any one method, could take part in the medical researches. Thus there was such an immense quantity of scientific matter produced more than during any other epoch of history. There was no end to the work, and the competition was exorbitant! The result was a feeling of analogous rights and independence of spirit among the workers, and to these the German surgery owes its scientific rise. Authority was overthrown regardless of the prestige of its social position, which no longer satisfies a student of today. So the doors were opened to progress, which passed unmercifully over all who opposed the spirit of the times or who were too weak to follow. It is no wonder that this self-consciousness at times attained an extraordinary degree and often causes a morbid condition, for many, talented or untalented, capable of a little work consider themselves as contemporaries in the progress of the sciences.

Buckle, the historian of culture, says of these: "We must remember that the deep thinkers are the world's benefactors, and not the great experimenters, nor the great observers, and not the well read nor the very learned, and those who point out the way to make discoveries are deserving of the highest praise, not those who make them. When the true course of research has been indicated, the rest is comparatively easy. A regular course of routine is always used, and it is not hard to find those who follow the old path, but to find people who will open a new route. Every period of time produces many men of ingenuity and considerable diligence, who are fully capable to add a part to science, but who are unable to extend its limits. A new method is required for such an extension."

In closing allow me to say a few words on the work itself. I chose the subject, Surgery One Hundred Years Ago, because the scientific practice had its origin in Germany at that time. German national feeling began to develop then and produced its deepest philosophers, greatest musicians and best poets. When some one remarks to me that the German surgeons of that time do not interest him because a few French and English contemporaries have far surpassed our countrymen in the sciences, I reply to him that the history of the German nation did not begin on that world-renowned day when the Emperor was crowned at Versailles. If the history of our surgery is to originate when surgical geniuses are born, then it can peacefully rest for a few hundred years, for nature is very miserly in the production of great men and they are to be found only at long intervals. The truly great surgeons are as scarce as the geniuses. This work embraces the eighteenth century, the latter half being the more important. The first part treats of the surgical classes, the last of the surgical sciences. The surgery of our Fatherland ought to be honored by the erection of a national memorial for which I would like to carry a few building stones. German surgery should not forget its youth and faithfully remember the dreams and battles of its childhood years. To present it with its proper coloring, German medicine and foreign surgery had to cast their shadows on it. The history of surgery is international; here French and English surgery have obtained full rights. It was not my intention to write a complete history of the eighteenth century. A picture of the skull is much more interesting to us than the top of the wild cherry tree. From this point of view I ask you to pardon the shortcomings. I write for the practitioners, not for the book learned. If history is to become an

animated practical study, it must be made as entertaining as life itself, but not with a cold heart, nor like a skeleton, pursue its course. History must be contented to wear a simple and becoming dress, instead of one adorned with learned ornaments. The savant has a right to demand information on the sources of knowledge; he must admit, however, that no reading matter or thesis is more fatiguing than that of which the text is decorated with figures referring to certain citations, and almost covered by the extended remarks. It would have been an easy matter to name the various sources, sentence after sentence, but I avoided the great mass of citations in order to obtain the good will of the practical physician. No surgeon will be able to incite a desire among practitioners to take up a neglected study with its dry literature. Such works are dead when issued and from the bookbinder they are ready for the library. *Le style c'est l'homme*. In order to produce as elegant a form of language as possible a hundred years ago France employed the so-called *hommes de lettres*, to whom the best physicians and surgeons, as Sabatier and Baudelocque, contributed their writings. No *hommes de lettres* exist to polish our works, therefore let us proceed!

(To be continued.)

Fourteenth Biennial Report of the Board of State Commissioners of Public Charities for the Years 1895 and 1896.

ARTHUR R. REYNOLDS, M.D., PRESIDENT.

For the last biennial period Illinois appropriated for State charities the sum of \$2,962,550. This is a large amount, yet it is only one factor in the incalculable sum which the State by private and public contribution devotes to the care of the dependent classes. Scientific investigation has demonstrated its economic value in discovering sources of disease and disability and in suggesting methods of prevention. We submit that the State can not afford to conduct its charitable institutions merely for the immediate and direct alleviation of suffering and the protection of the inmates, primary and vital as this purpose is. The State has in these institutions great resources for research and study. Their proper use in furthering medical education, in promoting scientific investigation is due to the future of society and to the taxpayers of Illinois. Such use means no lack of consideration for the sick and helpless charges of the State. On the contrary, it means for them, now and at once, more faithful humane care; while it means an effort to benefit future generations by prevention rather than by cure. Work has already been done in a few of our institutions in accord with above. We make further suggestions below, and in regard to others we make no specific suggestion at this time, although the principle is applicable to all.

The following classes of institutions are by law subject to the examination of the State Board of Charities in Illinois, namely: 1, State charitable institutions which have been enumerated before; 2, the county jails and almshouses; 3, industrial schools; 4, private insane asylums. To those various institutions in the period since the last biennial report nearly four hundred visits have been made by various members of this board. These visits have been made at irregular intervals and in most cases unannounced. The board does not undertake in what follows to discuss all these institutions in detail, but merely to make suggestions upon those subjects of most immediate importance or urgency.

BLIND.

The Eye and Ear Infirmary at Chicago, the School for the Blind at Jacksonville and the Industrial Home at Chicago constitute the State provision for the blind. We believe this provision is ample in scope, and, when the equipment of the Industrial Home is completed and the hospital at the infirmary enlarged, it will be adequate to the reasonable needs of the blind and a credit to the State. As we have indicated elsewhere, the infirmary at Chicago should be enlarged and the Industrial Home must be completed and equipped.

HOME FOR JUVENILE FEMALE OFFENDERS.

Since the last biennial report of the Board of Charities this institution has left its temporary quarters in the city and has moved to its permanent location near Geneva, in Kane County. It has a fine piece of land, about fifty acres, overlooking the Fox River and giving opportunities for dairying, gardening, poultry-raising and such outdoor occupations as girls may be taught. The building is of brick, two stories and attic, divided into sections or flats absolutely distinct, each having its own dining-room and kitchen, superintended by a matron, thus permitting classification of inmates. The girls are now taught the work of a house and sewing—other occupations will be added as rapidly as practicable. All the girls are now in school

half of each day. Girls are placed out in carefully selected homes, where their past history shall prejudice them as little as possible and where they may have the most favorable opportunity for a fresh start in life. Girls are placed in homes in accordance with Section 27 of the act creating this institution. The Home for Juvenile Female Offenders is administered upon the theory that if the girls are to be reformed they must be given new and better tastes and must be taught a way to gratify these tastes in the course of earning an honest livelihood. The trustees and superintendent are laboring with unusual earnestness and are entitled to great credit in the organization of this new institution. The Home is now caring for about seventy nine girls. It is already crowded and such good work should not be limited by lack of equipment or space. We have elsewhere advised the erection of another simple cottage.

The provision for the deaf and dumb we believe is also generous and creditable to the State. Of course, the schools for the deaf and dumb and for the blind, like all educational institutions, need constantly some renewal or increase of equipment.

FEEBLE-MINDED.

The School for the Feeble-minded at Lincoln, which now contains 639 children, is crowded far beyond its capacity. Upon its books are 361 urgent applications; of these 162 are for epileptics.

Feeble-minded children and epileptics are found in many almshouses, and even in some insane asylums. The application list at Lincoln, however, shows that there are more children in private families who need State care than in institutions, parents only sending their children to an almshouse as a last resort.

A notice was sent out through the auxiliary county boards, which was published in the summer of 1896 in a portion of the county newspapers, requesting information as to epileptics. As a result of this a number of most pitiful cases were reported, indicating that of which the board is well satisfied from its general information and observation, namely, that the number of feeble-minded and epileptic in need of State care is much larger than is apparent at first, and above all that their presence in the community uncared for and unprotected is dangerous to them and to the public.

The presence of a feeble-minded child in the home of people of scanty means is usually a great hardship, often making the family incapable of self-support. As a matter of economy it is much wiser for the State to provide fully for the care of feeble-minded children than to leave them in homes which they practically reduce to pauperism by their presence. Even if this is not the case, the child can receive no proper training except by a degree of attention impossible in an ordinary family, and grows up into a positive menace to the community in too many cases; whereas, under proper guidance and protection such a child may be made, in some cases, almost self-supporting, and at least not dangerous to the community at large. We are of the opinion that the wisest economy as well as the soundest humanity requires that the State provide institutional care for all feeble-minded children whose parents can not give them proper care and protection at home. As the feeble-minded person never advances beyond childhood, we believe that the State is justified in assuming the permanent custody of all those who enter the institution for the feeble-minded and who can not be safely protected by their natural or legal guardians.

The State must especially learn the necessity of protecting feeble-minded women and girls. The moral imbecile is too often held to a stern responsibility which she can not even understand, but is now given the protection and segregation which her feebleness demands. Some of the facts as to parentage given in the list of children in the Cook County Almshouse, shown in the appendix to this report, as well as similar instances in many a county almshouse, point out the moral that the State should assume custodial care of this class.

It was plainly the original intention that the school at Lincoln should be a school for improvable feeble-minded children, not epileptics. But the pressure for admission has been so great that there are now at least 125 epileptic children at Lincoln. In our opinion the institution at Lincoln should be somewhat enlarged, and we have approved the request for the erection of a girl's cottage for sixty, and a house for boys on the farm to contain about fifty inmates.

EPILEPTICS.

We recommend that the State provide a separate institution for epileptics, for the following reasons:

1. As the proportion of epileptics is about 1 to 600 of the population, making in Illinois an epileptic population of about 8,000, from which the ranks of the dependent epileptics are

constantly recruited, and as the disease is one which at present almost baffles medical skill, we believe that the State should promote the study of this disease with a view to curative or preventive measures. This is only possible in an institution where such cases can be under constant observation.

2. The medical treatment and diet of epileptics should be different from that of feeble-minded children not epileptic.

3. As the institution at Lincoln was not intended for epileptics, this class has therefore been discriminated against necessarily in admitting children. As was stated above, 162 of the 361 applications now on file are for epileptics, so that a separate institution for epileptics would not only relieve Lincoln of about 25 per cent. of its population, but would provide for about 45 per cent. of those on the application list.

4. There are also throughout the State a large number of adult epileptics, found occasionally in almshouses, who are able to work a portion of the time, but whose seizures prevent their employment in the ordinary affairs of business life. An institution modeled somewhat after the Bielefeld Colony, in Germany, or the Craig Colony, in New York, seems to us the wisest expedient for the feeble-minded and epileptics of the State, who are now neglected, and whose neglect is not only causing great suffering, but is entailing an expense which can not be estimated, but which is certain to be very great upon this and future generations. The presence of adults able to work in a place particularly adapted to their infirmity would prove an economy and great assistance in the care of the helpless. Doubtless a considerable portion could be practically self-supporting under conditions which made it possible for them to work when able. We especially urge that this institution should be upon what is called the colony plan, and advise the purchase of at least one thousand acres of land for this institution. A considerable number of small buildings of simple construction will be needed to care for the various classes of inmates. Not only farming but various other industries should be provided, so that the colony shall be as nearly self-supporting as possible.

5. There are in our insane asylums a considerable number of epileptics, probably 7 per cent., or nearly 400, who are sane between their seizures, or who could be allowed more liberty than is considered prudent in the hospital for the insane. For instance, in the Central Hospital there are 100 epileptics, of whom the superintendent, Dr. Watson, says: "Ninety per cent. have lucid intervals and are all able to work more or less. They would be much better off in the country on a farm where they could be regularly employed at out door work." Good authorities recommend that a certain proportion of the epileptic insane be transferred to an epileptic colony. If for no other purpose we believe that the medical study of the disease makes it desirable that this class of patients should also be included in the population of an epileptic colony. There is no reason why they can not be cared for there as well as in any other institution, if separate means are needed. Thus there are now:

| | |
|---|-----|
| In the school for feeble-minded | 125 |
| In the insane hospitals (estimate) | 400 |
| Applicants for admission to Lincoln | 162 |
| In the almshouse (estimate) | 100 |
| Total | 787 |

All of these could be cared for better in a separate institution besides an uncertain number known to exist who should be in the care of the State.

In conclusion, we urge an epileptic colony, first, to afford protection, together with the greatest degree of freedom consistent with the safety of the inmates and society, for a class of our population now suffering, neglected and too often a public menace. Second, to provide education, training and industrial pursuits for all who can be taught or who can work. Third, to apply the best medical care and investigation to the study of epilepsy so as to insure such alleviation as possible for the inmates, so as to obtain and diffuse knowledge as to the nature and prevention of this disease, and so that by a careful study of the influence of heredity the people may be fully informed of the responsibility of parentage, with the hope that the future burden of the State and society may be lightened.

STATE CARE FOR THE INSANE.

The following figures show the population of the various State institutions for the insane yearly since 1890:

| | Criminal | | | | | Total. |
|--------------------|-----------|----------|----------|-----------|---------|--------|
| June 30, | Northern. | Eastern. | Central. | Southern. | Insane. | |
| 1890 | 522 | 1,687 | 912 | 627 | — | 3,748 |
| 1891 | 1,010 | 1,710 | 1,180 | 840 | 113 | 4,853 |
| 1892 | 1,107 | 2,090 | 1,231 | 825 | 116 | 5,372 |
| 1893 | 1,178 | 2,178 | 1,207 | 829 | 123 | 5,495 |

The insane in the county almshouse are 2,265 in 1896.

The erection of the Western Hospital for the Insane near Rock Island, planned for 1,000, immediate capacity 480, and the Asylum for the Chronic Insane at Peoria, immediate capacity 200, will give much needed relief to our crowded State hospitals and will permit State care of a portion of the most urgent county-almshouse cases.

It is the conviction of the Board that the State should provide, without further delay, some complete and systematic plan of caring for all the insane of the State or for supervising authoritatively their care if any are left in the county almshouses. It is true that this Board has the duty of visitation, but an annual visit to an almshouse with no power to enforce any improvement in the care of the insane who may be confined there, becomes no better than a painful travesty when there is need of improvements which cost money and attention.

In many of the counties the following hindrances to reasonable care of the insane appear: 1. Political influence in the appointment of the almshouse superintendent. 2. The lack of popular knowledge as to what constitutes proper care of the insane. 3. Unwillingness of boards of supervisors to make necessary expenditure. 4. The practical impossibility of providing humane and adequate accommodation for a few insane, unless the cases are of the mildest type. Even if these difficulties are not all found in all counties, they exist in most, so that many insane do and must suffer (as all the reports of this Board for years past have shown) under our present arrangement. Common fairness seems to us to demand an equality of care which can only be secured by State maintenance.

In the opinion of the Board, any permanent plan should be elastic enough to permit the inauguration of experiments in "boarding out" quiet chronic cases, as we are strongly of the opinion that ultimately a certain proportion of our insane must be cared for in this way. The Board deprecates the suggestion of one large asylum for incurables, but would rather urge the extension of our present system of smaller mixed hospitals. The medical testimony gathered by the Board in 1895 shows that such European authorities as Dr. J. Morel of Ghent and Dr. Hartniz of Alt Scherbitz, and such American authorities as Dr. Wise, formerly superintendent of the St. Lawrence Hospital, N. Y., and the Ohio State Board of Charities, favor mixed hospitals as against special institutions for the incurable insane. The mixed hospital gives a working force, which is an important consideration, and reduces the cost of caring properly for acute cases. The stamp of hopelessness is set upon the hospital for incurables, and it is hard to enlist such medical interest or skill in its behalf as is necessary to maintain it above the level of an almshouse.

We wish to emphasize the need of a better popular understanding of the fact that insanity is a disease, no more discreditable to the victim or shameful to his relatives than rheumatism.

If the superstitious dread of an insane person could be overcome in the popular mind, many of the mild cases now immured for life in the institutions could be cared for at home, at a considerable saving of money to the State. If a proof of this were needed it could be too easily found in some of the chronic insane in almshouses. In repeated instances quiet cases returned from State institutions live with the other inmates without any difference in care, never running away, behaving peaceably and usually working far more faithfully than the sane inmate of equal strength. Again, numbers of old persons in various stages of senile dementia are received at the hospitals, not dangerous or unsafe to be at home, nor requiring care and attention impossible at home, but needing a little indulgence for their vagaries.

In regard to old people, we quote from Dr. Loewy, Superintendent of the Northern Hospital, who was asked to report upon this matter. He states as follows:

"Case 1. An old lady between 60 and 70 years old, in poor physical health, mental aberration very slight, as shown by simple mental enfeeblement. This patient has some means, and her conservator and myself have made repeated efforts to have her cared for by her sisters, but without result; and only within the past week have we been able to make arrangements with a neighbor of hers, where she used to live, to care for her. Her means are sufficient to care for her to the end of her days.

"Case 2. A patient about 60 years old, who is slightly exalted mentally, who occasions no trouble, and to my mind could be easily cared for at home were her relatives willing to put forth the effort.

"Case 3. A patient about 70, usually very quiet, no trouble to any one, but as her friends express it, she tires them out.

"Case 4. Very quiet patient, very slight mental aberration and has been here for several months. I have tried to get her children to take care of her, but they all evade any direct statement by me in regard to taking her home, by stating that they have not time to visit her.

"Cases 5 and 6. Patients each about 60, who have some

delusions of persecution, but I believe could be cared for at home.

"Case 7. Patient is very quiet and the mental aberration is extremely slight, and could be easily cared for were her friends willing to make a few sacrifices.

"Case 8. A very quiet patient, slight mental aberration and could be easily cared for.

"Cases 9 and 10. Two old men who are mentally enfeebled, one bedridden, but both could be easily cared for at home were it possible to make this a compulsory matter.

"I could cite many more cases, and think that on both male and female sides there must be between thirty and forty patients of this kind who could be cared for at home at least part of the year; but the friends of the patients evade any responsibility in the matter by stating that they do not want to take the patients home until full recovery takes place. I have just received a copy of the last report of the Southern California Hospital, and the Superintendent makes reference to cases which he thinks could be cared for at home but for what he calls a lack of filial affection."

Dr. William Watson, Superintendent of the Central Hospital, says:

"I have 134 cases of senile insanity; 94 males and 40 females. These people are all over 60 years old and might be cared for by their friends, if they were willing to take the trouble and cared to look after them."

Judge Orrin N. Carter, County Judge of Cook County, recently remarked upon the number of cases of senile dementia brought before him, and states that they are seldom dangerous or excited, and that their condition, sent away from the familiar surroundings of their lives to end their days in a great institution, renders them the most pitiable of all the insane brought before him.

MEDICAL EDUCATION.

If the increase of insanity is to be stemmed by the medical profession, we are satisfied that the general practitioner must be depended upon rather than the alienist. The general practitioner sees the patient when insanity might be arrested. The alienist usually sees him only when symptoms are unmistakable. The family physician knows the patient in the usual surroundings of his life and can discern the external causes which may provoke an outbreak. If he were acquainted with the symptoms of the disease he could often perform a preventive function impossible to the specialist.

We regret to see that several of the recognized medical schools of the State do not include mental diseases in their announcement of courses, and that the others allot this subject of such profound importance but meager attention; the school requiring most in this regard allowing the subject of mental diseases a credit of 1 out of the total 55 required for graduation. We earnestly bespeak the interest of our medical schools in behalf of more extended courses and better clinical advantages for this subject, and would heartily favor any reasonable arrangement with the State hospitals which should secure to students additional opportunities.

INTERNES.

It is largely in view of the importance of a knowledge of insanity to the general practitioner that we have urged the appointment of internes to our State hospitals for the insane. The Board wishes to acknowledge the approval of the Governor and the coöperation of the superintendents in the inauguration of the system of the appointment of internes by annual competitive examinations. The last examination was held in Chicago in May, 1896, and resulted in the appointment of nine internes, eight men and one woman, as follows: three to Eastern Hospital, two to each of the three other hospitals now in operation. It is believed that their usefulness to the hospitals and to themselves, and to the public, can be further greatly increased by arranging a course of work and investigation for them which shall be uniform in all the institutions.

(To be continued.)

SELECTIONS.

A Strange Experiment in Insurance in Switzerland. The December issue of the *Consular Reports*, contains an article on a Swiss scheme for insurance against loss of work by the canton-governments of Berne and St. Gall. The following extracts will suffice to give to medical readers who are interested in insurance a glimpse of this singular experiment ostensibly begun in the interest of so-called "laboring classes." It may be stated

that St. Gall has already abandoned the plan, chiefly for the reason that the really industrious workingmen found themselves unbenefited, and the system resulted in the promotion of laziness and idleness. The article says: State socialism, it is claimed, has its strongest hold in the mountain republic. In almost every need the people look to legislation for relief. Notwithstanding numerous failures, the masses of Berne and Basle, Geneva, Zurich, and Lausanne look to the Government for aid unknown and unheard of in other countries. In 1893, a petition was sent to the Federal Government demanding laws against enforced idleness. The petition urged that each citizen had a right to remunerative employment, and asked that the law be invoked to aid him in getting it. To do this, it was demonstrated that in certain industries those then employed would have to work fewer hours in order to leave something for those who otherwise would be forced or kept out of employment. To carry out this scheme, the State was either to employ the idle in State factories, making the same goods, or to compel existing institutions to take them. The proposition was voted down by 308,289 votes against 75,880 in the popular assemblies. The vote by cantons was "No," and unanimous. However, to show good will in the matter, the Federal Assembly urged the federal council to appoint a commission to inquire into the matter. It might cost money, but it would be money well spent. The object was to find out whether it would be wise or worth while to open bureaus to aid the unemployed to get work and societies to insure against loss of labor. The commission has not reported. This has not deterred two cantons—Berne and St. Gall—from going ahead. Basle, Zurich and Lausanne are very much interested: what action they will take is not known. The Berne plan differs very essentially from that of St. Gall. In the former canton, it is left to the free will of the laborer to insure or not, as he or she pleases; in St. Gall, each must insure. The basis of the Berne system is as follows: The working people, laborers and professional men, are all united under one head. Each person insured pays 8 cents a month. Each city in the canton contributes 7,000 francs (\$1,351), formerly 5,000 francs (\$965). Members must have been enrolled six months, paid dues regularly, and be out of work fourteen days at least before being entitled to a pension. The aid given is 1 franc daily for unmarried men and 1.50 francs for married men. Only men are pensioned. The money is paid only during December, January and February. A workman who refuses to take any work offered him, or loses his work through his own fault, or joins in a strike loses all rights to the pension. On December 31, 1895, the organization numbered 605 members and had paid pensions to 169 persons during the year. In 1894, there were 390 members, and the parties to whom pensions were paid numbered 226. In this case, it was more a State help than a workingman's insurance club; for in 1894, unaided by the cantonal subscription, payment would have been impossible. Most of the men supported or aided belonged to the building occupations. These are more or less idle year in and year out. Hence it is hard to say what worth such an effort is to have in solving the huge social and comic problem, *i.e.*, the effort made in Berne.

Much misery, it is true, might in this way be wiped out, but men whose labor has always been steady and is likely to continue so complain bitterly about being compelled to support others in idleness whose labor, though at times uncertain, is for that very reason better paid when there is work. It is not in the nature of things for such a system to succeed even among so loyal, loving, and gentle a folk as are the Swiss. The effort is not in vain if it will teach the thoughtless how hard it is to make laws or to institute any system that is to take the place of thrift and economy during the days when work is plentiful. The decision of the commission will record the popular will, and that, as far as can be judged from facts at hand, will be adverse.

Treatment of Morbus Basedowii and Epilepsy with Total and Bilateral Resection of the Cervical Sympathetic.—T. Jonnesco of Bucharest has performed this operation nine times, stimulated by the success obtained by Alexander and Jaboulay in their partial operations. (See the *JOURNAL*, pages 546 and 1248, vol. 27.) In his three cases of genuine epilepsy there have been no attacks since, and only a slight transient vertigo in one case at times. In the two cases of morbus Basedowii the exophthalmus disappeared, the goitre diminished in size and the tachycardia ceased in one case, but still persists in the other. The other operations were for chorea with hystero-epilepsy, cerebral tumor with epileptic attacks, hysteria and progressive paralysis. No benefit was derived in these cases. The fact has been established by physiologic research and also by an attack of epilepsy occurring while Doyen was performing a hemicraniotomy, that a disturbance in the cerebral circulation occurs simultaneously with the attack. The troubles in morbus Basedowii evidently proceed from the sympathetic cervical, and resection of this nerve is therefore clearly indicated in this disease, even if it is necessary to tie the vertebral artery to complete it. He recommends the operation to others, stating that it is absolutely free from serious after-disturbances. He describes his technique in the *Cbl. f. Chir.* of January 16, which can be summarized as follows: 1. The incision in the skin begins at the posterior border of the mastoid process and is carried below the clavicle along the posterior border of the sterno-cleido-mastoid. The incision is made through the skin, the platysma myoides, the external jugular vein after ligating it in two places, and the branches of the superficial cervical plexus. 2. The posterior border of the sterno-cleido-mastoid is exposed, and 3, the nerve cord is found. Sometimes it is in the posterior wall of the cervical vascular sheath. Tearing open this sheath with the sound, the gangliated cord is easily distinguished by its relations with the internal jugular vein and its location outside of the pneumogastric. It can be seen through the prevertebral fascia and is easily distinguished from the phrenic nerve just outside of it. 4. It is drawn out and stripped of the connective tissue with a hollow sound, as far as the base of the skull. The fusiform superior cervical ganglion is then exposed front and back, and detached, preferably with the finger. When the upper end is reached and detached it is cut with a special pair of blunt curved scissors, first the branches and then the cord above, from front to back, from within forward, and from above downward, to avoid injury to the surrounding organs. The field of operation must be cleaned by separating some of the occipital attachments of the sterno-mastoid and drawing up the vaso-motor funiculus and the sterno-mastoid with a hook 4 cm. wide and 3 cm. long, inserted in the upper angle of the wound. 5. Resection of the middle and inferior cervical ganglia. The middle cervical ganglion is often absent, but two sympathetic branches are always found in the corresponding spot, surrounding the thyroid artery. In some cases the thyroid artery was so rigid that it had to be cut between two ligatures to expose the middle ganglion or the plexus that replaced it. The resection of the inferior ganglion is the most difficult part of the operation, as it lies in the deep groove between the scalenus posticus and the spine, covered by the vertebral artery and vein, in direct contact with it and of such size that they entirely fill the groove. Another difficulty is that this ganglion forms one single mass with the first and even the second thoracic ganglion, which extends along the spine in the thorax. The pleural cavity is also in more or less intimate relation with the inferior ganglion and the neighboring organs, so that it may be opened during the operation. If we consider also the enormous current of blood in the retro-clavicular veins and the arch of the subclavian artery, the difficulty of operating in this extremely vascular region becomes evident. But nevertheless the extirpation of the inferior cervical ganglion is possible and Jonnesco

has performed it twelve times. He inserts again the hook mentioned above and detaches some of the attachments of the sterno-mastoid to the clavicle. Then the gangliated cord is separated from the vertebral artery and vein, which are both pulled forward. The ganglion thus exposed is freed from the bone and by pulling it a little all the branches are brought into sight. These are cut in turn, including the vertebral and cardiac branches, and the ganglion is thus extirpated. If the pleura has been opened the wound is seized quickly with the forceps and ligated. The operation is completed with a deep suture, uniting the posterior border of the sterno-cleido-mastoid to the subcutaneous tissue. The skin is closed without drainage, which is useless. All the wounds healed rapidly *per primum*. The length of time required for the operation ranged from one-quarter to three-quarters of an hour. The only inconvenience observed was a transient redness of the face, lachrymal and nasal secretion and a transient contraction of the pupils. He considers his success sufficient to encourage others to work along the same lines, as a certain and safe method of treating diseases which have hitherto baffled us.

Health Points for Eastern People Wintering in Arizona.—The two principal towns in the southern portion, chiefly sought for their climatic advantages, are Phoenix and Tucson. Each of them has 10,000 inhabitants or more. They have the electric light, telephones, trolley cars, plenty of hotels, banks, book stores, good schools, churches, an occasional theatrical performance, sometimes a lecture or a circus, often a horse race, and, in the spring a thoroughly curious and interesting "fiesta." For the rest, people must take their amusements with them. Good horses are abundant and cheap, and there are plenty of cowboys—the genuine article—to show what horses can do. The driving for fifteen or twenty miles in almost any direction from Phoenix is nearly always easy. The roads are apt to be dusty; but there is one well sprinkled drive of six or eight miles, and since the winds are quite regular in their direction it is rarely difficult to choose a route on which the dust will be largely carried away from you. The unbroken desert itself is often as easy to drive over as an Eastern highway, and the whole valley is a paradise for bicycles or equestrians. If a mountain region, considerable altitude and a comparatively low temperature are desired, Prescott is in a picturesque region, near a great mining district, and has the social advantage of an army post, Whipple Barracks. Flagstaff is still higher, is in a region of dense pine forests and is within a hard day's journey of one of the wonders of the world, the Colorado Canyon. Oracle is a pretty mountain nook, embowered in splendid live oaks, like those of California, and is also near an important mining district. If lower altitude and a distinctly semi-tropic climate is desired, the three places most likely to be considered are Yuma, Tucson and Phoenix. The first is near the sea level, is the warmest and probably the driest of the three, has the least population and the smallest provision for visitors. Tucson is the oldest town in the Territory and, after Santa Fé, perhaps the oldest in the Southwest. Its adobe houses give it a Mexican look and are thoroughly comfortable. Its newer houses are of a handsome building stone found in the vicinity. The Territorial University is here, and it was formerly the capital. The elevation being more than double that of Phoenix, it is somewhat cooler, and as there is next to no irrigation near it the air is a little drier. Phoenix is in the center of the greatest irrigation in the Territory. The country for miles around smiles with green fields, covered with almost countless herds of cattle, and it is everywhere shut in by low mountains. It is the Territorial capital, has the Government Indian School, the Territorial Lunatic Asylum and other institutions, and is the general focus for the Territory. Like Tucson, it has its occasional wind and storms, perhaps not quite so often. At either place visitors who know how to

adapt themselves to circumstances can be entirely comfortable and in each they will find an intelligent, orderly, enterprising and most hospitable community. They will find a country full of mines, full of rich agricultural lands, abounding in cattle and horses, in vineyards and orchards, and the beginnings of very successful orange groves—a country in fact, as full of promise for hardy and adventurous men now as California was in the fifties. Above all, if it has been their lot to search for health in far countries, they will revel in the luxury of being in their own land, among their own countrymen, within easy reach of their friends by telegraph or rail, and in a climate as good of its kind as any in the world.—*New York Tribune*.

PRACTICAL NOTES.

Treatment of the Insane by Repose in Bed.—It has been found in St. Petersburg that insane patients are very favorably affected by being kept in bed, and the system has been introduced on a large scale for noisy, excitable patients and cases with psychic depression and general debility. Neither force nor narcotics are used, but the patients are merely habituated to remain in bed, although they take their walks and physical exercise every day as usual. It is not necessary to keep them in separate apartments and the economy of space and trouble to the attendants renders the practice a great convenience.—*Presse Méd.*, December 29.

A Case of Fatal Hysteria.—The *Rivista Med. de Sevilla* for October contains the description of the case of a young woman who after a brief married life and separation was attacked with all the "algias" known to science, with functional disorders in every organ and phantom tumors, etc., a most distressing case which was diagnosed as hysteria. This diagnosis was confirmed when after years of suffering the patient dreamed that if she received the communion she would be freed from her troubles, as proved to be the case. It was the first time anything had passed into her stomach for weeks, as a constriction in the esophagus had prevented her taking food. This miracle of her complete restoration to health continued for some months, when her former state returned in an aggravated form, accompanied by serious gastro-intestinal disorders and a peculiar pigmentation of her face, as if she had been tattooed with blue paint; fever and complete insomnia rapidly terminated her life.

Salubrol, a New Antiseptic Powder.—Salubrol and Salubrol gauze (20 per cent.) are designed to substitute iodoform, and are proving successful on small abscesses, boils, burns, etc., as they dry the surface rapidly and promote the formation of the scab to such an extent that small abscesses do not require dressing after being sprinkled with the powder. Experimental tests on animals demonstrate that it is completely non-toxic, while its bactericidal power is so great that it not only prevents the development of bacteria, but kills already flourishing developed colonies of staphylococci, anthrax spores, etc. It is made by the action of bromin on methyl-bis-antipyrin, and corresponds thus approximately to a tetrabromin derivative. It is not adapted to use on large surfaces as it dries them so fast that fresh granulation does not occur to the desired extent. There is no irritation of the skin from its use, but it causes smarting in some cases, when applied as a powder, but not as a gauze.—M. Silber in the *Deutsch. med. Woch.* December 21.

The Influence of Antidiphtheria Serum on the Kidneys. In *Virchow's Archiv*, for November and December, appears a clinical and experimental study of the influence of Behring's diphtheria serum on healthy and diseased kidneys by Dr. F. Siegers. He finds that slight transient albuminuria and albumosuria are often induced, and that although occasionally acute parenchymatous nephritis and hemorrhagic nephritis have been observed in association with the injection of the serum,

the dependence of the renal lesion upon unaltered serum has not been proved. Suppression of urine has been observed experimentally as well as clinically. Preëxisting albuminuria is not unfavorably influenced by the use of the serum, the employment of which, if its specific value in diphtheria is proved, ought not to be set aside on account of any renal effects.

The Bacteriology of Colitis.—Before the Liverpool Medical Institution, Dr. A. W. Campbell showed specimens and cultures of a bacillus isolated from the cases of colitis occurring in Rainhill Asylum. The organism is a small short rod morphologically allied to the bacillus coli communis and others of that genus; it grows freely on agar-agar, gelatin and potato; it does not liquefy gelatin, its growth is not stopped by potassic iodid, it forms gas abundantly, it coagulates milk and is motile. So far cultivations from the feces of three cases suffering from the disease have been made, and some initial experiments performed in Professor Boyce's bacteriologic laboratory seem to point to a causal relation between the bacillus isolated and the disease in question. In case No. 1 the cultivations were made when the disease was at its worst, the patient being severely purged, prostrate and pyrexie, and a rabbit inoculated subcutaneously with 3 c.c. of a broth culture died in nineteen hours after showing signs of commencing diarrhœa. At the necropsy of this animal the intestinal canal was in a condition of acute catarrh, the feces were liquid, the mesenteric glands enlarged, and the blood teemed with the organism. In case No. 2 cultivations were obtained from another acutely suffering patient and inoculation into another rabbit produced severe diarrhœa, along with general prostration lasting for four days. The animal was killed at the end of a week, when it was showing signs of recovery, and on postmortem examination, though there was no catarrh of the intestinal canal, still the Peyerian patches, the solitary glands in the large intestine and the lymph glands in the mesentery were swollen and the organism was present in the blood. In case No. 3, cultivations were made from the feces of a patient recovering from the disease, and it was interesting to find that a rabbit inoculated with some of the growth presented no signs of the disease other than edema round the seat of inoculation. Dr. Campbell mentioned that the next step in the investigation would be to endeavor to produce the disease in swine, because he had observed in pigs which had died from "swine fever," in addition to the specific lesion, a condition in the large intestine which bore much resemblance from an anatomic point of view to the change in the large intestine of the human being dying from colitis.—*London Lancet*, December 19.

Hydrotherapeutics.—W. Winternitz states that in various epidemics of infective diseases in which he has treated some patients with antipyretics, others with hydrotherapeutics and others expectatively, the proportion of mild cases was larger with the hydrotherapeutic than with the others. He claims that the failures in hydriatics are due to the incorrect application of the baths. He always decides the indications for them by a test sponge bath of a small portion of the surface of the body. The reaction from this shows the condition of the heart and cutaneous vessels. The latter are exceedingly excitable in typhus and pneumonia, while in measles and scarlet fever there is almost a paralysis of the peripheral vessels, and the strongest thermic excitation scarcely produces any reaction. If the test bath results favorably, he gives baths of 25 to 20 degrees C. in typhus and pneumonia, while in measles and scarlet fever, and also in the eruptive stage of variola, short baths at a low temperature are indicated. In regard to the indications for cooling, heating and stimulating packs it is important to bear in mind that leucocytosis is established by cold baths, while with stimulating applications a moderate leucocytosis is accompanied by a strong erythrocytosis. Stimulating applications

should not be covered with a moisture proof covering as the heat is drawn from the skin to dry the cloths, which does not occur with impregnated material. If the wet cloth is about the temperature of the blood, the skin under it will feel cool although an active hyperthermia is being excited by the stimulating application. He disapproves of Germain Sée's theory that it is best to wait before beginning the hydrotherapeutic treatment until the disease has advanced to a certain stage as it renders the diagnosis so difficult, remarking that the life of the patient is worth more than the diagnosis.—*Wien. klin. Rundschau*, December 27.

Negretto's Radical Cure of Ischuria from Hypertrophied Prostate by Cauterization through the Rectum.—The annoyances of castration are avoided by this method, which does not interfere in any way with the genital organs. It is simple, effective, and free from any danger, and Negretto considers it superior not only to castration and section of the vas deferens, for various reasons, but also to all other methods suggested to date, including Bottini's thermo-galvanizing process. It is described in the *Gaz. degli Osp. e delle Clin.*, of December 27, with the reports of five cases treated. Rapid and permanent cure was invariably secured, and this experience was confirmed by numerous experiments on animals. It is especially indicated in the congestive stage, as it is sure to produce atrophy of the prostate. His instrument consists of a sharp, slightly curved hook, 1 cm. long, on the end of a straight graduated stem about three inches long, with a slanting handle. The evening previous to the operation or the night before that, a saline purgative is administered, and one or two rectal injections are given an hour before the commencement of the operation. After chloroform the patient is placed in the peritoneal cystotomy position with the pelvis raised very high. The rectum is dilated with the Collin or Weir speculum, and a short distance above the gland the rectum is plugged with iodoform gauze to prevent fouling the site of the operation with fecal matters. After this the speculum is removed and with the left forefinger the center of the prostate is located, and the hook introduced, guided by the forefinger, and inserted in the center of the gland, a slight traction serving to hold it in position. The figures show the exact distance the stem has penetrated in the rectum and also any displacement. It is then entrusted to an assistant to hold, warning him to continue the traction. The speculum is reinserted and any scraps of the rectal mucosa are removed with a wad of gauze. The prostate is then cauterized with the Paquelin cautery or with the galvanocautery, around the hook, the extent depending upon the case. The operation is completed in two minutes on an average. If necessary the assistant can render the region of the prostate more prominent by pressing on the suprapubic abdomen. After the operation a large dose of bismuth subnitrate with opium is administered, to keep the bowels from moving, and a permanent Nelaton catheter is inserted in the bladder. It is changed in a few days and the bladder periodically disinfected. The sixth or seventh day an oil purgative is given and the gauze plug is expelled with the discharge. At the end of ten or twelve days the catheter is finally removed and the patient henceforth urinates without difficulty.

Insufficiency of the Bacteriologic Diagnosis of Diphtheria.—Dr. Spronck in *Semaine Médicale*, Sept. 4, 1896, points out that although a bacteriologic diagnosis of diphtheria is very easily and certainly arrived at, nevertheless cases exist in which bacteriologists disagree. Cultivation in serum, followed by microscopic examination, shows that there are three varieties of the diphtheria bacillus. On the serum these are differentiated only by size; the short bacillus, however, closely resembles the pseudo diphtheria bacillus described by German authors. As regards virulence the short bacillus is regarded as extremely benign, the intermediate as less so, and the long bacillus as

the most toxic of all. It might be thought that the small bacillus described by French writers was identical with the pseudo-bacillus of German authorities, but doubt is thrown on this by the results of experiments on guinea pigs. Though benign, the small bacilli in cases under observation differed in their degree of benignity, though none of the animals affected died. The cultures used were in all cases pure. To determine whether or not two pathogenic specimens were true diphtheria bacilli recourse was had to antidiphtheria serum. If the true diphtheria bacillus had been present, this should have been capable of protecting a guinea-pig from ill effects. This was not found to be the case. Spronck concludes that there exists a pseudo-diphtheria bacillus, which is pathogenic to guinea-pigs, hitherto unknown or mistaken for the short bacillus. Researches on the but slightly pathogenic pseudo-diphtheria bacillus showed that in time the cultures lost their virulence, and when spontaneously attenuated could not be distinguished from von Hoffmann's pseudo-diphtheria bacillus. This proves that the relationship said to exist between the latter and the diphtheria bacillus can not be admitted without reservation. Probably von Hoffmann's bacillus is derived sometimes from the true diphtheria bacillus, at other times from a slightly virulent pseudo-diphtheria bacillus. It seems justifiable to think that microscopic examination of the colonies is adequate, and it is necessary to control the diagnosis by the experimental use of antidiphtheric serum.—*British Medical Journal*, December 26.

Tuffier's Technique of Intravenous Injections.—According to Tuffier the facts to be borne in mind in these injections are that there is no toxic dose, but only a toxic speed, and that the kidneys must be sound. The intravenous method is not difficult, nor dangerous, as no harm results if air gets into the veins, while the absorption is certain and the effect apparent at once. It is applicable in hemorrhages and medical infective diseases, but is of especial value in surgical and obstetrical infections. It increases the intravascular tension and is an almost indispensable preliminary to an operation after part of a member has been crushed. It has been found effective in cholera and recently in two cases of tetanus. Infection of the kidneys is the only contraindication. The formula used is: Water, 1 liter; sodium chlorid, 8 grams; sodium sulphate, 10 grams. The serum is boiled or better still sterilized in the autoclave at 115 degrees C. for ten minutes. The chances of infection are reduced to a minimum by Voisin's contrivance for keeping the serum in balls with two openings; the rubber tubing is attached to the shorter small tube, at one opening, and the ball placed on some suitable support. At the moment of the injection the serum should be about 40 degrees C. The preferable injecting point is the internal saphena just in front of the internal malleolus, where it can be easily palpated. An incision two centimeters in length exposes the vein, which is then taken up on a grooved director. The vein is seized with the forceps and a small pointed flap cut with the bistoury in its wall, the adherent base on the side toward the root of the member. As the blood starts, without letting go of the venous flap, held with the forceps in the left hand, the trocar is taken in the right hand, and after letting the serum flow to expel the air, the trocar is inserted in the wound in the vein for about two centimeters. The receptacle is raised 1.50 meter above the level of the bed, which allows the liquid to flow at the rate of 1,500 grams of liquid in twenty-five to thirty minutes. When the injection is completed, an antiseptic compress is all that is necessary, as the same opening in the vein may serve for future injections, only the trocar must be inserted a little deeper in the vein to avoid the clot that has formed. The amount of liquid injected can without inconvenience be as much as 2,000 grams twice a day, until the arterial pressure is entirely restored. The pulse becomes perceptible, the temperature rises in hemorrhages and falls in infections with hyperthermia, and diuresis is established, accompanied by salivary secretion and diarrhea.—*Presse Méd.* from *Gaz. Hebdomad. de Méd. et de Chir.*, Nov. 22, 1896.

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It would greatly facilitate the prompt delivery of the JOURNAL to those members of the Association living in large cities, if they would kindly furnish this office with their street address in those cases where it is omitted from the wrapper of their JOURNAL, as we have been notified by the postmasters of the larger cities that second-class mail matter not having street address, would be placed in the general delivery to await call.

SATURDAY, FEBRUARY 13, 1897.

THE DECENNIAL REPORT ON THE VITAL STATISTICS OF THE REGISTRAR-GENERAL'S OFFICE OF ENGLAND.

The successor of FARR and OGLE as Superintendent of Statistics, in the Registrar-General's office of England, is Dr. J. F. TATHAM, formerly of the Health Office of Salford. He is the author of the fourth decennial report on the vital statistics of England, being a supplement to the fifty-fifth annual report. That report covers the decennium 1881-1890, and is technically known as "the Registrar-General's Decennial Supplement." This report contains the third English life-table that has been published by that office. The first was drawn up by Dr. FARR, based upon the seventeen years period 1838-1854; the second was constructed by Dr. OGLE for the ten years 1871-1880. The period 1881-1890 has been the basis of Dr. TATHAM's new life-table, contained in the decennial report recently published. The last report is, like its forerunners, the result of most laborious research and has numerous improvements respecting mortality and its causes.

Regarding the general death-rate of England and Wales, the report shows that the rate has declined from 21.27 per 1,000 in the former decade to 19.8 in the period 1881-1890. The rate for males declined 12.6 per cent., that for females declined 10 per cent. There has been found a decrease of mortality in both sexes and at every age, except at one period, that for males aged 65 to 75 years, the rise for the age period being less than one per cent. In the decennium con-

sidered in Dr. TATHAM's report there were many thousand faulty certificates of death, requiring the sending to medical practitioners of over 22,000 letters for purposes of correction. The life-table of Dr. TATHAM is constructed for both sexes, for each sex, and for every year of age, with comparisons with the two foregoing life-tables of Drs. FARR and OGLE. This table is of sufficient interest to medical examiners for life insurance and to practitioners generally as to call for a partial reproduction of the findings of Dr. TATHAM. In the following brief tabular statement is given the mean after-lifetime, or "expectation of life," for males, at birth and at fifteen other selected age periods, in England and Wales with comparative columns for the corresponding data of the periods studied by Drs. FARR and OGLE:

MEAN AFTER-LIFETIME, OR "EXPECTATION OF LIFE," FOR
MALES IN ENGLAND AND WALES.

| AGE. | LIFE-TABLE OF— | | |
|-----------------------------|----------------------|----------------------|------------------------|
| | DR. FARR. 1838-54 | DR. OGLE. 1871-80 | DR. TATHAM. 1881-90 |
| At birth | 39.91 | 41.35 | 43.66 |
| Five years | 49.71 | 50.87 | 52.75 |
| Ten years | 47.05 | 47.60 | 49.00 |
| Fifteen years | 43.18 | 43.41 | 46.47 |
| Twenty years | 39.48 | 39.40 | 40.27 |
| Twenty-five years | 36.16 | 35.68 | 36.28 |
| Thirty years | 32.76 | 32.10 | 32.52 |
| Forty years | 26.06 | 25.30 | 25.42 |
| Forty-five years | 22.76 | 22.07 | 22.06 |
| Fifty years | 19.54 | 18.93 | 18.82 |
| Sixty years | 13.53 | 13.14 | 12.88 |
| Seventy years | 8.45 | 8.27 | 8.04 |
| Eighty years | 4.93 | 4.79 | 4.52 |
| Ninety years | 2.84 | 2.66 | 2.37 |
| One hundred years | 1.68 | 1.61 | 1.24 |

From these figures we learn that the English male infant, of the last decennium, had 2.31 years added to his life-expectancy as compared with his ten-year old brother; and 3.75 years more than his father born in period of Dr. FARR, say from 27 to 44 years before. Improved expectations of life are shown up to 26 years of age; but from 27 to 44 they are less favorable than in the oldest table, and better than that of 1871-1880; at 45 years and over they are lower than in both the earlier tables. The chief improvement, therefore, is noted within the working period of life—namely, from about the twentieth to the sixtieth year. It is, therefore, satisfactory to observe that the average number of years lived between these limits of age by each male born are 20.92, 22.00, and 25.56 years respectively, according to the three successive life tables; an increase in the working period of life has therefore been shown within the last two decennia, amounting to an average of more than a year and a half for each male in the population. Among females the expectation of life at birth, which had been 41.85 years and 44.62 years respectively in the two earlier tables is further increased 47.18 years in the new table. The expectations of life at the several ages up to 54 years are greater by the new life table than by either of its predecessors. At all ages beyond 45 the expectations of life are less by the new table than by

either of the earlier tables. The average number of years lived between the ages of 20 and 60 years by each female born according to the three life tables are respectively 21.65, 23.48 and 25.12 years.

The report shows a heavy sacrifice of life by small-pox, namely, 12,280 deaths in the decade. Of these 2,145 were returned as having been vaccinated, 3,370 unvaccinated, and 6,765 of which the certificates failed to give the requisite information. The much-needed information was lacking in over 50 per cent. of the death certificates—a rather bad showing for the paternally governed “tight little island.” An encouraging fact brought out in this report is the conspicuous and progressive reduction which has recently taken place in the death-toll levied by pulmonary phthisis. The life-saving represented by this reduction during 1881–90, as compared with the previous decennium, is equal to 392 lives in each million of the population, and the lives saved are mainly those of young adults, who are economically the most valuable to the State. In the course of the last twenty years the crude mortality from phthisis has decreased by 30 per cent. Among males the rate of decrease has been equal to 25 per cent. and among females to 35 per cent. A very remarkable change in the sex incidence of phthisis has been observed within the last forty years. From the year 1851 to 1865 the phthisis rate was greater amongst males, although the difference gradually diminished as time went on. Since the year 1866, however, the mortality has been uniformly in excess, not amongst females, as formerly, but amongst males; and in the last two decennia (of the forty years) the excess of the male rate over the female rate was greater than had been the excess of the female over the male rate in the first decennium (1851–60). From information obtained since 1890 it appears that this remarkable change in the sex incidence of phthisis is still being continued. The mortality from this disease showed a decline during the recently ended decennium amongst males as well as females at all ages of life.

Scarlet fever, which has been sometimes termed “the English pestilence,” has shown a declining annual mortality during the last three decennia. The proportional decline being as 972 to 716 to 334 per million for the periods ending respectively in 1870, 1880 and 1890. It is not easy to ascertain whether this gratifying ebb has been due to a diminished prevalence of the disease or whether the malady has assumed a milder form in recent years. The returns from the fever hospitals, however, would seem to support the latter view. The deaths have been higher among males than females; especially is this true of children under 10 years old. It also appears that the mortality by scarlet fever is less among infants under one year of age than those in their second to fifth years.

A PSYCHOLOGIC STUDY OF THE THREE PROFESSIONS.

Recently some very interesting studies have been made by lawyers, clergymen and physicians, in two of the great metropolitan cities of the country. The object was to ascertain if possible the intellectual status of the different professions, compared with each other. It was assumed that each profession would be found intellectually rising, or perhaps merely holding its own along the levels of general development. Or possibly one profession might be at a lower level of comparative growth or far beyond the others in point of attainment. The data from which such studies could be made must include not only a history of each professional man, but a fair estimate of what he had accomplished in his intellectual life. This was ascertained in the numerous biographies and separate personal studies of professional men. A comparison of these histories would give a general answer to the inquiry. The results so far of these studies are very suggestive. Of the three professions, physicians appear to have made the most progress. Intellectually they are rapidly ascending, and the records of their actual achievements surpass all others. Every year more college trained men are entering the profession, and signs of progress along lines of literature and arts are rapidly increasing. The immense development of scientific research, no doubt has reacted on medicine more than other professions. But beyond this the profession has moved with greater rapidity, following broader lines of inquiry, with less reverence for the teaching of the past. In the studies of physicians in these two cities, a large number have made substantial progress in the discovery of new facts, and the new application of old ones to new conceptions of science. Many of these medical men are scientific students working out and testing new problems of medicine continually.

Next to the physicians come the lawyers, who seem to be making but little progress. Some of these men as judges have given broader interpretations of the law, and some new technical applications to practical life, but the greatest intellectual strain seems to be to adjust the law to the new conditions of life and living. As politicians and legislators, but little new work is accomplished, every thing seems to bend to preserve the harmony of the past and present.

In other circles a slow advance is apparent; in literature and the arts they occupy a prominent place, and in humanitarian circles they have barely kept pace with business men. The heavy weight of prestige and theories of the past outweigh and keep down much of the progress in the present.

The clergymen came last in the list. While intellectually, in general culture and scholastic training, they have probably exceeded both law and medicine, yet in real original work they have fallen back in the

march of progress. Few rise to the levels of the age in their teachings, or cut loose from the past, but like lawyers, spend a great deal of energy to keep in harmony with both present and past. The clergymen in those cities were very active in humanitarian work, but along old lines. They had contributed freely to the literature of the day, but little or nothing to the new life and new conditions of living. As a class they had not held their own in the march, but had broken up into extremists and doubters. In these two cities are to be found many of the ablest men of the country in the three professions. Yet from records of actual achievement intellectual progress and evolutionary development, medicine far exceeded both law and theology.

While these studies are not complete, and perhaps open to many sources of error and correction, they call attention to possibilities of attainment not often considered. Doubtless there are many towns of the country where the medical men are far back in real attainments, and are exceeded by both lawyers and clergymen. But the fact remains that scientific rational medicine, as a field for new discoveries that will raise the levels of life and living, offers the widest opportunity for intellectual development. Studies of this character are very practical, not only in giving us high points of view from which to estimate the direction of the real progress, but bringing incentives to the individual life of physicians not obtained in other ways.

The sociologic and anthropologic aspect of medical life furnishes many facts, a knowledge of which would be of great value in many ways.

THE MEDICAL ASPECTS OF THE MODERN "SKY SCRAPER."

The semi-revolution in urban architecture of the past few years, to which we owe the lofty structures that make a distant view of even the flattest of our cities picturesque, has a side that perhaps calls for some attention to be given it by the medical profession. The guardians of the public health have a right to investigate and, if needs be, pass judgment on any novelty that may directly or indirectly affect it, and it is quite possible that there exist in these sky-scraper structures, with all their advantages in economy of ground surface, some serious disadvantages that call for our professional consideration. As yet they are not universal even in limited districts, but the tendency is toward their multiplication, and the first natural suggestion is to query what will be the result of so materially affecting the ventilation and sunlighting of our streets when they have become as they may only deep narrow canyons, which are already strongly suggested in some even of the wider streets of our newer cities. A clever writer of fiction has even utilized this suggestion in the title of a novel and his

description of the bird's-eye view of the modern town and comparison of it to the bad lands of the West is an apt and striking one. In the narrower streets of the older cities of the Eastern border of our country, where buildings of only ordinary height produce some of the evils spoken of, the modern high structures can only aggravate them, and yet it is there that the craze, as we may call it, is just at present in its most pronounced phase. While in Chicago, where this modern construction can be said to have originated, there is now a restriction as to the height, and the day of the excessive sky scraper may be said to have past, in New York they are reported to be projecting thirty or forty story structures and exceeding the most extravagant ideas of the past. It would seem to be time to call a halt from motives of even ordinary prudence if for nothing else.

The dangers of public health are possibly not limited to the obstruction to the ventilation of the public streets, though that in itself is a sufficiently serious matter. The free sweep of the wind and consequent change of air and sweeping away of impurities is a very important matter in large centers of population and goes far to compensate for many sanitary deficiencies. The high buildings, however, are accused in some quarters, of having positive sanitary disadvantages of their own, entirely independent of their effect on the general health conditions of the streets and the city. A sanitary engineer, speaking it may be a little strongly, has called them "gigantic cupping glasses," sucking up and diffusing impure air and foul odors, and it is, in fact, not difficult to conceive that defects in sewerage, etc., may be amplified and exaggerated by the height of the building, unless special arrangements are made to meet such possibilities. Again, in their present generally isolated condition, standing alone among lower structures, it is claimed by some that the occupants of their upper stories are especially liable to injury from emanations from the chimneys, ventilation flues, etc., of the lower buildings around them. Cases have been reported of serious disease caused in this way, and it would appear to be a matter for consideration, at least by sanitarians, in the case of tall apartment buildings intended for residence purposes.

There is still another question, not strictly a medical one, but one that may involve human life and welfare; that of the durability of these constructions. They are practically frame structures, but the steel frames are almost everywhere concealed by solid masonry, tile and cement. Steel is a perishable material unless absolutely protected from erosion, and engineers have stated that its condition in these structures is one of the most serious questions of the present day. Even if these buildings are no more likely to fall or give way in parts than those of the older styles of construction, their great height makes

the risk more serious. Another matter to be thought of carefully is their possible behavior in case of serious conflagration. While they are themselves, it is to be presumed, comparatively fire-proof, what would be the effect of the intense heat, from fires in adjoining buildings, upon their metallic framework? These are engineering questions more particularly, but they have also, in their way, a sanitary bearing and can be mentioned here.

Tall buildings of the modern type are as yet an experiment, and it is too early to say with assurance whether the predictions of those who condemn them will be fully justified. It is always time, however, to note their possible sanitary defects with a view to obviating or amending them for the better. They certainly offer some problems for the sanitarian.

PRE-ENLISTMENT OF OPINION CONDEMNED.

In a murder case, after stating that, upon the trial, medical experts were examined on either side, and gave their answers to hypothetic questions as prepared and propounded, the court of appeals of New York uses this language: "The usual conflict of opinion occurred, which is constantly seen upon such trials, and which tends not only to bring discredit upon a learned profession, but, more seriously, to embarrass the search after the truth, in which the tribunal is engaged, by confusing and darkening the minds of the jurors with opinions upon the scientific questions before them, which are expressed as previously pledged to either side. The fact that the rule which permits expert testimony in such cases works, in practice, badly for the interests of justice, can not be so much attributable to the inexactness of the science in which the witness is assumed to be skilled as to the preënlisment of his opinion by the party." That the procedure in such respects is defective, the court admits, is also true. However, the issue of sanity having in this case been submitted to the jury, who were to finally determine it upon the evidence and having been determined against the defendant who plead insanity, the court holds, *People v. Hoch*, decided October 13, 1896, that their determination will not be interfered with where the evidence was in fair conflict, and permitted of opposing inferences. It also holds that it was a competent way to probe the mind of a medical witness, and to test the merits and value of the opinion he had expressed of defendant's insanity on the assumed state of facts, to ask him, on cross-examination, to give his judgment, from his examination under his employment by the district attorney as to whether the defendant was sane or insane while awaiting trial on a previous charge, some years before, the hypothetic question having embraced his conduct while serving sentence. Besides, the court holds that, it having appeared that the witness's examination had not been made while attending the

defendant as his physician, but at the special employment of the people, for the purposes of their prosecution, he was not disclosing any information acquired in attending a patient in a professional capacity. Furthermore, while the issue turns upon the prisoner's mental condition at the time of the homicide, whether he was laboring under such a defect of reason as to render him incapable of knowing the nature and quality of the homicidal act, or was incapable of knowing that it was wrong, the judge writing the opinion says that there is no apparent reason, and he is aware of no authority, for holding that, in addition to all the other facts, the jury may not be informed, by one competent to speak, as to the mental condition of the defendant at the time of his trial.

SURGERY OF ONE HUNDRED YEARS AGO.

Some time since, the Editor was very much pleased to obtain a copy of the wonderful history of *Surgery of One Hundred Years Ago*, by the learned Dr. GEORGE FISCHER, of Hanover, Germany. His great and exhaustive study of the development of modern surgery, and superior opportunities for obtaining unusual information, made the book one of very great interest and led the Editor to write for permission to translate the work for the benefit of the readers of the JOURNAL. Dr. FISCHER in a pleasant letter kindly granted the desired permission.

The work of translation has been committed to Dr. CARL H. VON KLEIN, of Cleveland, Ohio, who has been in ill health since he returned from Europe, but has fairly recovered and is now sojourning in Chicago.

We begin with the table of contents and translator's preface and introductory in this issue and will continue weekly until the entire work is published. Some of the chapters are as interesting as a romance and we advise our readers to preserve every number, as no extras will be printed.

A CANDIDATE FOR MAYOR.

We are informed that the lay Health Commissioner, Hon. WM. R. KERR, is a candidate for Mayor of Chicago. He bases his claims for consideration on the excellent record of the Assistant Commissioner, Dr. FRANK W. REILLY, to whom is due the first-rate administration of the Health Department.

If the affairs of that Department have been conducted with such skill as to entitle any one to consideration as a candidate for mayor, why not choose the actual person who has made the plans and performed the service? On that basis the candidate would justly be Dr. FRANK W. REILLY and not WM. R. KERR.

TO TRY THE SERUM.

The French Government has appointed Dr. YERSIN of Paris, to proceed to India and use his anti-plague serum. The French do not expect Dr. YERSIN to

conduct his investigations by letter. That method is peculiar to Washington. Let us have a Department of Public Health!

CORRESPONDENCE.

The Poor Physician.

NEW YORK, Feb. 1, 1897.

To the Editor:—While we are discussing the question of capital and the farmer, why not touch on the interesting question of the poor physician? His case is truly, if you look at it closely, which nobody seems inclined to do, a very, very lamentable one. Think of this: A man who has made his millions, by fair means or else by hook or by crook, it does not matter, feels that he has done nearly enough for this world and that some of his thoughts and deeds might be now reasonably employed to do something to result in dividends in another world possibly to come. The recipe for the cure of such morbid anxieties is an old and hackneyed one. No necessity for breaking one's head, as he had done before on Wall street matters, or about Standard oil wells in the West. Oh, no; there is a panacea! Let's found a hospital, or if we are very high-toned, let us endow a college. The hospital staff is filled by the founder's beneficiaries, or perhaps such of his friends, especially of such as are willing to contribute more influence and more money for the institution. To the clinics of this hospital only the poor are supposed to go. Such as appear there, and are not poor, are treated also and pay a monthly fee. We may naturally expect that some of the staff physicians, who, be it understood, receive no pay, as they are simply helping in a friendly way the rich man to pay his debt to heaven and his conscience, will divert some of the latter patients to consult him in his own office. But what becomes of the poor physician, the general practitioner of the community, while so much good is being done around him? He has to eke out his existence, support his wife and children, with what these good charitable people have left him. Only some of the very poor are left to him and these he can not, without public condemnation and a kind of dishonor, refuse in case of urgency to treat *gratis pro Deo*. This poor physician is not so perplexed as the rich man may have been, before beginning his great charitable career, as to the means of insuring to himself a livelihood in heaven, but he would be very much pleased if the admirable philanthropy of others allowed him to make one in this valley of tears.

I can not help making here two remarks which seem to me exceedingly curious, and I believe that anybody with a tolerable modicum of humor in him must be struck by their piquancy. First, the anxiety of doing good is sometimes so great that the thing is monstrosously overdone. What will you say of a hospital intended for 700 patients that can only recruit 35? But now comes the second point: In order to come as near as possible to the number of patients which their colossal structure requires, they have the unspeakable naïveté to send around inviting the poor physicians, whom they have already despoiled, to help them complete the spoliation by sending to the hospital clinics the few poor patients whom they have left them. The man in the hospital whose specialty it is to care for a certain fraction, or a certain casualty of the human body, wants the poor physician to send him *all those of his patients* (if this way of speaking is not ridiculously grandiloquent) who are affected with the complaint to which he has devoted his genius. Another who watches over a different point makes a similar request; they want their clinics to be well attended and interesting, whatever the poor doctor's dinner may be. For, you see the rich man must read reports which show that his work is prospering on earth, as his spiritual wheat is in heaven.

ALBERT S. ASHMEAD, M.D.

The Roentgen Ray in Ophthalmology.

PHILADELPHIA, PA., Jan. 29, 1897.

To the Editor:—In the issue of the JOURNAL of January 16, the proceedings of the Chicago Academy of Medicine are reported. Dr. Casey A. Wood, in the discussion of Dr. E. H. Lee's paper on "Dermatitis following the Roentgen Ray," is quoted as saying "So far as the diagnostic value of the X rays in ocular diagnosis is concerned the subject may be dismissed in a few words. . . . But it was found that inasmuch as the eyeball is surrounded by a bony casing . . . the experiments were found to be of little value." In experiments made in Chicago to determine the presence and location of a foreign body in the eyeball "the X ray was found to be of little or no value." In Philadelphia our experience has been quite the reverse. Within the past two months, two instances of the detection of steel in the vitreous have been reported in the Transactions of the Ophthalmic Section of the College of Physicians, the first by myself and the second by Dr. G. Oram Ring. Dr. G. E. De Schweinitz has verbally communicated to me the history of the third case in which, after the presence of the foreign body was determined by the X rays, it was extracted by the Hirschberg magnet. Thus it will be seen that the bony walls of the orbit and the coats of the eye are permeable to the rays. By comparison of the shadow of the metal with that of the margin of the malar process of the superior maxillary bone and the knowledge of the relation of the Crooke's tube to the sensitive plate the location of the foreign body can be closely estimated. The three radiographs of the cases above referred to were taken by Dr. Max J. Stern in the laboratory of the Philadelphia Polyclinic. Dr. Wood's hope "that we shall be able to make use of the Roentgen ray for purposes of this sort" has been realized.

Very truly

HOWARD F. HANSELL, M.D.

Blindness and Quinin.

COLUMBUS, OHIO, Feb. 2, 1897.

To the Editor:—In your issue of Nov. 7, 1896, Dr. H. B. Ellis, of Los Angeles, Cal., reports a case of total blindness, "possibly due to an overdose of quinin." I have read his report with interest, although I can not but regard the quinin as a very improbable factor in the production of the blindness.

The report, however, reminds me of a case which occurred many years ago in the practice of my preceptor, Dr. J. C. Reeve, of Dayton, Ohio. A young man came to the office complaining of symptoms which lead to a diagnosis of malaria. A prescription, containing quinin as the chief ingredient, was given him. A few hours later he reported that he had become suddenly and entirely deaf. This deafness was absolute and permanent. He had, however, not taken a single dose of his medicine. Had he taken the quinin I have no doubt the case would have gone on record as an undeniable one of permanent deafness produced by the administration of quinin.

There are so many things happening in this busy world that many events which seem to be sequences are really only co-incidences, and I think the blindness in the case reported was of this nature.

J. F. BALDWIN, M.D.

A Case of Temporary Amblyopia from Eucain.

GALESBURG, ILL., Feb. 6, 1897.

To the Editor:—The new succedaneum for cocaine—eucain—has, I believe proved so useful and so nearly free from danger that its continued employment is not a matter for doubt. I have frequently used it in cases where its points of difference from cocaine have seemed to indicate its employment in preference to that drug, and I have often been struck, in such cases, by its excellences.

Recently, however, there fell to me an experience of a kind to teach us that eucain certainly has its dangers. The case was

that of a man, a physician, aged 32, who came to me with a moderately large hypertrophy of the anterior extremity of the right inferior turbinated bone. Ordinarily, before applying galvanocautery to the turbinated bones, I produce anesthesia with cocaine. In this case, however, from the fact that the hypertrophy was seated so far forward, I did not think it necessary to produce the shrinking of tissue that follows the use of cocaine, and hence merely secured anesthesia by means of eucaïn. The strength of the solution I used was 5 per cent.

Immediately after the cauterization, the patient complained that his sight was growing dim, and a few minutes later, he said that it had entirely left him. There were no strongly marked constitutional effects, though the pulse was rather rapid and the patient seemed talkative and a little incoherent. The amblyopia was of exceedingly short duration, having almost entirely disappeared at the end of four hours. Neither while it continued nor afterward were any changes perceptible by the ophthalmoscope. The return of vision has been perfect and permanent.

I have read of at least one case of amblyopia from cocaine, but as yet no other case from eucaïn has come to my notice.

Yours, etc.,

THOS. H. SHASTID, M.D.

A "MILL" Graduate in Indiana.

PERU, IND., Feb. 8, 1897.

To the Editor:—I see in the *JOURNAL* of February 6, a reference to the Illinois Health University, now Independent Medical College, of which one J. Armstrong is president, secretary, treasurer, etc. We have had here a little experience with one or more of his graduates, one Dr. Elmor (?) who struck our town last summer, with long hair, a good supply of cheek, but little money and glowing advertisements, prepared as he thought to bluff everything in sight; but for once he over-looked his hand. We made him lie down, shut up, and get out, as we have all other advertising quacks of similar qualifications, coming to our town. If you will send J. Armstrong and his college down to Peru, we will turn his college into a hospital and make him the leading patient.

My idea about his college is to suppress his graduates, and that can be done in almost every State in the Union with the now existing laws. Indiana has a very weak medical law; but we find that a weak law strongly used is better than a strong law weakly used. Now if the profession will go to work and enforce the different laws effectually against all such quacks and graduates as of the Illinois Health University or Independent Medical College, in two years time there will be no such institutions. One thing is sure, such rot does no go in our section.

J. O. MALSBUY, M.D.

The Journal Gives Post-Graduate Instruction.

LEOMINSTER, MASS., Feb. 3, 1897.

To the Editor:—Let me thank you for calling my attention to the *JOURNAL*. I received my medical education forty years ago and it was an old garment that fitted nothing in the earth beneath or the heavens above, so I had decided to take it to some post-graduate school for reconstruction, when the *JOURNAL* came with its wealth of knowledge, up to date and exhaustive, yet within the limits that any busy practitioner could compass, and I soon made the discovery that a reader of the *JOURNAL* OF THE AMERICAN MEDICAL ASSOCIATION is receiving a post-graduate course in his own study.

Yours truly,

C. A. WHEELER, M.D.

PUBLIC HEALTH.

The Epidemic History of the Sandwich Islands. The *Medical Examiner* has compiled the following statistics regarding those islands: Some time ago I came across a rather rare epitome of history of the Sandwich Islands. In connection with our

line of business, I noticed that in 1805 there was an epidemic of cholera, which swept off half the inhabitants of Hawaii. There was no census between 1836 and 1850, but the decrease of population in that period was very rapid. In 1848 the measles were introduced from California, and spread through the group—10 per cent. of the population died. In 1853 there was an epidemic of smallpox. Census taken about that time gave a population of 73,137—a decrease of 11,027 in three years. In 1853 leprosy was first found in the islands; in the year 1864 leprosy had begun to spread to an alarming extent. In 1865 an Act of Isolation was passed; a peninsula on the north side of Molokai was selected for the purpose of isolation. In 1872 smallpox again appeared, but was easily suppressed. In 1881 smallpox came in from China, but was confined to the Island of Honolulu. Total population in 1890 was 99,990.

Valid Garbage Ordinances.—No argument is needed, says the appellate division of the supreme court of New York, to show that garbage in a decayed or decaying condition is a substance deleterious to health, the keeping of which may properly be prohibited by a municipality in the exercise of the police power. And it holds reasonable and valid, in *Town of Newtown v. Lyons*, Dec. 22, 1896, an ordinance which forbids any person from having or keeping at any place within the town any garbage or refuse vegetable or animal matter in a decayed or decaying condition, and prohibits boiling or cooking it at any place within the town in any open vat, kettle or caldron, or in any manner so as to permit the vapors or exhalations from such boiling or cooking to escape into the surrounding air. But a reasonable construction, it goes on to state, requires it to hold that a cooking vessel shut into a closed building would not be "an open vat, kettle, or caldron," within the meaning of the ordinance.

Public Health in Michigan, January, 1897.—For January, compared with the preceding month, pneumonia increased in area of prevalence. Compared with the average for January in the eleven years, 1886–1896, erysipelas, consumption, diarrhea and pneumonia were less prevalent. Including reports by regular observers and others, consumption was reported present in Michigan in the month of January, 1897, at 209 places; diphtheria at 94 places; measles at 77 places; scarlet fever at 63 places; typhoid fever at 42 places and whooping cough at 37 places. Reports from all sources show consumption reported at 7 places more; diphtheria at 9 places less; measles at 37 places more; scarlet fever at 22 places less; typhoid fever at 29 places less, and whooping cough at 4 places more in the month of January, 1897, than in the preceding month.

Contagious Period of Whooping Cough.—Dr. Weil of Lyons asserted in 1894 that whooping cough is not contagious during the period of paroxysms nor during its decline, but only in the earliest stages, when it is still unsuspected unless the child is known to have been exposed. He now confirms his revolutionary statement by an imposing array of statistics, collected in his hospital experience, where 865 child patients in the various wards were in close contact with fifty-nine cases of whooping cough in the paroxysmal period, without a single case of contagion occurring. Thirty little patients in the most intense stage of whooping cough, but convalescent from other diseases were accustomed to play among the other convalescents (195 between 2 and 5 who had never had the whooping cough), without the appearance of a single new case. Léon has recently published an observation of the contagiousness of the disease in its catarrhal, bronchial stage. The prophylaxis of the disease, therefore, assumes a new phase; the prompt isolation of every child at the first appearance of a cold during an epidemic of whooping cough, and the inutility of further isolation when the paroxysms have made their appearance. According to Roger, the incubating period is six to seven days, and not until this time has elapsed without the manifestation

of any of the specific symptoms of the disease, should the child with a simple cold be allowed to mingle with others, when there is reason to suspect that he has been exposed to whooping cough.—*Bulletin Méd.*, January 10.

Low Mortalities in New York State.—An interesting account of the recent death rate in that State is given in the *Bulletin* of the New York State Board of Health for November. Ten large cities, with a population ranging from 36,000 to 1,995,000, present for the month of November an annual average death rate of 16 per 1,000 inhabitants. The small cities and rural sections present a rate of 13.5 per 1,000; and the State at large 14.75. Of these ten cities, Buffalo with a population of 350,000 had the lowest rate, 10.6; Troy, having 65,000 population, the highest rate, 20.5. The combined cities of New York and Brooklyn, with 3,095,000, had 15.9 per 1,000. Among the ten cities, also, are Rochester with a rate of 12.6; Syracuse with 14.2, and Yonkers, 14.7. The aggregate population of the ten cities is very close to 4,000,000. The number of deaths reported for the month is 7,888, which represents a death rate of 14.75 per 1,000 living; this is the lowest death rate for years. Compared with the preceding month, in which the mortality was unusually small, the number of deaths is less by 800; there were 500 fewer than were reported in November, 1895. November is uniformly the month of lowest mortality in the year in this State; the average daily mortality for the ten preceding months of this year has been 340, while that of this month was 265, and for the past ten years there has been an average daily mortality during November of 280, a death rate of 15.75. The infant mortality is unusually low, 27.5 per cent. of the total deaths having occurred under the age of 5 years. The same is true of the zymotic mortality, which caused 11.3 per cent. of the total deaths in the preceding month, and likewise in the month of November, 1895: 13.0 per cent. of the deaths was from these causes. From all the diseases of this class the deaths were less than they were last month except diphtheria, which, however, has caused fewer deaths than during the corresponding period of last year.

Admissibility of Opinion Evidence of Exposure to Disease.—Under the interpretation which has been placed upon the general New York statute relating to local boards of health, the mere possibility that a person may have been exposed to a contagious or infectious disease is not sufficient ground for requiring his isolation, but he must have been exposed to it, and the conditions actually existed for a communication of the contagion in order to bring into operation the power to isolate. It may be common knowledge that one coming in personal contact with another affected with a contagious disease or occupying the same room with him is exposed to it. But, beyond that, whether, in a particular case, conditions so exist for the communication of the contagion to a person as to render him exposed to the disease, the appellate division of the supreme court of New York says, may be a question of medical science and skill. So it holds, Dec. 15, 1896, in *Smith v. Emery*, an action against the Acting Commissioner of Health of the city of Brooklyn for false imprisonment, that it was error to exclude evidence of how many cases of smallpox there were at a certain time in a certain district and their location, as well as to exclude the testimony of a member of the medical profession as to the infectious and contagious character of smallpox, how the contagion of the disease is conveyed, that it is conveyed by the air, absorbed in the respiratory tract, conveyed in clothing and utensils, and by atmospheric contagion, and how long the poison of the disease retains its vitality; this evidence being offered with a view to a hypothetical question to the witness, calling for his opinion whether the plaintiff was exposed to smallpox, which it is also held was erroneously excluded. On these grounds, the judgment which the plaintiff obtained is reversed and a new trial ordered. But Mr. Justice

Bartlett, while concurring in the result, says he entertains considerable doubt as to the propriety of permitting hypothetical questions in such a case, which call out opinion evidence to the effect that a given series of events constitutes exposure to a disease.

The Imperial Commission on Vaccination for Germany.—Another important recommendation of bovine vaccine for official purposes has been put upon the sanitary records of Europe. The Prussian government recently decided to investigate certain questions connected with vaccination, and for that purpose appointed a commission, presided over by Dr. Schmidt-mann of the Government Medical Department, and composed of bacteriologists such as Professor Koch, Professor Pfeiffer and Dr. Frosch of the Berlin Royal Institution for infectious diseases, together with practical vaccinators. The commission was consulted as to the possibility of ascertaining without bacteriologic examination whether a sample of lymph is in good condition or not, also whether there is any ground for the belief that vaccination wounds are specially liable to erysipelas. The report of the commission has just now appeared and supplies information on the following subjects: Number and species of bacteria found in the lymph, difference between the bacteria found in animal and in human lymph, connection between the symptoms of reaction following vaccination and the concentration of the lymph, the method followed by the vaccinator, and the idiosyncrasy of the person vaccinated. The commission came to the conclusion that there is an essential connection between the bacteria of the lymph and the inflammation of the tissue at the place of insertion; erysipelas and gangrene are due to secondary infection and are always caused by want of care either on the part of the vaccinator or in the subsequent management of the case. It is impossible for lymph to be absolutely free from all bacteria. The best lymph is calf lymph, in the collection of which no blood has been drawn and which has been treated by subsidence, centrifugation and solution. Such lymph is the least likely of any to induce excessive reaction.

The Secretary of State for Health.—The *Public Health Journal*, December, admonishes us that the health of the nation and the saving of human life is paramount to all other questions, and deserves a national consideration. No foe of the government is so widespread in its effects as that which attacks a nation's health, permeating all parts of the social and political structure. Its dangers can not be exaggerated. Empires have fallen because of neglected moral physical laws of health. Sickness brings weakness and poverty. Health develops strength and wealth. Therefore public health is of great commercial value. That which obstructs business and sacrifices lives that are valuable to the State is worthy of its earnest attention. Epidemics, though confined to our section of the country, affect the life and finance of the whole nation. Millions are given for the advancement of commerce, thousands spent in the interest of agriculture, and they are deemed worthy a place in the councils of the nation, while that which paralyzes trade, wastes strength, causes loss of labor and its earnings is neglected. In this enlightened land there are annually sacrificed to preventable disease 250,000 human beings. War, with all its dread calamities and horrors, does not bring such desolation, suffering and despair as disease. And yet millions annually flow from the treasury for the maintenance of army and navy, and two cabinet officers faithfully watch their interests. The time for temporizing has passed, makeshift ways must give place to the practical and scientific. The needs of the hour demand a concert of action against disease, with a well-equipped army of assistants, and a master mind at Washington to guide the attack. As we near the close of the nineteenth century let the united medical profession, with a full realization of its necessity, by a power that shall place in the

national council one whose scientific eye shall ever watch for threatened danger. Let us have a Minister of Health, and set an example to the great nations of the civilized world in this important direction.

How Dr. Kinyoun Escaped Typhoid Fever.—In the January *Bulletin* of the North Carolina Board of Health appears a report of a Health Conference, as it is called, held at Charlotte. Dr. Kinyoun participated in the discussion of milk-borne diseases. He stated that he had for several years adopted the plan of sterilizing or Pasteurizing all the milk used in his own home. His family had been obtaining milk from a dairyman living outside of Washington. "One morning he was missing. We did not think anything of that, but day after day passed, and upon inquiry of the man delivering the milk he said he was sick at home with typhoid fever. 'How long has he had it?' 'He was taken sick about ten days ago. His wife also has typhoid fever.' I asked, 'has his wife been away from home?' 'No; she has not been off the place,' admitting that she had not gotten typhoid fever from somewhere else. Immediately the question was asked in our family: 'Shall we abandon the milkman and get milk from another place?' I said, 'No; we have been exposed to the infection for three weeks and have no typhoid fever.' Upon inquiry, I found upon this milkman's route there were five cases of typhoid fever and it was traced to the milk. Herein is this apparatus for Pasteurizing extremely simple, it does not require an extraordinary knowledge to handle it, an intelligent cook can fill an ordinary bottle with milk and do it as well as yourself. I believe if I had not used this precaution, described in your hearing, some of my family would have had typhoid fever. I have advised all my friends to use some such apparatus. The beauty of it is this: It does not change the quality of the milk; very slightly if any at all. The digestive property of the milk taken from the cow remains the same, whereas in boiled milk it is exceedingly changed. It has another beauty. It removes the animal odor from about it, which is very disagreeable to many persons."

"Return Cases" of Scarlet Fever. The Mortality by Measles.—Dr. Thorne Thorne, of the Local Government Board, gives an explanation of the term "return cases," as applied to infective diseases, that is not infrequently met with in English journals and reports, and that is comparatively unknown to Americans. According to his explanation the use of the term is at present restricted to scarlet fever. *Pari passu* with the growing practice in recent years of isolating scarlet fever patients in hospitals, this disease has, in not a few instances, shown a tendency to reappear in households shortly after the return thereto of persons who had resided for some time in hospital as scarlet fever patients, and the term "return cases" has come to be applied to such instances of secondary infection. The hospital belonging jointly to the Bromley and Beckenham district councils seems to have come under the notice of the board in this connection during 1894, and the late Mr. T. W. Thompson was instructed to confer with the representatives of the combined hospital authorities on the subject. The circumstances are clearly set out in Mr. Thompson's report, which shows that a certain number of "return cases" appear to have been caused in the way above indicated as a result of the operations of this hospital; but in consequence chiefly of the smallness of the figures concerned Mr. Thompson did not profess to have discovered any definite solution of the matter under investigation. The report, however, which is included in Dr. Thorne Thorne's appendix is full of interest to those who, as practical sanitarians, have to deal from time to time with return cases of scarlet fever, for it will readily be understood that these unfortunate accidents interpose difficulties of no light kind in the way of those whose duty it is to secure the prompt isolation of first cases of infectious disease. Dr. Theodore Thomson contributes a valuable report, which is included in the

same appendix, on the subject of the prevalence and fatality of measles. It is quite clear to sanitarians that the mortality from most of the diseases of the so-called zymotic class has been slowly but steadily decreasing in recent years. Measles forms an important exception. This disease kills annually, on the average, nearly thirteen thousand persons, mostly, if not exclusively, young children, and it unfortunately shows a tendency to increase. Even in the quinquennium 1890-94, the death rate from measles was higher than that from any other zymotic disease except whooping cough and diarrhea. The mortality from measles is always much greater in towns than in country places, the disease being more frequently epidemic in towns where the opportunities for direct infection from person to person, in schools and elsewhere, are unusually frequent.

Although it is well known that uncomplicated measles is a comparatively mild disease, as it occurs generally among the children of well-to-do persons, the case is far otherwise among the poor. The importance to sanitary authorities of being able to devise measures for the control of measles among the latter class on its first appearance in their districts is apparent on consideration of the tender age at which measles is mostly fatal, namely, during the second year of life. "If," says Dr. Thorne Thorne, "measles, which formerly was epidemic every other year, be so far discouraged by preventive measures as to acquire epidemicity only every fourth year, it is clear that a larger number of susceptible children will, when the epidemic arrives, have reached ages at which the disease is little fatal, and that in this way many lives will be saved which formerly were sacrificed to measles." In discussing the measures likely to prove serviceable in the face of an epidemic of measles, Dr. Thorne Thorne naturally turns to notification and endeavors to learn how far this expedient has been adopted by the sanitary authorities of the country and with what results. Here, it must be confessed, the returns are disappointing. The notification of this disease has not been required under the Act by any considerable number of authorities, and it appears from the report to be questionable whether any great amount of good has been obtained in those cases where the disease has been scheduled. "Unfortunately, it is impossible," says Dr. Thorne Thorne, "to point to any one district as having systematically adopted all practicable measures of precaution for the prevention of measles; but the facts recorded go to indicate that in so far as in particular districts the difficulties of the problem have been realized . . . by so far have the results obtained been found encouraging to the sanitary authorities concerned."

For the facts and deductions in the above statements, we are indebted to the review of the last Annual Report of Dr. Thorne Thorne, medical officer of the Local Government Board of Great Britain, in the London *Lancet*.

Health Report.—The following reports of mortality from smallpox, cholera, yellow fever and plague have been received in the office of the Marine Hospital Bureau of the Treasury Department:

SMALLPOX—FOREIGN.

Bombay, December 22 to 29, 2 deaths.
Cairo, November 12 to 18, 1 death.
Cardenas, January 9 to 16, 26 cases, 5 deaths.
Genoa, January 9 to 16, 4 cases.
Gibraltar, January 3 to 10, 7 cases.
Madrid, January 6 to 13, 20 deaths.
Messina, January 9 to 16, 1 case.
Moscow, January 2 to 9, 7 cases, 1 death.
Nogales, January 16 to 23, 1 case.
Odessa, January 2 to 9, 25 cases, 10 deaths.
Osaka and Hioga, December 26 to January 2, 67 cases, 39 deaths.
St. Petersburg, January 2 to 9, 3 cases, 2 deaths.
Warsaw, January 2 to 9, 12 deaths.

CHOLERA.

Bombay, December 22 to 29, 1 death.
Calcutta, December 12 to 19, 30 deaths.
Colombo, December 12 to 15, 30 deaths.
Singapore, November 1 to 30, 12 deaths.

YELLOW FEVER.

Cardenas, January 9 to 16, 19 cases, 1 death.
Matanzas, January 6 to 20, 9 deaths.

PLAGUE.

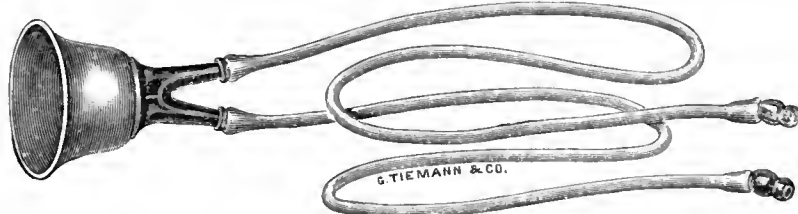
Bombay, December 22 to 29, 390 deaths.

NEW INSTRUMENTS.

A NEW STETHOSCOPE.

PARIS, Ill., Jan. 25, 1897.

To the Editor:—Being unable to find a stethoscope that was efficient, simple and portable, I devised the one here represented, compared it with Camman's different styles, the Denison and the phonendoscope, and found it the best instrument for general use. It is easily carried in the pocket, in a tight box to exclude dust, etc., which is much in its favor, as I know



from having carried a cumbersome stethoscope for nearly twenty years. My last purchase was a phonendoscope, which transmits sounds perfectly, but does not locate them satisfactorily, besides being uncomfortable to the patient and too heavy to carry in the pocket. The above instrument is made by Geo. Tiemann & Co., New York city. If the ear pieces do not fit, they will either admit external sounds or cause roaring.

Respectfully, W. H. TENBROECK, M.D.

ANTITOXIN SYRINGE.

Mulford's 5 c.c. antitoxin syringe is especially designed to inject concentrated antitoxin. The syringe case is solid metal, nickel plated, provided with a movable rack, thus permitting



of thorough sterilization. The plunger is expanded by a new and highly improved method. By simply turning the piston head to the right the packing is easily adjusted at any point in the barrel.

NECROLOGY.

PERRY H. MILLARD, M.D., of St. Paul, Minn., dean of the College of Medicine and Surgery, at the State University, died at Johns Hopkins Hospital in Baltimore, February 1. He was born in the State of New York in 1848 and was graduated from the Ogdensburg Educational Institute. He was graduated in medicine from Rush Medical College in 1872. He then spent several years in the practice of his profession at Stillwater, Minn., afterward removing to St. Paul. He was an aggressive advocate of higher medical education and it was mainly through his efforts that the present laws regulating the practice of medicine in Minnesota, were enacted. He rendered the Association valuable services while a member of the Board of Trustees. Following are resolutions passed by the College Faculty:

The Faculty of the College of Medicine and Surgery of the University of Minnesota record with sincere regret the untimely death of its dean, Dr. Perry H. Millard. In his death, a loss is sustained—not by this Faculty alone, but by the medical profession of the State of Minnesota and by the cause of medical education throughout the country. He was a self-made man of large natural resources, of indomitable energy and perseverance, of unswerving devotion to his chosen purposes. And those purposes had, at heart, the good of his profession. To that profession he devoted twenty-five years of his life, achiev-

ing an enviable success in its service. He filled many positions of trust with faithfulness and places of honor with modesty. His services to the State of Minnesota are written upon her statute-books and in the history of her medical institutions. He was the author and inspirer of the laws which have governed the practice of medicine in the State and, particularly, of that progressive measure known as the Minnesota Medical Practice Act, which has become the type of legislation for over half the States of the Union. He was one of the most active organizers and promoters of the American Medical College Association, a body which has done much to elevate the average standard of medical teaching in this country. His most signal service was

in the projection, organization and development of the Department of Medicine of the University of Minnesota. It was in his brain that this institution, which has taken rank among the foremost professional schools of America, first took shape. It was his influence which secured the surrender of the charters of those private colleges which united in its establishment. It was largely through his unceasing labors and his persistent enthusiasm that it was placed upon the University campus beneath the roof of Medical Hall. It was his first ambition, his daily duty, his well justified pride to forward its interests throughout the years of his fatherhood of its Faculty. He passed from its immediate service under the inevitable compulsion of a death-warning he had too long refused to heed, to a death-summons which commands the sorrow of his associates and inspires this memorial "to the duty he has wrought."

CYRUS NORTHROP, LL.D. Pres't.

JOHN F. FULTON, M.D.

PARKS RITCHIE, M.D.

R. O. BEARD, M.D.

A. W. ABBOTT, M.D.

C. L. GREENE, M.D.

H. M. BRACKEN, M.D. Committee.

RICHARD JOHN HALL, M.D., of New York City, died January 24, at Santa Barbara, Cal., after an operation for appendicitis. He was a son of the Rev. Dr. John Hall of that city, and was born in Armagh, Ireland, forty-one years ago. He was graduated in arts, from Princeton College in 1875, and three years later from the New York College of Physicians and Surgeons. He took a surgical course of instruction in Vienna, and upon his return to New York joined the House Staff of Roosevelt Hospital, and became subsequently an associate of the late Prof. Henry B. Sands of that city. In 1886 he was appointed lecturer upon the principles of surgery, at his alma mater, and so continued until near 1888, when to recuperate his health, he went to Santa Barbara. While there, he established a hospital. He leaves a widow and two daughters. His brother Rev. Thomas J. Hall of Chicago had summoned his father to his own bedside just before the news of the death of Dr. Hall had arrived, and he is regarded as being still in a precarious state of health: the mother also is grief stricken and is shattered in health.

SIR THOMAS SPENCER WELLS.—The death of Sir Thomas Spencer Wells is announced as having occurred at Antibes, in the south of France. He was born in 1818 and educated at Trinity College, Dublin. He was a Fellow of the Royal Medical and Chirurgical Society, and surgeon to her Majesty's household, and at the third centenary of the University of Leyden and the eighth of the University of Bologna he received the degree of an honorary M.D. Queen Victoria in April, 1883, conferred upon him a baronetcy in acknowledgment "of the distinguished services which he has rendered to the medical profession and to humanity." He was the author of several important surgical works, on those branches of operative surgery to which he specially devoted himself, and was widely quoted as an authority on this continent.

CHARLES A. STARK, M.D., died at Marshfield, Mass., January 22, aged 35 years. Dr. Stark was a native of Manchester, and a graduate of the Dartmouth Medical School. He was for a time connected with the staff of the New Hampshire Insane Asylum, and then went south, practising his profession in Louisiana and holding the post of division surgeon on the Illi-

nois Central Railroad. In 1889 he was compelled by failing health to return to the north and in the following year established himself at Marshfield, where he acquired an excellent practice. He only gave up active practice when the progress of his last illness enforced retirement. He married, in 1886, Miss Harriet O. Walker, of Chelsea, who with a son, survives him. He was a great-great-grandson of General John Stark. Dr. Stark was a member of the Massachusetts and New Hampshire Medical Societies.

LAWRENCE J. McNAMARA, M.D., Bellevue College, New York, 1882, aged 37 years, died in New York City January 28, leaving a wife and five children. He was an "original" member of the New York County Medical Association and a member of the New York Pathological Society as well as Visiting Physician to the Hospital for Nervous Diseases. He had also served on the House Staff of St. Vincent's Hospital before entering upon general practice, which subsequently became both large and profitable.

FRANCIS MORELAND LORETTE, M.D., College Physicians and Surgeons, New York, 1843, born in London, died at his home in Brooklyn, N. Y. January 29, aged 84 years. He retired from practice about ten years ago. Three children survive him.

WM. S. ROLAND, M.D., University of Pennsylvania, 1835, of York, Pa., died January 23.

FREDERICK M. TURNBULL, M.D., Jefferson Medical College, 1877, died in Boston January 16 after a long illness.

OLIVE DEWEY ALDRICH, M.D., Woman's Medical College, Pennsylvania, 1874, died of pneumonia, January 11, at her home in Philadelphia.

Dr. F. F. MORAWITZ of St. Petersburg, famous as an entomologist. His collection of insects is considered the most complete in the world.—Dr. J. H. Thiry, professor of surgical pathology at Brussels.—Professor Plucker of Liège, president of the Société de Médecine-Chirurgie, in his 46th year.—Dr. J. M. Carminhoa, professor of medical botany and zoology at Rio Janeiro.

ASSOCIATION NEWS.

Semi-Centennial Meeting of the American Medical Association.—The Committee of Arrangements for the Semi-Centennial Meeting of the AMERICAN MEDICAL ASSOCIATION, to be held in Philadelphia June 1, 2, 3 and 4, 1897, desire to announce that in addition to the regular order of exercises during the meeting of the ASSOCIATION there will be for a week preceding and a week succeeding the ASSOCIATION Meeting, special courses and clinics given in the various large teaching institutions of Philadelphia, without cost to visiting physicians. This course has been organized in response to a generally expressed wish that opportunities might be given to visiting physicians of taking clinical courses, for it is believed that many physicians from distant points would be glad to spend a week or two over and above the time occupied by the Meeting, in this manner. A schedule and roster describing the course in detail will be published shortly before the Meeting. Further information may be obtained from Dr. Edward Martin, 415 S. 15th St., Philadelphia, the Chairman of the Committee on Hospital Courses.

H. A. HARE, M.D.,

Chairman of the Committee of Arrangements.

SOCIETY NEWS.

The British Medical Association.—The *Montreal Medical Journal* for January has the following items of news regarding the coming meeting of that Association. The president-elect of the Association, Dr. T. G. Roddick of Montreal, has departed for England, where he will devote some weeks to the business of the Association. "His visit seems to have been very well

timed; not only will he be able to post the officials of the Association with all necessary information concerning what has been done in Canada, but he will, we trust, be able by personal interviews to secure the attendance and active coöperation of many who are first and foremost in the profession." As an indication of the hearty coöperation of all parts of the Dominion, we are pleased to note that the following leaders of the profession have accepted positions upon the Executive Committee and have offered their coöperation: Dr. W. Tobin, president of Halifax Branch British Medical Association; Dr. G. L. Milne, president of British Columbia British Medical Association; Dr. C. R. Church, president of Ottawa Branch British Medical Association; Dr. A. Catellier, president of Quebec Branch British Medical Association; Dr. J. A. Duncan, president of British Columbia Medical Council; Dr. J. McLeod, president of P. E. I. Medical Board; Dr. V. H. Moore, president of Canadian Medical Association; Dr. D. W. Daniel, president of Maritime Medical Association; Dr. Coventry, president of Ontario Medical Association; Dr. H. H. Chown, president of Manitoba Medical Association; Dr. J. P. McDonald, president of Nova Scotia Medical Society. There are yet more names to be added to the Committee. In the absence of any official year-book of the profession of the Dominion, the secretaries have found some difficulty in determining the present holders of official posts in connection with the leading medical bodies of the Dominion, and as consequence the invitations to join the Executive Committee have been delayed.

Iowa Central State Medical Society.—The meeting of this society was held Dec. 16, 1896. Drs. Cora Williams, Merrill and E. M. Singleton were elected members. Upon balloting, Dr. W. S. Devine, Marshalltown, was elected president; Dr. W. E. Whitney, Eldora, vice-president; Dr. F. S. Smith, Nevada, second vice-president; Dr. C. C. Cottle, Marshalltown, secretary and treasurer; Drs. F. H. Boucher, H. L. Getz, G. W. Dobson, trustees. Committee, Drs. W. S. Devine, Marshalltown, W. E. Whitney, Eldora, F. S. Smith, Nevada. Dr. H. L. Getz, in a timely speech, introduced Dr. W. S. Devine to the society as the in-coming chairman. Dr. Devine responded in a few words and was installed as president. First paper by Dr. Singleton on the "Superiority of Inunctions in the Treatment of Syphilis." Discussed by Drs. Kierulff, C. C. Cottle, F. S. Smith, G. W. Dobson and H. L. Getz. Second paper by Dr. B. F. Kierulff on "Progressive Myopia in School Children." Paper discussed at length by Drs. Cottle, Singleton, Dobson, Getz, Smith and Devine. Two cases (recovery in both) presented by Dr. H. L. Getz. First case hysterectomy and ovariectomy; second case, removal of appendix and double ovariectomy. Discussed by members. Committee on revising Constitution made final report as follows: We, your committee on revising Constitution recommend the following: 1, that the date of regular meeting shall be on the second Tuesday of June and December. 2. That all of the words in Section 1, Article 5, previous to the word "present" be stricken out, leaving it to stand as follows: This Constitution and the following By-Laws may be amended by an affirmative vote of two-thirds of those present.

Report accepted and on motion the amendments were carried. On motion the society adjourned.

BOOK NOTICES.

Twentieth Century Practice. An International Encyclopedia of Modern Medical Science. By Leading Authorities of Europe and America. Edited by THOMAS L. STEDMAN, M.D., New York City. In Twenty Volumes. Volume X. "Diseases of the Nervous System," pp. 859. New York: William Wood & Company. 1897.

The manuscript for Volume IX of this series not being entirely finished, Volume X has been published in its place, and the pub-

lishers announce that Volume ix will be issued in April, 1897.

The volume begins with diseases of the brain properly so called, and is then followed by chapters on intra-cranial hemorrhage, tumors of the brain, diseases of the meninges, hysteria, epilepsy, the spasmodic neuroses, neurasthenia, the disorders of speech and the disorders of sleep. The contributors to this volume are Sanger Brown, M.D., Chicago; Joseph Collins, M.D., New York; Chas. L. Dana, M.D., New York; Chas. Samson Féré, M.D., Paris, France; Howell T. Pershing, M.D., Denver; and Bernard Sachs, M.D., of New York.

The great changes that have been made in works on the nervous system in the last few years are due to more correct notions of the anatomy and physiology of the nervous system.

"The birth of the neuron theory," says Dr. Collins, "has been accompanied by a flood of light in the interpretation, not only of the physiology of the brain, but of the pathology as well. . . . We are nearing the time, if indeed it be not already at hand, when the nosology of disease shall be built upon or in unison with the neuron theory, and already some workers in the science of neurology have heralded the advent of such classification."

In the preparation of this volume such has been the deep sense of responsibility of the authors that "current medical literature and not previous treatises, has been the source where information has been sought."

The work then will be seen to embody the fruits of the latest teachings, and those wishing to keep *au courant* with neurologic literature should possess this volume.

Report on America's Relief Expedition to Asia Minor Under the Red Cross. By CLARA BARTON. Paper, pp. 143, illustrated. Washington. 1896. (Price thirty cents.)

This report is published for the benefit of the Armenian sufferers, and is an interesting narrative of the expedition. The illustrations are numerous and instructive.

Miss Barton and her corps have placed here an enduring record of her latest and best work in the cause of humanity. Nothing is set down in malice, nor are the instances of misgovernment by the "unspeakable Turk" shielded. The constant courtesy and respectful treatment of the Turkish Government is acknowledged.

The report is a plain unvarnished tale of human misery and suffering, phenomenal cruelty of the Mussulman, and heroic efforts of relief by a philanthropic society.

MISCELLANY.

Mirror-Writing.—Professor Richet states in the *Progrès Méd.* that the great genius, Leonardo da Vinci, was accustomed to write in this way. His notes and letters were absolutely illegible until they were held before a mirror.

New York Polyclinic.—The trustees of the New York Polyclinic Medical School and Hospital have decided to rebuild on the site of their former building, Nos. 214 to 218 East Thirty-fourth Street. The work will be begun immediately.

The Mignonette as a Vermifuge.—The *Journal de Médecine de Paris* for October 4, states that in Russia the mignonette (reseda luteola) has long been held in great popular esteem as a remedy against tapeworm, and tells of a woman who, fasting, took a very strong decoction of the flowers and then a large dose of castor oil, and three hours afterward voided the tapeworm in the form of a ball.—*New York Medical Journal*.

The Earliest Men.—Dr. Ranke, of the German Anthropological Society, recently undertook to describe the physical characteristics of the earliest men, as ascertained from the examination of prehistoric graves. They were of a yellowish color, he said, and had coarse hair. Their heads were peculiarly shaped, the part of the skull which contains the brain being large relatively

to the face, while the face was small. They had other peculiarities, among which was the rudimentary or undeveloped condition of the third molar, or back grinder tooth. The Doctor believes that the first men originated in Asia.

Disqualified for Appointment to Make Examination.—If, in any case, a litigant, suing for the recovery of damages for alleged injuries to his person caused by the negligence or the wrong of the defendant in the suit, can be, upon motion of the defendant, compelled to submit to an examination by a surgeon, the court of civil appeals of Texas holds, *Houston and Texas Central Railway Company v. Berling*, Nov. 12, 1896, that such surgeon should be one agreed on by the parties or selected by the court and not one who has already testified in the case adversely to the plaintiff.

Waiver of Privilege as Part of Contract.—Where the statutory law in force at the time a contract of insurance is entered into permits the insured to waive the benefit of the provisions of law preventing any physician from disclosing any information acquired in attending patients, and such a waiver is incorporated in the contract of insurance, the court of appeals of New York holds, in the case of *Foley v. Royal Arcanum*, Dec. 15, 1896, that a subsequent amendment of the law allowing waiver only when made upon the trial does not affect the waiver already made as stated, because the legislature can not pass an act impairing the obligation of contracts, and such a waiver is not in and of itself contrary to public policy.

Filling of Child's Teeth not Urgent Necessity.—While extracting of a tooth in relief of a toothache may be reasonably within the agency of a person with whom a child is temporarily residing apart from its parents to require, and thus obligate the father to pay for, the appellate term of the supreme court of New York holds, in *Ketchum v. Marsland*, Nov. 25, 1896, that such agency does not extend to the employment of a dentist to fill and regulate the position of such a child's teeth, it not being deemed such an urgent necessity as to warrant such a course. However, the court holds the father liable in this case because of his ratification of what was done by not communicating any dissent to the dentist during three years that elapsed after he sent in his bill.

Opinions on Qualifications of Experts.—One who has personal knowledge of the qualifications of an expert, the supreme court of Michigan holds, *People v. Holmes*, Dec. 24, 1896, may speak to the fact, based upon such knowledge; but reputation can not be shown, nor can an opinion as to the qualifications of an expert be based upon reputation. Thus, to ask a medical witness whether he regards another one as good authority, the court declares objectionable, on the ground that the opinion called for might be based upon mere reputation. Nor does the court think it proper to attempt to show the effect of an injury upon a person's mind by showing the effect of a somewhat analogous injury on the mind of another person.

Anatomic Foundation of Acute Delirium.—Prof. N. M. Popov recently had an opportunity to study the cerebral lesions in the case of a woman who had died from acute post-puerperal delirium. The nerve centers showed important modifications, the cerebral parenchyma was also affected, the pia mater and the superficial layers of the cortex were full of vascular lesions like small interstitial hemorrhages, while the neuroglia and nerve cells were perceptibly altered, the whole resembling what occurs in cholera, presenting the picture of a diffuse meningo-encephalitis with hyperplastic alteration of the cerebral substance itself. The conclusions to be drawn from these facts are that the conditions are undoubtedly due to some infection as in the case of cholera. *Bulletin Médical*, December 23.

Can Give Opinion Before Facts.—When it is shown that a medical expert has made the proper professional examination of the patient in order to ascertain the existence of some physical or

mental disease, the court of appeals of New York, in the case of *People v. Youngs*, Dec. 15, 1896, that he is then qualified to express an opinion on the subject, though he may not yet have stated the scientific facts or external symptoms upon which it is based. At the same time, the court thinks it undoubtedly the better and safer practice to require the witness to state the circumstances of his examination, and the facts, symptoms or indications upon which his conclusion is based, before giving the opinion to the jury. But, if the opinion is given first, all the facts or symptoms upon which it is based may be drawn out also either upon the direct or cross-examinations.

Jubilee of Dr. Theodore Roussel of Paris.—The beautiful custom of celebrating the fiftieth anniversary of prominent persons with appropriate ceremonies and speeches is more customary abroad than in this country, where we usually wait until a man is dead before we express our appreciation of him and his services to mankind. Dr. Roussel's jubilee was celebrated with great brilliancy by a grand meeting in a large hall presided over by the Minister of the Interior, and the addresses were brilliant homages to the work accomplished by this well known physician, senator and hygienist. The laws for the protection of unfortunate children from infancy to maturity are recorded as the Roussel laws, and the deliverance of the country from pellagra, which still devastates the fairest provinces of Italy, is another debt France owes to Roussel. He remarked in his response that this jubilee was not the festival of a single man, but rather the rejoicing at the culmination of the collective labors of many at home and abroad, which have resulted in laying a firm and broad foundation for the "protection of unfortunate childhood."

The Epitaph of Yale's Founder.—It is not generally known that Elihu Yale, the founder of Yale University, lies buried in the churchyard at Wrexham, North Wales, about ten miles from Hawarden. The following lines are inscribed on his tomb in the front of the church door.

"Born in America, in Europe bred,
In Africa traveled and in Asia wed;
Where long he lived and thrived, in London dead,
Much good, some ill he did, so hope all's even,
And that his soul through mercy's gone to heaven."

These quaint lines had become almost effaced by the "tooth of time," when, a few years ago, a party of Yalensians visited the church and seeing the state of things, had the lettering recut. The church itself is a very old one, more than five centuries, it is said, and the curfew is rung from its bells every evening.

Surgeon General Robert Adair.—The hero of that fine ballad, "Robin Adair," was a dashing young Irish surgeon who, about the middle of the last century, finding his way into London society, was fortunate enough to secure the affections of Lady Caroline Keppel, daughter of William, second Earl of Albemarle, and his wife, Lady Anne Lennox, daughter of Charles, first Duke of Richmond. The match was naturally looked on with disfavor by the family of the young lady, and it was during a period of temporary separation that Lady Caroline is said to have written the words of "Robin Adair," and set them to the old Irish tune of "Eileen Aroon," which she had learned from her lover. At length, however, love triumphed, and the pair were united on Feb. 22, 1758. Within a few days Adair was appointed inspector general of military hospitals, and subsequently, becoming a favorite of the king, was made surgeon-general, king's serjeant-surgeon and surgeon of Chelsea Hospital. He died in 1790.—*Medical News*, January 2.

The Will of the Inventor of Dynamite.—The *Progrès Médical* states, January 16, that Alfred Nobel, the recently deceased Swedish engineer, who invented dynamite, bequeathed a large part of his immense property to establish a fund the income from which is to be divided into five equal parts and awarded each year to the five persons who during the year have made

the most important discovery or improvement in physics, chemistry, physiology or medicine, or, in the domain of letters, the most exalted production in the ideal sense, or contributed the most or the best to the brotherhood of peoples, the suppression of standing armies or the propagation of peace congresses. The prizes are to be awarded irrespective of nationality and if the provisions of the will are carried out, each of the five annual prizes will amount to 300,000 francs.

Experimental Tests of Subconjunctival Injections.—After having produced an ulcer in the center of the cornea in rabbits by injecting cultures of staphylococci, Von Sicherer treated one eye with subconjunctival injections of the various medicaments used for the purpose, leaving the other eye untouched. He found that the injections produce in fact a slight salutary effect, by causing a considerable leucocytosis around the infected focus. The simple 2 per cent. salt solution is equally effective with the more irritating salts, and deserves the preference for these injections. But there is no necessity for the injections at all, as the same effect is produced by the simple application of a salve of the yellow oxid of mercury, followed by an occlusive dressing. The leucocytosis thus produced is equal in extent to that by any other method, and the ulcer heals as promptly. Von Rothmund reserves galvano-cauterization for the supplementary treatment of ulcers of the cornea that are decidedly progressive and serpiginous.—*Rev. Gen. D'Ophthalmologie*, November.

Advance Waiver of Privilege Under New York Law.—The New York law providing that information acquired by a physician while attending a patient in his professional capacity, and which was necessary to enable him to act in such capacity, shall not be disclosed by him, was amended, in 1891, making the exception where such provisions are "expressly waived upon the trial or examination" by the patient. An application for insurance made in 1893 stated that the provisions of the New York law, and of similar provisions in the laws of other States, were thereby waived, and that it was expressly consented and stipulated that, in any suit on the policy applied for, any physician who had attended, or might thereafter attend, the insured, might disclose any information acquired by him in any wise affecting the declarations and warranties made in such application. This, the appellate division of the supreme court of New York holds, in *Holden v. Metropolitan Life Insurance Company*, Dec. 2, 1896, was a good waiver of the patient's privilege, which would preclude his legal representatives from afterward objecting to the admission of the testimony of his attending physician as to his having previously had bronchitis.

Connection Between Word Deafness and Deafness.—Word deafness has hitherto been ascribed to a cerebral lesion, but Keller and Freund have recently been impressed with the important connection between it and disturbances of the ears, especially of the labyrinth, which is able alone to cause word deafness. They urge the necessity of investigation of the ears in such cases. Keller asserts that isolated speech deafness with retained ability to comprehend other sounds, often corresponds with bilateral affections of the labyrinths, and is dependent upon tone-gaps in that portion of the tone scale which is physiologically important for the comprehension of speech. It sometimes happens that bilateral ear affections which in themselves are not sufficient to cause word deafness, produce it by a secondary degeneration of the nerve tracts and auditory centers. It requires such supreme efforts of attention then to hear that the patient gradually renounces the attempt, and lack of use hastens the degenerative processes. This is demonstrated by Urbantschitsch's system of ear gymnastics, which does not so much improve the hearing as it arouses and practices the faculty of comprehending what is heard. Pick's case is instructive in this respect. The patient was exceedingly hard of hear-

ing with word deafness also, and yet no lesion of the ears could be ascertained. The necropsy revealed, however, great alterations in the temporal lobe, to which the sensory aphasia was undoubtedly due.—*Deutsche Med. Woch.*, January 14.

Declarations of Cause of Injury not Evidence.—Whatever the rule may be in other jurisdictions, the supreme court of Illinois holds, in *Globe Accident Insurance Co. v. Gerisch*, Nov. 23, 1896, that the declarations of an insured person, as to the cause of his injury, made to his physicians at different times from several hours to three days after the supposed accident, are not proper or competent evidence in an action brought to recover upon a policy of accident insurance for his death, though had his statements related only to the part of his person that was hurt, his sufferings, symptoms, and the like, it would have been competent evidence.

Want of Skillful Treatment no Defense in Murder Case.—In the murder case of *State v. Edgerton*, the supreme court of Iowa holds, Dec. 9, 1896, that the trial judge properly stated the law when he charged the jury that if they found from the evidence that the defendant inflicted wounds which caused or contributed to cause death, then he could not avoid the consequences of his act on the ground that the wounds were not treated according to the best and most approved methods of medical and surgical treatment for wounds of that character, and that the judge properly excluded certain expert and medical testimony, as well as some medical and surgical books offered by the defendant, tending to show that by proper treatment of the wounds of the diseased his life might or could have been saved, it being especially contended that if the physician called had resorted to "laparotomy" his patient might have recovered.

Alloxur Bodies and Leukemia.—Gumprecht (*Centralblatt für allgemeine Pathologie und Anatomie*, Vol. vii. p. 820, 1896), taking the term "alloxur bodies" in Kossel and Kruger's sense as meaning those bodies which have an alloxan and a urea nucleus and therefore as meaning beside uric acid, also xanthin or nuclein bases (xanthin guanin, hypoxanthin adenin, or their derivatives) found that in leukemia in the cases where uric acid excretion is normal or diminished (it is generally increased) the alloxur bodies are increased, and that their amount varies directly with the amount of leucocytosis. He gives one case of his own in which this is shown very clearly, and points out that it forms an additional support to Horbaczewski's view that uric acid comes from degeneration of leucocytes, being formed from their nuclei. The "alloxan nucleus," or erythric acid, is a substance obtained from uric acid by the action of nascent chlorin or nitric acid, in the form of colorless crystals, large and small, that impart a red color to the skin. This substance has been found in the intestinal mucus of catarrhal enteritis.—*British Medical Journal*, December 26.

Formol.—Its synonyms are formaldehyde, formic aldehyde, formyl hydrid, mehanal. Preparation (Trillat process): Vapors of methyl alcohol are passed through coke or retort charcoal, heated red hot, in a copper tube. This results in the production of formol in an aqueous solution, mixed with methyl alcohol with possibly traces of formic acid. The alcoholic and ether products are expelled by distillation. The formol solution is then concentrated to 40 per cent. and in this form is commonly called formalin. Formic aldehyde is gaseous. It is usually employed in the 40 per cent. solution. It can not be concentrated beyond 50 per cent., as it undergoes in that case a polymerization which transforms it into a solid substance, tri-oxy-methylene or triformol. In the 40 per cent. solution it is a colorless liquid with a strong, pungent odor, resembling that of the mouse, and a peppery taste. Reaction neutral. Formol dissolves readily in water. It is a powerful antiseptic, preventing fermentations and putrefaction of the urine. It is not toxic. It is used in surgery in a solution of 0.25 to 1 gram per

1,000. As a disinfectant it is evaporated in the infected rooms in shallow dishes containing a liter of formol diluted one-tenth. Traces of formol causes a characteristic white cloudy disturbance in diluted solutions of anilin. It is incompatible with ammonia, alkaline bisulphates, silver and copper solutions and gelatin. Formol deodorizes the hydro sulpho-combinations.—From the *Annales de la Soc. Méd.-Chir. de Liège*, December.

The "Itchy Man" at Guy's Hospital.—The *Lancet*, November 28, quotes from a recent book, "The Girlhood of Maria Holroyd," who was the daughter of Lord Sheffield, the president of Guy's Hospital, about a century ago, to illustrate the "pull" of a peer, in those degenerate days. "Papa has got into Guy's Hospital four Frenchmen, gentlemen and officers, who perhaps you may recollect something of their having been a long time confined on board a ship and at last escaped by swimming to shore; I forget the particulars. How melancholy to think that these gentlemen are most thankful for admittance to the hospital; but one of them, a very genteel young man, is almost eat up by the 'itch'; and as it is a very extraordinary complaint, and they had no other proper place to put him into, he is now in the same apartment with the lunatics. They have hardly a shirt to their backs and neither shoes nor stockings. With the greatest difficulty they (four in a hackney coach) collected amongst them twopence to pay the turnpike. James went to the hospital to receive them and recommend them to the steward, and offered them money by papa's desire. They refused accepting it, saying they should want for nothing there. What uncommon generosity of mind, for men who are not above entering into an hospital can not be accused of false pride. Papa has sent Walpole today to get a lodging for the itchy man if he finds himself at all incommoded by his situation among the madmen. It really makes one's blood run cold to think what extremities hundreds are reduced to and what a number of melancholy stories there are that come to our ears." What a howl would be raised now were such a thing to be done. But it is a charming story and one hardly knows whom to pity most, the itchy men or the madmen. Perhaps the former is the more fit subject for compassion, since a lunatic ward at the end of the eighteenth century was not a desirable habitation.

Large Roentgen Apparatus.—Dr. R. A. Fessenden of Western University has just completed what is believed to be the largest apparatus of this kind in the world.

The machine is enclosed in a neat oak cabinet, four feet high and two feet wide, and weighs but 175 pounds. Handles are provided on either side to carry it. The most important feature is the coil, which rests near the base, between the legs of the cabinet. This is composed of seventeen coils and is wound with fifty miles of small wire. It is arranged to give a spark over twenty inches long, while the capacity of the machine reaches thirty inches. The current is received from two portable storage batteries, the ordinary direct or the alternating currents. The main circuit is broken by a revolving contact breaker which makes about two hundred breaks a second. This is important when it is known that the sparks are produced when the current on the large wire is broken. The contact breaker is immersed in ordinary petroleum, and is adjacent to a magnet, both of which put out any light produced in the breaker. This is encased in a small box on the top of the cabinet and is driven by a small one-horse power motor placed beside it. The suddenness of the breaking of the sparks is regulated by an adjustable condenser, also on the cabinet top. It is simply an alternation of tin foil sheets and paraffin paper. It arrests sparks and makes the break more sudden. Fastened to the side of the cabinet is an adjustable arm for holding the Roentgen ray tube. This is so constructed with several elbows that it can be placed in any position. If necessary, it can be placed beneath the bed upon which the patient lies and the photograph taken without moving or disturbing the sick one. A drawer is also inserted in the cabinet for the storing of assorted sizes of tubes. The tube is of Professor Fessenden's own discovery and represents the latest and most economical principles. It was worked out six months ago and has been in successful operation. It was designed

in accordance with a principle that the positive electrode must not be nearer any part of the fluorescent glass than the length of spark the coil will give. The positive terminal is, therefore, enclosed in a long tube connected with the main bulb. The coil is the most powerful ever successfully made. A photograph can be taken through the thickest part of the body in fifteen minutes, and the surgeon can easily see through every part of the body with the fluoroscope.

The New York Maternity Hospital Receives a Princely Gift.—We envy men of large wealth in one particular only, or chiefly, let us say, and that is in respect of their luxury of liberal giving to worthy causes. Such a luxury has Mr. J. Pierpont Morgan of New York, recently indulged in, in a gift of a ton of money, more or less, to suffering womankind. He purposes to donate \$1,000,000 for a new building, ten stories in height and fire-proof throughout, to the New York Lying-in Hospital. Wealthy women have given largely to churches and art, but it has been left to a man, already known for his generous gifts in other quarters, to seize the opportunity to qualify the parturient suffering of the poor. The following comment in the *New York Herald* explains gracefully and cunningly the concomitants of the generous gift:

"Mr. Pierpont Morgan has done so many things with his right hand which his left hand knew nothing about that it gives us a peculiar pleasure to congratulate him on an act of beneficence concerning which he is compelled to take the public into his confidence. There are many men in New York who are not only princely in the extent of their fortunes, but equally princely in their gracious generosity. Among these Mr. Morgan occupies an enviable place. He has bestowed a large sum on a most worthy institution. There are in this city tens of thousands of women who while passing through the ordeal of child bearing are dependent on charity for nursing and medical attendance. The Lying-in Hospital has done what it could to alleviate their sufferings, but Mr. Morgan's beneficence increases its power for good at least one hundred fold. The condition on which this gift is based—namely, a sufficient endowment to keep the institution in perfect running order—offers another opportunity to our citizens to assist a cause which makes a very pathetic appeal to the community."

The influence of a physician, Dr. Thomas M. Markoe, is said to be back of it all. The annual income of the hospital is \$47,000, inclusive of \$12,000 that the city is in the habit of apportioning to it. It is stated that no donor during his lifetime has given an equal sum to a charitable institution. Five of the junior physicians on this hospital's staff have been traveling and investigating the home and foreign hospitals, their expenses having been defrayed by Mr. Morgan, and this has been going on in a quiet way, for fully two years. The new building as at present designed is to be a ten-story fireproof structure of steel framework and a body of granite and light brick. It is to be ten stories high and capable of accommodating six thousand patients yearly, as against the present capacity of about 2,768. In the cellar floor will be the laundry, furnaces, dynamo rooms, a disinfecting room and rooms for servants and attendants. The basement will contain a student's dormitory and sitting room, drug store, instruction room and clinic and examination rooms. The kitchen and dining room for attendants will be on this floor.

Etiology and Treatment of Puerperal Eclampsia.—Dr. William Warren Potter of Buffalo read a paper on the above subject at the 91st annual meeting of the Medical Society of the State of New York, Albany, Jan. 26, 1897. He said, in part:

"Though the pathogenesis of eclampsia is still unsettled, we are certain that it is a condition *sui generis*, pertaining only to the puerperal state, and that to describe, as formerly, three varieties—hysterical, epileptic and apoplectic—is erroneous as to pathology and causation, as well as misleading in treatment. The kidney plays an important office in the pathology of the eclamptic. If it fail to eliminate toxins, symptoms are promptly presented in the pregnant woman. Renal insufficiency is a usual accompaniment of the eclamptic state. Overproduction of toxins and underelimination by the kidney is a short route to an eclamptic seizure. However, many women with albuminuria escape eclampsia, and many eclamptics fail to exhibit

albuminous urine. The microbic theory of eclampsia has not yet been demonstrated. The toxicemic theory, in the present state of our knowledge, furnishes the best working hypothesis for prevention or cure. Treatment should be classified into 1, preventive; and 2, curative. The preventive treatment should be subdivided into medicinal and hygienic, and the curative into medicinal and obstetric. A qualitative and quantitative analysis of the urine must be made at the onset. If there is defective elimination, something must be done speedily to correct a faulty relationship between nutrition and excretion. One of the surest ways to control progressive toxemia is to place the woman upon an exclusive milk diet. This will also serve to flush the kidneys and thus favor elimination. Distilled water is one of the best diuretics; it increases activity and supplies material—two important elements. In the pre-eclamptic state, when there is a full pulse with tendency to cyanosis, one good full bleeding may be permissible, but its repetition should be regarded with suspicion. If there is high arterial tension, vaso-motor spasm, glonoin in full doses is valuable. When eclampsia is fully established the first indication is to control the convulsions. Full chloroform anesthesia may serve a good purpose. If the convulsions are not promptly controlled the uterus must be speedily emptied. This constitutes the most important method of dealing with eclampsia. Two lives are at stake, and by addressing ourselves assiduously to speedy delivery of the fetus we contribute in the largest manner to the conservation of both. Rapid dilatation first with steel dilators, if need be, then with manual stretching of the os and cervix, followed by the forceps, is the nearest approach to idealism. Only rarely can the deep incision of Dührssen be required. Cæsarean section should be reserved for extreme complications, as deformed pelvis, or to preserve the fetus when the mother's condition is hopeless. *Veratrum viride* is dangerous, uncertain and deceptive in action. In eclampsia of pregnancy, *i. e.*, prior to term, the aseptic bougie, introduced to the fundus and coiled within the vagina, may be employed to induce labor. Finally, to promote the elimination of toxic material diuresis, catharsis and diaphoresis should not be forgotten; neither should the hot air bath nor the hot pack be overlooked."

Tetanus.—The following four cases of traumatic tetanus, all under treatment at the Cook County (Illinois) Hospital at the same time, make a remarkable record in the treatment of this fatal malady. Three out of the four recovered, while the one that died was prognosed the most favorable of the quartet on admission to the hospital.

The first case was in the service of Dr. A. F. Lemke. The patient was a boy of 17 years, who stepped upon a nail and received a puncture in the sole of the right foot. He was admitted to the hospital on Sept. 20, 1896, and had general tetanus of the most pronounced type. On the 22d, he was given 50 cubic centimeters of the Pasteur Vaccine Company's tetanus antitoxin, which was followed by a decided amelioration of the symptoms. On the 23d he was given 20 cubic centimeters more, and on the 29th a third dose of 20 cubic centimeters. This was the last dose of the antitoxin used and his recovery was uninterrupted.

The following three cases were in the service of Dr. L. Dy-sart, who kindly furnished the notes herewith given. The first patient was a colored boy of 14 years, admitted to the hospital on Sept. 24, 1896. He had convulsions of a general character, most marked in the upper extremities and thoracic regions—the spasms occurring about every five minutes, and were of a severe type. The trismus in this case was well marked and accompanied by some *risus sardonius*. Four days after the development of the tetanic symptoms, and not yielding to the ordinary means of treatment, the boy was given 30 cubic centimeters of antitoxin. Three days later another similar dose was administered. The convulsions ceased, convalescence was established and the patient is practically well, a little more than three weeks from the date of the attack.

The next case was a laboring man of 42 years, admitted on October 7. Nine days after receiving a wound on the right malleolus by being struck with a staple, symptoms of tetanus were developed, being the most pronounced in the arms and muscles of the chest, with trismus of a severe type. On the third day after the development of the symptoms he received his first antitoxin, 50 cubic centimeters. On the following day he was given a dose of 30 cubic centimeters, since which time there has been such a continued and gradual decline of symptoms that it has not been deemed necessary to repeat the dose. His recovery is now assured.

The last case of the series is that of a boy 8 years of age. On September 26 he was kicked by a horse on the left side of the head. Soon afterward facial paralysis was noticed, and ten

days after receipt of the injury the first symptoms of tetanus appeared. These were confined to the head, neck and upper part of the thorax, but were of great severity. Four days after the spasms commenced he was given 50 cubic centimeters of antitoxin, and again four days later another dose of 60 cubic centimeters. The convulsions were partly controlled in the beginning of the treatment, but became more severe toward the last, and he died on the 14th of October, four days after his admission to the hospital and eight days after his first tetanic spasm. Owing to the age of the patient, the late appearance of the first symptoms, the limited area affected and the absence of any notable complications, this case was regarded as the most favorable one of the four. But it must be remembered that the antitoxin was not used for four days after the development of the disease; whereas to secure the best results from any antitoxin, it should be employed at the earliest possible moment. The physician in charge of the case at the hospital used the antitoxin immediately upon his admission, but the disease had already been running four days, and its speedy termination in death shows that it must have been of a very grave type.

The Microphonograph.—Professor Dussaud of Geneva has invented a microphone placed directly on the membrane of a phonograph, attached to a battery and telephone receiver, which transmits sounds to the ear greatly magnified, and promises to be to the ear what the microscope is to the eye. When the receiver is held to the ear the sounds repeated by the phonograph can be regulated by increasing or decreasing the current or manipulating the microphone. A volume of sound can be secured sufficient to produce violent pain to normal ears, while deaf persons with a little practice can learn to distinguish melodies with it, beating time to them and distinguishing them, showing a preference to this or that tune, etc. The value of such an instrument in teaching the deaf to converse is inestimable, and it can also serve as an audimeter, determining the more or less absolute deafness of the subject, and improvement or the reverse in hearing. It will also serve another purpose in registering sounds inaudible to the ear, such as the pulsations of the heart, the sounds produced in respiration, the steps of an ant, etc., and reproduce them magnified for scientific study. As sound is so eminently fleeting, it must be fastened and held to be studied with scientific accuracy, which Professor Dussaud has succeeded in accomplishing. Microphonography is destined to an important rôle in the study of the at present inaudible sounds of normal and pathologic organs. He states the four following principles as the foundations of his investigations, and the source of his success: 1. The sounds transmitted by means of the microphone undergo an important transformation in their character, and become more accessible to defective hearings as they assume in some respects the characters of noise. 2. the microphone is the only means of increasing the power of acoustic waves to a point where the sense of hearing, even the most blunted, is able to perceive them as long as there is a vestige of the sense left. 3. The mechanical vibration of the microphone caused by the vibrating membrane of the phonograph produces an acoustic power several hundred times superior to that obtained by transmitting atmospheric waves on the microphone. 4. By placing the wooden receiver in contact with the ear the mechanical vibration of the wood, varying with each note or syllable transmitted by phonograph, produces a mechanical effect on the ear, which approximates in the case of the deaf and dumb what we call the sensations of sounds.—*Bulletin de l'Acad. de Méd.*, December 29.

Husband can Recover for Sale of Laudanum to Wife.—The supreme court of North Carolina has handed down a decision, Nov. 24, 1896, in the case of Holleman v. Harward, for which it says it was able to find no precedent in the English Common law courts or in the courts of any of our States, save only in the New York case of Hoard v. Peck, 56 Barb. 202. It holds that an action will lie at the suit of a husband, to recover damages from druggists for injuries sustained by him in consequence of the sale by them to his wife of laudanum and similar prepara-

tions, in violation of his express orders, and knowing that his wife was using the drugs in large quantities as a beverage to the ruining of her health. It bases its decision upon the broad principle that, "whoever does an injury to another is liable in damages to the extent of that injury." A married woman, it says, still owes to her husband, notwithstanding her greatly improved legal status, the duty of companionship and of rendering all such services in his home as her relations of wife and mother require of her. And so it holds that the defendant druggists owed the husband the legal duty not to sell to his wife opium in the form of large quantities of laudanum as a beverage, knowing that she was, by using them, destroying her mind and body and thereby causing loss to the husband. Under the circumstances stated, it declares they were just as responsible as if they had forced her to take the drug for they had their part in forming the habit in her, and continued the sale of it to her after she had no power to control herself and resist the thirst; and that, too, after the repeated warnings and protest of the husband, who said that he was trying to counteract the habit, which he alleged was the outgrowth of taking opium in different forms, principally laudanum, as a medicine. There is no difference, the court insists, between the principle involved in this action and the principle upon which a husband can recover from a third person damages for assault and battery upon his wife. Nor will it admit that, because there is no statutory provision in North Carolina prohibiting the sale of laudanum as a beverage or as a medicine, it must therefore follow that a sale of it under all circumstances is lawful. It is a well known poisonous drug, which can not be drunk as a beverage without injury to the body, affecting the health of the physical and moral powers, as all druggists know. So it reverses a judgment which held there was no cause of action stated in this case, laying down the law as above.

1896 at the Paris Academie de Medecine.—The retiring president, Dr. Hervieux, in his address stated that each year has certainly had its share in the progress accomplished in these last years of the century, and 1896 deserves honorable mention. . . . Perfection in asepsis has reduced the mortality in our lying-in-hospitals from 13 per cent. a few years ago to a fraction of 1 per cent. Surgeons now approach the most audacious operations with perfect confidence, extirpating the larynx or a kidney, a portion of the liver, several centimeters of intestines, the bladder, the uterus, the ovaries, and think nothing of opening the abdomen to solve a diagnostic question. Not a meeting takes place without some remarkable surgical achievement presented. Our hospitals are overcrowded with patients, and this crowding, which a few years ago would have produced the most deplorable epidemics, now has no effect on raising the mortality. . . . The present is an age of facts, as is shown once more by the absence of theoretic discussions and the preponderance of practical questions in our meetings this last year. . . . The year 1896 has added another to the list of microbial diseases, and Nocard's discovery of the bacillus of psittacosis has established its infective character. Yersin's serum has triumphed over the plague. Henriot has discovered a new ferment in the blood which solubilizes the fats. Lannelongue has secured brilliant success with his sclerogenic treatment of inguinal hernia with chlorid of zinc. The Roentgen ray has been utilized to discover foreign bodies in the organism, and radioscopy with the fluorescent screen has enabled Fournier to study the displacement of the liver during each respiration and the cardiac revolution as it commences with the auricles. Cornil has also added to our knowledge by his important study of the mode of reunion of the serosa in intestinal operations. He fastened the serous surfaces of two intestinal loops together and watched the histologic processes, finding that they are due entirely to the multiplication and displacement of the cells

of the endothelial and connective tissues by movements of their protoplasm, anastomizing and forming the definite cicatrix by the formation of new vessels, which result from their activity. A similar process occurs in the fibrinous effusions in aseptic pleurisy, and he also states that the cicatrization of vessels after a ligature is the same as after suturing. Francois-Franck has succeeded in establishing the vasomotor action of the nerves of the pulmonary vessels. Stimulation of the filaments emerging from the superior thoracic ganglion increases the pressure in the pulmonary artery while it diminishes it in the left auricle.

Medico-Literary Notes.

PREMATURE BURIAL.—Mr. W. Tebb, an Englishman, and Col. Vollum, an American, have thought it to be worth their while to get up a book on this subject, published in London, by Swan, Sonnenschein & Co. It is a grewsome subject and it will grow still more hideous when the Sunday newspapers have their attention called to the theme.

A BRINTON CALENDAR.—The publishing house of Jacobs & Co., Philadelphia, has upon its list "The Pursuit of Happiness" Calendar for 1897. The writings of Dr. Daniel G. Brinton have been drawn upon, in many happy selections, to make the calendar instructive. A portrait and decorative drawings give it added attractiveness.

AN AMERICAN BOOK COMMENDED.—The *Lancet* speaks quite highly of an American book, namely, Norris and Dickinson's Text-book of Obstetrics, issued in London by the Rebman Publishing Company, at 42 shillings. The book has 900 illustrations of a high order of merit that were contributed by Dr. Robert L. Dickinson of Brooklyn as art editor. On this subject the *Lancet* says: "There is generally something attractive about a fresh presentment even of familiar facts, and to this attraction there are added in the work before us several features that in no small degree contribute to make it a welcome addition to the literature of the subject. We may more especially instance the illustrations, many of them beautifully colored, for which we have nothing but praise. There is, we think, no work on midwifery in which the illustrations are so numerous and excellent. The figures are all drawn to scale, usually one-third or one-sixth life size." The American publisher is W. B. Saunders of Philadelphia. Another reviewer has written: "In the wealth and excellence of its illustrations, this work stands alone."

THE COMMENTARY OF APOLLONIUS.—An important contribution to a revival of interest in ancient medical literature has appeared in a magnificent edition of the Commentary of Apollonius of Kitium on the Hippocratic treatise, *περί Ἀρθρῶν*, "On the Joints," by a German scholar—Hermann Schöne. Apollonius, like another physician of note, Apollodorus, taught and practiced medicine at Kitium, a town on the south coast of Cyprus. He flourished about the date 60 B. C. A still further confirmation of his date is the fact that his commentary is dedicated to Ptolemy—not the King of Alexandria, but almost certainly Ptolemy Auletes, King of Cyprus. Little more is known of him, but his commentary has always been prized by medical scholars and has been carefully studied by Bandini, Kühlewein, Ilberg and others. The manuscript on which the text before us is based is in the Laurentian Library in Florence, and its history as given by Schöne is of peculiar interest. Schöne assigns it to the second half of the ninth century. It was bought on April 3, 1492, in Candia by John Lascaris, on his second voyage to Greece, at the instance of Lorenzo de' Medici. It next received hospitality in the Bibliotheca Medicea under Piero de' Medici: then it was passed on to Rome at the request of Pope Clement VII. We next find it in the hands of Guido Guidi, physician to King Francis I. of France, who translated it into Latin: and then a copy of it was made for the library at Fontainebleau. It can be next traced to the library of Cardinal Ridolfi, from whose keeping it was transferred to that of Marshal Strozzi, and once more to that of Catharine de' Medici, from whom it finally found its way into the Laurentian Library before 1571. It constitutes the "fons et origo" from which the Parisian and other manuscripts are derived. All this and a good deal more related with admirable

lucidity by Schöne leads up to the text, of which he presents us with a careful recension, which is likely to remain the "textus ab omnibus receptus" for a long time to come. Hardly less important are the plates, thirty in number, which illustrate the text beside conveying to us a vivid appreciation of the anatomic science of the first century B. C. These are executed with consummate skill, thanks in the first instance to an able photographer, then to a not less competent lithographer, in whose hands the facsimiles of the manuscript and diagrams, clear, effectively colored and highly artistic, gives the book a value of their own. The whole volume, published at Leipzig by Teubner, is indeed honorable to the medical scholarship of Germany and leads us to hope for other contributions to the elucidation of Hellenic healing art from the same editor.—London *Lancet*, December 12.

THE PUBLIC SERVICES.

Army Changes. Official List of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from Jan. 30 to Feb. 5, 1897.

Major Edward B. Moseley, Surgeon, ordered upon the expiration of his leave of absence to Benicia Bks., Cal., relieving Major Curtis E. Munn, Surgeon. Major Munn, on being thus relieved, is ordered to Ft. Logan, Colo., for duty, relieving Major Augustus A. DeLoffre, Surgeon. Major DeLoffre, on being thus relieved, is ordered to Ft. Sam Houston, Texas, for duty.

Major William C. Shannon, Surgeon, will upon expiration of his sick leave be relieved from duty at Ft. Custer, Mont., and ordered to Jackson Bks., La., for duty, relieving First Lieut. Robert S. Woodson, Asst. Surgeon. Lieut. Woodson, on being thus relieved, ordered to Ft. McPherson, Ga., for duty, relieving Capt. Philip G. Wales, Asst. Surgeon. Capt. Wales, on being thus relieved, ordered to Ft. Nebraska, Neb., for duty.

Navy Changes. Changes in the Medical Corps of the U. S. Navy for the two weeks ending Feb. 6, 1897.

Asst. Surgeon H. LaMotte, granted sick leave.
Asst. Surgeon C. E. Riggs, detached from the "San Francisco" and ordered to the "Detroit."

Change of Address.

Crowley, P. F., from Dunning to Jefferson Park, Ill.
Davies, W. H., from Maquoketa, Iowa, to San Bernardino, Cal.
Gallagher, Thos. J., from 1321 Race St. to 605-606 California Bldg., Denver, Colo.
Hulse, Ellen H., from Irving Park to 204 N. Main St., Canton, Fulton Co., Ill.
Hickman, Henry, from 3586 to 3624 S. Broadway, St. Louis, Mo.
Reynolds, Dudley S., from 3d and Chestnut Sts. to 304 W. Chestnut St., Louisville, Ky.
Van Cleve, A. H., from El Paso, Texas, to Silver City, N. M.

LETTERS RECEIVED.

Abrahams, R., New York, N. Y.; Anthony, H. G. Chicago; Appel, A. H., Fort Porter, Buffalo, N. Y.
Brown, F. E., New York, N. Y.; Beard, R. O., Minneapolis, Minn.; Baker, Henry B., Lansing, Mich.; Buckhout O. K., Chemical Co., Kalamazoo, Mich.; Biddle, J. G., Philadelphia, Pa.; Brown, I. M., New London, Wis.; Boehringer, C. E., & Soebne, New York, N. Y.
Carveth, J. A. & Co., Toronto, Can.; Cockett & Overman, Cleveland, Ohio; Clark, C. R., Warsaw, N. Y.
Davison, F. B., Fleetville, Pa.; Davis, A. C., Topeka, Kas.; Dake's, E. C., Advertising Agency, San Francisco, Cal.; Dunn, G. & Co., St. Paul, Minn.; Diefendorfer, W. B., Cresson, Pa.
Earle, C. A., Desplaines, Ill.
Fehr, Julius, Hoboken, N. J.; Fullert, C. H., Advertising Agency, Chicago; Ferguson & Goodnow, Chicago; Forline, H. H., Houston, Texas; Fougere, E. & Co., New York, N. Y.; Finch, W. E., Durham, N. C.; Gibbons, P. J., Syracuse, N. Y.; Gillis, J. A., Buda, Texas.
Hamblin, R. E., Toledo, Ohio; Haldenstein, I., New York, N. Y.; Harman, W. E., Ames, Iowa; Hazlett, J. W., San Bernardino, Cal.
Ingals, E. Fletcher, Chicago; International Society, The, Chicago.
Kremers, H., Holland, Mich.; Kraft, Wm., New York, N. Y.; Kreider, George N., Springfield, Ill.; Koehl, Victor & Co., New York, N. Y.
Londonderry Lithia Spring Water Co., Nashua, N. H.
Madden, John (2), Milwaukee, Wis.; Mallory, C. H. Co., New York, N. Y.; Merrick, M. B., Passale, N. J.; Muchleek, Geo. A., Philadelphia, Pa.; Midland Chemical Co., Cleveland, Ohio; Minor, Chas. L., Asheville, N. C.; Mulford, H. K., Co., Philadelphia, Pa.
Northwestern Christian Advocate, Chicago.
Ozone Co., The, Chicago; Ott, Isaac, Philadelphia, Pa.
Parker, M. G. (2), Lowell, Mass.; Purvis, C. B., Washington, D. C.; Paquin, The Paul, Laboratories, St. Louis, Mo.; Pearce, Herman E., Kansas City, Mo.; Procter & Collier Co., Cincinnati, Ohio.
Russell, C. R., Keokuk, Iowa; Reynolds, Dudley S., Louisville, Ky.; Rhoads, Thos. Ledy, Philadelphia, Pa.; Register & Montgomery (Drs.), Charlotte, N. C.; Reed & Caruick, New York.
Steiger, E. & Co., New York, N. Y.; Sturgis, F. R., New York, N. Y.; Schering & Glatz, New York, N. Y.; Springer, Willard, Wilmington, Del.; Schultz, Moritz, Chicago; Searles, J. D., Keokuk, Iowa; Sutton, R. L., Orrville, Ala.; Schieffelin & Co., New York, N. Y.; Sutton, C. F., Baltimore, Md.; Starkey, Horace, M., Chicago; Smith, E. Franklin, New York, N. Y.; Society of the Lying-in Hospital of the City of New York, New York, N. Y.
Trowbridge, L. S., Detroit, Mich.; Townsend, W. R., New York, N. Y.
Ward Brothers, Jacksonville, Ill.; Wallon, A. J. & Son, Syracuse, N. Y.; Wallace, D. R., Waco, Texas; Wingate, U. O. B., Milwaukee, Wis.; White, M. M., Italy, Texas; Woodbury, Frank, Philadelphia, Pa.; Wilkinsou, A. D., Lincoln, Neb.; Walsh, Ralph, Washington, D. C.; Whitmire, Z. L., Urbana, Ill.
Zumo Pharmaceutical Co., St. Louis, Mo.

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No. 8.

ADDRESS.

RETROVERSION OF THE UTERUS.

Address delivered before the Central Illinois Medical Association at
Streator, Dec. 1, 1896.

BY FRANKLIN H. MARTIN, M.D.

CHICAGO.

Retro-displacement of the uterus is one of the most important conditions which the gynecologist and the family physician are called upon to remedy in the treatment of female complaints. It is important because the condition frequently exists, because it produces a long train of symptoms which frequently end in invalidism, and because it is frequently ignored if discovered at all by physicians whose experience ought to teach them better.

Because the uterus is a movable organ, because it is behind the bladder which must fill and empty, and in front of the rectum which must distend and contract, because it is subject to the intra-abdominal pressure with every inspiration and expiration of the woman; because it is fixed with elastic and muscular supports which protect it from sudden jars; because of all of this it does not prove that there can be no normal position of the uterus and hence there can be no pathologic displacement. A man's arm has a normal range of movement in order that it may accommodate itself to its environment and perform its function, but that does not argue against a possibility of pathologic dislocation of the arm.

APPROXIMATE NORMAL POSITION OF THE UTERUS.

In order to diagnose and treat a dislocation of the uterus one must know the normal anatomy of the parts. While I have reason to believe that there are physicians of reasonable appearance who do not apply this same rule in the practice of pelvic disorders, I affirm that every family physician or gynecologist who depends upon his own knowledge for making diagnosis of pelvic difficulties should not only know pelvic anatomy but should also be able by repeated practice to detect abnormalities.

The uterus, Fig. 1, in its normal location is suspended in the pelvis with the fundus lying a fraction of an inch below a line drawn from the top of the symphysis pubis to the promontory of the sacrum. With the subject in the upright position the body of the uterus inclines forward on an angle of about 45 degrees with the horizon. The cervix lies within an inch and a half of the sacrum. The body of the uterus projects from the top of the vagina in a forward direction at about right-angles to that muscular tube. The fundus of the uterus occupies such a position in the pelvis when normal that the intra-abdominal pressure deflected from the anterior abdominal wall strikes it just posterior to its crest in a direction to force it, if at all, in an anterior direction.

The supports of the uterus are the broad ligaments which suspend it with side expansions, the vaginal

tube resting upon the peritoneum supporting the cervix, the two folds of peritoneum called the sacro-uterine ligaments holding the cervix near the sacrum with the anterior vaginal wall acting as a counterpoise suspending it in front. The round ligaments act as stays preventing the uterus from being forced into retroversion by sudden impulses or jars. So that it has supports from almost every point, and in no case are the supports immovable and fixed. It is surrounded with cushioned supports and elastic guys, while its free fundus is embraced in a canopy of soft ever-yielding intestines. No organ in the human body is more carefully protected from violence from without or from its immediate environment from within.

THE FEMALE PELVIS.

The female pelvis upon which the destinies of the human race so much depend is not only a box of wonderful security, but it is a stronghold of marvelous nervous mechanism. The uterus is connected with and has extensive automatic control of almost every organ in the body. No other organ except the heart has such universal sway over the whole economy. From the time that puberty begins in early maidenhood until the well-earned rest is secured at the menopause the immense network of sympathetic nerves surrounding the uterus is ever ready to perform herculean tasks. If conception occurs it must automatically, at once, begin a work which is the most remarkable thing in the world. It compels the heart to send more blood for nourishment of its new life, it compels the brain to create an appetite in the individual, it compels the stomach to digest larger quantities of food and the intestines to increase assimilation. It strengthens and expands the peritoneum, it softens the cartilage of the pelvis, it expands its own supports, it enlarges its environment without pathologic consequences, it develops the breasts and fills them with fluid, and when at a certain hour on a certain day the climax of gestation is reached it touches the spring which sets in motion all of the awful machinery of labor, which contracts its own powerfully developed walls, relaxes and lubricates the soft parts through which the child must pass, compels abdominal contraction at the proper time and when finally the labors are finished it telegraphs less blood to the pelvis, more to the breasts. It contracts its own walls, narrows its blood supply, furnishes an antiseptic fluid of soothing quality for the soft track of its outlet and in a remarkably short time has returned to its normal size and position.

When we stop to think a minute of the wonderful accomplishments of this uterus, and realize that its functions of menstruation or gestation are constantly maintained for thirty years it does not seem unreasonable that a displacement of the organ with a consequent disturbance of its sympathetic nervous connection will produce disastrous results.

Retroversion of the uterus produces *local* and *remote* subjective symptoms.

The *local symptoms* are produced by the disturbance the dislocated organ produces by pressure on neighboring parts. Constipation may result from direct pressure of the uterus on the lower bowel. Sacralgia or backache may be produced by direct pressure of the displaced fundus on the sacral nerves. This (displaced fundus) may draw upon the support of the bladder or the displaced cervix from forward pressure, may too disturb the function of this organ. This displacement of the uterus frequently forms flexures of the broad ligaments which interferes with the return venous circulation of the organ and produces a passive congestion with symptoms of heaviness. Pain in the ovaries and tubes may result from the same cause.

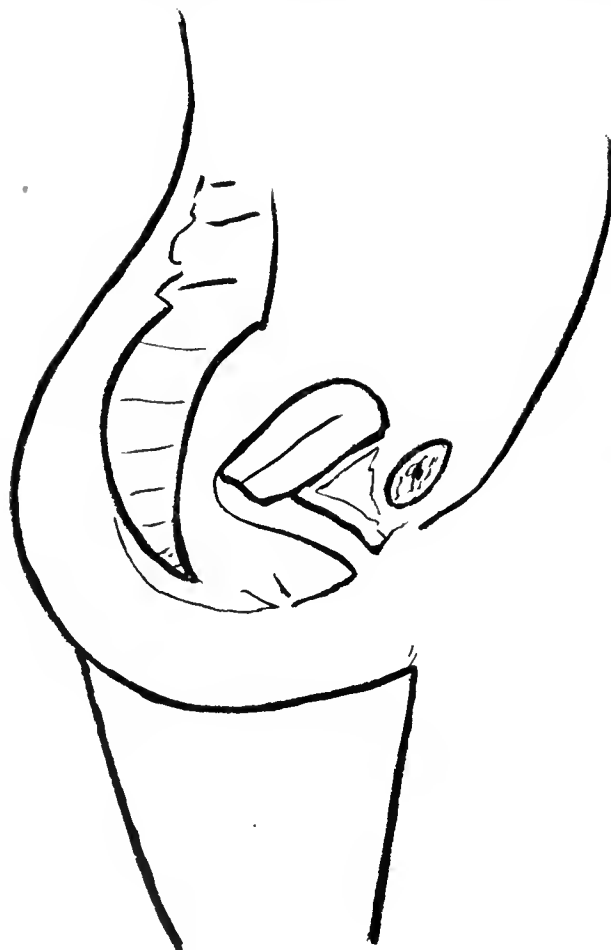


Figure 1.

The organ from its increased weight and from lying with its long axis parallel with the vagina (Fig. 2) slides into a lower plane of the pelvis and gives rise to the distressing symptoms of "bearing down." These symptoms are all aggravated by exercise of the patient and the upright position of the body because these things exaggerate the displacement. Menstruation is invariably disturbed and more or less pain is seldom absent.

Remote symptoms.—The remote symptoms may be as multitudinous as the nerves which connect the organs of reproduction with other organs of the body. While the uterus in health has such positive influence on the functions of other organs, it is easy to understand how, when in distress, just this intimate connection might disastrously disturb the normal functions

of these neighbors. Such is the case. Palpitation of the heart, poor digestion, nausea, intestinal disturbance giving rise to imperfect assimilation, bladder irritation, backache and almost invariably severe headaches are a few of these symptoms.

General symptoms.—After the suffering woman has been allowed to bear the constantly harassing symptoms from month to month, with the cause becoming more and more fixed, with poor assimilation leading on to anemia, with rampant reflexes gradually endangering the balance of the nervous system, we find the subject growing thin in flesh, we find her despondent in spirits, especially aggravated each month when the labor of painful menstruation is superadded, her will forces become less resistant to the nerve storms, hysteria supervening and what was once a healthy woman is transformed into a thin, weak, white-skinned, aching, despondent, hysteric invalid.



Figure 2.

Diagnosis.—While the subjective symptoms already rapidly recited must give us a clew to the local condition, it is the objective signs as gained by an examination of the pelvic organs which must make or confirm our diagnosis.

With a knowledge of the normal conditions well fixed in his mind the physician should proceed to make a thorough examination of the pelvis. The patient is placed on an office table or a bed with her legs flexed and her feet supported in a pair of stirrups, or on two chairs if the examination is on a bed. The examiner with the index finger of his left hand well soaped or otherwise lubricated, standing or sitting close in front of the patient, between her separated knees, should proceed to make a vaginal digital examination, reserving the strong right hand for external

palpation. In an instant he will determine if the perineum is lacerated, whether the anterior or posterior vaginal walls are projecting. He immediately reaches the cervix. If it is well back in the pelvis it would be well nigh impossible for retroversion to exist, because the overhanging sacrum would throw the fundus forward, and by placing the finger in front of the cervix it can be proved by grasping the fundus in front (Fig. 3). If the cervix is well forward and low in the pelvis, then look out for the retro-displacement of the fundus, for then by placing the finger in front of the cervix the hand from above will approach it with no fundus to be felt between (Fig. 4). By placing the finger behind the cervix in such a case if the fundus is retroverted it can be palpated in that position, thus proving conclusively that the uterus is retroverted (Fig. 5). While the uterus is grasped

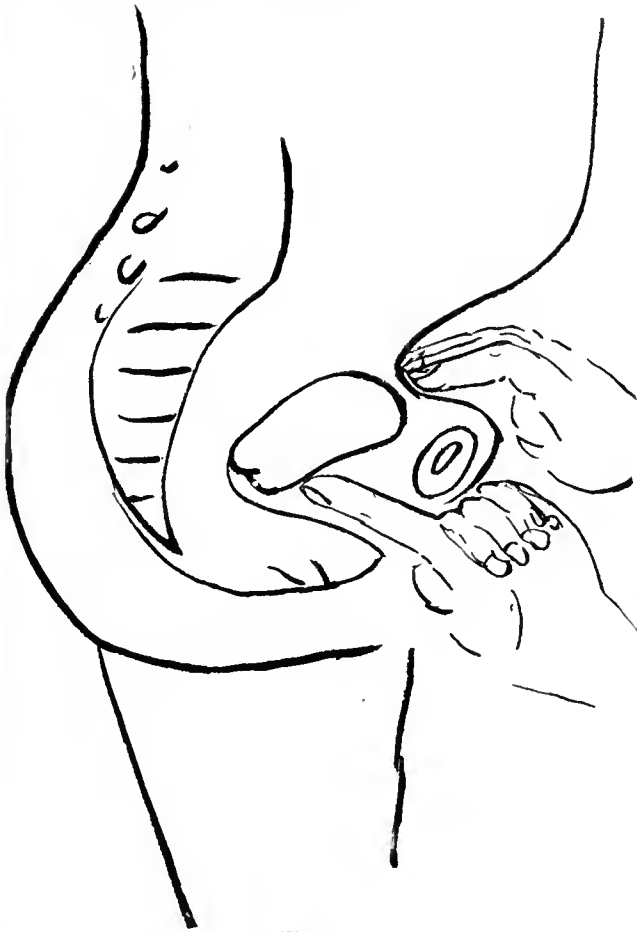


Figure 3.

in such a position any irregularities of its surface, its size and something in regard to the amount of its mobility can be ascertained. In fact an expert in bimanual palpation of the pelvis can easily by some such systematic course as described above determine not only the position, shape and size of the uterus, but also the condition of the appendages. If the parts are tender, or the patient a virgin, or the pelvic walls unusually resisting or thick, an anesthetic should always be given in order to accomplish a thorough examination. In fact it should be followed as a rule that an anesthetic should be given when an examination without one leaves any doubt. Whenever the uterus appears fixed in retroversion an anesthetic should be given in order to confirm the diagnosis as frequently an apparently adherent

uterus becomes dislodged and movable under the relaxing influences of ether.

Treatment.—Without going more fully into etiology, more minutely into methods of examination, or into a more exhaustive study of the anatomy of the pelvis, than the foregoing hasty discussion will allow I must hasten to the more practical part of my subject, viz., treatment. And here, too, I can but touch on general principles with the elucidation of but one or two important practical applications.

For the treatment of simple persistent retroversion without adhesions or with laceration of the perineum or diseased appendages two possible means of cure may be adopted.

Without Operation.—One can not safely promise a cure in any case of retroversion without finally resorting to an operation but after taking the precaution to explain to a patient before treatment is begun that

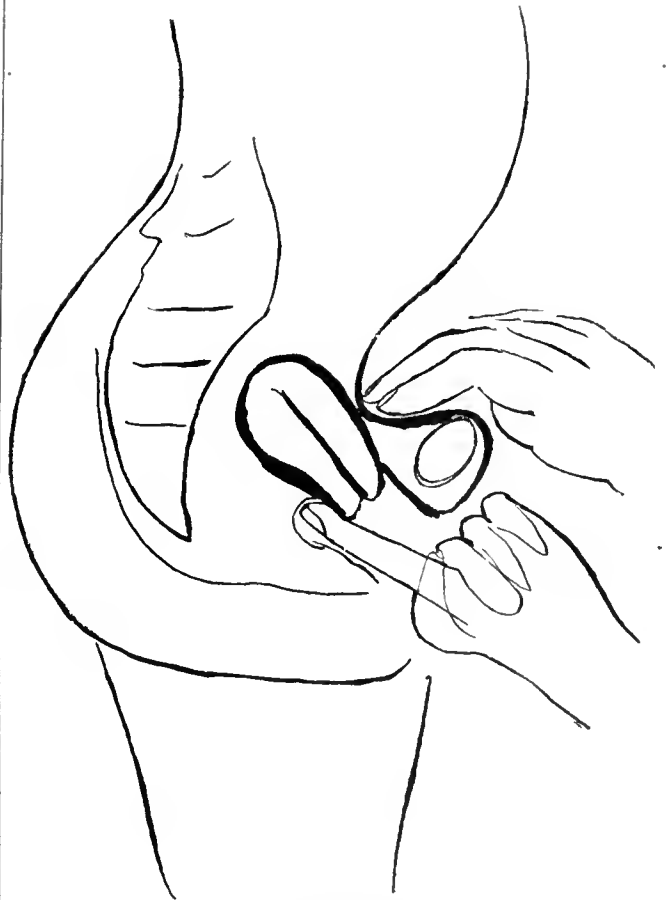


Figure 4.

non-operative treatment *may fail*, one is justified in making an attempt (with patients who can wait) to cure without operation.

The treatment here should be the replacement of the uterus and the retention of the organ in place by a well-fitting Hodge-Smith pessary, or the replacing of the uterus at each treatment by means of well placed tampons, keeping them in position until just before the next treatment, and all this supplemented by a judicious application of local tonics and stimulants.

To be more exact, my method is as follows: I replace the uterus by bimanual manipulation, by forcing the cervix backward and drawing the fundus forward (Fig. 6). I then select a pessary which will lengthen the vagina, thereby keeping the cervix back

in the hollow of the sacrum, and whose posterior bow will force the fundus forward.

I then place in the vagina a vaginal electrode and over the replaced fundus an abdominal sponge electrode and apply a slow break faradic current of electricity, applying it as strong as the patient will bear without pain and for a period of five minutes. This stimulates all of the muscular supports of the uterus and that, too, when they are in a state of relaxation. The patient is then instructed to get into extreme knee-chest position three times a day and when in that position to open the vagina so that it will be distended with air by retracting slightly with her finger the perineum. This reverses temporarily intra-abdominal pressure, throws the uterus forward by gravitation, and forces the cervix into the hollow of the sacrum by ballooning the vagina with air. The patient takes the local stimulation of faradization

first time at the next visit the patient will announce a failure, her symptoms having already convinced her of that fact. Another month or even two months' treatment should be advised.

If a well-fitting pessary will not be tolerated, then at the end of each treatment, after the uterus is well in position, the patient should be placed in knee-chest position and with the aid of a perineal retractor and a pair of dressing forceps an elastic wood tampon should be placed in front and below the cervix (Fig. 7). This should be allowed to remain until the following evening when it should be removed by the patient and an antiseptic douche given. The patient should remember to assume the knee-chest position at least three times a day during the time she is receiving this treatment. All forms of violent exercise should be avoided and corsets should be abandoned.

These tedious forms of treatment will yield a gratifying result in about one case in five. This small percentage is well worth fighting for, however.



Figure 5.



Figure 6.

Alexander Operation.—What shall we do with the failures under this head of non-adherent, but persistent retroversions? Unhesitatingly I say: Shorten the round ligaments. These cases require the slightest tension on the part of the round ligaments to make them permanently normal. The operation is safe and by my method of ligament fixation it is sure.

RETROVERSION WITH ADHESIONS.

Adhesions of a retroverted uterus without concomitant disease of the appendages is a rare complication. However, cases will occasionally be found where adhesions have occurred from destruction of the epithelium of the opposing peritoneal surfaces as a result of pressure and friction without the intervention of a septic process. These adhesions occasionally I believe I have been able to separate by manipulation under anesthesia. If they do not yield by one manipulation under ether, we may hope by repeated massage, local stimulation of faradism and hot water and depletion to cause frail adhesions to give way without operative interference. After once overcoming the adhesions the case should be treated exactly

three times a week and at each time the uterus is examined to make sure that it remains in place. The surgeon should by bimanual manipulation stretch the shortened supports and force the uterus into extreme antiversion at each treatment. After a month's treatment the pessary is carefully withdrawn, the patient is instructed to avoid violent exercise, is cautioned to assume the knee-chest position religiously, in order to avoid a relapse, and to report the following day. At this time the parts are examined and if the uterus has remained in place for the twenty-four hours without support one should be much encouraged. The ordinary treatment should be applied and a two days' respite given. And so, carefully, these cases should be nursed and about one out of five will reward you with a final cure.

Frequently after withdrawing the support the

on the principles of those cases of non-adherent retroversions.

Adhesions of a permanent and unyielding character complicating retroversion where there is not serious disease of the appendages requires more radical treatment. While by an examination under anesthesia (and all of these cases should have such) one can not invariably say that the appendages are not seriously diseased, it is possible for one of experience to arrive at a pretty satisfactory conclusion. If then posterior fixation exists and the appendages, in the opinion of the surgeon, need not be sacrificed, he should proceed to break up the adhesions through the posterior *cul de sac*, after first cleaning the uterus with a curette, ascertain the true condition of the appendages, replace the uterus and retain it in position by shortening the round ligaments by Alexander's operation.

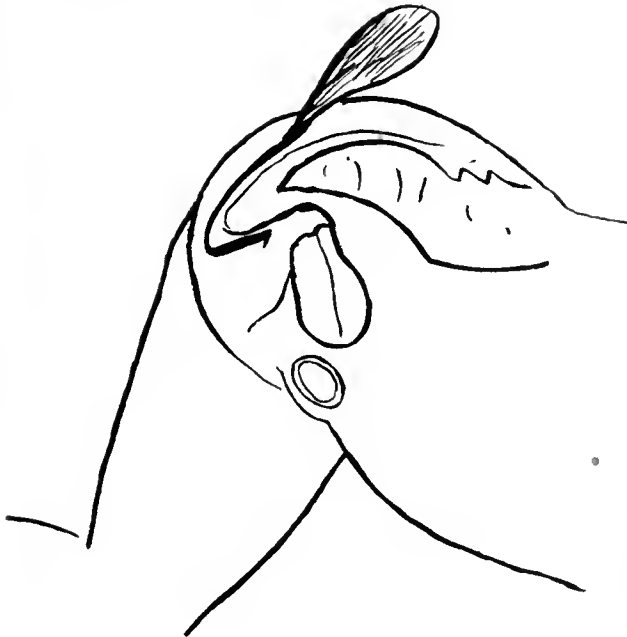


Figure 7.

RETROVERSION WITH DISEASED APPENDAGES WITH OR WITHOUT ADHESIONS.

Retroversion with diseased appendages, with or without adhesions, can, in my opinion, be successfully treated by laparotomy only. A small incision usually suffices. The uterus is sought for and the fundus freed by sweeping the finger between it and the adherent peritoneum. The diseased appendages are sought and treated by removal if necessary, or if simple cysts only exist they should be excised, disinfected and drained and then the uterus is brought well forward and suspended.

Method of Suspension.—I have adopted Fowler's method of ventral fixation or a modification of his method when the urachus is absent. The urachus, which ordinarily may be seen lying parallel with the abdominal incision on the peritoneum in the sub-peritoneal space, is avoided in making the incision and when the uterus is freed and ready for attachment the urachus is stripped from its surrounding tissue until a cord of two and a half or three inches is obtained, then the umbilical end is severed, leaving it attached low down in the pubic end of the abdominal incision. The uterus is drawn well up into the abdom-

inal incision and the blades of a Cleveland forceps are passed from behind forward through the fundus just posterior to its crest. The points of the blades are separated and are made to grasp the free end of the urachus and by withdrawing the forceps the cord-like urachus is drawn through the top of the uterus. Now by grasping the free end of the urachus the uterus is slid along the ligament into extreme antiversion well below the lower angle of the wound. An antiseptic catgut suture secures the uterus in place and the free

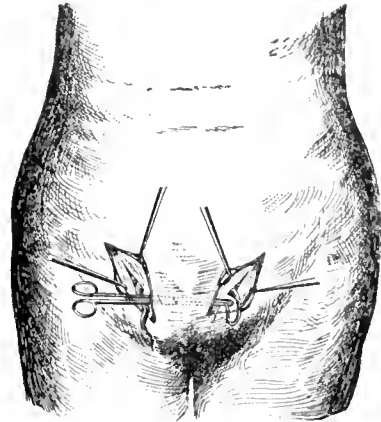


Figure 8.

end of the urachus is buried in the whole length of the abdominal wound as the wound is closed with its permanent sutures. This succeeds in suspending the uterus on an animal living ligament taken directly from the surrounding tissues, and the fact that the cord-like tissue is again immediately reburied in succulent, well nourished, living tissues insures its integrity. The uterus, therefore, becomes successfully fixed without the intervention of any kind of an artificial permanent or temporary suture which are always liable to become infected and give rise to troublesome fistulæ.

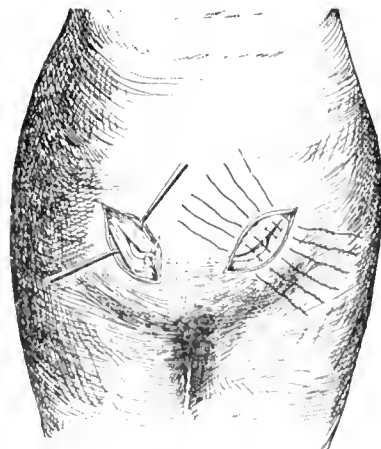


Figure 9.

When the urachus is absent, or divided and scattered as it occasionally is, I take a strip of peritoneum about one-half inch wide from the side of the incision, twist it into a cord and leaving the pubic end attached I treat it exactly as I do the urachus. It is in every way as efficient as the urachus.

I have done these two operations at least thirty times within the last year, and in no case has there been the least tendency to weakness of support. I consider it superior to any other method I know.

THE AUTHOR'S ALEXANDER OPERATION.

With my method of doing Alexander operation some of you are already familiar, as I published it over a year ago. It is unique only in the method of fixation of the ligaments. As in my ventral fixation operation, in fixing the shortened round ligament I do not cumber my wound with any permanent or temporary buried sutures. I make the ordinary incision from the spines of the pubes, two inches in length, in the direction of the anterior superior spine of the ilium, exposing the external rings (Fig. 8). I separate the rings and draw out the strong round ligament. I then pass the closed blades of an artery forcep from the lower end of one wound beneath the skin, fat and superficial fascia over the pubes to the lower end of the wound of the opposite side. I then open the closed blades of the forceps and grasp the freed end of the ligament of the farthest wound and draw it through to the other wound (Fig. 8). The two ligaments are then drawn taut and tied tightly together over the pubes in a strong hard knot. The free ends of the ligaments are tacked by means of antiseptic cat-gut to the ligament on either side in such a way as to prevent the knot slipping until adhesions have occurred (Fig. 9.) This method of tying effectually and evenly shortens the ligaments and the knot thoroughly fixes them without the necessity of resorting to any kind of objectionable permanent suture. The wound is then closed over the ligaments in the ordinary way with temporary silkworm gut sutures.

SUMMARY.

1. Continuous retroversion of the uterus is a condition which frequently leads to serious pathologic consequences.

2. Retroversion without adhesions can be cured without operative interference in about 20 per cent. of the cases in which it occurs.

3. A small percentage of retroversion with adhesions can be cured by massage, electricity and depletion.

4. Retroversion with unyielding adhesions should be freed through the Douglas *cul de sac* and the round ligaments shortened at the same operation.

5. Retroversion with diseased appendages should be treated through an abdominal incision and the uterus brought forward and suspended on the urachus or a ligament constructed of peritoneum.

6. When the Alexander operation is performed the ligaments should be secured without resort to a permanent buried suture, and this can best be accomplished by tying the two ligaments together in a hard knot over the pubes beneath the integument.

ORIGINAL ARTICLES.

THE TECHNIQUE OF OPERATIONS FOR ACUTE APPENDICITIS.

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The technique of operations for acute appendicitis has been studied and discussed by a splendid array of the world's best surgeons. Nevertheless opinions continue to differ not only as to the immediate objects of operative interference but also as to the technical methods by which these objects are to be accomplished.

Some of the operators whose lists are longest and whose statistics make the best showing are extremely vague when it comes to a working description of their methods. The incision which each writer affects is carefully described; the statement made that the intestines are carefully protected by gauze; the appendix carefully removed or carefully left in and a few sutures inserted. But in my opinion the most important part of the operation consists in the protection of the normal serosa from infectious matter and the application of the gauze drain. These points are not carefully dwelt upon as a rule and one prominent writer says he fears he can not give an accurate idea of the method he employs.

This paper is not intended to exhaustively treat of technique in all the multitudinous forms and anatomic varieties of appendicitis, but rather to discuss the common forms, if possible, in a way to suggest the principles upon which the infinite variety of morbid anatomic conditions may be dealt with.

The minds of those who have not operated at all, or of those who have only operated "occasionally," should first be disabused of the notion that operations for appendicitis are easy or simple affairs and a wholesome conviction should be entertained that they are not unassociated with danger. It is impossible for me to withhold an expression of surprise and almost of horror that most writers either leave an opposite impression or like Sonnenburg¹ state boldly that the operation is a simple one. It is my firm belief that a hundred cases of acute perforative appendicitis will show a much higher percentage of recoveries under a uniform "medical" treatment of rest and hot applications with "lancing" of pointing abscesses than will be the case with a hundred patients similarly affected and operated upon by a hundred or even twenty surgeons gaining their first experience. I am confident that the loss of life from weak or faulty operations for appendicitis is proportionately much greater than is the case with operations in pelvic abdominal work. The reason for this greater danger is that a surgical operation in the course of appendicitis is an act of supreme violence—supreme because inflicted just at the critical point, the seat of virulent infection with the deadly inhabitants of the intestine. No surgical calamity can be more appalling than the uncontrolled distribution of pus from appendicitis to previously uninfected peritoneum. When this accident has occurred the fear of the patient's death is before us, no matter what surgical technique or detail of subsequent medical management be resorted to. It is the prevention of this accident, the unnecessary distribution of pus to normal serous membrane, that in these operations marks the man of surgical skill.

No medical man objects to the acquisition of experience by the tyro; he must make a beginning at some time. But ethics demand that except in cases of the utmost urgency the inexperienced operator abstain from drawing blood. Experience can be gained without much loss of life by assisting an older surgeon. A second proposition of equal importance is that none should begin operating on these cases who has not the inclination and opportunity to follow up his work and to so perfect himself in the beneficent art that his later cases may fare better than his earlier ones.

¹ "Die Operation bei der Appendicitis perforativa ist eine einfache, und jeder, der mit den anatomischen Verhältnissen bekannt ist, wird sie leicht erlernen koennen." Deutsche Zeitschrift fuer Chirurgie, Bd. xxxviii, Hefte 2 und 3.

The *objects to be accomplished* in these operations should be clearly defined and borne in mind at the bedside and at the operation. None will deny that the first great goal to be reached is the saving of life. It is the cry of danger to life that has aroused the profession to the importance of operating at all and it is this which gains for us the consent of the patient to submit to a procedure which is *in itself dangerous*, although if indicated and properly done not so dangerous as the disease itself.

We can not conscientiously permit any departure from those technical details which most strongly promise the saving of life. In consequence we must subordinate to *this prime object* considerations of future comfort and convenience.

The *secondary objects* are, first the prevention of fistulæ; second the avoidance of recurrent appendicitis, and third the diminution of the risks of hernia.

The *preparation* for the operation by the surgeon, if the patient be not in hospital, involves in the first place obtaining the best nurse to be had, since her services will not only be required during the operation but will accordingly be of the greater importance in the after-treatment. A trustworthy assistant to stand opposite the operator is essential to the best work, to aid in preventing escape of pus into the uninfected abdominal cavity, to arrange sponges and keep them warm, to prevent breaks in the chain of antisepsis, to place and hold retractors, etc. An operating table must be provided suitable for the application of the Trendelenburg principle, if conditions are present before or arise during the operation to make it desirable. An ordinary kitchen or dining table will do in an emergency if the patient's feet are fastened to the end in such a way as to prevent his slipping toward the head of the table. A box or chair placed under the end of the table will raise its feet sufficiently. Elaborate preparation of the patient is usually impossible for lack of time. The cleansing and disinfecting of the skin should not be done in such a way as to jeopardize the integrity of the abscess wall if adhesions have taken place. Transportation of the patient even to a neighboring hospital is an extremely hazardous procedure. Every jolt and jar causes the patient to suddenly contract the abdominal muscles, menacing the normal peritoneum with a flood of infectious matter from perforated bowel or abscess.

The *position of the patient* should be subject to the varying demands of the operator as modified by the pathologic conditions encountered. Should pus be met with at the pelvic brim it may be necessary to prevent its flowing into the pelvis by quickly tipping the patient into the Trendelenburg posture. If the pus tends to flow toward the median line the patient may be rolled upon the right side. These two maneuvers may be practiced simultaneously if desired. The site of the incision must depend largely on the site of the appendix and the morbid anatomic conditions present. It must be so located as to give the most free and direct access to the seat of disease, except where we desire to avoid opening the free peritoneum. The median incision has been discarded except for the rare cases in which the cecum and appendix lie behind the linea alba.

The most rational *method of opening the abdomen* when the appendix lies in one of its more usual positions, is that of McArthur and McBurney. McBurney recommends that the skin incision, about 4 inches

long, should cross a line drawn from the anterior iliac spine to the umbilicus nearly at right angles, about 1 inch from the iliac spine, and so situated that its upper third lies above that line. The aponeurotic structures are divided with the knife, but the muscular fibers are separated by blunt dissection. In this way a wound is produced at whose edges are muscular fibers running in different directions. These fibers, held apart by retractors during the operation, close the wound almost perfectly when the operation is finished, by overlapping. Unfortunately this method can not be applied except where an abundance of good assistance is at hand and where the wound need only be a small one. The general principle involved should be respected in all incisions involving the lateral regions of the abdomen, *i. e.*, the direction of the incision should follow the general trend of the fibers of the external oblique muscle and the fibers of muscles should be cut as rarely as may be possible. In this way nerve trunks may be avoided. It is to avoid nerve injuries that Kocher recommends our making only transverse or slightly oblique incisions except in the median line. Hence the old Langenbuch incision at the side of the rectus muscle, and the various longitudinal incisions over the colon must be given up. With Kocher's recommendation we must heartily agree, partly because the nerves supplying the rectus muscle should be held sacred, for fear of weakening that part of the abdominal wall by paralysis, but chiefly because the oblique incision gives perfect access to all ordinary foci of appendical inflammation and at the same time making the wound parallel with the general traction lines of the abdominal muscles prevents yawning of the wound and diminishes the tendency to hernia at the seat of operation.

The *length of the incision* must be adequate for all the manipulations required in the abdominal cavity. The wound should always be long enough to facilitate and not to retard intra-abdominal work. There is no essential advantage in operating through openings of especial shortness. On the other hand, making the wound unnecessarily long conduces to prolapsus of intestines and increases the liability to hernia.

Before going further a few *diagnostic points* demand brief consideration, since they concern most intimately the manipulations to be undertaken later. They are as to the site and the morbid anatomy of the appendix and of the adjacent structures. No diagnostic study of a case of appendicitis can be considered complete until these points are if possible determined. The *site of the chief pathologic activity* can be determined in the majority of instances, especially when a tumefaction exists or when tenderness is found. To discover these signs a *rectal* or vaginal examination *should never be committed* since a pelvic location or extension of the inflammation is by no means rare.

[I can not agree with Fowler, who says, "Generally speaking, it is not possible to demonstrate by means of a rectal examination in these cases anything which can not be made out much more satisfactorily by external examination; if the examining surgeon is to be the operator in the case he will do well to keep his finger out of the rectum." In several instances I have been able to make or to strongly confirm the diagnosis by this mode of examination; while in other cases the exact site of the primary or secondary focus has been made out.]

Pain at the end of urination is a sign of much value

in the diagnosis of inflammation of the vesical peritoneum.

In the cases of the gangrenous appendicitis, or in the perforative cases in which diffuse peritonitis takes place, the absence of a tumefaction and the presence of widespread tenderness makes a *diagnostic localization of the appendix* impossible.

A preliminary determination of the *relation of the inflammatory focus to the ascending colon* and to the ileum is also of great import. These structures, ileum and colon, act as barriers, water sheds so to say, tending to limit or retard the spread of inflammatory fluids. Abscesses to the outside of the ascending colon generally occupy a position well toward the flank and tend to extend as they grow larger toward the renal and hepatic regions. Moreover the tympanitic colon can often be detected by percussion, nearer the median line.

Inflammatory activity *below the mesentery of the ileum* tends to extend into the lesser pelvis and can often be located by rectal or vaginal touch. Our gravest apprehensions are excited for the patient's recovery when the site of inflammation is *mesial to*

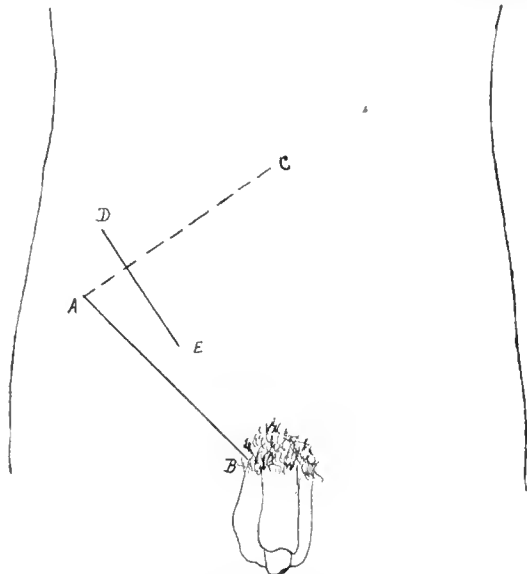


Fig. 1.—A B, Poupart's ligament; A, anterior superior spine of ilium; A C, line joining umbilicus and anterior superior spine; D E, line of incision recommended by McBurney, parallel with the course of the fibres of the external oblique muscle and its aponeurosis.

the ascending colon and above the mesentery of the ileum. The percussion relations of the colon are here of some value, but our chief dependence must be upon the situation of the tumefaction and tenderness well toward the median line.

The abnormal positions of the appendix are usually not determinable before operation unless the focus of inflammation can at once be located at a point remote from the usual site of the caput coli and be recognized as appendical.

The *Morbid Anatomic Conditions* to be encountered can be determined before operation only to a limited extent. It is partly on account of this very uncertainty that appendicitis operations may prove far more difficult after the abdomen is opened than they appeared beforehand.

The duration of the inflammation and the size of the tumefaction are points which often, not always, give a suspicion of the morbid changes to be encountered. Obviously a suppurative process of long-standing (one to three weeks) can be considered to have

brought about much adhesive proliferation. On the other hand, acute and violent symptoms lead us to suspect no such delimitation of the process by adhesions. And combining these general propositions, an inflammation which has existed for some time, but which has at the last advanced by sudden exacerbations, may be suspected to have become limited at first, but to have extended later by successive fresh invasions of previously normal serous membrane. Uncertainty in respect to the state of these new-formed barriers to the spread of inflammation is greatest between the third day and the end of the first week. No reliable diagnostic signs are as yet at our disposal to aid in deciding this important clinical question. Our efforts result only in a prediction of probabilities. From signs of violent activity of the disease, we assume the local extension of the inflammatory process. A tumefaction not apparently enlarging, in the presence of mild general symptoms, would of course suggest the limitation of the process by adhesions.

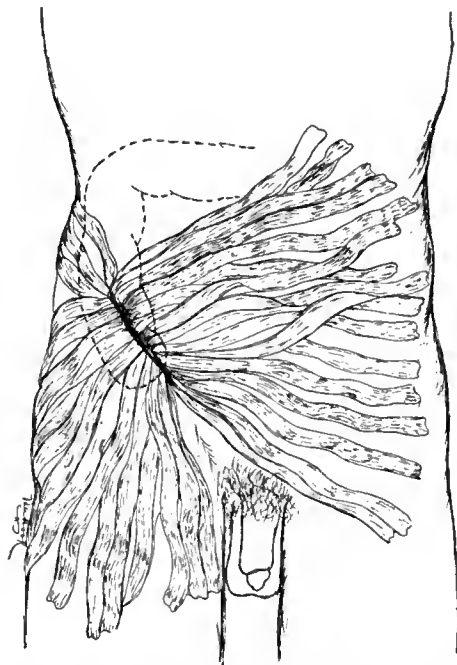


Fig. 2.—To show the appearance of the gauze strips before they are turned over to the right side of the patient's body.

Edema of the skin is usually an indication of the adhesion of the abscess to the abdominal wall and the operator in that case has the opportunity of simply draining the abscess without even seeing the free peritoneum. In one case I was able to push about in the abdominal cavity the caput coli with the abscess mass for a distance of three-quarters of an inch in each direction. The operation disclosed the fact that the omentum covered the coils of adherent intestines enclosing the perforated appendix. And as the omentum was not inflamed upon its anterior surface, the whole mass could be slipped about by external pressure.

An additional subject upon which to exercise our diagnostic acumen in future is as to the *amount of tension* present in the abscess-cavity. Much prognostic importance would attach to this knowledge if we could in any way gain it. Unfortunately we can only draw from our clinical study the vaguest inferences on the subject.

Having decided, as nearly as possible, these pre-

liminary diagnostic points we have to ask ourselves, *what is the technical task before us* when we undertake an operation for acute appendicitis. It is, we may say briefly in answer, to expose and drain an area of serous membrane surrounding the appendix, which is infected, usually with enormous quantities of bacteria of many species and often of the utmost virulence acting with the aid of most irritating fluids. If this were all—if the damaged tissues and the invading microorganisms lay beneath the skin or even immediately below and in contact with the abdominal wall, the case would be surgically simple. But this drainage has to be effected over a membrane the progressive infection of which means death to the victim of the disease.

Of what properties of this delicate serous membrane can we take advantage in attempting a practical solution of the difficulties to be met? First, our most important aid, our ever present help in time of need, is the enormous resisting power of infection presented by the peritoneum. No other tissue in the human body can so powerfully annul the pathogenic power of bacteria or so quickly and effectually remove disease producers as can the peritoneum. One-tenth the filth often cast into the peritoneal cavity without

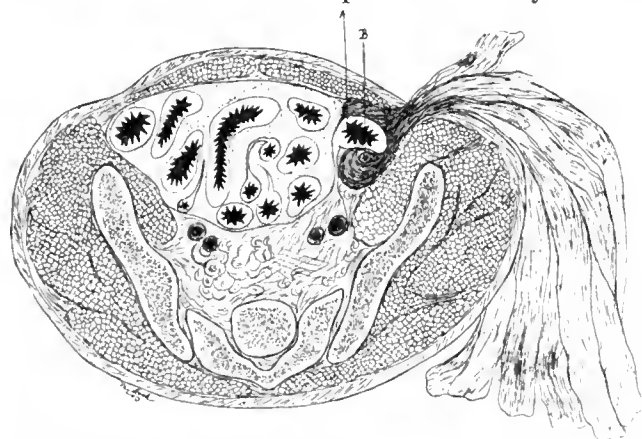


Fig. 3.—To show the relation of gauze strips to the cecum (A) and the stump of the appendix (B), when the appendix lies between the cecum and the outer abdominal wall.

harmful results would cause fatal infection in the cranial cavity. In operating for appendicitis under the conditions assumed, we take advantage of this resisting power of the peritoneum and *deliberately inoculate a portion of the serous membrane*. Inoculation, however, is fortunately not always tantamount to progressive infection. But traumatism, such as mechanical and chemical irritation, drying and cooling of the serous surface, tend to diminish resistance. These things can not be wholly avoided, and for that reason it is strongly urged that these operations are not, as is so often maintained, devoid of danger or even only slightly dangerous.

Our main surgical resource is found in *drainage by capillarity*. In the unopened abdomen the normal serous surfaces are not separated from one another by layers of gas or ordinary air. They lie in contact with one another, lubricated by a thin layer of serous fluid. A foreign fluid poured out between these surfaces is disseminated with extreme rapidity, partly by the action of gravity, but chiefly by capillary action. This force, which lifts the sap to the tops of the highest forest trees, is aided also by the vermicular action of the intestines. When about to open a *dépôt* of infectious matter it has been the usual custom to pro-

tect the intestines from contact with this material by means of large compresses. When the infected cavity has been evacuated as well as possible, the compresses were removed and pieces of gauze applied in their place to be left as drains, with the purpose of opposing the capillary action between serous surfaces and the action of gravity with the capillarity of the cotton fibers. I wish to urge the *preventive* application of this capillary drain. Before defilement has taken place in that part of the peritoneal cavity lying between the anterior parietal serous layer and the *dépôt* of infection, the operator should apply gauze sterilized and, if not required in too great quantity, iodoformized, in such a way that it will attract fluids away from the intestinal interstices and not into them. This gauze, instead of the peritoneum beneath it, must henceforth be the surface to be protected by gauze compresses. The ends of the pieces of gauze are to be inserted into various spaces, as will be dwelt upon later in order to prevent by occlusion as well as by capillarity the dissemination of poisonous fluid. The strips of drainage gauze are not to be replaced by fresh gauze at the close of the operation for three reasons, to wit: 1. The repeated manipula-

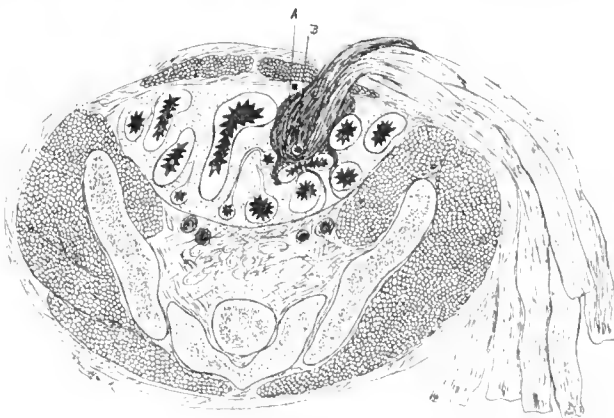


Fig. 4.—To show the application of the gauze when the appendix (B) lies in the midst of the small intestines, to the left of the cecum (A). This and the preceding drawing were made from photographs of frozen sections made by the writer after having performed the operation described in the text upon the cadaver.

tions of the intestinal serosa favor the ingress of the bacteria into the tissues. 2. The handling of the parts transports bacteria to previously clean areas. 3. The gauze, if properly applied, will carry outward, through the very long strips employed, the infectious matter contaminating their surfaces, which has escaped the carefully applied gauze compresses, that of course have been replaced as often as desired by the operator.

It is maintained by Gubaroff that the beneficent action of the absorbent gauze extends a distance of two and one-half inches on each side of its margin. This must be at least approximately true, since by no other assumption can we explain why capillary drainage enables us continuously to withdraw infectious fluids across the serous membrane without wide-spread inflammation. A recent autopsy by Dr. Fuetterer upon a case of my own, operated upon after general peritonitis had set in, confirms Gubaroff's opinion. Dr. Fuetterer says that for at least a distance of two and one-half inches on either side of the gauze the peritoneum presented all the evidences of recovery from the violent inflammation.

For practical purposes it is of the first importance for the operator to decide before operation whether he has to deal with: 1, a morbid process not mechan-

ically limited. 2, a pus dépôt shut off from the uninfected peritoneum by delicate adhesions; or 3, a well marked abscess-cavity without strong adhesions.

Once a positive diagnosis of appendicitis has been made a probable determination of these morbid anatomic points must be reached by consideration of the points already mentioned, the most important of which is the duration of the disease. In a first attack of moderately severe perforative appendicitis effective adhesions may be considered absent up to the fourth day. Between the fourth and tenth days the bands of new connective tissue are becoming resistant and may be utilized in the operative treatment. After the tenth day the abscess (if it has not enlarged by successive ruptures) may be expected to have strong walls, requiring distinct pressure to break them down.

TECHNIQUE.

In the absence of adhesions, the proper preparations having been attended to, an incision is to be so made as to place the operator in full command of the region involved. It is important that the incision be made long enough before manipulations are begun within the abdomen. This having been accomplished, the first thing to be done is to apply a gauze barrier about the

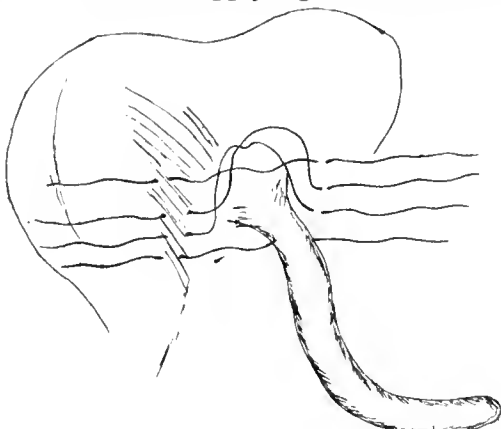


Fig. 5.—Lembert sutures applied before the appendix is cut off.

wound, so that exudate and feces may not soil the normal peritoneum. For this purpose, strips of plain sterilized gauze and of iodoform gauze will have been prepared by the nurse, two and a half inches wide, fifteen to eighteen inches long and four layers in thickness. The iodoform gauze will be used for all packing if the quantity required is not so great as to threaten iodoform intoxication. If this is feared plain gauze will be used for preventive packing and the iodoformized material reserved for the immediate drainage of the disease focus. An assistant now places a large dull-edged retractor under the abdominal wall at the edge of the wound and by strong traction perpendicularly to the abdominal parietes lifts the wall upward and away from the intestines. The operator then pushes the end of a ribbon of gauze under the abdominal wall between the parietal peritoneum and the intestines for a distance of one to three inches, in a direction at right angles to the line of incision. This piece of gauze is to be flattened out rather neatly. The retractor is now moved aside in either direction for a short distance and another piece of gauze inserted by the side of the first one, with whose edge it lies in contact. This process is repeated if free peritoneal surface surrounds the wound, in every direction, so that as the operator looks into the

wound, the edges of the incision are seen to be covered by gauze extending out into the abdominal cavity. If the inflammatory focus lies in contact with the lateral parietes, the gauze barrier must be applied with great care to prevent infection of the pelvic cavity below or the hepatic region above. For this purpose the incision must be low enough to enable the operator to get well below the appendix. Strips of gauze are then passed down toward the pelvic brim until the surgeon is sure that this avenue of infection is reasonably well closed. This maneuver may be facilitated by the temporary use of the Trendelenburg position. Equal care must be taken to guard the hepatic fossa by a similar method. For, while a patient may escape with his life, if this large area be infected, since it is in a sense isolated from the rest of the peritoneum, the extent of the surface is so great that even the primary intoxication due to flooding with feces and pus is of most serious import, especially as the chief resorption area of the peritoneum, the centrum tendineum of the diaphragm, is located here.

The object of this packing is, 1, to prevent as far as possible infection of the peritoneum when the disease focus is disturbed; 2, to set up enough peritoneal irritation to determine a serous discharge, so that outward capillarity along the strips of gauze may conduct infectious matter away from the free peritoneum²; and 3, to favor the formation of adhesions



Fig. 6.—Lembert sutures tied after removal of the appendix.

about the tract through which drainage is to be effected.

The second step has for its purpose the finding of the inflammatory focus and its immediate treatment. The operator carefully covers the visible parts of the gauze strips with gauze compresses wrung out of warm (105 degrees F.) salt solution, and with the edges of these compresses he presses aside loose coils of bowel until he reaches the seat of most active disease. If the location of the offending part has not been determined by palpation before operation and if a real search is necessary the longitudinal muscular band of the colon is an infallible guide, leading the surgeon at once to the seat of trouble. The appendix having been found, a quantity of feces, pus or sero-pus will gush upward almost invariably and must be caught on compresses, which, as fast as they are replaced by fresh ones, must be carefully discarded to prevent their being used again. The cecum is not to be lifted from its original site, if by so doing the least additional danger of infection is to be incurred. Before removing the appendix the operator carries his strip of gauze packing well down to the infected region surrounding the dangerous area, thus completing the well of gauze through which the work is done. Far

² See paper by the writer, Amer. Obstet. and Gyn. Jour.

better would the surgeon leave the base of the appendix closed by a strong catgut ligature at the bottom of such a well protected cavity, than by lifting out the cecum from the wound, spread the virulent bacteria often present over uncontaminated serous membrane. But if the cecum can be thus lifted up without risk of infection, *i. e.*, without risk of pouring infectious matter into parts of the peritoneal cavity unprotected by adhesions, a piece of gauze is slipped under it, the appendix is amputated by incision between a thin but strong temporary ligature on the proximal side and a compression forceps on the other. The projecting mucosa is then touched with a drop of carbolic acid and a row of Lembert sutures passed from side to side over the stump of the appendix. These sutures are not tied until the temporary ligature has been removed. But when this has been done the stump is inverted into the cecum and the Lembert sutures knotted. A second row of sutures may be placed if desired. This elaborate technique is rarely practicable in acute appendicitis.

Hemorrhage from the arteries of the mesenterium is controlled, if need be, by ligatures or suture ligatures. If the cecum has not been lifted, drainage of the deeper cavity is effected by some additional strips of iodoform gauze and, if the operator chooses, by a tubular drain. If it is found that the infectious fluid has already traveled between the intestines in any direction or to any extent, it is carefully followed with sponges, cleansed away by gentle pressure with gauze sponges and gauze drains left in contact with the infected serous membrane. The practice of lifting extensive masses of intestine from the abdominal cavity to clean them seems to me illusory. They are much better treated by surrounding them with gauze drains which can be subsequently removed, if necessary under anesthesia. The ends of the gauze strips are to be left very long so that they may hang over into hydrophile dressings at the side of the patient, since the writer has shown that the dependent part of the gauze strip delivers fluid partly by gravity and partly by capillarity at an exceedingly rapid rate, thus enabling the intra-abdominal portion of the strip to lift fluid against gravity without the embarrassment of imperfect delivery upon the surface of the abdomen. This method of placing the gauze drains almost all the fluid to the patient's side. I have often found the gauze and cotton dry at a distance of two inches from the wound on the left side, while on the right side of the body toward which the strips were directed, not only the dressings but the bedding and mattress were soaked with exudate.

The last step consists in the partial closure of the wound. The point at which the drains are to project is determined, the gauze being made to emerge in as short a line as possible from the site of inflammation. Silkworm gut or silver sutures are inserted above and below the drainage opening and tied. The same material is to be used for secondary sutures, the threads being introduced at the sides of the gauze mass but not tied until the drain is removed.

It is *when adhesions exist* in easily recognizable degree and mass but while they are still easily broken down by the finger-tip that the technique is as yet farthest from being settled. All are agreed that the appendix is to be removed if it be near at hand on exposing the focus of inflammation. Others say it may be removed if in the operator's opinion this can be done without breaking down the abscess wall; some say

if the appendix do not constitute a part of that wall.

Shall we remove the inflamed appendix at all hazards, as advised by still another set of clinicians? There is at present no more popular clinical problem in all surgery or one, perhaps, better worth consideration. Some bold operators say it is always to be removed; that operations without its extirpation are "incomplete;" that undiscovered abscesses may be left undrained; that recovery is slow; that fistulae and sinuses remain and recurrences are to be expected. Unfortunately statistics can not help us at present, for our clinical classification of cases is so poor that a reported death rate of 15 per cent. by one operator may be an index of no better work than would be indicated by a mortality rate of 20 per cent. by another man whose run of cases is different. Of course the man who operates on all cases, even the mildest, will make a better showing than will he who chooses for the knife only those of well marked severity. He who gets his cases on the third day will have a brighter list than will the man whose patrons call him in council on the fourth. Statistics of appendicitis operations indiscriminately gathered furnish no trustworthy information.

The question that arises in our minds when we approach our cases of appendicitis for operation is, How can we operate to save life? All other questions are secondary. All considerations of surgical nicety and personal satisfaction must give way. What is the main anatomic object to be accomplished by operation *when adhesions have formed*? You will agree that it is to relieve by outward drainage the tension in the abscess cavity—to make a safety-valve. When this has been properly done our chief excuse for interference is exhausted. Further work in the abdomen is dangerous. To what extent is it justified by securing to the patient immunity from other ills? The "aggressive" surgeon says, if we do not find the appendix we may leave a secondary abscess unopened. The "conservative" operator replies that secondary abscesses do not very frequently occur; that he does not consider removal of the appendix necessary to the discovery or drainage of the secondary abscess; and that the manipulations necessary to effect extirpation necessarily disseminate pus and, by injuring the peritoneal surface, invite infection. The aggressive man urges that recovery is prolonged if the offending member is not plucked out, that fistula or sinuses may remain, and that the patient is exposed to recurrences. His opponent argues that even if the first statement is correct, a few more days spent in bed can not be so serious a matter as the additional operative risk; that fistulae and sinuses do not often occur, and can be cured with comparative safety by an operation instituted when virulent pus has well nigh disappeared; that tenderness and occasional pain over the appendix region will usually warn the patient after the acute attack is over, if a chronic inflammation exists which is capable of being lighted up into a new acute attack, so that the part may be removed during the quiet stage. The percentage of recorded recurrences after drainage seems to be small. Fitz placed it at 11 per cent. No one should underestimate the value and satisfaction of leaving the patient freed of the dreaded appendix; but it seems to me we should not too strongly urge the operator, especially if inexperienced, to go too far toward this ideal. The conservative ground is here the safest to advise. Remove the appendix when you feel confident that by so doing

you will not scatter pus or destroy the wall of adhesions which encloses the *dépôt* of infection. Success in these operations depends largely on the use of a proper system of gauze packing. On opening the abdomen the wound is first carefully surrounded with gauze strips, as already described, passing between the abdominal parietes and the superficial layer of intestines wherever they are not adherent. The next step consists in the application of the gauze about the coils of intestine which are matted together to retain the infectious material. The operator should palpate with the utmost gentleness to ascertain what portions of bowel are non-adherent and therefore to be isolated from those nearest the appendix by the protective packing. These deeply seated strips of packing material are to be carried well back to the posterior parietal layer of peritoneum. They must touch one another from side to side and must be spread out evenly. All knots and coils of gauze must be avoided with great care. This can be accomplished most easily where the end of each gauze strip can be carried to its destination on the tip of the finger. No strip is to be folded longitudinally upon itself in order to fill up cavities. When spaces are to be filled in, additional pieces of gauze are to be used, each one coming to the surface of the abdomen by as a direct a route as possible. The infected area is not to be encroached upon for any purpose, diagnostic or therapeutic, until the peritoneum is protected by gauze. Once the operator is sure of his protective gauze the infected area is to be opened and drained. This is done deliberately by working the finger gently between the adherent coils of intestine until the exudate is reached. Direct drainage to the cavity is then affected by a strip of gauze which may enclose a tubular drain if the operator desires. If removal is not practicable, the intestines are carefully retracted with gauze compresses or strips and the drains inserted deeply enough in the track of the pus to assure the operator with reasonable certainty that no pockets of pus are without a vent. It is much safer to carry the drainage down to the appendix itself, even if it is not removed.

The location of the inflammatory focus with reference to the great barriers to the spread of infection is of the first consequence in estimating the safety and justifiability of these manipulations.

Foci situated between the ascending colon and the right lateral abdominal wall offer conditions relatively very favorable to manipulation, since the colon acts as a watershed to turn the course of infection from the main part of the abdominal cavity. Before opening such a focus the surgeon takes care that the space between the anterior surface of the colon and the abdominal wall, if not obliterated by adhesions, is protected by gauze strips and that the upper and lower boundaries of the infected area are well protected by packing to prevent the infectious matter from traveling upward toward the liver or downward toward the pelvis. This technique needs but slight variation when the appendix lies farther down *i. e.*, in the internal iliac fossa.

It is when the inflammatory disturbance lies mesially to the colon and above the ilial mesentery that the greatest difficulty exists in protecting the peritoneum during the operation and in draining adequately afterward. In the language of Harris, "However well we may pack around with gauze, it is often impossible to prevent pus escaping into the general

cavity with a resulting fatal peritonitis."³ Presupposing that adhesions are slight or altogether absent, it is absolutely essential that the patient be placed upon a table which can be adjusted to the Trendelenburg position. The pelvis being elevated, the abdomen is opened, the gauze strips having been adjusted as usual about the wound, aseptic compresses are so placed as to receive any infectious matter emanating from the appendical region, and if any adhesions are present at all, the most delicate manipulations must be made in order to leave them intact and a drain of gauze, with perhaps also a tubular one, is to be passed down to the appendix. Should delicate adhesions be disturbed peristaltic action may carry the liberated small intestines to a distant part of the abdomen in a few hours together with the actively infectious matter adherent to their walls.

It should be mentioned that transperitoneal drainage has often seemed to various surgeons more hazardous than direct drainage of pelvic accumulations through the vagina or rectum. One of these routes may occasionally be used with advantage. If the inflammation has existed for a length of time sufficiently great to allow strong adhesions to form, binding an abscess wall to the abdominal parietes, it is the surgeon's duty to seek the most direct route to the abscess interior, the incision through the abdominal wall being made in such a way that the free peritoneum will not be injured. When abscesses are situated in the right iliac fossa adhesions will oftentimes be firm between the walls of the abscess and the outer abdominal parietes, even though the anterior wall be free. The incision in such a case should be made well to the outside of the focus of inflammation or even in the lumbar region.

The gauze drain should not be removed until five to eight days have elapsed, giving ample time for adhesions to have walled off the infected area.

AN IDEAL SUTURE FOR THE CLOSING OF ABDOMINAL INCISIONS, CUTS ON THE HANDS, FACE AND BODY GENERALLY.

BY W. H. HAUGHEY, M.D.

BATTLE CREEK, MICH.

The ideal suture is one that, first, can be most readily and easily introduced; second, that holds the parts in perfect apposition with the least possible interference to the circulation of or at the edges of the wound; third, that is the least apt to become septic; fourth, that requires the least possible amount of suture material; fifth, that leaves the least possible scar; sixth, that can be relied upon to fulfill these requirements and after fulfilling them, can be removed.

The old interrupted *en masse* suture, while fulfilling the first requirement of introduction well enough, utterly fails in all the rest except the last, *viz.*: removal, for by including the tissues from one-half to one inch on each side of the wound and tying them, the circulation is materially interfered with, thus preventing healing and promoting sepsis by reducing the blood supply and depriving nature of its best means of keeping the wound disinfected and promoting its rapid repair.

The buried animal suture is objectionable because

³ See the admirable paper of Harris, *Journal American Medical Association*, Dec. 1895.

of its proneness to become septic despite our very best efforts at cleanliness and antisepsis.

In silkworm gut and silver wire we find the nearest approach to the ideal suture material that science has yet produced; either can be rendered aseptic and when so rendered, are almost absolutely non-irritating to living tissues. The problem is to so introduce them that they will meet the six requirements above stated. I have solved this problem thus: With a straight, sharp-pointed needle about one and three-quarters to two inches in length, threaded with silkworm gut (of the very best variety), I begin at the lower angle of the peritoneal incision on the left side, and with a simple spiral continuous suture rapidly close the entire peritoneal cut, bringing the end of the suture out about one and one-half inches above the upper angle of the incision in the skin, pass it through a thin aluminium plate and fasten by means of a perforated shot, then threading the needle on the other end, bring it out and fasten in the same manner about the same distance below the lower angle of the wound. Do not make too much tension, but fasten just tight enough to avoid a slack suture.

In exactly the same manner introduce the suture in the muscular aponeurosis; here you may, if the cut

twenty-four hours, when you can easily draw more; fasten and leave again, and so on until the entire suture is removed.

I have also been using this suture for the past year in cuts, wounds and operations about the face, hands, or any part of the body. It leaves the least possible scar, offers the least possible interference to circulation, thereby promoting the healing process; can be left as long as you wish, can be readily and easily removed, and in fact possesses all the requirements as yet known to man of an ideal suture. Only the very best, smoothest and strongest silkworm gut should be used. This suture was exhibited to the Calhoun County Medical Association in Albion, January 14, 1897.

REPORT OF A CASE OF CHRONIC NEPHRITIS COMPLICATING PREGNANCY, LABOR AND THE PUERPERIUM.

Read at the meeting of the Obstetric Staff of the Chicago Health Department, Nov. 2, 1896.

BY LAWRENCE H. PRINCE, M.D.

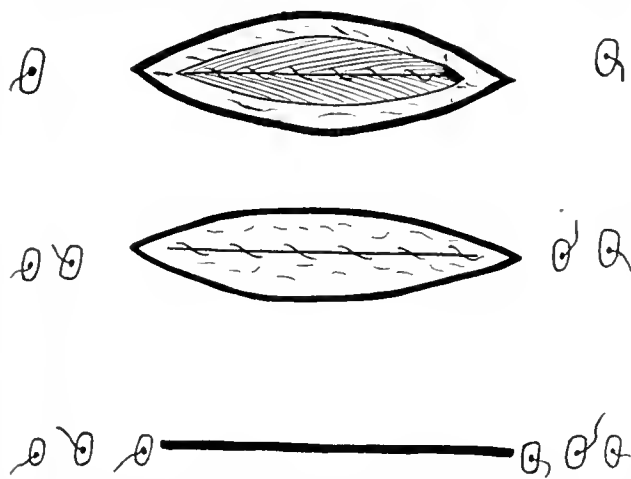
CHICAGO.

I regret very much that more accurate observations were not made in this case, and also that many of the notes recorded were lost. However, I trust that the main facts as here reported will be of interest:

Mrs. H., of Irish descent, a bright, intelligent woman, 28 years old, I saw for the first time the latter part of December, 1895. She gave me the following history: As a girl she was always well and strong. She became pregnant shortly after marriage and the child was stillborn at term. When four months pregnant with this first child she began to suffer from sleeplessness, dizziness, edema and momentary attacks of blindness. After the seventh month all these symptoms became aggravated. The edema was general, even extending to the lips and to the tissues of the back. The lips and finger nails were often cyanosed. The urine was scanty throughout pregnancy. Labor was rapid, lasting about an hour, and unaccompanied by convulsions, or any other complications that the patient knows of. There was severe epistaxis, lasting one hour, the day following labor. Patient remained in bed three weeks, the edema gradually disappearing. She got up anemic, emaciated and weak. Her general health improved and there were no further subjective symptoms of kidney disturbance. Menses returned in two months.

Three months after the birth of her first child she again became pregnant. She remained in fairly good health up to the sixth month. From this time on she suffered as she had during her first pregnancy, though less severely. She was delivered of a living child at term, the labor lasting two hours. There were no complications at time of labor and for one week the puerperium was normal. She then had a chill, followed by three days of fever and abdominal pain. She remained in bed for three weeks, getting up weak and anemic, but improved rapidly afterward for a few months. She nursed her baby for fourteen months, the child growing stronger and the mother weaker after six months. After weaning the baby she became stronger. The child is still living and robust. Menses returned after the weaning of the child.

The patient's third pregnancy began eighteen months after the second child was born. She aborted



is long, with advantage use silver wire about No. 23 or 24, as it is probably stronger, and can be left as long as necessary with no danger of disintegration, though I have left silkworm gut five weeks and had no trouble in this respect. The skin suture is introduced in the usual manner of a buried skin suture. Fasten ends same as the other two. It will thus be seen that the first or peritoneal suture will be the longest and will be fastened farthest from the extreme angle of the cut at each end; the muscular suture is second longest and fastened in the center at each end, the skin suture shortest and fastened nearest the incision at each end.

No difficulty will be experienced in removing either the peritoneal or skin suture if they have been properly introduced; simply grasp the shotted lower end, lay the open blades of the scissors on the aluminium plate, draw on the suture, make counter pressure with the scissors until about one inch of suture is withdrawn, then clip, grasp the other end and draw the long or remaining end of suture out. The muscular suture will be found to offer, in many cases, much resistance, and if too strongly pulled on will break. This is not necessary. Simply draw what will come easily and fasten by means of a split shot and wait

at three months. There was no edema prior to the abortion, but she had frequent "weak spells" and attacks of dizziness. Immediately afterward she suffered from nausea and vomiting and attacks of weakness, and had rather a severe hemorrhage after seven days. She did not fully recover from the results of this abortion for three months. Menses remained regular and patient's health remained fairly good for two years, when she became pregnant for the fourth time. This, the fourth pregnancy, began in October, 1895. At the time of her first visit to me she was about three months pregnant and in fair health. During the second week in January, 1896, she suffered from a severe attack of quinsy. A couple of weeks later her husband died of pneumonia complicating typhoid fever. During the ten days of his illness Mrs. H. assisted in the care of her husband and she received very little rest or sleep. I did not see the patient after this until she was six months pregnant, that is, in April, 1896. She said she had been feeling fairly well up to within a few weeks, and that she had voluntarily placed herself upon a diet consisting largely of milk, knowing from past experience that such a diet was best for her. Her feet and legs were becoming more and more edematous and she had begun to suffer from headaches, sleeplessness, dizziness and occasional momentary loss of vision. Examination of her urine at this time, and at intervals afterward, showed generally less than one litre passed in twenty-four hours, with a diminished amount of total solids and of urea. There was always present considerable albumin and large numbers of waxy and granular casts. There was also some pus in each specimen of urine. The treatment consisted in placing the patient upon an almost absolute milk diet, laxatives, and an occasional sweat. Her condition remained nearly stationary until two or three weeks before labor began. The old symptoms became aggravated with temporary relief after a profuse sweat or catharsis. Edema of the neck was especially marked, although there was no portion of her body that was free from swelling. On account of the edema of the neck there was difficulty in lying down, the patient thus securing little rest.

Labor came on the night of July 14, 1896, lasting but an hour, although there had been for a few days occasional preparatory pains. Aside from extreme nervousness and considerable muscular twitching, the labor was normal in every respect, and a living, though small and feeble child, weighing four and one-half pounds, was born. A few hours after labor, the patient was catheterized and the urine thus secured found to contain 5 grams of albumin to the litre. During the first few days of the puerperium the edema became gradually less, the patient's temperature remained normal, and the lochia was normal in amount and character. Patient complained of no pain and was quite cheerful, but slept little and was restless. She was very anemic. The urine was scanty, highly albuminous and deficient in urea and other solids. From two to four copious watery stools were produced daily by means of cream of tartar. A strictly milk diet was adhered to. At 3 P. M. of July 16, the third day of the puerperium, patient had a severe chill lasting about fifteen minutes. At the completion of the chill the temperature was 101.6 degrees F. The chill was almost immediately followed by profuse perspiration and by 6 P. M. the temperature was normal. The following two days the

patient's condition was practically the same as it had been prior to the febrile attack. On the morning of July 19, the sixth day of the puerperium, patient had another chill, lasting a full hour, the temperature at the end of chill being 104.5 degrees; pulse rapid. Profuse perspiration followed almost immediately, with rapid lowering of the temperature. An examination of the blood was made with a negative result, except that on one slide was found a single body bearing a strong resemblance to a malaria plasmodium. The spleen was very much enlarged. There was no headache, no abdominal nor pelvic pain nor tenderness, and the lochia was normal. There was no pain on micturition. In the absence of evidence of cystitis, or of pelvic inflammation, a provisional diagnosis of malaria was made, and accordingly quinin was administered, 2 grs. every two hours. At 3 P. M. of the same day, July 19, patient had another paroxysm, this time the temperature reaching 105 degrees, which again subsided in a few hours to 101 degrees. The urine was scant and contained 7 grams of albumin to the litre. On the following day the patient had three or four paroxysms, the chills becoming less severe with each. The temperature rose to 106 degrees the afternoon of this day, apparently without affecting the patient's general condition more than as already stated. The lochia ceased the next day, July 21. After this the daily temperature curve ranged between 100 and 104 degrees, sweating following each rise, which occurred from two to four times during the twenty-four hours. There was a gradual lowering of the temperature curve from day to day and the normal was reached at the end of the third week of the puerperium. The lochia reappeared before the temperature reached normal. The odor was faint and free from evidence of putrefaction.

About July 24, the patient complained of some pain in the right side below the ribs. An examination showed an easily palpable right kidney, enlarged and a little tender.

Up to this time the urine remained scanty, the amount for twenty-four hours varying between 250 and 750 c.c., containing much albumin but little pus. On July 24 there was an increase in the amount of urine and a sudden increase in the amount of pus, which was at first large and then gradually diminished. There was also an increase in the amount of total solids eliminated. There was some edema of the lungs and an irritable cough, worse at night, resembling whooping cough, from which her son was suffering.

The patient's general condition gradually improved; she soon was able to sleep better, and in three weeks was able to change from her bed to the couch. However, she remained emaciated and anemic for some time after. On the first of August her urine contained 1 per cent. of albumin, considerable pus and granular casts.

The patient works every day at her business, that of hairdresser and manicurist. She is living on a non-nitrogenous dietary, as for seven months past, and is slowly improving in strength and flesh. She has occasional spells of dizziness and blindness, nevertheless. On Nov. 13, 1896, she passed 1024 c.c. of urine, acid reaction, sp. gr. 1015, containing 1½ per cent. albumin, 10 grams urea, some pus and a few granular casts.

The child, which has been bottle-fed from birth, has made a desperate struggle for existence, and now

after four months, gives fair promise of making a success of it.

After a careful study of all the facts in the case, I feel confident that the puerperal febrile disturbances were due to pyelitis complicating chronic nephritis.

51 Lincoln Ave.

OPERATIONS FOR THE RADICAL CURE OF HERNIA IN PERSONS OVER SIXTY YEARS OF AGE.

BY A. E. ROCKEY, A.M., M.D.

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Illustrative case.—Man aged 72. Ruptured forty years. Retention with truss always difficult and painful. For two years the hernia had not been reduced and had grown to enormous size. During examination the intestinal portion, representing about three fourths of its bulk, was reduced by taxis with some difficulty but an omental portion remained irreducible. A truss was adjusted but the hernia could not be retained. The man had chronic bronchitis and the paroxysms of coughing soon sent the intestine under the truss. Radical cure by operation was recommended and accepted. Previous to operation the patient was kept in bed for two days and the cough much allayed by an anodyne mixture.

Chloroform was administered, the sac opened and a large mass of omentum, the lower end of which was firmly incarcerated in a small pouch, was removed after ligation with fine silk. The operation was finished after the manner of Bassini, using silk ligature and sutures. The patient made a rapid recovery and now after ten months the hernia remains perfectly cured and the general health, comfort and ability to exercise are much improved. No truss has been worn since the operation.

Appended to this article is a table of 144 cases, most of them unpublished, for which I am indebted to the courteous letters of surgeons I have the pleasure of meeting personally, both in this country and abroad. The list will suffice to illustrate the purpose of this paper in pointing out the advisability of the more general adoption of operative treatment for the radical cure of hernia in persons whose disability from rupture increases with advancing age. Under what circumstances should an operation for the radical cure of hernia be performed in the aged? It will be almost universally admitted that when strangulation makes herniotomy necessary it should be followed by an operation for radical cure except when contraindicated by gangrene or exhaustion. Beyond this point there is a wide divergence of opinion as to the propriety of performing operations for radical cure in the aged.

Jonathan Macready in his most admirable "Treatise on Ruptures" says in describing the indications for radical cure operations, "Whatever divergence of opinion there may be as to the kind of cases which call for an operation there is none in regard to the unfitness of aged and cachectic individuals." On page 367 of the same work is a table, the perusal of which may well suggest the question as to whether we have as surgeons, done our whole duty by the aged when we have dismissed them with this dictum, and then wait for them in the hospital, until the occurrence of strangulation removes all doubt as to the absolute necessity of operation.

This table is compiled from the statistical reports of St. Bartholomew's, St. Thomas', St. George's and the University College hospitals, for varying periods during twenty years and comprises in all, the records of 1063 operations for strangulated hernia.

Of these 749 were under 60 and there were 525 recoveries leaving a mortality of about 30 per cent.

There were 314 strangulated hernias in persons over

60 requiring operation for relief and but 146 recovered, leaving a mortality of 53 per cent. Observe the greatly increased mortality in the last class. A considerable part of this table antedates the general adoption of antiseptic surgery and for this reason and also that operations were then longer delayed than at present the total mortality is high. This, however, does not affect the relation between the two groups of cases and the fact remains that the mortality after strangulation in the aged is very great.

In the table which I have compiled we have the results of 144 operations for the radical cure of hernia in persons over 60 years of age done since the general adoption of antiseptic surgery. Of these eighty-three were strangulated, and there were sixty-five recoveries leaving a mortality of 23 per cent. I have tabulated these cases for the purpose of contrast with the results of radical operation in non-strangulated hernia where the operation is one of choice and not of necessity.

There were sixty-one of these operations with but two deaths, or mortality of 3.5 per cent. The fatal cases are Nos. 11 and 24 in the table. The first by Dr. W. T. Bull. Patient aged 80. Double inguinal complicated with hydrocele. Death by hemorrhage from atheromatous artery cut by ligature in omental stump. Here the cause of death was distinctly incident to age and what would have otherwise proved a complete success was defeated by this small yet significant accident. The lesson is an important one and has not passed unheeded. I recall vividly the emphasis which Dr. Bull placed on this source of danger in his paper and the fact that several times when scrutinizing an omental stump previous to returning it to the abdominal cavity, I had his words in mind. On one occasion an omentum had been ligated in four or five portions and was about to be returned when I discovered that one of the ligatures had slipped and the artery was leaking. Haste at this point would have lost the patient, and it is but right to give Dr. Bull the credit of having saved him, for I had learned the lesson of care by reading his paper. By a more general exercise of this care I believe that we may eliminate entirely this source of danger. In case No. 24, by Dr. Le Bec, the patient, aged 70, had an enormous scrotal hernia with adherent omentum, uncontrollable, with pad. Death occurred on the fourteenth day from pneumonia, the autopsy showing the peritoneum to be normal. Under these conditions the fatal result can only in a very indirect way be ascribed to the operation. This leaves us fifty-nine recoveries, which means much for the comfort of the time remaining to life after 60. How many of this number have been saved the greater danger of strangulation?

There are important factors, both of body and mind, the direct result of senility, predisposing to strangulation, and as the principal cause of mortality, they should not be overlooked or regarded as trifles. First of these may be mentioned diminished peristalsis incident to age. If we examine and give credence to the elastic strangulation theory of Sir Astley Cooper and the older writers, or to the *abknikung* theory of Busch, and admit that strangulation is even occasionally the result of fecal occlusion as stated by Kocher and Röser, then it must be conceded, that on account of diminished peristalsis the aged are in greater danger. More important than this, however, is the constantly increasing disability to reduce the rupture

| No. | Operator. | Ref. | Sex and Age. | Kind of Hernia. | Reason for Operation. | Kind of Operation. | Result. |
|-----|---|------|--------------|-----------------|--|---|--|
| 1 | G. Stanmore Bishop. | 1 | M. 63 | Left scrotal. | Patient's request. | Bishop's | Cure. Lost sight of. |
| 2 | Same | 1 | M. 67 | Left inguinal. | Could not wear truss. | Bishop's | Cure. Lost sight of. |
| 3 | Same | 1 | M. 63 | Right scrotal. | Patient's wish. | Bishop's | No return after five years. |
| 4 | Same | 1 | M. 61 | Right femoral. | Strangulation. | Barker's | Recurrence. |
| 5 | Same | 1 | M. 60 | Double scrotal. | Patient's request. | Bishop's | No return after three years. |
| 6 | Same | 1 | M. 62 | Right scrotal. | Strangulation. | Barker's | No return after 2½ years. |
| 7 | Same | 1 | M. 75 | Rt. inguinal. | Truss unbearable. | Bishop's | No return after eight months. |
| 8 | Wm. R. D. Blackwood. | 2 | M. 73 | Femoral. | Strangulation. | Excision of sac, suture of ring. | Cure. |
| 9 | Trevor Fowler | 3 | F. 68 | Umbilical. | Strangulation. | Exc'n of omentum, ring closed with eight silver sutures. | Radical cure. |
| 10 | Edgar Underhill | 4 | F. 81 | Femoral. | Strangulation. | Exc'n and suture of omental plug in neck of sac. | Cure. |
| 11 | Wm. T. Bull | 5 | M. 80 | Dble. inguinal. | For radical cure. Complicated by hydrocele and adherent omentum. | Ligature and excision of sac. | Death from hemorrhage from atheromatous artery cut by ligature in omental stump. |
| 12 | Same | 5 | F. 61 | Femoral. | Strangulation. | Ligature and excision of sac. | Recovered. Relapsed. |
| 13 | Same | 5 | F. 61 | Femoral. | Irreducible. | Ligature and excision of sac. | Recovered. |
| 14 | Same | 5 | F. 60 | Femoral. | Strangulation. | Ligature and excision of sac. | Recovered. |
| 15 | Same | 5 | M. 71 | Inguinal. | Strangulation. | Ligature and excision of sac. | Cured; no relapse; no truss. |
| 16 | Same | 5 | F. 76 | Femoral. | Irreducible. | Ligature and excision of sac. | Relapsed. |
| 17 | Same | 5 | F. 60 | Femoral. | Irreducible. | Ligature and excision of sac. | Cured. |
| 18 | Same | 5 | M. 63 | Inguinal. | Irreducible—10 years. | Lig. and exc'n of sac with sut. of external ring; omentum removed. | Cured; no relapse. |
| 19 | Same | 5 | M. 65 | Inguinal. | Strangulation. | Ligature and excision of sac, with suture of canal. | Relapsed. |
| 20 | Murdock Chisholm | 6 | F. 77 | Inguinal. | Strangulation. | Suture of omental plug to pillars, Lig. and exc'n of sac. | Cured. |
| 21 | Robert O. Callaghan | 7 | F. 74 | Umbilical. | Strangulation. | Lig'n and exc'n of omentum, purse-string sut. of sac, silk-worm gut suture of ring. | Cured. |
| 22 | Same | 7 | M. 78 | Inguinal. | Strangulation. | Ligature and excision of sac; stump returned into canal. | Cured. |
| 23 | Same | 7 | M. 84 | Inguinal. | Strangulation. | Same as above. | Cured. |
| 24 | Dr. Le Bee | 1 | M. 70 | Inguinal. | Enormous. Unable to control with pad. Adhesion of omentum. | Ligature and excision of sac; suture of canal with silk-worm gut. | Died on 14th day of pneumonia. Peritonium normal. |
| 25 | Same | 1 | M. 71 | Inguinal. | Strangulation. Adhesion of omentum to sac. | Suture of ring. | Cured. |
| 26 | Same | 1 | F. 64 | Femoral. | Strangulated. | Ligature and excision of sac. | Cured. |
| 27 | Same | 1 | F. 63 | Umbilical. | Could not tolerate pad. Adherent omentum. | Suture of ring with silk-worm gut. | Cured. |
| 28 | Same | 1 | M. 69 | Inguinal. | Impossible to retain with truss. | Suture of canal. | Cured. |
| 29 | Same | 1 | F. 72 | Inguinal. | Hernia enormous. Never retained by truss. Strangulation. | Excision and suture. | Cured. |
| 30 | Same | 1 | F. 72 | Femoral. | Adherent omentum. Pad not tolerated. | Excision and suture. | Cured. |
| 31 | Same | 1 | F. 60 | Umbilical. | Adherent omentum. Pad not tolerated. | Excision and suture. | Cured. |
| 32 | Same | 1 | F. 64 | Femoral. | Strangulated. | Excision and suture. | Cured. |
| 33 | Same | 1 | M. 65 | Inguinal. | Adherent omentum. Pad not tolerated. | Excision and suture. | Cured. Slight relapse after two years. |
| 34 | Cases from 34 to 70, inclusive, are from a personal communication from Mr. C. H. Makins, Surgeon to St. Thomas' Hospital, from cases recorded in Hospital Reports from 1889 to 1894, inclusive. | 9 | M. 61 | Large scrotal. | Strangulation. | Lig. and ablation of sac; drain. | Cure. |
| 35 | | 9 | M. 66 | Inguinal. | Strangulation. | Ligature and excision; suture. | Recovery. |
| 36 | | 9 | F. 70 | Inguinal. | Strangulation. | Ligature and excision; suture. | Recovery. |
| 37 | | 9 | M. 80 | Inguinal. | Strangulation. | Ligature and excision of sac and suture of ring. | Cured. |
| 38 | | 9 | M. 65 | Inguinal. | Strangulation. | Same as above. | Death on 19th day. |
| 39 | | 10 | M. 74 | Inguinal. | Strangulation. | Same as above. | Cured. |
| 40 | | 10 | M. 74 | Inguinal. | Strangulation. | Ligature and excision of sac. | Died night of operation. |
| 41 | | 10 | M. 84 | Inguinal. | Strangulation. | Lig. and exc'n of sac; suture. | Died on second day. |
| 42 | | 10 | F. 72 | Femoral. | Strangulation. | Ligature and excision of sac. | Cured. |
| 43 | | 10 | F. 68 | Femoral. | Strangulation. | Ligature and excision of sac and deep suture. | Cured. |
| 44 | | 10 | F. 74 | Femoral. | Strangulation. | Same as above. | Cured. |
| 45 | | 10 | F. 63 | Femoral. | Strangulation. | Ligature and excision. | Died on fourth day. |
| 46 | | 10 | F. 69 | Inguinal. | Strangulation. | Lig. and exc'n; sut. of canal. | Cured. |
| 47 | | 10 | F. 71 | Umbilical. | Strangulation. | Same as above. | Collapse. |
| 48 | | 11 | M. 66 | Inguinal. | Strangulation. | Same as above. | Cured. |
| 49 | | 11 | M. 74 | Inguinal. | Strangulation. | Same as above. | Cured. |
| 50 | | 11 | M. 82 | Inguinal. | Strangulation. | Same as above. | Cured. |
| 51 | | 11 | F. 64 | Femoral. | Strangulation. | Same as above. | Cured. |
| 52 | | 11 | F. 73 | Femoral. | Strangulation. | Ligature and excision. | Died. Gangrene of gut. |
| 53 | | 9 | F. 67 | Femoral. | Strangulation. | Lig. and exc'n; sut. of canal. | Cured. |
| 54 | | 12 | M. 61 | Inguinal. | Irreducible. | Same as above. | Cured. |
| 55 | | 12 | F. 72 | Femoral. | Strangulated. | Same as above. | Cured. |
| 56 | | 12 | F. 65 | Femoral. | Strangulated. | Same as above. | Cured. |
| 57 | | 12 | M. 72 | Inguinal. | Irreducible. | Same as above. | Cured. |
| 58 | | 13 | M. 71 | Inguinal. | Strangulation. | Same as above. | Cured. |
| 59 | | 13 | F. 75 | Femoral. | Strangulation. | Same as above. | Cured. |
| 60 | | 13 | M. 63 | Femoral. | Strangulation. | Same as above. | Cured. |
| 61 | | 14 | M. 69 | Inguinal. | Strangulation. | Ligature and excision of sac. | Died on second day. |
| 62 | | 14 | M. 64 | Femoral. | Strangulation. | Same as above. | Cured. |
| 63 | | 14 | M. 65 | Femoral. | Strangulation. | Same as above. | Cured. |
| 64 | | 14 | F. 64 | Femoral. | Strangulation. | Same as above. | Cured. |
| 65 | | 14 | F. 66 | Femoral. | Strangulation. | Same as above. | Cured. |
| 66 | | 14 | F. 67 | Femoral. | Strangulation. | Same as above. | Cured. |
| 67 | | 14 | F. 70 | Femoral. | Strangulation. | Same as above. | Died on third day. |
| 68 | | 14 | 70 | Femoral. | Strangulation. | Same as above. | Cured. |
| 69 | | 14 | 73 | Femoral. | Strangulation. | Same as above. | Died third day; peritonitis. |
| 70 | | 14 | M. 62 | Umbilical. | Strangulation. | Excision and suture. | Died 4th day; peritonitis. |
| 71 | Aug. Bioco | 1 | F. 69 | Femoral. | Irreducible for three years. | Ligature, excision of sac and drainage. | Cure. |
| 72 | Same | 1 | M. 63 | Inguinal. | Strangulation. | Ligature and excision of sac. | Cure. |
| 73 | Same | 1 | M. 64 | Inguinal. | Strangulation. | Same as above. | Cure. |
| 74 | Same | 1 | M. 67 | Inguinal. | Suppurative peritonitis. Intestinal perforation. | Ligature, excision of sac and drainage. | Death on day of operation. |
| 75 | Same | 15 | M. 79 | Inguinal. | Strangulation. | Ligature and excision of sac. | Cure. |
| 76 | Same | 15 | M. 63 | Inguinal. | Suppurative inflammation of omentum. | Ligature and excision of sac and omentum. | Cure. |
| 77 | Same | 15 | M. 64 | Inguinal. | Reducible, but could not be retained by truss. | Excision of omentum and sac; ligature. | Cure. |
| 78 | Same | 16 | F. 68 | Inguinal. | Strangulation. | Ligature and excision of sac. | Operation May 9, primary union, death June 1. |
| 79 | Same | 16 | F. 77 | Femoral. | Strangulation. | Same as above. | Death fourth day. |
| 80 | Same | 16 | F. 68 | Femoral. | Strangulation. | Same as above. | Death third day. |
| 81 | Arthur T. Barker. | 1 | F. 66 | Femoral. | Strangulation. | Excision of sac and suture with chromicised catgut. | Cure. |
| 82 | Same | 1 | F. 66 | Femoral. | Irreducible. | Same as above. | Cure, no recurrence after 2 yrs. |
| 83 | Same | 1 | F. 70 | Femoral. | Strangulation. | Same as above. | Cure. |
| 84 | Same | 1 | M. 61 | Rt. inguinal. | For radical cure. Hernia enormous; contained cecum, omentum and small intestine. | Bassini's method. | Cure, no recurrence in 2 years. |
| 85 | J. D. Griffith. | 1 | F. 62 | Umbilical. | Incarcerated. | Excision and suture with silk. | Cure. |

| No. | Operator. | Ref. | Sex and Age. | Kind of Hernia. | Reason for Operation. | Kind of Operation. | Result. |
|-----|----------------------------|------|--------------|---------------------------------------|---|--|---|
| 86 | J. D. Griffith | 1 | F. 65 | Umbilical | Incarcerated | Excision and suture with silk. | Cure. |
| 87 | Same | 1 | F. 61 | Femoral | Strangulation | Bishop's | Cure. |
| 88 | Same | 1 | F. 68 | Femoral | Strangulation | Bishop's | Cure. |
| 89 | Same | 1 | F. 60 | Femoral | Strangulation | Bishop's | Cure. |
| 90 | Joseph Ransohoff | 1 | F. 62 | Umbilical | For radical cure | Exc'n and silver wire suture | Cure. |
| 91 | Same | 1 | F. 60 | Umbilical | For radical cure | Same as above | Cure. |
| 92 | Same | 1 | F. 67 | Umbilical | Strangulated | Same as above | Recovered. |
| 93 | Same | 1 | M. 70 | Inguinal | Strangulated | Ligature and excision of sac | Patient an alcoholic, died in two weeks. |
| 94 | Same | 1 | M. 61 | Inguinal | For radical cure | Ligature and excision of sac, suture of canal | Cure. |
| 95 | Same | 1 | M. 63 | Inguinal | For radical cure | Same as above | Cure. |
| 96 | Same | 1 | F. 60 | Femoral | Strangulation | Same as above | Cure. |
| 97 | W. W. Keen | 17 | F. 60 | Fem.—Littre | Strangulation | Laparotomy; bowel released by traction from within | Recovery. |
| 98 | Same | 1 | F. 65 | Inguinal | For radical cure | McBurney's | Cure. |
| 99 | Same | 1 | M. 65 | Femoral | Strangulation | Herniotomy; suture | Died. |
| 100 | Same | 1 | F. 77 | Femoral | Strangulation | Same as above | Recovery. |
| 101 | A. E. Rokey | 18 | M. 61 | Inguinal | Could not manage truss | Marcy's | Cure. |
| 102 | Same | 18 | F. 65 | Umbilical | Adherent omentum | Excision and wire suture | Cure. |
| 103 | Same | 18 | M. 72 | Inguinal | Irreducible | Bassini's | Cure. |
| 104 | H. O. Marcy | 1 | F. 63 | Left inguinal | Strangulated | First case where closure was made with buried animal sutures; catgut; Lister dressing; carb. plaster | Union primary, remained perfectly cured until death, six years after. |
| 105 | Same | 1 | F. 67 | Left inguinal | Uncontrollable by truss. Deliberately decided upon for cure. | Closed with buried sutures | Union primary and cure remains perfect. |
| 106 | Same | 1 | F. 68 | Rt. inguinal | Same patient (105) demanded operation for smaller hernia. | Marcy's | Union primary and cure remains perfect. |
| 107 | Same | 1 | F. 62 | Umbilical | Large. Strangulated | Closed with catgut buried sutures | Union primary, cure perfect, think still living. |
| 108 | Same | 1 | F. 63 | Umbilical | Strangulated | Resected 7 inches of necrosed small intestine; sutured with caribou tendon | Death some days after from exhaustion; primary union, intestines united without peritonitis, specimen held column of water without leakage. |
| 109 | Same | 1 | M. 70 | Enormous ser. left inguinal | Strangulated | Removed sac by suturing at base and closing with kangaroo tendon suture; collodion seal | Recovery, union primary, cure permanent. |
| 110 | Same | 1 | F. 66 | Rt. Femoral | Strangulated | Closed with tendon sutures | Union primary and permanent |
| 111 | Same | 1 | F. 62 | Rt. Inguinal | Non-strangulated | Removed large omental mass, closed wound without drainage, sealed with collodion | Union primary and permanent |
| 112 | Same | 1 | F. 62 | Left inguinal | Non-strangulated | Same as above | Union primary, cure perman't. |
| 113 | Same | 1 | M. 65 | Left inguinal | Uncontrollable by truss | Marcy's | Union primary, cure perman't. |
| 114 | Same | 1 | F. 67 | Large ventral | After a suppurating Alexander's operation | Resected and closed in layers of tendon suture; sealed | Union primary, cure perfect. |
| 115 | Same | 1 | M. 65 | L'rge l't ser't | For radical cure | Marcy's | Union primary, result perm't |
| 116 | Same | 1 | M. 83 | Left serotal | Strangulated, containing twelve inches of large intestine | Marcy's | Union primary, result permanent until death 3 yrs. later. |
| 117 | Same | 1 | F. 61 | Large umb'cal | Irreducible | Resected large mass omentum and elliptical portion about umbilicus; joined with layers of tendon | Union primary and result permanent. |
| 118 | Same | 1 | M. 65 | Rt. Inguinal | For radical cure | Marcy's | Union primary, result perm't. |
| 119 | Same | 1 | M. 65 | Left inguinal | For radical cure | Marcy's | Union primary, result permanent, cord a long time tender |
| 120 | Same | 1 | F. 62 | Large umb'cal | Enormously fat woman. Uncontrollable | Resected and removed large mass of adherent omentum; closed in layers with tendon sutures; sealed | Union primary, result perfect. |
| 121 | Same | 1 | F. 65 | Left femoral | Strangulated | Closed in layers and sealed | Union primary, result perm't. |
| 122 | Same | 1 | F. 70 | Left femoral | Strangulated | Closed and sealed | Union primary, result perm't. |
| 123 | Same | 1 | F. 63 | Left inguinal | Uncontrollable | Marcy's | Union primary, lost sight of. |
| 124 | Same | 1 | F. 78 | Rt. femoral | Strangulated five days | Resected, closed and sealed | Union primary, result permanent, living at date. |
| 125 | Same | 1 | M. 62 | Rt. Inguinal | For radical cure | Closed and sealed | Union primary, result permanent, died in 1895. |
| 126 | Same | 1 | M. 67 | Enormous rgt. serotal | Old congenital. Uncontrollable by supports | Large mass of omentum adherent to testicle; testicle diseased and removed | Union primary and permanent |
| 127 | Same | 1 | M. 71 | Large right serotal | Uncontrollable | Testicle diseased; removed | Union primary and result permanent. |
| 128 | Same | 1 | M. 61 | Rt. Inguinal | For radical cure | Marcy's | Union primary and result to date permanent. |
| 129 | Same | 1 | M. 61 | Left inguinal | For radical cure | Marcy's | Same as above. |
| 130 | Same | 1 | F. 62 | Rt. femoral | Strangulated | Sealed | Union primary, died of pneumonia some weeks later. |
| 131 | Same | 1 | M. 61 | Rt. inguinal | Very imperfectly retained by truss | Closed and sealed | Union primary. |
| 132 | Same | 1 | M. 61 | Left inguinal | Very imperfectly retained by truss | Closed and sealed | Union primary, 9 months later slight yielding of internal ring. |
| 133 | Same | 1 | M. 61 | Large rt. ing | Irreducible | Closed and sealed | Wound infect'd and superficial fatty structures sloughed, union strong at date. |
| 134 | E. J. Senn | 20 | M. 67 | Inguinal | Difficult retention and annoying | Bassini's modified | Cure. |
| 135 | W. T. Bull | 21 | M. 67 | Left inguinal | Irreducible | Czerny's | Wound healing, suppuration, relapse in one month. |
| 136 | Same | 21 | F. 60 | Umbilical | Sac contained omentum, colon and loop of small intestine. Irreducible | Omentum resected; wound closed in layers with kangaroo tendon | Primary union, except small stitch-hole abscess. |
| 137 | Same | 21 | M. 63 | Rt. femoral | Irreducible | Omentum reduced; ligation of neck of sac; ring not sutured | Primary union. |
| 138 | Same | 21 | M. 61 | Inguinal | Strangulated | Same as above | Death on tenth day, autopsy showed 1½ ft. of ileum nearly black, no perforation, fatty heart, tubercular deposits in lung. |
| 139 | Same | 21 | M. 63 | Db'l. inguinal | For radical cure | Canal sutured with kangaroo tendon | Well eleven months later, no relapse. |
| 140 | Same | 21 | F. 60 | Rt. inguinal | For radical cure | Bassini's | Primary union. |
| 141 | Same | 21 | M. 62 | Db'l. inguinal | For radical cure | Double Bassini's | Primary union. |
| 142 | Same | 21 | M. 72 | Inguinal | Strangulated | Double Bassini's | Death 11 hours after operation. |
| 143 | W. B. Coley | 21 | F. 62 | Om'til ventr'l | Irreducible. Frequent attacks of incarceration and local peritonitis. Hernia about size of a fist | Incision of omentum | Primary union, slight relapse about one year later. |
| 144 | Same | 21 | F. 68 | Rt. inguinal | Of many years' duration. Irreducible for six months. Considerable pain | Incision of omentum | Perfect primary union. |

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and properly adjust the truss. This may be due to lack of intelligence or to a lowered sensibility. There are many persons whose tactile sense and mechanical ability are poorly developed and it surely does not improve in advanced age. Lack of intelligence in matters of this kind in those otherwise capable may be caused by want of proper instruction and to the confusion brought about by the failure of the many inefficient appliances which fill the markets. Some months ago I was called to attend a man over 70 years of age who was wearing three trusses and a suspensory loosely applied at various points over a large unreduced rupture. An efficient truss was adjusted, he was properly instructed in its use and has since retained his rupture without any great difficulty though not without some inconvenience.

Unfortunately all ruptured persons do not have ready access to skillful surgeons or clinics and truss societies where they have the best attention the world affords to prevent or cure strangulation. These are facilities afforded by large cities and yet the great number of strangulated hernias occurring where they are to be had and the fatal results in the vicinity of immediate assistance, might suggest that additional aid in their prevention would be desirable. I believe that remoteness of the ruptured from skillful surgical aid in the emergency of strangulation should be considered a reason for operating in those cases that both theory and experience have shown to be in such danger.

Lowered sensibility in the parts implicated in a rupture does not necessarily mean a lack of sensitiveness. In both the sensitive and the obtuse there may be an inability to discriminate and it frequently happens that the hernia protrudes and the truss is worn for a time making pressure on the contents at the neck of the sac thus greatly predisposing to strangulation. Liability to protrusion under the truss or to forcing a greater quantity of intestine into the sac from straining incident to enlarged prostate may be another cause of strangulation.

There is no inconsiderable proportion of cases of entero-epiplocele in which the omental portion is irreducible on account of firm incarceration in a pouch which in an early stage in the development of the rupture formed a purely omental hernia, but as the ring increased in size and a larger sac was pushed down from the peritoneum, the intestine was admitted to the upper and larger pouch alongside of the omentum now held securely fast below. There are also others in which the intestine has formed adhesions to the sac wall and are for this reason irreducible. In Bull's table of 134 operations of all ages there were forty-two irreducible. Of a total of 176 cases of irreducible hernia seen at the London Truss Society in the years 1888 to 1890 inclusive twenty-five were in persons over 60 years of age. These hernias it is true may be sometimes held satis-

factorily and frequently reduced by the hinged cup truss of Mr. Kindon. On page 221 of Macreadie's Treatise we find the following significant sentence: "A person wearing a hollow truss for irreducible hernia can not be deemed secure, for at any moment a descent of intestine may occur and he may suffer strangulation."

The considerations so far named have been for the safety of the patient but if it can be shown that the danger of operation is not great, are we not justified in taking some risk for his comfort? Inability to bear a sufficient degree of truss pressure to retain the rupture may often be due to poorly fitted appliances. Frequently it is caused by a tenderness and intolerance to pressure in all the tissues. Not only is the pressure of the pad poorly borne but points of counter pressure on the back are much complained of. This is especially true when we have associated an impatient disposition and is aggravated when the extrusive force is increased by chronic cough or enlarged prostate. Under these circumstances the desire of the patient to be rid of the pain, discomfort and annoyance of wearing a truss should surely have some weight in favoring the performance of a radical cure operation provided that it can be done with a reasonable degree of safety.

Permanence of cure is an important question that our inquiries have not entirely answered, for the reason that so many cases are not seen again after immediate recovery. Bishop reports one recurrence in his seven cases, but that was after strangulation. Some of his cases though have been under observation for years and have remained well. Bull reports recurrences when the method was ligation and excision of the sac. But that was in operations done years ago, before Marcy or Bassini's or even Macewen's or Bishop's methods were in vogue. Other things being equal I believe that permanence of cure may be as readily attained after 60 as in younger subjects. Success in this important particular depends on the method employed. The operation, though, must be well done. Slouchy work will not give good results.

From time to time I have tried most of the operations in vogue for the radical cure of hernia.

My conclusions are that Marcy's operation will give the best results in inguinal hernia. When I say Marcy's operation I mean the operation by closing the internal ring under the cord with kangaroo tendon. It is displeasing to me to have this operation called Bassini's because the operator does not happen to use Marcy's needles or cobbler's stitch.

Bassini's operation with silk gives equally good results, but when suppuration does occur, as it has sometimes in my operations and occasionally with others also, then the buried silk proves to be a nuisance by perpetrating a nidus for pus microbes. I believe with absolute care in all points of technique this will be very rare. In femoral hernia Bishop's method will fill the canal easier and firmer than any other method and I always employ it.

In umbilical hernia I believe the buried mattress suture of silver wire will give the best results. The pressure on the closed ring is stronger and more unremitting than in other hernias and the presence of the wire must be a continued benefit.

The prognosis as to recovery is well set forth in my table. Sixty-one cases of operation for radical cure for seasons other than strangulation and but two deaths.

Bull's seven and Le Bec's nine cases seem to have been a matter of serious discouragement to these operators. Bull says in the article already quoted: "This fatal result is worthy of notice in so far as it serves to emphasize my conviction that old and feeble subjects should not be subject to operation in reducible cases."

Le Bec says in his letter: "I dislike to operate for the radical cure of hernia in the aged as it is scarcely necessary in those who do not labor and the results are doubtful." His nine cures to one death, and that from pneumonia fourteen days after the operation, the peritoneum being normal, should be regarded more favorably.

Mr. Edmund Owen says "Age is an indefinite term and no barrier to the performance of an otherwise successful operation."

N. Senn says: "I have operated on a number of persons over 60 years of age for radical cure of hernia, usually after operation for strangulation. Age did not seem to interfere with a good result. The last patient was 78 years old. Strangulation of sigmoid flexure. Complete recovery in four weeks."

In reviewing the table and giving attention especially to the experience of H. O. Marcy, G. Stanmore Bishop, W. T. Bull, Le Bec, Arthur T. Barker, Ang. Broca, J. D. Griffith, W. W. Keen and Jos. Ransohoff, it would seem to me that precedent was established and prognosis sufficiently favorable to warrant us in recommending the operation to the aged in suitable cases as a matter of increased safety and comfort to those in whom reduction is impossible or retention difficult.

NOTE.—Recent experience with formalin catgut leads me to believe that it may entirely supplant kangaroo tendons in hernia operations. An autopsy one month after an exploratory laparotomy in a case of cancer of the stomach, where the peritoneum had been closed with a continuous suture of fine formalin catgut, showed it still firm enough to maintain support, but undergoing absorption. Previous to the appearance of Professor Senn's article (See JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION for Dec. 12, 1896, p. 1219) I had exposed catgut for one week, instead of twenty-four hours, to the formalin solution. Before boiling it is brittle, but after boiling has great strength. It requires a longer time for absorption, as I have proved in frequent trials of both methods.

ABSCESS OF THE SEPTUM NARIUM.

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The condition which, for the sake of simplicity in nomenclature is designated "Abscess of the Septum," only occasionally presents the typical characteristics of acute circumscribed suppuration. When caused by traumatism the first stage may be an effusion of blood beneath the muco-perichondrium of the cartilaginous septum which is termed "Hematoma of the Septum." In time the blood degenerates, perhaps becomes infected by pyogenic microorganisms and changes to a brownish yellow fluid which when evacuated appears neither like blood nor typical pus. In this state it has been called "Cold Abscess," and again when it does originate without traumatism and runs an acute course with pain, fever and obstructive swelling terminating in ideal suppuration, it has been spoken of as "Acute Perichondritis." Jurasz¹ has described a form in which the contained fluid is at first serous, termed serous perichondritis. Some sort of abscess is the culminating stage of all these conditions.

Although it might be possible for the bony portions to be affected, the usual seat of the disease is the cartilaginous part of the septum and it may be either unilateral or bilateral.

Etiology.—The most frequent cause is believed to be traumatism, e.g., blows or falls upon the nose, yet in many cases it is impossible to establish this relationship: slight contusions, readily forgotten, can determine a hematoma of the septum. This may run an insidious course, endure for days or weeks and undergo spontaneous absorption, having been little noticed, but in other instances the blood changes to sanguinolent pus and the cartilage itself disintegrates, the contents being retained by the bulging muco-perichondrium. Pyogenic microorganisms could excite suppuration in these and also in so-called idiopathic cases by gaining an entrance through excoriations which frequent these surfaces. The disease may occur also during the course of typhoid fever or smallpox, and Scheck calls attention to the frequency with which facial erysipelas proceeds from abrasions upon the septum and infers that abscess of the septum can be caused by infection by the streptococcus erysipielatis. In many cases still it is quite impossible to assign any definite cause.

This was true in the following case which is a typical example of the variety termed cold abscess.



Case 1.—Master G., aged 16 years; while away from home at school began to suffer from nasal obstruction which he attributed to an acute exacerbation of his customary "catarrh." No history of traumatism could be elicited, the disease having seemingly commenced as a cold and continued several weeks before it received serious consideration. But nasal obstruction, and swelling within and without the nose gradually grew so serious that he was sent home where he was confined to his bed, supposed to be suffering from asthma. On examination the diagnosis was at once apparent, for from each side of the septum bulged a fluctuating tumor which completely blocked both nostrils. The enveloping mucosa was unbroken, somewhat inflamed, and the nose generally reddened and edematous. A brownish yellow liquid was withdrawn by a hypodermic syringe, and this was followed by a free incision toward the base of one side and gentle curetting of the cavity. The central portion of the cartilage had liquefied, but it redeveloped from the muco-perichondrium and perfect recovery ensued.

Symptoms.—In case of the transition of a hematoma into an abscess, the disease may manifest itself either quite insidiously or the suppurative change may ensue quickly and be associated with sneezing, nasal irritation and slight fever. In either event the salient symptom ultimately complained of will be obstruction to nasal respiration together with the discomforts of mouth breathing.

When the abscess arises in the form and in conse-

¹ Journal of Laryngology, etc., Nov. 1896, p. 266.

quence of acute perichondritis it is ushered in during a few days by symptoms indicating a high degree of inflammation, *e. g.*, chill, pronounced fever, pain, swelling and redness of the whole organ. Spontaneous rupture is more apt to occur quickly in this than in the former type, although it may be much delayed after the subsidence of the inflammatory symptoms, leaving again nasal obstruction as the salient symptom.

Case 2 exemplifies the latter type.—Mr. B., aged 26 years; thought he had contracted a severe "cold in the head," the condition commencing with chilly sensations followed by headache, fever, local sensitiveness and redness extending to the bridge of the nose. These symptoms gradually subsided but were replaced by nasal obstruction and what he now supposed was chronic nasal catarrh. The examination was not made till the third week when a fluctuating tumor was observed to bulge from each side of the septum. Typical pus was evacuated by an incision and the cavity curetted. The destroyed central part of the cartilage ultimately redeveloped without deformity. He positively denied the least probability of traumatism as a cause.

Diagnosis.—By simple inspection with the head tilted backward, the semicircular tumor may be seen bulging from one or both sides of the septum. Palpation by a probe will cause deep pitting or even fluctuation, and aspiration by a hypodermic needle will provide a sample of the contents. It may thus be readily distinguished from polypus for which it is most commonly mistaken by novices, but which occurs but rarely in this situation, and also from syphilitic gumma which commonly develops at just this spot. I have seen one case of gumma in which the central part had liquified before the occurrence of superficial ulceration, in which the diagnosis would have been impossible, had not other syphilitic signs been present.

Prognosis.—If recognized reasonably early and the abscess evacuated, the prognosis is very good. Notwithstanding complete liquefaction of the cartilage itself, if the muco-perichondrium be preserved, another cartilaginous septum will develop and this usually without deformity. However, if the disease be unrecognized or if the inflammatory action extend to the antero-superior border of the septum, the line of junction of the septum with the lateral cartilage and nasal bones, softening and depression of these which constitute the dorsum of the nose will result. Apart from this "saddle-back" deformity or in conjunction with it, perforation of the septum can also ensue.

Treatment.—When the initial stage is a hematoma cold applications would be suitable. In any event as soon as pus is present a rather free incision should be made low down on one side and the contents expressed. This should be reopened daily with a probe until the cavity has been effaced. It is probably not necessary to curette, wash out or pack the cavity with gauze although one or all of these may seem desirable at times.

FIBROUS NASAL POLYPUS.

BY D. R. SILVER, M.D.

SIDNEY, OHIO.

As a contribution to our knowledge of nasal polypi, I venture to report this case, which, in one respect at least, may be unique. The growth developed in a boy, 12 years old. He had the characteristic mouth-breathing at all times on account of the complete closure of the posterior nares. On inspection, a tumor the size of a man's thumb could be seen in the naso-

pharynx below the line of the soft palate. To the touch it was hard and seemed firmly attached; so firmly, indeed, that to remove it by twisting was out of the question. Its point of attachment could not be made out. Its large size made the passage of anything through either nostril nearly impossible. As a preliminary step, a threaded needle was passed through the lower portion of the growth so that it could be pulled well down and forward, after which it was found possible to pass a small rubber catheter, to which was attached a string, through the right nostril and out of the mouth, as in the operation for closing the posterior nares. By means of the string a heavy silver wire, doubled, was drawn through and slipped over the tumor, fortunately encircling the point of attachment, which could hardly be called a pedicle, since it was found to be nearly as large as any other portion of the neoplasm, and fully three-fourths of an inch in diameter. The wire attached to a strong screw cut its way through in an hour.

It proved to be a three-lobed affair, very hard and fibrous, and was drawn out through the mouth by means of the thread which transfixed the growth at its lower end. Its dimensions were $2\frac{3}{4}$ by $1\frac{1}{2}$ by $\frac{3}{4}$ inches. The pain produced by the constricting wire was considerable, but there was no hemorrhage to occasion alarm. Notwithstanding the fact that the point of attachment was well cauterized a large mucous polypus sprang up in a few weeks. This was removed by twisting and did not return. The specialist trained in the manipulations of rhinologic work may not find the removal of nasal and post-nasal polypi very difficult. But when these growths are very large or very small the general practitioner finds their management quite perplexing. For this reason the subjects of nasal polypi furnish a large contingent of the army of victims who fall an easy prey to the catarrh "specialist." Nostrums, whose only recommendation is their nastiness, are bought and used for years by persons whose rather fashionable complaint could be removed by a twist of the forceps.

HEMORRHAGE FROM THE LARYNX, FOLLOWING AN ATTACK OF MEASLES, IN AN ADULT.

Read before the Section of Otolaryngology of the College of Physicians, Philadelphia, Pa., March 3, 1896.

BY FRANK WOODBURY, M.D.

Instructor in Laryngology in the Philadelphia Polyclinic; Attending Physician to the Medico-Chirurgical Hospital, etc.

PHILADELPHIA, PA.

On January 24, Martin S., 27 years of age, born in Ireland, a laborer by occupation, presented himself at the laryngologic dispensary of the Polyclinic Hospital with an acute inflammation of the fauces and pharynx and with almost extinguished voice, requiring considerable effort in speaking. He gave the following history: About nine weeks previous, or about the first of December, four sailors were admitted to the Naval Hospital suffering with measles. Three cases developed subsequently among the employees of the institution, where he was engaged as a fireman, and all the cases recovered. The patient was taken sick January 3, or about two weeks after the first patients were convalescent, and had been allowed to go around the grounds. He said that he had fever, eruption, conjunctivitis, cough, and subsequently there was much desquamation, especially from his face

and hands. The cough continued and was attended by hoarseness and free expectoration. He was confined to bed for only one week, but had been feeling poorly ever since. The notes in the case book state that three days before the visit to the hospital, he woke up in the morning feeling his throat obstructed and, on clearing his throat, expectorated mucus and blood, followed by a small quantity of pure blood. He stated further that he had spit blood each morning since, but none during the day. He indicates a spot in the trachea, just below the larynx, as the place which he considers the source of the hemorrhage, as he has more or less pain in it all the time. He has also sore throat and pain in speaking and in swallowing.

On examination, the fauces, soft palate and uvula and part of the pharynx were found to be intensely hyperemic and his throat was so irritable that it was impossible to make a complete laryngoscopic examination at this time or on several subsequent visits. On February 5 the throat was so much better that an examination was made, when hyperemia of the larynx and vocal bands was recognized but no ulceration was found. There has been no hemorrhage since his first visit and his general condition has steadily improved.

The treatment was by inhalations of benzoinated steam, a gargle of chlorate of potassium and rhus glabra, with the internal administration of muriate of ammonia (gr. x every three hours) and milk punch. he was instructed to use his voice as little as possible and to remain in the house the greater part of the day.

SHOULD CULTURES FOR BACTERIOLOGIC EXAMINATIONS BE TAKEN FROM THE NASAL CHAMBERS AS WELL AS FROM THE THROAT IN CASES OF SUSPECTED DIPHTHERIA.

Read before the Section of Otology and Laryngology of the College of Physicians, Philadelphia, Pa.

BY E. LARUE VANSANT, M.D.

Professor of Diseases of the Throat and Nose, Philadelphia Polyclinic; Laryngologist and Aurlst to the Howard Hospital; Fellow of the College of Physicians, Philadelphia; Fellow of the American Laryngological, Rhinological and Otological Society. PHILADELPHIA, PA.

Recently I commenced to take cultures for bacteriologic examination from the nasal chambers as well as from the membranous deposits in the throat in cases of suspected diphtheria. The nasal cultures were made by pushing the swab back to the posterior portion of the nasal chambers, but not going through to the pharynx. Those from the throat were made by rubbing the swab over the surface of the membranes before any remedial application had been made.

In the following two instances the bacteriologic examination showed diphtheria bacilli in the cultures from the nose, and gave negative results in those from the throat. The bacteriologic examinations were made by Dr. W. J. Gillespie, to whom I acknowledge my indebtedness:

Case 1.—Mr. M. H., age 46 years, seen Nov. 25, 1896, has a history of several attacks of quinsy during his life. His present illness dates from a chill three days ago: since then he has had fever, chilliness and exhaustion, pain on swallowing, with swelling of the left side of his throat. Examination showed the left tonsil swollen and hypertrophied, the peri tonsillar tissue of the same side greatly swollen. A velvety, dirty yellowish-white membrane covered the left tonsil and extended over the palatine arches. Upon removing a portion of this membrane a granular, slightly bleeding surface was seen

beneath. There was no membrane visible in the vault of the pharynx or nose. The nasal septum was deflected to the left and the nasal chambers contained considerable muco-purulent secretion. The bacteriologic report was: for the nose, numerous diphtheria bacilli; for the throat, large cocci, numerous spores and long slender bacilli, no diphtheria bacilli.

Case 2.—I. L., aged 18 years: seen Dec. 2, 1896. Has been in good health until two days ago, since then has suffered from chilliness, fever and sore throat. He comes from a neighborhood largely infected by diphtheria. Examination showed both tonsils swollen, with an extensive yellowish-white exudation from the crypts. This exudation in several spots spread over portions of the tonsils. The pharynx was dry and glazed with a whitish membranous appearance at the vault. Nasal inspection revealed an advanced atrophic rhinitis, but no membranous deposit. Bacteriologic report: The culture from the nose contains a few diphtheria bacilli; that from the throat contains numerous organisms resembling the bacilli subtilis, no diphtheria bacilli.

It is a well-known fact that it is not infrequent to receive negative results from bacteriologic examinations in clinically well marked cases of diphtheria. Thus, Dr. B. Meade Bolton, in an abstract from the first annual report, bacteriologic laboratory, Bureau of Health, Philadelphia, Pa., read before the Philadelphia County Medical Society, June 10, 1896, states that in 557 cases diagnosticated as diphtheria, bacteriologic examination showed the presence of diphtheria bacilli in 507, or 90.2 per cent.

Here, then, is nearly 10 per cent. of negative bacteriologic examinations in 557 cases where positive diagnosis of diphtheria had been made. There can be no doubt but that carelessly made cultures would account for some of these negative results. Still, when we consider that the membrane in the throat in diphtheria quickly becomes loaded with many other bacteria found in the mouth, and further that the diphtheria bacilli are rather under the membrane than in it, we can readily see how a carefully made culture may have the typical growth of the diphtheria bacilli obscured by that of foreign germs, and how a culture taken from the surface of a diphtheritic membrane may contain only partially devitalized diphtheria bacilli, incapable of giving a good culture for bacteriologic examination. The normal nasal secretion, however, seems to retard the formation of the membranes; cultures, therefore, taken from the nasal chambers may in some instances give more accurate results than those taken from the throat.

The embarrassment to the attending physician caused by receiving a negative bacteriologic report in cases clinically so well marked as to cause him to make a positive diagnosis of diphtheria and the lessened carefulness and insufficient isolation on the part of the patient after receiving such a report, should certainly cause us to use every means to insure accurate results. I, therefore, would suggest that in all cases of suspected diphtheria, cultures should be taken from the nasal chambers as well as from the site of the membranes in the throat.

INFANT MORTALITY DURING LABOR, AND ITS PREVENTION.

BY Z. LINCOLN WHITMIRE, M.L., M.D.

URBANA, ILL.

(Continued from page 294.)

Uterine inertia.—This brings us to uterine inertia, which is a peculiarity the uterus has sometimes of suspending operations and refusing to further assist in the delivery of the child. It most commonly occurs in protracted cases, accompanied by great prostration in the patient, and coming on near the

termination of labor, though it may occur at any time, it is more apt to occur at a time when its presence most endangers the child's life, as when the head or cord or both are passing over the perineum and are undergoing great compression irrespective of the uterine contractions; so that for the child to be left in this position would be certain death if continued for any great length of time.

Uterine inertia is also apt to appear in excessively painful cases and in those in which the patient is weak and emaciated, a condition resulting from disease or from an ever-present dread of the approaching and inevitable ordeal of labor. The chief consolation to the physician is that this trouble may be anticipated and often prevented, and when the above-mentioned indications are present the patient should be put on a tonic and alterative treatment at once. If we see her for the first time in this condition when we are called to attend her through confinement, we have nothing left to do but to fortify her against the probable results by a judicious administration of stimulants. But in cases of high nervous tension, sedatives may be indicated. Sometimes it happens that her health is in a perfect condition, but circumstances are such that the case bids fair to be a long and tedious one; as, for instance, when the membrane has ruptured early or in a case of breech presentation, and particularly when both these conditions are present. In such cases also we should fortify her against the probable occurrence of uterine inertia.

Unless properly attended to, uterine inertia is apt to prove fatal under the following conditions: 1, in a breech presentation when the body is born and the head and cord are passing together over the perineum; 2, in a head presentation when the head has reached the outlet and the crown is exposed to the cold air. In both these cases the child's life may be lost by the head being too long in this contracted condition while passing through the outlet; and also the cold air upon the exposed part may cause the child to inhale sufficient mucus to strangle it after the cord is tied and the child is dependent upon its lungs for oxygen. In a breech presentation the cause of death is the compression of the cord, and it will be fully discussed under the head of breech presentation. When uterine inertia occurs under either of these conditions, a prompt delivery is necessary to save the child. Forceps must be used, if indicated, where there is time to apply them.

Ante-partum hour-glass contraction of the uterus is not an uncommon complication to labor. It is usually caused by a premature rupture of the membrane, for when the amniotic fluid escapes the uterus has to contract upon the irregular surface of the child's body. This causes an uneven distribution of the uterine force, and the uneven contractions resulting are apt to assume the hour-glass variety. Under such circumstances the child can not pass out of the uterus, and unless the pressure is relieved or normally applied the child's life will be lost. For the purpose of stopping this abnormal and dangerous condition such remedies are indicated that tend to relax the muscles of the uterus. A dose of ipecacuanha is very good for this, but a trifle slow in its action. A hypodermic injection of morphia sulphate or a very small injection of apomorphia are also good remedies, but should be given with care. Inhalations of chloroform, however, are perhaps the most commonly used and are far the safest. Whatever is determined upon must

be administered promptly and with due consideration for the patient and for the circumstances attending upon her case. After the contractions have assumed their normal state, if there is a disposition on their part to return to the abnormal type, the physician may use as prophylactics the remedies he formerly used as a cure, though in most cases he will find that an immediate delivery is far preferable.

Displacement of the uterus.—Of the various displacements of the uterus, anterior displacement occurs most often in pregnant women; and a description of it will answer for a description of each of the others—except as to the location of the os and the fundus. The principal cause of anterior displacement of a gravid uterus is the weakness of the walls of the abdomen and their inability to support the weight of the uterus. It tips forward therefore and distends the abdomen, while the os is tipped backward and out of sight, as an examination of the vagina will disclose. It is quite evident that while the os is in this hidden position it will be impossible for the uterus to expel the child, and the pressure is sure to either rupture the uterine wall or kill the child, or both. To prevent such a calamity it is the duty of the physician to correct the displacement and to maintain the uterus in its normal position till labor has progressed far enough to prevent a recurrence of the trouble. This is easily done. To replace the uterus, govern the fundus with one hand, from without the abdominal wall or from within the rectum, according to the direction of the displacement, and with the other hand in the vagina, guide the cervix with your fingers. After it has been replaced it can be kept in its proper position by bandages around the body of the woman or by her assuming an appropriate position. It is then best to hasten delivery; but do not use forceps unless especially indicated.

Premature rupture of the membrane is next in order in this discussion. This complication may happen at any time during gestation, though it rarely happens before the fifth month. When the membrane ruptures before the last two weeks of gestation, the length of time thereafter till the occurrence of premature labor is proportional to the amount of amniotic fluid that escapes. This rule applies only to those cases where the membrane has been ruptured by accident, or ruptured intentionally. When it has been ruptured by the expulsive force of the uterus in trying to expel the child the rule does not apply; only applying where the rupture of the membrane produces the pains.

The normal time for the membrane to rupture is after the os has been expanded and dilatation is almost, if not quite, complete. The premature rupturing of the membrane with which the physician has to contend, and which comes under this class of complications, is that in which the membrane ruptures near the completion of gestation and before the os is dilated. The principle use of the unbroken membrane in labor is the service which the sack performs as an entering wedge in dilating the os; a use for which its conical shape is particularly adapted. When it breaks, its conical shape is lost. But the breaking of the membrane does not always mean the loss of the fluid, for the presenting part sometimes hinders the escape of the fluid that is behind it; hence the bad results that sometimes follow it are prevented; for instance, ante-partum hourglass contraction of the uterus. It may be stated as a rule

that the earlier the membrane ruptures the more fluid escapes and the more serious are the resulting troubles.

When a child is born at full term and the fluid has escaped several weeks previous to the delivery it is commonly called a dry birth or a dry labor; and such a labor is usually a slow and tedious one. The first stage is slow because (in the absence of the conical-shaped sack) the os can not easily be dilated by the blunt skull or flabby and yielding breech; while the rest of the labor is retarded by the uneven distribution of the uterine force, due to the uterus having to contract upon the irregular surfaces of the child's body. This slowness subjects the child to the pressure a long time, and may of itself be the cause of the child's death. This is particularly true when the head is passing over the perineum, where it undergoes great contraction. The uneven distribution of the uterine force may result in ante-partum hourglass contraction, which has been discussed.

As mentioned above, the cases in which the membrane ruptures early in confinement are slow and tedious and especially so when nearly, if not quite, all the fluid has escaped; but, nevertheless, they should be allowed to take their course and should not be interfered with till it is seen that the life of the child is in danger. In that case delivery must be hastened as much as is consistent with existing circumstances, but always bearing in mind that the forceps must not be used until they are indicated.

In the second class of complications, those located in the cord and placenta, there are five kinds, as follows:

Short cord.—By this term is meant a cord that becomes taut before the child is delivered. It may occur in several ways, of which the two main ones are: 1, its entire length may be too short; 2, its shortness may be acquired. Examples of the second may be found in cases where the cord is wrapped around some part of the child a sufficient number of times to make it too short, or where the cord is tied in knots enough to produce the same effect. The cases are very rare in which the cord is naturally too short, but when such a case does occur it is a most difficult one to handle. The diagnosis of a short cord is not very easy, and on a correct diagnosis depends the success of the delivery. When the child descends during a pain and then goes back with a jerk, and keeps up this by-play without any ground being gained, one may be fairly certain that he has a case of short cord to contend with and should proceed at once to determine the cause of shortening. This can usually be done by inserting the hand past the presenting part and feeling carefully with the fingers to determine if there are any knots in the cord or if it is wound around any part of the child; one of which conditions will be found, as a rule, to cause the shortening of the cord. If these are excluded, then the only conclusion remaining will be that the cord is naturally too short.

The dangers from a cord that is naturally too short are, that it may break or that the placenta may be torn off before the child is in a position to breathe, or before the cord can be tied. Before the child can be born the cord must be divided or the placenta must be separated from the uterus; hence it is the duty of the physician to strive to have the child as nearly delivered as possible before that time, in order that no time may be lost in completing the delivery and ligating the cord, and he should also cut the cord, if

possible, rather than allow it to break wherever it may happen to, or to allow the placenta to be torn off. The cord will stand a great amount of tension before it breaks, and may be stretched to nearly five-fourths its original length. However, stretching the cord in utero has its dangers. An umbilical hernia may be produced, and in some cases it may retard the circulation sufficiently to asphyxiate the child. The umbilical hernia may be prevented if the hand can be placed inside the uterus so as to grasp the child by the abdomen and allow the cord to pass between the fingers. This is impossible with a head presentation, and can rarely be accomplished when the breech presents.

When the shortness of the cord is caused by its being wound about some part of the child or from its being tied in one or more knots (though it may not be naturally too short to allow the child to be delivered) the dangers are the same as those above mentioned, but the danger of stopping the circulation is greater. These cases will be discussed separately.

(To be continued.)

SURGERY ONE HUNDRED YEARS AGO.

AN HISTORICAL STUDY

BY DR. GEORGE FISCHER.

DEDICATED TO THE GERMAN SURGICAL ASSOCIATION.

TRANSLATED FOR THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION
BY CARL H. VON KLEIN, A.M., M.D.

CHAPTER I.—DOCTOR AND BARBER.

Social relations in the first half of this century; Prejudice; Physician's dress; Family physicians; How soon can one become a great and renowned physician? Education of physicians; Dissensions in consultations; Title; Drinking, physician's income; Beard and barber; Lepers and bathers; Education of the barber-surgeon (*des Wundarztes*); His social position; Country barber-surgeons; Consultations between physicians and surgeons; Various classifications; Surgical fees; Separation of surgery from medicine; Extinction of barber-trust.

In the eighteenth century family life among the Germans was very rigid. Housekeeping was recognized as the highest destiny for the wife and daughters and the simplest as well as the poorest homes were kept in the best of order. The husband demanded respectful obedience from his wife and children; even the brothers exercised a certain amount of superiority over their sisters. There existed but little general culture in these homes, but plenty of mother wit and wholesome cheerfulness. On holidays, the wealthy citizen appeared in a velvet coat, richly embroidered in gold and silver, broad cuffs and fine lace jabots; and shoes and silk stockings were the correct style in ladies' company. Father and son carried a sword at the side. The apparel worn by the women resembled the fashions of the present day; the hair was dressed high on top of the head, adorned with ribbons and flowers; the heels on the shoes were very high, whalebone corsets which compressed the waist and forced the bosom together were worn, and large hoopskirts and trains. The faces were painted, *tout comme chez nous*; there are only the little beauty spots of court-plaster lacking on the cheeks and chin of our beautiful women. A strict formality controlled all social intercourse. Congratulations and compliments were so rigidly regulated, that with the numerous little rules of propriety the entire intercourse maintained its unchangeable solidity. No woman was allowed to attend a concert or theater without an escort, nor to go promenading;

even on her way to the church or store she had to be accompanied by her servant-girl. The German peasant often boisterously scolded about this constrained formality, yet he frequently lacked strength of character and will-power. Money and external honor exercised so great a power that about the year 1750, among the best citizens there was scarcely a single man in Germany who would have refused an anonymous bribe; for example, even Gellert, professor at Leipsic, who served as a model of delicate feeling and unselfishness for his contemporaries, yielded to the temptation. The height of ambition was to obtain a title.

About the close of the seventeenth century the absurd custom of giving mechanics court titles sprung up, and if the rank of the court tailor exceeded that of the court gardener, the latter received the distinction of wearing a sword. These things increased the feeling of inferiority among the poorer middle classes and created in their characters the deference and self-constraint paid to the upper classes. The system of protection flourished. Those who had noted and influential acquaintances were envied; an intercession was demanded from every friend of the family, and to kiss the hand of a patron was deemed good form. On account of this lack of self-consciousness, vanity, on the other hand, grew to such an extent that those without rank, title, or station in life were recklessly thrust aside or spurned. Recognizance by the influential and not merit was brought to account. An enlightened public press and strong public opinion were wanting in the German citizen, and his interests in political economy were at a standstill. Most of the gentry of every city belonged to the learned professions, and the theologians, jurists and physicians represented the culture of the times. Every morning they met at their favorite resort, the apothecary's, for a social chat. While enjoying a glass of aquavit (liquor) here they talked over the news of the day, caring little about the skeletons of sharks, stuffed apes and abortions in alcohol which adorned the tops of the cases. This custom grew so that the Mayor of Hanover (in 1784) prohibited the sale of whiskey and liquors at the town apothecary's, because the drug clerks were detained in their work and liable to make mistakes. Only physicians and surgeons were admitted, but no longer than necessary for their usual morning drink. The next important event of the day was the arrival and departure of the mail coach, and when a stranger came to town, what an unusual occurrence! Every two weeks only, in the year 1750, did the mail coach go from Dresden to Berlin. The usual stage coach fairly crept along through the country, there being no highroads built until after the Seven Years' War. Those who had to travel a great distance, generally purchased a conveyance, which was sold at the end of the journey. The fastest horses got over the ground at the rate of five miles a day. (G. Freitag.)

About this time the upper classes began to show an interest in science. The boys collected butterflies and beetles and then mounted them; chemistry, distillation, etc., were pursued with pleasure. Superstition, however, still prevailed among the laity. In the graveyard they imagined they saw ghosts, and old cats they took for witches. In the village of Hechingen, in 1725, the lord high forester offered five florins to every countryman or peasant who delivered any of the evil spirits, dead or living, to him. During a thunder storm the church bells were rung, but this was forbidden in Prussia in 1783; in the Rhenish

hamlets, however, this superstitious notion still exists. Throughout Germany, as well as England, bleeding was allowed only on certain days. Crowds of peasants migrated to the cupper, who abused them outrageously. The Greeks and Turks, at that time nearly all having the festering cut on the arm (Fontanelle), had a few incisions made in the vicinity of the ear for the bleeding, after a bandage had been tied around the neck to stop the flow of blood, all on account of a little headache. In Pavia existed the barbarous custom of bringing all the horses into the public square of the church, where one after the other they were bled in honor of the holy Antonius, the father of the monks. Purgatives were taken on certain days, the dog-days being particularly dreaded. The result of the physic depended upon the sign of the zodiac in which the sun chanced to be, but in the fall and spring of the year it was very necessary for the maintenance of good health to cleanse the system thoroughly. It was thought that the blood during the period of menstruation contained poison, so a number of surgeons forbid the use of linen articles belonging to women. Amulets and conjuring were in high favor and served as a cure for dead bones. With the formula "abrakadabra," fever was treated; the bite of a mad dog by the Hubert's key.

If clothes make a man, the German physician's appearance during the middle of the eighteenth century proclaimed him one of the worthiest of men. Imagine him with a wig high in front and falling in curls halfway down the back (allongeperücke) powdered white as snow, with a scarlet red coat embroidered in gold and adorned with a jabot and broad lace cuffs, silk hose, white or black, and with flashing knee and shoe buckles. Under his arm he carried a small black silk chapeaubas and in his hand a large bamboo cane, which was indispensable in supporting his chin when pondering over critical cases. When Frederick William I. condemned the allongeperücke and introduced the braid in the Prussian army on account of its simplicity, the fashion set was soon followed by all the men, even the colleague adopted the plait.

But this mode continued only until the French Revolution, when there was no time for curling and dressing the hair: on the other hand, however, the style of dress-coat worn by the North American ambassador in Paris was adopted. Not every German doctor could, without punishment, cut off his braid to be more comfortable, did he not wish to be decried as a Jacobite by the nobility and lose their patronage. It was evident that the physicians speculated to retain the confidence of the public by means of the changes they made in their apparel. This circumstance was well remembered by Napoleon I., who, when suffering from cancer of the stomach while at St. Helena, not wishing to have two diseases, nature's and the physician's, and refusing every internal remedy, wrote his Italian physician the following: "You know, Doctor, that the science of medicine is nothing more than the art of putting to sleep and soothing the imagination; for this purpose the ancients clothed themselves in long coats and flowing garments, which attracted attention and forcibly impressed the sick; but since this Galenic delusion is out of practice, you no longer exercise your former power over them. Who knows but what I would take you for the god of Health were you to appear suddenly before me, attired in a flowing toga and a large wig with a long braid. Unfortunately you are no more than the god of Remedies." The

position occupied by a physician grew to be a most honorable one. He obtained a certain amount of superiority among the upper classes because they were sadly deficient in the knowledge of sciences, and his importance grew more and more when, in the eighteenth century, the family physician came to occupy the confidential relations to the family formerly held by the minister of religion. Soon the former learned all the weaknesses and secrets of the family, binding him more closely, and the relationship between physician and family was considered a great blessing. Thus during the latter half of the eighteenth century the doctor occupied a position only inferior to the nobility. The State also aimed to elevate the position of the physicians. In 1748 they were ranked between the knights and the nobles. The latter loudly disapproved of this classification, so the emperor settled the matter in favor of the doctors, who of their own accord had expressed their desire not too closely to approach the birthright of the gentry in writing. Joseph II. abolished an old law existing in Galicia, that any nobleman who practiced medicine should be deprived of his rank. Afterward the physicians partially lost their high esteem, principally on account of those who, by means of pride, charlatanerie or grossness, which had become typical of our class, ingeniously tried to force their rank. To attain this end they employed many little devices, for as in all ages the laity judged the physician more from appearances than by his scientific knowledge and talents. He who hastened to a bedside and remained a long time, chatting to the patient and those surrounding him, wrote a new prescription at every visit, bowed low and kissed the hand, was the most highly respected, and as long as there are physicians it will never be otherwise. Even Galen complained that he had noticed many doctors by paying compliments in the morning and attending a social dinner in the evening, rose to the rank of a "Doctor of Fashion."

The layman valued the physician with gray hairs the most, for he reasoned thus: The greater the age the greater the experience; a correct inference, providing he was a capable critic. But if he lacked this talent of observation then his experience was of as little value as an old shepherd dabbling in our science.

In answering the question: How can one soon become a great and noted physician, a fine set of rules for success is found in Gruner's Almanach of 1782, which are as follows:

1. Enjoy as long as possible all pleasures of academic life; study a little of everything and for the rest depend upon your good head and your glib tongue.

2. On your return to the Fatherland be the wise-acre and derive all your wisdom from journals and newspapers.

3. Give your opinion on everything as if you were an adept in the art whether you understand the matter or not.

4. Praise yourself and your merits, your successful cures and operations, on every occasion, especially when meeting those incapable or not desirous of criticizing you, and all other know-nothings treat with contempt.

5. Be governed by those who wish you well, flatter them, please them in all respects, and as the occasion demands be most courteous.

6. Don't continue your studies, but all the more find fault with learning, journals and bibliomania.

7. Begin early in the morning to stroll through the streets and so persuade the inexperienced ones to believe you the greatest and busiest physician.

8. Give yourself the appearance of a busy man even if you are doing nothing.

9. Mention with pride the important observations and discoveries you have made to your friends so often until they believe it.

10. Become a naturalist or a researcher of nature, because it is the fashion and purchase an elegant case for natural products filled with all kinds of bric-a-brac.

11. Invest in a splendid library and a fine collection of instruments and prepared articles, anatomic, chemic and pharmaceutic; cause a bust to adorn your entrance and your renown as a collector to be spread everywhere.

12. Become the editor of a journal or paper, otherwise a co-worker. If neither, appoint some one to laud your deeds in them.

13. When attending a social gathering see to it that you are called away several times and after your return remark how great the afflictions of a famous man and physician are.

14. Procure a court title or one of some scientific society. It will insure you respect and a reputation.

15. Strive to gain the patronage of the aristocracy.

16. Meddle in everything, undertake everything and promise everything and, like a man of rank, keep only as much as you can and desire to do.

17. Go on a trip if possible. Knowledge gathered in Paris or Edinburgh is better than German wisdom.

18. Condemn all medical books that do not come from London or Edinburgh and purchase the original copies, even if unintelligible to you. The possession of them looks so very learned.

19. Keep up a correspondence with the learned and employ your money in obtaining patrons and friends.

20. Be a friend of the superficial colleague, of the ministers, the druggists, barbers, and of the midwives; also of the merchant, if he can be of use in attaining your purpose.

21. Be religious and a strict observer of ecclesiastic tenets, if you can thereby add to your reputation and increase your income.

22. Manufacture secret medicines, and effect, like Ailhand, the publication of letters of convalescents who never wrote you any.

23. Write some paradox article, clothed in modern style, if forced to copy from the practice of the ancients, and confirm your work by invented or false observations, regardless of the connoisseur and independent thinker.

24. Marry the daughter of an eminent man (distinguished relatives increase purse and mind) or of a rich man, be he of superior or inferior rank. For money encourages one and occasionally makes fame.

25. Have your photograph taken several times and have steel engravings made, accompanying them by your titles, whether merited or unmerited.

26. Assist wherever you can gain honor, money or reward, unmindful of right or wrong.

27. Make it a point to entertain the public with the latest news, with the introduction of novelties, with modern changes in art, with various rumors, etc., and cause them to feel your great value in diverse ways.

28. Boast of the many professional offers you have received from all parts, and if necessary, have some

relative prepare some plausible papers for the purpose. The following instance of Dr. Faust shows us by what means some of the colleagues sought to draw on the people. When Dr. Faust settled in a village he sent out printed sheets offering his aid to the peasantry. He introduced his circular by: "My dear countrymen! It is well for us to know the man with whom we are to have anything to do, so I say to you that I am a just, good and upright man." Then he advertised that his price for a prescription was only a groschen (about 2½ cents), that the medicines he dispensed could be had at cost price or prepared for a groschen; the real poor would be benefited without paying the groschen. In conclusion the advertisement read: "And now, dear fellow-men, I hope that you will not need my services. But if you do you will find that I am an honest and sensible man. Farewell! Altmorschen, the 6th of November, 1785.—B. C. Faust, Dr."

The number of physicians in the beginning of the century was limited, but greatly increased toward the latter half. This increase was partly caused by the growing dislike for the ministry and the abandonment of many cloisters, and partly by the greater number of public offices being filled by the sons of the nobility, making it difficult for the middle classes to obtain any of these positions. The very easy examinations also contributed thereto. On account of the superfluity of young physicians, no more than six inland candidates were allowed to graduate in Vienna every year (1789). The greater mass of the profession was comparatively ignorant; there were as many titled dabblers as real quacks. Aside from the complaints of the great men, that there were not twenty out of a hundred physicians, who had intelligently read Hippocrates in the original language, and that many had never even seen his works, the studies of the practitioner were at a stand-still. They never changed their views, read nothing, obtained no information on anything and followed their old rut of practice. But a few had such an excessive thirst for knowledge, that they continued their studies while out on the street. Stoll, who had a large practice in Vienna, put several volumes, especially Boerhaave's writings, into his buggy, which he read while driving. No one concerned himself much about literature and the younger physicians knew little of what had been written prior to the beginning of their studies; most of them cured palliatively; not knowing the nature of the disease, its origin, or its symptoms. They had but little knowledge of pharmacology, for many mixtures prescribed decomposed, soured or turned into a poison. These were extremely expensive prescriptions—"but physicians and druggists ought not to foster an unlawful and secret agreement." (Austria, 1872). Hieroglyphics in writing prescriptions were still used, as: ∇ was the sign for water, † tr. pur. for saltpetre, θ)-(ac. crud. for sal-ammoniac, and others. Not until about the end of the century a greater interest was taken in the study of materia medica, as well as a preference shown for the same, and those in possession of many approved prescriptions were thought to have invaluable treasures. The physicians became druggists. An idea of the amount expended for medicines in the various hospitals may be gleaned from the following: In the year 1796, at the clinic in Jena \$680 worth of medicines were needed for 540 patients; and for the Kieler Hospital in 1797, the total of the apothecary bill was \$711 for 343 patients. On

account of their low degree of education, disputes among the physicians were common occurrences. Often these became so heated, that they were discussed in public and the most absurd measures planned to extirpate such an evil. According to the opinion of theologists there was no class of professionals in the whole of Germany who contradicted each other oftener than physicians. Whether they attended the same university, were instructed by the same teachers or learned at the bedside of the same patients, was a matter of indifference to them, but when practicing they met at the home of a patient, the spirit of opposition arose. A code of ethics was not followed by physicians in consultation, for if an improvement resulted in the patient's condition, the consulted physician received the credit, while on the other hand, if the patient died it was considered due to the treatment of the regular doctor. Hence ensued the aversion for consultations among physicians, particularly the older men. If a slight shake of the head was noticed by some member of the family, a little wrinkling of the forehead, or a scarcely perceptible smile on the part of the consulted colleague, then the confidence of the family physician was irrevocably lost; although he may have been incapable of correctly diagnosing the disease in the first acute stages, the nature of the same was readily understood the moment the second physician was called in. There accrued an intolerance of sects and advocates of different methods of practice. If a patient died, the one party cried out that the other had beaten him to death. The animosity toward the learned physician was often vented in such expressions as: "He cured his patients in Greek. . . . they died from the influence of too much Hippocrates," and such. The opinions of others were not tolerated and it was believed that there was only one saving and infallible church of medicine, which was defended with an amount of arrogance and animosity, which had no equal. But systems and hypotheses were subjected to so many sudden changes, that the younger generation seldom held the same opinions as the older, although the difference was often only apparent, not real, being clothed in a different language. In large cities, where many consultations were held, the practitioners made an agreement, something like Molière's axiom: *Accordez-moi la purgation, je vous accorderai la saignée*. What the family physician prescribed was good and the drift of the whole consultation was that everything was sanctioned in a friendly manner, but silently conditioned to enjoy a similar collegiality, should the case be reversed. He who was not loyal to this party was excluded from the consultation, or a great tumult arose, if it was absolutely demanded. The conduct of physicians toward each other professionally, was not an honorable one, for they were very envious of each other. They could not endure to see the financial conditions of a physician in great demand improve day after day, when they themselves were remaining far behind. Envy combined with an over-estimation of self, made them uncharitable and intolerant, and even if the merits of the more remote were willingly acknowledged. Those of the nearer colleagues were ignored and underrated. The mass of medical students has been without means from the very beginning, which is very detrimental when entering on their practice. In Vienna it was a common occurrence that medical students, in order to live, accepted a position as tutor or steward in some

wealthy family. Maria Theresa decreed that only the most talented of the laity be admitted to the study of medicine. For some time practitioners among the higher classes were honored with titles by the State. Beginning often as private surgeon, they soon advanced to the position of private physician, and if made privy councillor, reached the highest round of earthly happiness. Among these climbers there was a wild chase after titles. If you made yourself ridiculous by being addressed as "Mr. Counsellor of Justice" or Mr. "Counsellor of the Superior Court of Justice," whether P. Frank, himself privy councillor and private physician, called to mind how absurd it would have sounded to say Privy Councillor Hippocrates and Private Physician Galenus, was immaterial. This "miserable chase after titles by physicians," which Kurt Sprengel also severely criticised, this inequality, which was thereby carried over into the social standing and not tolerated by the weaker characters, caused much ill-feeling. If the privy councillor believed that his higher title also gave him a scientific preference or rank, the position of the lower ranks of the profession was hard indeed, and these often showed their spite by contradictions at the consultations. At the beginning of their practice the younger physicians had to battle with all these disadvantages. They soon perceived that scientific knowledge alone did not reap the greatest harvest, but that the artifices of flattery and ostentation were the most profitable. In consequence many intelligent men cursed their thankless profession, lived in poverty, or very early in life resorted to by-ways to obtain a practice by means of which they could support themselves. Others, like the quack, proclaimed their skill and corrupted the position of their colleagues in a malicious way. The rules prescribed by the state as to the proper conduct of physicians availed nothing. The Austrian physicians "ought, at all times, to lead a good, decorous and righteous life; deport themselves toward every one, as well as toward each other, in a quiet and modest manner; not derogate one another as to his skilfulness nor as to his profession, nor by underrating one of his colleagues obtain his patients; carefully investigating their condition and constitution, ought not to disclose the secretly discovered wants and frailties of anyone, and in consultations necessary to ascertain the recovery of a patient, should unite their jurisdiction and skill to further the same; not prescribe for a patient secretly, without the knowledge of the regular professor, nor give him medicines prepared by himself, unknown to the regular physician, but be especially impressed with the importance of their calling when following the same, and bear in mind that every carelessness perpetrated by them conceives a subtle murder for which they will some time be held accountable to God." (1753.)

The measures taken to prevent the quarrels of physicians were poorly chosen. Prominent men gave well-meant advice to the young physicians how they were to conduct themselves toward patients and colleagues and what would be of advantage to them in their pursuit. But they overlooked the fact that the young men revealed no inclination to accept such precepts and conducted themselves with the same spirit of independence as heretofore. Fines were imposed upon the physicians in Jülich-Berg, who quarreled during a consultation in the presence of a patient, or slandered an absent physician. A man who gave the provocation had to pay a fine of ten

dollars, the one who took it up in a similar temper, five dollars—physicians fared no better, the fine for slandering an absent colleague and corrupting his good name was fifty dollars. Peter Frank believed that this nuisance might be abated by a more extensive education of the practitioner, therefore proposed the establishment of public libraries to promote greater facility for study, the contributions for which would be small in comparison to the expense of a private library. Circulars were to be sent out in the city and the country. He also recommended the formation of medical societies, to induce physicians to be more sociable and to meet once a week for the discussion of serious cases. Stieglitz did not share his opinion when a young man; deemed a true spirit of friendship among physicians more valuable and more beneficial than all medical associations, in which he did not believe.

The drinking habit, it is well known, was common among the physicians as well as the members of other social circles. The German has ever done honor to the cup and foreigners have not, without cause, held up this thirst as a general disgrace to him. In Venice it was customary to offer the physician a cup of coffee when paying a visit to a patient of nobility, so the busy doctor was obliged to drink on an average of twenty cups of coffee a day; in Southern Germany, however, the courtesy offered was a pint-glass full of wine.

The laity drank much brandy, the abuse of which gained such ground that Heister made the proposition to allow its sale only at apothecaries' where it was to be retailed in small quantities. To prove his assertion that brandy was unnecessary, Heister said that the Grenadiers at Potsdam were fine-looking men, although they were prohibited from indulging in a draught, by the King of Prussia. The number of practicing physicians being small in the first half of the century, their income was sufficiently large and lived however in modest circumstances, corresponding to those of the peasantry. During the reign of Friedrich Wilhelm I. of Prussia, doctors were not allowed to charge exorbitant prices for their services, especially when attending the poor: they "must diligently strive to make them as moderate as possible." In Austria a patient was not allowed to change his physician or surgeon, unless he had paid him well, yet "to contract for big wages was forbidden." Later on, the increase in the number of physicians impaired their incomes: many scarcely made a living in spite of their great exertions. At that remote period, complaint was made that deceased physicians' wives received no pensions, although their husbands had died from contagious diseases contracted in hospitals or during epidemics. Accordingly a Medical Widows Association was formed in Vienna, in 1758. The rules prescribed were:

| | Braunschweig, Lüneburg. | Gräfschaft, Lippe. | Prussia, 1815 |
|---|----------------------------|-----------------------|--------------------------------------|
| | 1719 | 1789 | |
| Daily prescriptions | 3 Mgr. | 3 Mgr. | 1 ⁸ / ₁₆ Thlr. |
| 1 visit | 24 Mgr.—1 Thlr. | 12 " | 2 ³ / ₁₆ Thlr. |
| 1 visit after 10 o'clock | 1 Thlr. | 24 " | 2 ³ / ₁₆ " |
| Every succeeding day-visit | 6 Mgr. | 4 " | 1 ³ / ₁₆ Thlr. |
| Every succeeding visit after ten | | 12 " | 1 ² / ₁₆ " |
| A visit, one mile out, without traveling expenses or board | 1 Thlr. | 2 Thlr. | 1-2 " |
| A visit at night, one mile out, without traveling expenses or board | | Besides the mileage | |
| To attend a surgical operation | | 3 Thlr. | 3-4 Thlr. |
| | | 1 " | 1-3 " |

One Thaler equaled 73 cents; one Mgr., 23.85 cents.
(The Swedish physician had a right to demand one German specie dollar.)

On New Year's Day the druggists were wont to make valuable presents to the physicians and surgeons; it

was also the day for rendering bills. On account of the long interim, the laity did not remember how much they really owed for services rendered; the consequence was many complaints about the amounts charged. The following is the main substance of three contemporary protest letters written in the year 1760 in Hamburg: "Think of it! the Doctor has sent me such a bill that I'd like to put him in the pillory for it! I had a little hemorrhage of the lungs, in two days coughing up scarcely more than a little painful of blood. A few times he called at night, and for such a visit, the distance being only a step, the impudent fellow charges me a rix dollar, and beside that for every other visit he put down one mark. Aye, truly, he earns his bread very easily."

A consumptive woman, worth about 40,000 marks, who had received sixty-two professional visits, and a number of bottles of medicine beside, writes: "Sir, here are the hundred marks of Lubec; but never enter my door again! I will not pay a mark of Lubec (legal) for a visit, and for the 38 marks charged for medicines, I might have kept house a long time or made myself some fine presents. My life is so dear to me and my cough is not so intolerable that I must allow myself to be reduced to a beggar."

"Is it right, that I should pay a bill to the Doctor for my husband who died, when he ought to have helped him? I am now tired of paying bills. Besides, I don't want to throw my money out on the street. He suffered with dropsy. Three times the water was tapped, but it did no good. An hour before his death he said: My dear wife, it is of no use, I must die, so don't give the fellow a dreyling (penny), for he is letting me waste away. Now he has died, so he shall not have a single penny."

Only a few physicians, principally the private physicians in the large cities, had royal incomes, being handsome paid for the cures they effected. The Courts of Vienna, Berlin and St. Petersburg made the first private physicians privy counsellors, thereby imitating a custom which had existed in France for a number of years. When Joseph II. suffered from an ulcer (fistula) in the rectum, which was successfully removed by the Knight of Brambilla, he made him and his body physician von Stoerk, a present of 1000 sovereigns and a diamond ring worth 6000 florins; the younger Brambilla received 6000 florins and a ring worth 2300 florins, and the private physician Kollmann 4000 florins and a ring valued at 1300 florins. A few days before the death of Joseph II. Guerin was called in for a consultation, for which service the Emperor gave him a barony and 100,000 florins. The Emperor's royal brother, Frederick William II., of Berlin, gave Dr. Brown, who successfully vaccinated the princes and princesses of the House of Prussia, 10000 Prussian dollars (73 cents each U. S.) and pensioned him for life, the amount of 600 Prussian dollars being by and by raised to 1200. Not less generous was the King of England, George III., who for the treatment of his well-known trouble by Father Willis set apart 1500 pounds sterling for his yearly wants to run twenty-one years, and for the son, a life-pension of 650 pounds sterling. The other attendants received 30 guineas for every visit they paid in Kew. Occasionally the position of the court physician was abused, for instance, in 1780 when he had for many years attended the poor aristocracy of one of the German Courts, they gratuitously sent him testimonials of their friendship, accompanied by diplomas of recom-

mendation for services rendered, containing the gracious remark, that if he demanded as much as a penny for them, he would be disgraced with a dismissal.

(To be continued.)

PECULIARITIES OF THE SURGICAL DISEASES AND INJURIES OF THE NECK.

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(Continued from page 308.)

PECULIARITIES OF THE SURGICAL DISEASES AND INJURIES OF THE INFRAHYOID REGION.

Congenital malformations.—It is in the lower part of the region that the orifices of the bronchial congenital fistulæ of the neck are most frequently met, near the head of the clavicle; they may also be met in the thyro-hyoid region. Median fistulæ below the larynx exist but their internal orifice is always pharyngeal, not tracheal. Median thyro-hyoid fistulæ also exist, but they are always secondary, resulting from the rupture of a cyst; there exists only one positively identified case on record.

Acquired malformations present no peculiarities.

Swellings of the region are mainly due to the various diseases of the thyroid body, which will be especially described further on.

Burns and the effects of cold are only peculiar in the possibility of being followed by cicatrices which bind the neck, and chin down to the sternum in a very peculiar manner.

Contusions are usually due to blows, to the passage of a carriage wheel, to garroting, to hanging; on account of the presence of the larynx and trachea they may be followed by great concussion effects altogether out of proportion to the severity of the blow. Contusion of the thyroid cartilage by a blow upon and close to it may cause death without any appearance of a lesion. Contusions may cause rupture of the larynx and trachea. In hanging the compression very often bears upon the base of the tongue, and the larynx with its vessels and nerves are not injured. In strangulation the traumatism is applied upon the larynx and the trachea, which may be torn by the fingers and the rope; all the structures are more or less torn. In some cases lesions of the skin of the neck, of the trachea and of the larynx may cause inhibition of the heart, of the respiratory organs, and of the brain. It is especially in cases of traumatism of the anterior region of the neck that we observe a complete loss of consciousness and a respiratory and cardiac syncope. This is what takes place in cases of death through incomplete hanging, which does not prevent the passage of air through the respiratory passages. In such cases the red blood of the arteries continues red in the veins, whereas in death by true asphyxia the blood becomes rapidly black in the arteries. *Accidental wounds* are rare; the most frequent are punctured wounds resulting from a fall on a sharp body.

Homicidal wounds are not so rare; they are usually incised wounds and a cutting instrument is used by the criminal to make believe they are self-inflicted or accidental. Suicidal wounds are the most frequent; they are seldom punctured; they are usually incised wounds; they are most frequent at the point of the thyro-hyoid ligament or below it; they are lacerated,

jagged, deeper on the left side; they are usually directed from left to right and obliquely downward or transversely across the neck; the large vessels are seldom injured. Usually the suicide, throwing his head back, cuts too high; the trachea and the rigidity of the sterno-mastoid protect the vessels. If the head is too much bent the larynx, the trachea and the sterno-mastoid also protect the vessels. There is usually a single gash. These wounds are more commonly fatal than the other wounds, because the victims are usually intoxicated or are laboring under delirium tremens or insanity; these patients should be watched closely because they often tear away their dressings and die of hemorrhage. These wounds sometimes present much hemorrhage, although none of the larger vessels are hurt, except the anterior jugular vein; there are cases on record where air has penetrated into it and to the heart, causing death. The edges of these wounds are often much separated and have a tendency to roll in on account of the action of the fibers of the platysma; coaptation therefore needs more care. Lacerated wounds are very rare. Gun-shot wounds are also rare. Balls may traverse the neck without wounding any important structures, because the tissues are round in form, elastic, movable.

Bites by dogs are comparatively common; the anterior region of the neck is the favorite aim of dogs, especially the bull-dog; they cause all the lesions of strangulation and of incised wounds.

Non-penetrating wounds, *i. e.*, not involving the larynx, trachea, pharynx, esophagus, recurrent nerves, are not peculiarly serious and should be treated as elsewhere, taking care to secure the divided vessels, etc. Penetrating wounds due to any cause involving the respiratory or digestive tract and the recurrent nerve are of course severe. Punctured wounds, especially in duels, may penetrate into the mouth, pharynx, esophagus, larynx or trachea; it is important to look for such penetrations and to keep the parts as thoroughly disinfected as possible because there is often risk of infection of the wound from within. The landmarks are the hyoid bone, the thyroid and cricoid cartilages; the laryngoscope should be used.

Penetrating wounds above the larynx are less dangerous than those of the larynx and those below it; the lower the wounds the more dangerous they are. Wounds through the thyro-hyoid membrane penetrate into the pharynx, injure the epiglottis, the aryteno-epiglottic folds, the cartilages, the vocal cords; they are less dangerous than below because they allow feeding; they are more liable to suppuration. Wounds of the larynx are comparatively frequent because of its prominence; they are usually very dangerous and may be diagnosed by the rushing sound of the air passing through. They should be treated like those of the trachea. Wounds of the trachea are commonly followed by great hemorrhage; because of the large vessels around it, which may also have been wounded by the same cause. When the severance is incomplete, there is slight gaping; when the section is complete, the lower end is drawn in deep at each effort of respiration, and the soft parts cover up the orifice, causing suffocation. In all cases keep the blood and foreign substances out of the respiratory tract until hemorrhage is checked. Rose's position may be of assistance. In incomplete wounds there is slight gaping and the wound should not be stitched; the head should be flexed on the chest and fixed in that position by a liquid glass bandage. In complete

wounds, when longitudinal, there is little gaping. In complete transverse wounds the retracted lower end should be searched for and a strong thread passed deeply through it, an attempt at stitching should be made; if it fails a tracheotomy tube should be placed in it; the tube should be longer than the ordinary one because the swelling may lift it out of the trachea; the head should be kept flexed also; a moist cloth should be placed over the tube; the room should be warm, at about 70 degrees, and a vessel with boiling water should keep the atmosphere moist; all this to avoid bronchitis and pneumonia. Later we should be mindful of the exuberant granulations which may obliterate the canal.

The sequelæ of wounds of the air passages are permanent contractions of these passages, aphonia, fistulous orifices, entire occlusion of larynx, the air passing through the external wound; fistulæ are hard to cure. Wounds of the pharynx and esophagus are usually done through the side of the neck by balls, knives, etc.; they cause much pain, spasms, hiccup, dysphagia, more or less suffocation; there is escape of food through the wound if this be of a certain size; the thirst is great. The patient should be fed by enema; if the use of the esophageal tube becomes necessary from insufficiency of the rectal alimentation, it should not be left in place, but introduced each time. In incised wounds stitch immediately; in lacerated wounds let the wound granulate. Rupture of the esophagus from contusions are rare; the special symptom is hematomesis. When the diagnosis is sure cut down upon the injured spot along the anterior edge of the sterno-mastoid; stitch the wound if possible; if not, pack and let it granulate.

The immediate dangers of wounds of the anterior region of the neck are death from hemorrhage; although the hemorrhage stops from syncope it may start again later: from asphyxia due to the tongue or epiglottis or a piece of cartilage obstructing the passage, or to blood and clots in the larynx and trachea; from penetration of air in the veins. Penetration of the respiratory tract is recognized by cough, blood expectoration, hissing or boiling sound. The secondary dangers are inflammation of the larynx, edema of the glottis, bronchitis, pneumonia, abscess and purulent dissections, emphysema, aphonia more or less complete, dysphagia; secondary hemorrhages are common and serious complications. In all injuries with solution of continuity of the mucous membrane the most frequent source of death may be mediastinal emphysema and inhalation pneumonia.

Wounds of the neck parallel to the longitudinal fibers of the muscles are more apt to be followed by emphysema. The remote effects and sequelæ may be exuberant granulations causing dyspnea; cicatrization, producing strictures of the larynx, trachea and esophagus; persistent fistula; paralysis due to inflammatory thickening, which may disappear later, or due to injury of recurrent nerves or the pressure of a bullet. All these complications should be treated here as elsewhere.

Dislocation of the hyoid bone is very rare. There is one case (Gibbs) in which the dislocation was muscular; it was accompanied by a peculiar click on the left side of the neck and a sensation of choking; examination showed displacement of the left horn of the hyoid bone; reduction was affected by throwing the head backward toward the right side, so as to stretch the muscles of the neck, and then suddenly

depressing the lower jaw, thus bringing the depressors of the hyoid bone into action. All the following fractures are usually due to violent contusions.

Fracture of the hyoid bone is rare, but it is well-known; its site is usually the great horn, near the body; it may be unilateral or bilateral: it is characterized more or less by hoarseness and dysphagia, according as it is without or with displacement and without or with deformity, it is accompanied by more severe symptoms, especially when swallowing fluids, which pass into the larynx, because of the imperfect action of the epiglottis; it is reduced by using the fingers inside the oral cavity.

Fractures of the larynx are less rare than fractures of the hyoid bone; they are due to great violence; they are usually accompanied by much pain and suffocation, often calling for immediate reduction or for tracheotomy. Each cartilage may be fractured by itself; the thyroid is most frequently the site; fractures without displacement are not so grave. Fracture of the thyroid cartilage is more common in old people, because of the ossification of the cartilage. Fracture of the cricoid is more dangerous than the others, perhaps because of its small size, which causes slight displacement to be followed by serious obstruction. Fractures or subcutaneous ruptures of the trachea without actual wound have been observed after great traumatism; they are less frequent than the others; they present the same symptoms and indications as the fractures of the larynx, but the lesions are lower down. The trachea should be opened below the fracture, and a long tracheotomy tube be introduced; when the fracture is low down, the lower end should be hooked, raised and sutured to the skin or upper fragment. Spontaneous ruptures of the trachea due to violent efforts, are admitted by some. All these fractures are more serious if accompanied by displacement which obstructs the air passages. The symptoms are those of obstruction and shock, plus those of fractures in general: crepitation, abnormal immobility, plus also aphonia, dysphagia and emphysema. The fragments should be replaced by external and internal manipulations; if necessary, the parts should be incised through and the fragments stitched. Tracheotomy is often indicated; it is well to perform the operation before grave symptoms develop, because these sometimes come on so suddenly that the patient may succumb before the surgeon can be had to operate.

(To be continued.)

Fourteenth Biennial Report of the Board of State Commissioners of Public Charities for the Years 1895 and 1896.

ARTHUR R. REYNOLDS, M.D., PRESIDENT.

(Continued from page 315.)

IMPROVEMENT OF ATTENDANTS IN HOSPITALS FOR THE INSANE.

We believe that the State hospitals for the insane may well excite the pride of the citizens of Illinois. Their material equipment is admirable and in the whole their condition has undoubtedly never been as good as it is at this time. Such institutions, however, can not stand still. They must either retrograde or continually improve.

The medical and nursing care should always command our greatest interest, and it is here as in educational institutions of the State, that there must be continuous progress if there is not to be retrogression.

Early in 1896 the State Board of Charities sent out a list of inquiries to superintendents of hospitals for the insane in the United States regarding attendants or nurses. We present below a condensation of the replies received, fifty-eight in number. The inquiries were made because of the belief of the board,

founded upon careful observation of hospitals in this and other States that improvements in what should be the nursing care of the patients is at present the greatest administrative need of hospitals for the insane.

In the condensed statement below it will be seen that out of the fifty-eight State hospitals considered less than one-half have training schools.

The general average monthly wage for working day of sixteen hours is from \$18 to \$30 per month for men; from \$12 to \$25 for women. It will be remembered that the State of Illinois considers eight hours a working day for clerks and others whose employment does not carry with it any great responsibility.

On the other hand it is, so far as the board knows, universally admitted that no work is more exhausting to the nervous system than caring for the insane. It requires a disciplined mind and high character to bear calmly and patiently with the violent or annoying conduct of many insane patients and to regard all their unreason and extravagance as symptoms of a disease, no more to be resented than a rise in their temperature. Ought the State to expect to obtain such qualifications when the hours are twice the legal working day and the compensation no better than that of city house servants?

For the most part the attendants both lodge and eat upon the wards, *i. e.*, practically in the society of their patients. The time during each twenty-four hours in which they are permitted to absent themselves from the ward is two hours or less in forty-seven hospitals, including four of those in our own State.

The proportion of attendants to patients, as it actually exists in the hospitals, is, with few exceptions, much below the number recommended by the different superintendents of the same institutions. The superintendents, however the conditions of their own hospitals vary or depart from the desired standard, recommend in thirty-eight cases: 1, training schools; 2, higher wage; 3, housing and boarding of attendants in separate buildings apart from patients; 4, separate night service for the wards—which is the necessary accompaniment of boarding and housing attendants in separate buildings.

A more general employment of women attendants upon men's wards is recommended. This recommendation comes especially from those superintendents whose standing best entitles their opinion to respect. There is practically unanimous testimony to the superior service obtainable from women. This is ascribed in part to their natural taste for nursing, and in part to the fact that more avenues of desirable and lucrative employment are open to men than to women. We would respectfully submit that since it is possible to obtain a better grade of service among women than among men for the same pay, there is good reason from an economic standpoint, for urging the most general employment of women practicable. Women are employed on men's wards in some of the most progressive hospitals—including one of the Illinois hospitals. This does not mean that there shall be no men attendants, but points toward a partial introduction of the system in the general hospitals, with nurses in charge and male orderlies. This system, so far as tried, has satisfied the humanitarian and the physician alike.

It seems evident to us that, in order to secure proper nursing, the wage must be raised; especially does the women's present wage seem to us inadequate and unfair for the service demanded. The wage paid can not invite or retain, with any certainty, the sort of ability demanded for the care of the insane. It appears to be the general opinion of the superintendents, as shown in the "Remarks," that by increasing the requirements for an attendant, and also the pay and dignity of the occupation, efficient and humane service can be obtained, and in no other way.

Four of our Illinois hospitals are included in the replies and probably present the average condition indicated in schedule. One of them has a training school for nurses and employs nurses upon men's wards. The one failing to report is in no particular superior to the four which appear in the condensation.

VISITING STAFF.

While as we have stated above, we must depend upon the general practitioner to keep people out of the insane hospitals, we must look to the alienist for improving their medical care after they are received into the hospital.

It has proved impossible in all the States to maintain in a hospital a medical staff of expert alienists. The superintendent, burdened as he is with the administrative work of the community of from 1,000 to 2,500 souls, which our various hospitals constitute, can not take personal charge, medically, of the patients upon the wards also.

We therefore would recommend a visiting staff of alienists

or specialists upon mental diseases, who, together with the resident physicians, shall constitute the medical staff of the various insane hospitals, such visiting staff to visit in turn, examine patients, hold clinics and deliver lectures to the resident physicians, internes and nurses. We believe that such physicians should be paid for their services.

PATHOLOGIST.

The Board believes that the pathologic work of every insane hospital in the State should be thoroughly done. This can only be done under competent direction, and the board recommends as the most effective and economic method of doing this the appointment of a State pathologist, who shall be a member of the visiting staff, but shall devote his entire time to the pathologic work of the hospitals, and shall make the same uniform in character throughout the State.

MERIT SYSTEM.

The Board recognizes that such suggestions as the above concerning physicians and nurses, must fail, even if nominally carried out, unless all the positions involved be placed entirely upon a basis of efficiency.

In fact the entire administration of these hospitals must, in the opinion of the board, depend upon merit, absolutely unmoved by fluctuations of political party fortune, if the institutions are to continue long free from grave disasters.

COMMISSION.

In view of the statements made above we would respectfully request the Governor to appoint a commission of three physicians experienced in the care and treatment of the insane, to cooperate with this Board in formulating and putting into execution plans for securing: 1. A general plan for the future care of all insane by the State. 2. For promoting the most efficient medical and nursing administration of the existing hospitals. 3. For placing the service of the insane hospitals upon a basis of merit only.

CIRCULAR AS TO TRANSFER OF INSANE TO HOSPITALS.

We append a copy of a circular sent out Sept. 1, 1896. This was followed by a letter to all county judges, calling their attention to the fact that under the provisions of the Lunacy Law, they have power to direct how insane patients shall be transferred to the hospitals. We have reason to believe that these efforts to improve the care of insane patients prior to arrival at insane hospitals have had some good effect, but the matter still needs earnest attention.

PRIVATE HOSPITALS FOR THE INSANE.

Under the Lunacy Law of this State the Board of Commissioners of Public Charities is directed to license all private insane hospitals and to formulate by-laws as to their administration. Such licenses are good for twelve months and must be renewed annually, in order that the institution may lawfully exist. If there is a change in the management of a private hospital, the law requires that the Board be notified and that the license be transferred in the discretion of the Board.

During 1896 application was made to this Board for permission to transfer from Dr. Anna McFarland to Dr. George C. McFarland the license granted by this Board to Dr. Anna McFarland to carry on the private hospital for the insane known as Oak Lawn and situated at Jacksonville. After a careful examination of the case the board declined to consent to the transfer of license to Dr. George C. McFarland. Notwithstanding the refusal of the board Dr. George C. McFarland has continued to carry on the hospital. The Board has therefore referred the matter to the Attorney General for prosecution as by law directed. Sec. 33, Lunacy Law.

It is plain that the provisions of the Lunacy Law in regard to licensing private insane hospitals are intended as a protection to the public and a guarantee of good conduct. Such a law is not only a protection to the public and to the insane patients received into private hospitals, but is also a protection to private hospitals which are carried on faithfully and humanely.

We trust that the decision of the supreme court may be speedily obtained as to the provisions of lunacy law covering the licensing of private hospitals, to the end that the law may be amended if necessary.

The private hospitals for the insane now licensed are: Bellevue Place, Batavia; Dr. F. C. Winslow's Private Hospital, Jacksonville.

SOCIETY FOR AIDING CONVALESCENTS DISCHARGED FROM STATE HOSPITALS FOR INSANE.

We commend to private benevolence the temporary care of convalescent patients discharged from insane hospitals. Persons thus discharged as recovered struggle under great disadvantages in many instances in trying to obtain opportunities to

earn a living; it is the observation of all superintendents that discouragement and disappointment have frequently brought on another attack of insanity and compelled a return to the hospital, which might have been avoided if on leaving the institution the patient had enjoyed a little friendly help. A small yearly sum and a moderate amount of personal interest would perform a most humane and useful service in carrying on a society for the assistance of patients discharged from the State hospitals, and we commend the subject of the organization of such a society to the attention of philanthropic citizens. There are two societies for this purpose in Paris, which are reported as most beneficent in their result.

THE AUXILIARY BOARDS OF COUNTY VISITORS.

These boards have proved valuable in some counties already, but have by no means reached their full measure of usefulness throughout the State. A pamphlet containing reports from such as had performed active service was issued by this Board during the year. We append a list of the visitors who made reports in July, 1896, together with statement of visits made. In some counties marked improvement in the equipment and administration of the almshouses has been secured and less frequently improvement in the jails.

We feel that it is for public interest that these volunteer and unpaid public servants should be encouraged in a wise and vigorous performance of their duties of visiting the county jails and poorhouses and keeping themselves fully informed as to their condition. Yearly conferences addressed by experts in the care of dependents and in preventive measures, and where full opportunity for discussion is allowed can not but prove most valuable, and are essential as a means of educating public sentiment in the State.

At the State Conference of Charities held in November, 1896, it was found that the attendance of auxiliary visitors was smaller than had been hoped, and in repeated cases the members of the auxiliary boards stated that they could not afford to attend. We would recommend that the legislature permit the State Board to pay the railroad fare only to the State conference of one delegate from each county.

STATE CONFERENCE OF CHARITIES AND CORRECTION.

As indicated above, the visits of members of the Board of Public Charities to the various counties of the State convinced them that an annual conference of the auxiliary boards of visitors, the superintendents of State institutions and of all others interested or engaged in the care of dependent and delinquent classes in the State would prove of much service in diffusing throughout the State a more general public interest in problems which are little understood, and which have a vital relation for every taxpayer, as well as an interest for humane citizens. Such State conferences have been held in various other States for years with good results. The State Board of Charities therefore called a State Conference of Charities and Correction, which was held in Springfield Nov. 12 and 13, 1896, of which we append program.

The conference formed a permanent organization with the following officers for the ensuing year:

President, Jenkin Lloyd Jones, Chicago; vice-president, Fay Lewis, Rockford; secretary, Mrs. John Lutz, Lincoln, executive committee.

Secretary of the State Board of Charities ex-officio Clerk of the Executive Committee.

The proceedings of the Board have been published and form a valuable contribution to the literature of the State upon the subjects presented.

DEPENDENT CHILDREN.

The State through its law of guardian and ward has long said to the rich child, when the normal family relations were for any reason destroyed: "You are a ward of the State; your name is upon the records of the court; you shall not be lost; your estate shall be used for your education, and the guardian appointed by the court shall report his stewardship."

Because the child deprived of natural family care has no estate there is not less but more reason for public watchfulness. From the ranks of neglected, untaught, unprotected children we have no right to expect that upright, self-respecting, self-sustaining citizens will grow.

The law of Illinois regarding dependent children presents anomalies which certainly have never been purposed by any one and which public interest demands should be eliminated.

The county court can find a child "dependent" under the Industrial School Acts, as follows:

Part of Sec. 3 in aid of industrial schools for girls. "Every female infant who begs or receives alms while actually selling or pretending to sell any article in public, or who frequents any street, alley or other place for the purpose of begging or receiv-

ing alms; every female infant who shall have no permanent place of abode, or who shall not have proper parental care or guardianship, or who shall not have sufficient means of subsistence, or who from any cause shall be a wanderer through streets and alleys or other public places, or who shall live with, or frequent the company of, or consort with reputed thieves or other vicious persons, or who shall be found in a house of ill-fame, or in any prison or in a poorhouse."

And part of Sec. 3 of act to provide for and aid training schools for boys.—"Every boy who frequents any street, alley or other place for the purpose of begging or receiving alms; every boy who shall have no permanent place of abode, proper parental care or guardianship; every boy who shall not have sufficient means of subsistence, or who from other cause shall be a wanderer through streets and alleys or other public places; and every boy who shall live with, or frequent the company of, or consort with reputed thieves or other vicious persons."

The definition of "dependent child" under these statutes is probably sufficiently broad to cover all cases in which the child's normal family protection has been so broken down that public interest and humanity demand the intervention of the State.

The anomaly in the law is discovered when it is shown that after the judge has thus found a child dependent, he can, under the statute, dispose of the child in but one way, namely, by confiding it to the care of an industrial school—a private corporation. The school or some officer thereof becomes its guardian, having a right to retain during minority, or to discharge at any moment.

Again, it is found in practice that parents whose children are abandoned to almshouses, are nevertheless able to legally and successfully resist efforts to place the children in homes or give them for adoption.

As the counties are compelled by law to pay ten dollars monthly for each child placed in an industrial school, while the child may be retained in the almshouse at a much lower apparent cost, or it can be left in its bad surroundings at no immediately evident cost to the county, many counties object to the expense of placing the child in an industrial school, and when the supervisors or county authorities do so object, it is difficult or impossible to obtain commitments to the industrial schools.

Again, there is, as indicated above, no law forbidding the indefinite detention of children in almshouses, and many children pass through the almshouses of this State yearly through no fault of their own, receiving not only the stigma of pauperism, but the taint of poorhouse associations.

Our last report instances in detail some of the evils of bringing up children in the poorhouse, and it is unnecessary to again set forth special instances. It is true that the majority of children who are in the poorhouses do not grow up and marry inmates, as has sometimes occurred, but the history of pauperism in this State, so far as it can be traced, shows that the associations of the poorhouse in the parents breed dependency in the children, as has been demonstrated by long family histories in older communities.

The Board renews its former recommendation that the retention of any normal child between the ages of 2 and 16 years in any almshouse should be forbidden by law. It recommends that the County Court should have the power, upon finding the child dependent, to place him in an industrial school, or in a private family at no greater cost, or to make such other disposition as he may deem for the best interest of the child. It recommends that by agents, to be appointed by this Board, or by such other means as may be deemed wisest, the character of the homes into which children thus "placed out" are sent, shall be frequently and faithfully examined, and the education and proper maintenance of the child carefully supervised, and that the same shall be reported to the county from which the child comes, and to the body appointing the visiting agent. The States of Michigan and Massachusetts offer examples of State care of dependent children, which we can not afford to neglect or fail to imitate in such measure as best accords with our existing system of industrial schools. The State of Michigan maintains a State school; Massachusetts has abolished hers as unnecessary. In both States the essential feature is a system of "placing out" children by the State itself.

(To be continued.)

SOCIETY PROCEEDINGS.

Chicago Ophthalmological and Otological Society.

Regular meeting held at the Chicago Athletic Association Rooms, Nov. 10, 1896.

Dr. HENRY GRADLE in the chair.

The minutes of the last meeting were read and approved.

The application of Dr. J. W. Heustis of Dubuque, Iowa, was read and referred to the Committee on Membership.

Dr. Hotz showed a case of Thiersch grafting for pterygium. Four years ago Dr. Hotz had suggested the filling up of the space left in the conjunctiva after removal of a pterygium by Thiersch graft. In the ordinary pterygium the operation of excision with bringing together of the conjunctival edges is easy, but in certain cases the space left is so large and the amount of tissue removed so great that he thought it would be advisable to fill it up with a graft. He had used this method a few times about a year ago and showed a case to the Society. In this case the graft had not been fastened, but was simply laid over the sclera and during the first few days it shifted partially onto the cornea. The Doctor had seen the patient only a week ago and the small tag of skin was still over the corneal surface. In the case tonight the pterygium extended considerably beyond the pupil, was very large, measuring at the corneal edge about 8 mm. and at apex 5 mm. The operation was done on May 1. After the removal of the pterygium a small shaving of skin about 3 mm. wide and 9 mm. long was taken from behind the patient's ear. This was laid over the sclero-corneal junction and each end of the graft was fastened down by a stitch, in order to avoid the shifting. In spite of the fact that there was considerable disturbance of the cornea from infection, numerous small points making their appearance in the neighborhood of the wound, the healing of the graft was rapid. It shrunk to about 2 by 7 mm. in size. The epidermis became macerated and could be rubbed off with a blunt probe after a few days, leaving underneath a pink membrane. At present the surface looks about like normal conjunctiva.

In reply to Dr. Robertson as to how many cases relapse, the President stated that Fuchs says there should be no recurrence of pterygium if it is possible to close the conjunctival wound.

Dr. PINCKARD referred to the method of removal by means of a grooved director and a small cautery knife, the director being passed under the neck of the pterygium and incision made with the knife from edge to edge.

Dr. GRADLE stated that he had done subvulvotomy once with a very good result.

Dr. MONTGOMERY said that he had in broad pterygia dissected off the head and body of the growth and simply allowed the head to roll under without fastening it with a stitch. He had found that the growth showed no tendency to recur under these circumstances. He laid particular stress on the fact that the dissection from the sclera must be very complete. He reported a case where the growth was tendinous in character and seemed to be fixed to the internal rectus muscle. Numerous operations were done but no permanent benefit resulted.

Dr. GRADLE—The allusion by Dr. Hotz to purulent infection of the cornea in his case induces me to bring before you a very sad result of pterygium operation within my experience.

A man had been treated by me for nearly a year for trachoma of three years' duration. He seemed entirely cured of his trachoma, one cornea had always been normal. The other one had been covered by a moderate pannus, which had thinned considerably under the treatment and now permitted V=15-50. On this eye there was a small pterygium on the inner side, apparently slightly progressive. I had deferred an operation until after the trachoma was cured. The head was then dissected off the cornea and the small conjunctival gap closed with a suture. There was more than the ordinary amount of inflammatory reaction of the conjunctiva for the first four days, then it subsided. Thereupon minute white specks of infiltration appeared in the cornea adjoining the wound and from thence spread in a circular path around the cornea, forming an incomplete circle about 3 mm. inside of the limbus. This was accompanied by increasing ciliary irritation and injection. The area between limbus and the line of infiltration became vascularized and hazy. On the twenty-fifth day the infiltration on the site opposite and furthest from the wound changed into ulceration. The original wound had healed long before this and the minute infiltrates nearest to it had receded considerably. The ulcer was now touched with the galvanocautery. This prevented extension of the ulceration, but did

Laughter. Laughter is a most healthful exertion. It is one of the greatest helps to digestion with which I am acquainted and the custom prevalent among our forefathers of exciting it at table by jesters and buffoons was founded on true medical principles (Hufeland).

not prevent further infiltration in the form of minute specks in the same circular path. The disease had been very painful and the pain did not abate while the cauterized ulcer healed. A few days later it was evident that a relapse of the trachoma had occurred, as the conjunctiva of the lids now showed the characteristic appearance. For a few days the lids were touched with sulphate of copper, but without benefit. In spite of all customary local treatment (atropin, etc.) a hypopyon made its appearance, yet the individual specks of infiltration all receded after existing for a few days. The patient, worn out by his pain, went to the country for a week. When he returned the irritation had lessened very much but the cornea was uniformly hazy and vascular, and $V = \infty$. There was now a characteristic granular disease of the conjunctiva, which undoubtedly accounted for this unusual form of corneal affection.

Dr. J. E. COLBURN reported a case of

CYST OF THE CORNEA AND A CASE OF PIGMENT CELL SARCOMA OF THE CORNEA, FOLLOWING A PTERYGIUM.

Willie G., aged 15 years, was presented by Dr. E. M. Smith at the Chicago Polyclinic. About six months ago the patient's parents first noticed a pearl-like swelling about the size of a half pea, located midway between the cornea and inner canthus; it extended rapidly in all directions till it occupied the area indicated in the drawing. There has never been any evidence of inflammation.

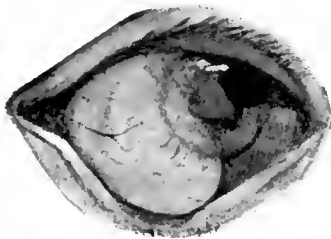


FIGURE 1.

When examined by me the tumor presented a pearly semi-transparent appearance, somewhat irregular in form; there was a slight depression just at the sclero-corneal junction, which was marked by the vascular ring. The tumor had forced its way into the cornea, separating its layers. The outer layer was transparent enough to allow a good view of the sclero-corneal junction of the inner wall, and somewhat deeply into the sclera portion of the tumor. The tension of the tumor seemed to be the same as that of the eye in other parts of the globe.

The parents recall that in early childhood while at play with a Newfoundland dog the child received an injury to the eye, which was followed by a scar located near the center of the cornea. There was no change in the shape of the corneal scar.

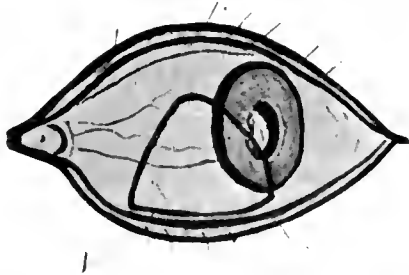


FIG. 2.—1, base of tumor.

The eye was cocaineized and the conjunctiva opened over the base of the tumor near its lower edge. The structure of the outer wall of the tumor was found to be continuous with the sclerotic. Fearing that there might be some connection between it and the cavities of the eyeball and the tumor, a very slight incision was made. This was followed by a rapid flow of clear water and a collapse of the tumor; the tension of the eye remaining normal, the incision was extended. The inner surface was carefully examined, for it had been suggested that it might contain a cysticercus. Nothing, however, was found to indicate that the cyst had been tenanted. The lining membrane was not vascular and could not be distinguished from the sclera; the outer wall was thin but firm and resisted the knife, cutting like a true scleral tissue. The inner wall was somewhat depressed and did not seem to be restored to the normal curvature by the removal of the tension of the tumor. After the conjunctiva had been dissected carefully back, the outer wall was entirely removed, the ocular surface carefully

denuded of the lining membrane and the conjunctiva made to cover the exposed surface. The central fibers of the internal rectus muscle were not disturbed. The wound healed promptly and the gray area which extended farther than the tumor upon the cornea, cleared up. The old scar, however, remained without change in appearance.

A careful search through the opthalmic literature at my command is not rewarded by finding the counterpart of the above case.

In 1894 Wm. S. called my attention to a small, progressive pterygium which had made but slight advance upon the cornea. The growth was again examined by me in six months and a marked advance noted. Three months later the growth was removed by tearing it from the cornea, excising the central portion of the conjunctival thickening down to the sclera, together with the tongue of growth just removed from the cornea. The conjunctiva was now separated from the corneo-scleral junction, and freed from its subconjunctival attachments, and the upper and lower edges brought together by two sutures. The corneal wound was scraped, the eye flushed with a saturated solution of boric acid and a light bandage applied.

The wound closed quickly and three months after the operation nothing could be noticed upon the cornea, and the conjunctival section was smooth and non-vascular.

About six months after the operation the doctor called my attention to the eye, saying that the pterygium had returned. There was no change in the conjunctiva, but upon the cornea there had appeared a thick, dark, slightly vascular mass extending from the near median line upward, and limited by the corneal margin. Cocain was used and an attempt was made to raise and dissect it away. The forceps disclosed the fact that it was papillated and bled freely when torn. Fragments of the growth were taken off and examined by Dr. Hoadley. He reported columnar epithelium, spindle cells of a large size and a dark pigment with some connective tissue.

We decided to cauterize the whole surface with electro-cautery. This was done and but slight reaction followed. The wound closed and for several months close scrutiny was made, but no return of the growth was observed.

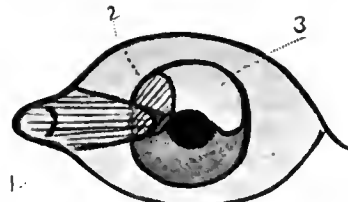


FIG. 3.—1, pterygium; 2, area of first growth; 3, area of second growth.

It was my intention to report the case in connection with some other cases of diseases of the sclero-corneal region. However, just as I was preparing my notes, the doctor called my attention to a greatly extended growth, similar to the one we had removed. This was of thinner structure, but covered all the area that had been involved before and extended to the equator on the opposite side, but not coming quite to the center of the cornea. (See Fig. 3.)

May 1896 I again burned the whole corneal surface involved, with galvano-cautery, using a low degree of heat, but burning much deeper and more thoroughly than before. The reaction was severe but the repair rapid and uninterrupted. The eye was irritable for some months. The corneal astigmatism became regular and glasses were given; these have had to be changed frequently; vision is now 20-30. The cornea is transparent and regular.

The report of the microscopist gave the same finding as in the first examination.

We have made frequent examinations of the eye during the past months and are unable to see any evidences of return of the growth. The doctor has had two tumors removed from the face, but no examination was made to determine their true character.

At the President's suggestion the January meeting was set aside for the discussion of "Asthenopia not due to Errors of Refraction."

On motion the society adjourned.

C. P. PINCKARD, Secretary.
103 State Street.

PRACTICAL NOTES.

Heredity of Gastritis.—An article in the *Bulletin Médical* of January 6, calls attention to the frequency of gastric disturb-

ances of the same type in different members of a family, as revealed by analysis of the gastric secretions. In most cases they are unsuspected by the subjects and only manifest themselves by secondary neurasthenia or other trouble. This hereditary tendency should be borne in mind and appropriate treatment instituted, especially in the case of persons with an arthritic inheritance. A number of interesting observations are cited to confirm the writer's statements.

Substances Incompatible with Antipyrin.—1. Those which precipitate the antipyrin, such as phenic acid in concentrated solutions, tannin and its preparations, tincture of iodine, chlorids of mercury, etc. 2. Those which decompose antipyrin when triturated dry with it: calomel, which forms with it a toxic combination, naphthol; chloral which forms an oleaginous liquid; sodium bicarbonate, which generates an odor of acetic acid; sodium salicylate, which also forms an oleaginous compound with it, and lastly the salts of quinin and caffeine, whose solubility is increased by antipyrin.—*Gazette Méd. de Liege*, December 31.

Effect of Chloroform and Ether Narcosis on the Liver.—Bandler of Prague performed a herniotomy on a hitherto strong, healthy man, who was however a hard drinker, using chloroform as the anesthetic. A few days afterward icterus developed and the patient died with cholemic symptoms. As leucin and tyrosin were found in the urine, *intra vitam*, the diagnosis of acute yellow atrophy of the liver had been made and it was confirmed by the necropsy. Bandler has been since studying the literature on the subject and experimenting on animals, to determine the exact effect of chloroform narcosis on the parenchymatous organs. He states that every case of chloroform narcosis showed degeneration of the liver cells afterward, while this degeneration was absent or very slight after ether narcosis. He therefore urges the importance of avoiding the use of chloroform in cases where there is reason to suspect that the liver is not perfectly normal, and using ether instead.—*Wien. klin. Rundsch.* from *Mittl. a.d. Grenz. d. Med. u. Chir.*, No. 3, Vol. I.

Dilation of Strictures of the Urethra.—Wossidlo states that relapses are frequent and in his experience almost inevitable when the urethra is only dilated to a No. 25 or 28 Charr. but that they are very rare and yield promptly to treatment if the dilation is carried as far as a No. 30. Microscopic examination shows that in the former case the mucous membrane is not normal, the lumen is funnel shaped and the crypts are filled with an infiltration. Only when the dilation is carried beyond 30 does the color return to normal and the infiltrate disappear. This can only be accomplished by an Oberland or Kollmann dilator. The process must not be hastened, and the reaction following each dilation must be allowed to run its course, which requires ten days, sometimes three to four weeks. The reaction can be favorably influenced by a $\frac{1}{2}$ to 1 per cent. solution of nitrate of silver. Dilation accomplishes nothing with rigid, unyielding strictures and internal urethrotomy is indicated for them.—*Cbl. f. Chir.*, December 26.

A Case of Porro's Operation. Schwartz reports, in *Centralblatt für Gynäkologie*, a successful case of delivery by this operation. The patient was a rachitic dwarf, aged 19 years. She was three feet, three inches in height, well nourished and muscular. There was lordosis with extremely pendulous abdomen. The pelvic deformity was remarkable, even in a dwarf. Between the iliac spines the measurement was seven and two-fifths inches, between the trochanters ten inches. The conjugata vera was one and one-half inch (4 centimeters or 1.56 inch). The patient was in the ninth month of pregnancy. Pains set in on Jan. 16, 1896; in a few hours the membranes burst spontaneously. Pains continued through the night, but were quite ineffective. Schwartz saw her early on the morning of January 17. The temperature was 104, the pulse 180.

Septic peritonitis was present. Porro's operation was at once performed with full precautions. The child was a fully developed female, 19.5 inches long and 5 pounds in weight. It was saved and reared. For two or three weeks the patient's life was in great peril through septic symptoms with peritonitis, followed by diarrhea. The stump of the uterus was treated subperitoneally. By February 5, convalescence was in steady progress.

Fish Diet in Chronic Nephritis.—J. E. Ferran describes in the *Archivos de la Policlínica* for December, his success in severe and prolonged chronic nephritis by suspending the classic treatment: potassium iodid, milk diet, etc., and putting his patients on an exclusive fish diet, selecting the fish that contain the most iodine, with once in a while a small amount of some vegetable. The improvement is prompt and radical. He mentions one case that had been treated in vain at Paris for two years, which had yielded in a few days to this treatment. He had seen the patient recently in magnificent health, after seven years, with no restrictions as to diet necessary. This treatment is based on Ferran's chemico-clinical studies and is invariably to be preceded by careful analysis of the urine, as he states that it must be limited to those cases that are in a generally satisfactory condition, without too large a proportion of granular cylinders, and in whom the urea, the density, the phosphates and phosphoric acid are normal or above, with over 800 grams of urine eliminated in the twenty-four hours.

Results of Thirty-Two Nephrorrhaphies for Floating Kidney.—The operations were performed in 1894 to 1896. The immediate results were all favorable; one patient died in a couple of months from fibrinous pneumonia, and another of fatty degeneration of the heart in four months; twenty-four are in the best of health to date, and the remaining six have been lost to sight. In twenty-three cases the operation was performed for pains, seven for dyspeptic troubles and two for neurasthenic disturbances caused by the wandering kidney. The patients were all women and in all but one case the right kidney was the one involved. In three cases there had been preceding trauma; enteroptosis was present in three; hydronephrosis in three and cysts in one. Ten were nulliparæ, the other twenty-two mothers. The suppuration was always restricted to the subcutaneous connective tissue and never interfered with the growth of the kidney to the *M. quadratus lumborum*. The peritoneum was not opened in any case.—*Tricomi at the Ital. Surg. Cong.*, *Cbl. f. Chir.*, December 26.

The Latest in Organ Therapeutics; Extract of Lung Tissue.—The *Bulletin Méd.* of December 27, publishes the results of trials and experiments made by F. Brunet with aqueous glycerin extract of the lungs of sheep. Two grams of lung tissue, fresh, shaved thin, to 60 grams of glycerin; after soaking half an hour, 120 grams of sterilized water is added and the whole filtered through linen in another half hour. The liquid is then sterilized in the autoclave, and passed through a Chamberlain bougie and glass tube into the ball in which it is kept ready for use. The doses administered internally were 10 c.c. and in injections, 2 to 5 c.mm. Ten cases of pulmonary affections were treated with it and many animals experimentally. In each case the cough diminished rapidly; the patients increased in weight, and the extract seemed to possess a general tonic property. The pus disappeared from the sputa and the sense of oppression was relieved so that the patients could sleep undisturbed. The general results of the treatment were similar to those of other organ extracts, in respect to the increase in the secretion of saliva, decrease in the amount of urine and increase of urea. Brunet therefore recommends it as extremely beneficial in liquefying bronchial expectorations, and suggests that the technique of administering it should be based upon the experience acquired with other organ extracts. He had no opportunity to observe it in cases with fever.

Precautions in Using the Catheter.—Patients should be instructed in the antiseptic use of the catheter, when obliged to resort to it habitually, as the most serious vesical troubles may be caused by infection from this source. We quote the directions given by Dr. Marc, republished in *Memorabilien* for December. The hands should first be washed with soap and warm water and then a 5 per cent. solution of carbolic acid or a 1 per cent. solution of sublimate be poured copiously over and through the catheter, held perpendicularly over a basin, washed off afterward with warm or cold water poured over and through it in the same way, as traces of the acid left might produce irritation in the urethra or bladder. The catheter is then dried with a clean cloth, or better, with a piece of sublimate gauze and greased with a little vaselin kept in a tight tin tube. After having used the catheter it must be washed carefully in warm soapy water, to remove all the urine, vaselin, etc., and water poured over it to remove all traces of the soap, after which the disinfecting solution must be poured over it as before and, without being wiped, it should be wrapped in a clean cloth or sublimate gauze, which should be renewed every few days. The catheter should never be wrapped in a newspaper or kept loose in a paper box.

Chronic intoxication from Trional.—Gierlich describes the case of a man who had been an excessive drinker of beer and afterward used morphin habitually, to a moderate extent. To relieve his insomnia he began to take trional, 1.50 gram every evening for two months, amounting to 84 grams in fifty-six days. At the end of a month he found he had some difficulty in writing. In a few days his speech was also affected, he staggered as he walked and required a support. The movements of his members resembled those in ataxia, with trembling of his hands, feet and facial muscles. He complained of a sensation of oppression, buzzing in his ears and spots before his eyes, while his spirits and mind were profoundly depressed and weakened. Several times he had involuntary mictions and evacuations. In speaking he transposed letters and syllables, and his writing was incoherent. With the suppression of the trional gradually all these symptoms passed away in the course of three weeks, but not until the fourth to fifth week could he write as before the attack. Gierlich advises against the prolonged use of trional. The doses should be rapidly diminished or interrupted for a day or two at intervals.—*Bulletin Méd. from Neurol. Cbl.*, 17, 1896.

The Toxins of Diphtheria and Tetanus in Amorphous Form.—In the London *Lancet* for January 9, is a note, taken from the *Deutsche medicinische Wochenschrift*, stating that Drs. Brieger and Boer have succeeded in separating the toxins of diphtheria and tetanus in an amorphous form. It is easy to precipitate these toxins from their solutions by means of zinc salts, but the further treatment of the compounds formed in this way presents some difficulties, for many of the usual chemie re-agents have a destructive effect on the toxins. In the preparation of the toxin the bacilli must be cultivated in a medium containing no albumin; human urine was the fluid selected. The specific toxin of diphtheria is described by the investigators as not giving the reactions of an albumin or a peptone; it must not, therefore, be classified as an albuminous substance. Alcohol, ether, acetone, and acids destroy it, but weak alkalies do not affect it. Oxidizing substances, such as potassium permanganate, also destroy the toxin, but reducing substances have no injurious influence on it even after twenty-four hours' contact. The indifference of the toxin to substances having a reducing effect is very important, for according to the researches of Ehrlich such substances are continually produced in the organism. It appears, moreover, that the pathogenic action of the bacilli is quite different from that of the toxin. Subcutaneous injections of the bacilli produce an intense necrosis at the place of injection without the internal

organs undergoing the alterations characteristic of diphtheria. It was already known that diphtheria bacilli produce local necrosis, but it now pointed out for the first time that this necrosis depends, not on the toxins elaborated by the bacilli, but on the actual bacilli themselves.

Improved Method of Vaginal Irrigation.—Prof. F. Ahlfeld believes that the frequency of infection from post-partum vaginal injections is due to the fact that the fluids injected wash the germs present up into the cervix as they rebound from the posterior wall. To avoid this he uses a glass canula, closed at the end, but bored with rows of small openings sloping obliquely from the top downward, so that the liquid injected is always flowing evenly and gently out of the vagina. With this instrument and the usual antiseptic precautions, these injections have ceased to be followed by accidents in his practice.—*Gaz. Méd. de Liege*, December 31.

Amylene Hydrate in Polyuria.—H. Brackmann had occasion to prescribe amylene hydrate for a young man mentally unbalanced, who had been affected with polyuria from infancy. 2.50 grams was given every evening, and under its influence the amount of urine fell from 7 to 2 liters a day, and the polydipsia ceased. These troubles returned as soon as the amylene hydrate was stopped, and ceased again when it was resumed. After a certain length of time permanent improvement was secured, so that the amount of urine never surpassed 5 liters a day, even without the medication. He therefore recommends the further use of this substance in diabetes insipidus.—*Semaine Méd.*, December 23.

Garay's Method of Operating for Crural Hernia.—The incision is made over the hernia and the sac opened and resected as usual. Then a second incision is made along the internal border of the sartorius muscle, which is opened up and divided in two by a longitudinal incision parallel to its fibers. The inside half is then cut and a lengthwise flap thus obtained. Another incision is then made in the skin, uniting the two others like the cross piece of an H, and the flap is brought through this third incision into the first, where the end is sutured to the crural arch, Gimbernat's ligament and the pectineus. The skin is then sutured. With slight modifications this method could be applied to inguinal hernia, by suturing the flap to the pillars of the internal ring. It is simpler than Bassini's method, and requires less time. Reported at Pan-American Congress.

The Light Perception Power as an Aid to Diagnosis and Prognosis in Diseases of the Eyes.—The instruments hitherto in use to determine the light perception power have all failed in exactness as the standard of light used varied and the shape of the object was also a factor in the result. Henry Wall suggests a new instrument for the purpose, which consists of an oblong box, one end covered with a piece of cloth like a photographic camera. In the other end is an opening fitted with nine discs of ground glass, arranged so that they can be removed one by one. A candle stands thirty-three millimeters outside of the box in another box that prevents any flickering of the flame. After remaining five minutes in absolute darkness, the subject puts his head at the large open end of the box, one eye is bandaged and the head is covered with the cloth. The ground glass discs are then removed one by one and he is instructed to state the moment he perceives the sensation of light. The standard of measurement is the number of discs through which he can perceive the light. By this instrument the disturbances due to nicotin, alcohol, albuminuria, diabetes, etc., can be differentiated and the chances of recovery estimated. The greatest loss of light perception power is found in pigmentary retinitis.—*Rev. Gén. d'Opht.*, November, from *Opht. Review*, February, 1896.

Improved Method of Applying the Wet Pack.—The sensation of being bound down hand and foot by the pack is so unpleasant to some persons that the use of this method of hydriatics has

had to be renounced in many cases in which it was urgently indicated. The method has now been modified by Buxbaum in such a manner that the arms and head are left free, while yet the moisture does not escape, as is the case when only part of the trunk is enveloped. The wet cloths are wound around the trunk from the armpits downward, combined with broad pieces passing from around the trunk over the shoulders, crossing in front and behind, the same material used in all the pack. As the arms are thus left free, scientific investigations can be conducted with the sphygmograph, plethysmograph, etc. It also allows the introduction of a coil of tubing over the heart to regulate its action during the packing, conveying a liquid from a receptacle raised slightly above the bed to another on the floor. The article in the *Blätter f. Klin. Hydrotherap.* for December states that packing is one of the most excellent antipyretic methods we have, but it is contraindicated in cases of feeble heart action, or when collapse is to be feared from any cause. This disadvantage is obviated by the tubing mentioned, which removes the only drawback to its use.

Importance of Preventive Therapeutics of Syphilis.—Prof. E. Lang of Vienna ascribes great importance to the prompt arrest of syphilis with preventive therapeutics. In an article in the *Wien. Klin. Rundschau* of January 3, he remarks that internal mercurial medication can not be prolonged to the necessary extent, owing to injury to the digestive apparatus and the lack of precision in the doses, as it is impossible to determine the precise amount of mercury that passes through the intestines unused. Inunctions have the same disadvantage; the lack of exactness in the dosage and the varying rates of absorption in different people. Subcutaneous injections are therefore more reliable than any other method, and can be graduated to the case. The selection of the preparation is of great importance and requires discrimination, and it is necessary that the physician should be familiar with the different therapeutic methods. But whatever method is selected, the chief point is to limit the mercury and not administer too much. *The mercurialization must be mild.* Inunctions and injections with full doses do more harm than good. The eruptions may be postponed, but the later manifestations are inevitably more severe and prove unusually obstinate. A mild preventive mercurial treatment, combined with a rational mode of life and observation of hygienic measures, is one of the most precious therapeutic measures in our possession. The imminent danger of subsequent tabes, which he connects closely with syphilis, renders preventive treatment almost imperative, and the favorable results of mild mercurial therapeutics, especially in his private practice (private patients can be traced much more easily than hospital cases), have impelled him to urge its importance upon all anew.

Pneumopexy.—Prof. C. Bayer of Prague, states in the *Cbl. f. Chir.*, January 16, that he was performing an operation on a 13 year old boy, for the extirpation of a large sarcoma of the right thoracic wall, when the pleura adherent to the sarcoma in one place suddenly tore. The laceration was tamponed, when it tore again and the patient began to collapse. The larger tear was sutured, the portion of the sarcoma already detached was removed and the wound left open, with iodoform dressings. The operation was resumed and completed three days later, when the pleura tore again and this time the lung collapsed entirely and sank out of sight. The patient was succumbing when Bayer seized the superior lobe of the collapsed lung with a pair of forceps and drew it out of the thoracic cavity through the large hole in the pleura and fastened its lower border by three sutures about 3 cm. apart to the periosteum of the sixth rib, which was immediately above the end of the tear in the pleura. The patient revived at once and "we saw the fixed upper part of the lung breathing regularly." The inferior lobe remained collapsed, but he refrained from

attempting to suture this likewise, as he considered it best to utilize the opening for drainage. The after results were good. Dyspnea appeared only when the dressings were changed and he thinks that if he had been able to fasten the inferior lobe also no dyspnea would have occurred. The superior lobe continued its respiration to its full extent, and the lung did not seem to be at all injured by the suture. The patient is now (twenty-seven days after the final operation) recovering finely. The wound is healing perfectly with a deep depression corresponding to the defect. He considers himself justified in recommending the process of fastening the lung in this way as a simple means to restore this vital organ to its functions, when in cases of extensive injury to the costal pleura it is impossible to put an end to the pneumothorax by merely closing the wound with all haste. It is simpler than the method proposed by Tuffier and Hallion, who have succeeded experimentally in similar cases by artificially filling the lung with air through the larynx or trachea. Their experiments on dogs were encouraging, but the operation has not yet been applied to man.

Whooping-Cough Complicated by Myelitis.—Bernhardt reports in the *Deutsche Medicinische Wochenschrift* a case where whooping-cough was complicated by spinal symptoms. A girl aged 5 years, who had been suffering from whooping-cough for about ten days, was after a severe paroxysm suddenly seized with tonic rigidity of the lower extremities, so that walking or even standing became impossible. The power of speech and the functions of the sensory nerves continued normal. The tendon reflexes were increased and the adductor muscles of both thighs were strongly contracted. Neither fever nor cerebral symptoms were present. In the course of several weeks the child's state gradually improved, so that after two months she could move her legs and flex her knee joints fairly well, but the spasms of the muscles and the exaggeration of the reflexes continued. After four months the power of walking was regained. A year after the first illness the child was attacked with double parotitis and the spinal symptoms once more appeared, so that she could only walk with difficulty and by a succession of spasmodic movements; slight urinary troubles also developed themselves. A course of baths at the Oeynhausens springs proved beneficial, and when Professor Bernhardt saw the child some weeks ago she was able to walk, run and jump, but the reflexes were abnormally strong and micturition was more frequent than natural. No atrophy of the muscles or other symptoms of degeneration were present. Bernhardt points out that the case is probably to be classified as spastic spinal paralysis owing to myelitis caused by the specific virus of whooping-cough. He does not consider that there was hemorrhage into the medulla, because the muscular paralysis which is characteristic of this affection, did not follow the spastic symptoms. He is also opposed to the view that the case might be a severe manifestation of hysteria, because the child shows no other hysteric indications whatever. Cerebral troubles complicating whooping-cough have been sometimes described, but affections of the spinal cord and the peripheral nerves are extremely rare in this disease. Möbius published two similar cases 1889; the first occurred in a boy of 3 years of age who after whooping-cough suffered from a paresis of the arms, the legs, the cervical muscles and the diaphragm. The tendon reflexes were diminished, but sensation and the functions of the brain and the intestines were normal. The lesion was evidently slight, no atrophy ensued, and all the symptoms soon disappeared; it is not improbable that the case was only one of peripheral neuritis. In the second case a girl aged 2½ years on the sixth day of whooping-cough was seized with paresis of the legs, loss of the tendon reflexes and incipient degeneration of the peroneal muscles. The nervous affection began with high fever, the paresis of the legs did not entirely disappear, and the case proved to be one of myelitis. It is evident, therefore, that whooping-cough is practically free from any tendency to originate affections of the spinal cord and the peripheral nerves.

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SATURDAY, FEBRUARY 20, 1897.

THE DIFFERENTIAL DIAGNOSIS OF LEPROSY
AND SYRINGOMYELIA.

A number of observers have of late pointed out the close clinical resemblance between syringomyelia and the nervous form of leprosy—in fact it has been contended that the former is but a variety of the latter. While not going so far, it must be admitted that the differentiation is at times not easy, although a careful consideration of anatomic, etiologic and symptomatic details will usually remove any diagnostic doubt. Little difficulty is encountered in the recognition of the tuberculous variety of leprosy, the characteristic cutaneous nodules being quite distinctive. The complexus of symptoms described by MORVAN as painless whitlow is not generally viewed as an independent disorder, but rather as the manifestation of some primary affection, which is most commonly either syringomyelia or leprosy. In view of the insidious and widespread dissemination of leprosy, its discrimination from the diseases which it most closely resembles is a matter of considerable importance, from both the prophylactic and the therapeutic, as well as the purely scientific point of view. The distinguishing and differential features of the disease are admirably depicted in a recent communication by LAEHR (*Deutsche med. Woch.*, Jan. 18, 1897, p. 45) from the clinic of JOLLY at Berlin.

It is generally admitted that leprosy is dependent upon the activity of the bacillus lepræ of HANSEN, which can usually be found in all recent lesions of the disease and in most old ones. The disease belongs to

the group of infectious disorders, and, while not contagious in the ordinary sense, is still communicable from person to person, directly or indirectly. It further appears that infection is favored by hereditary or family predisposition, by unhygienic surroundings, by filth, by insufficiency of food and possibly by climatic influences. The first pathologic changes are to be found in the skin and consist in cellular proliferations about the cutaneous vessels, in the midst of which the bacilli are situated. This process extends along the nerves in gradually diminishing degree from the periphery toward the spinal cord. It is most pronounced in the most exposed situations, such as that of the ulnar nerve at the elbow and the peroneal nerve behind the head of the fibula. Syringomyelia on the other hand is a complexus of symptoms dependent upon various lesions of the central portion of the spinal cord resulting in structural alterations that terminate in the formation of cavities. The usual causes of this condition are developmental defects, traumatism, and inflammatory and anemic softening. There is no evidence that syringomyelia is dependent upon hereditary or family influences or that it is an infectious disease.

From the nervous form of leprosy recovery may and not rarely does take place, leaving only the secondary changes to which it has given rise. Such a result from syringomyelia is not known, death, though sometimes long deferred, being the inevitable termination, generally through some intercurrent disease. Both leprosy and syringomyelia develop insidiously, although the first symptoms noted are usually observed earlier in leprosy and are more commonly preceded by prodromal manifestations, such as headache, malaise, obscure paresthesiæ and rheumatoid and neuralgic pains. Febrile symptoms also more commonly attend the onset of leprosy than that of syringomyelia in the absence of complications. Previous residence in a leprosy locality can not be viewed as conclusive evidence, and unfortunately the bacillus lepræ is not always detectable in the lesions. Syringomyelia may develop under the former conditions, while failure to detect the bacillus does not exclude the possibility of leprosy. Of great significance would be the presence of a thickened, spindle-shaped nerve, such as the ulnar or the peroneal. Only exceptionally has the bacillus been found in the blood or at the site of the inflammatory lesions in the skin.

The greatest diagnostic importance is to be attached to circumscribed anesthesia, muscular atrophy and vasomotor-trophic disturbances of the skin, bones and joints. In leprosy these manifestations appear regularly first upon the face, trunk and extremities, more commonly earlier upon the lower than upon the upper, and often upon both simultaneously. In the great majority of cases of syringomyelia the disease is located in the cervico-dorsal region of the cord and the symp-

toes first manifest themselves in the upper extremities, the lower remaining uninvolved for many years. Should the lower extremities be affected first extension to the upper does not take place until later. As a rule, the face escapes, or is involved only very late. Certain cutaneous manifestations are characteristic of leprosy, *e.g.*, multiple pigmented and partly unpigmented hyperesthetic and hyperesthetic spots; and peculiar bluish-red reticular markings upon the skin, especially in the gluteal region, which are accentuated by friction and by temperature-changes. In the course of leprosy there frequently appear acute recurrent painful swellings of the joints, ultimately leading to deformities. Arthropathies are not rare in syringomyelia, but they are mostly painless. Both leprosy and syringomyelia may be attended with extensive deformities of the fingers and toes from ulcerative processes, and also with spontaneous atrophy of bone, but these are always much more pronounced in leprosy. Sweating is absent from the cutaneous areas affected by the leprosy process, while in syringomyelia hyperidrosis is common.

The muscular atrophy is much the same in both diseases, although it is more extensive in syringomyelia and is also associated with marked fibrillary twitching. With the spinal lesion the alteration in the response to electricity is more pronounced than the atrophy would lead one to anticipate. The muscular atrophy of leprosy usually involves the small muscles of the hands and feet, less commonly the parts supplied by the peripheral nerves of the forearms and legs; while the wasting of syringomyelia begins in the proximal portions of the extremities. The atrophy of leprosy corresponds in distribution with the cutaneous anesthesia; that of syringomyelia may be crossed. In leprosy there is relatively early involvement of the nerves of the face, especially those supplying the orbicularis oculi, with ulceration of the cornea, epiphora, etc. If the face becomes involved at all in syringomyelia it is so late. The resulting palsy is of nuclear type, the facial muscles being affected on both sides and only those supplied by the lower branches of the seventh nerve suffering. In addition there are likely to be symptoms of bulbar palsy, such as difficulty in speech and in swallowing. If similar symptoms attend leprosy they can be readily traced to local causes, such as inflammation of the mucous membrane of the mouth and pharynx. If ocular symptoms attend syringomyelia they are usually limited to narrowing of the palpebral fissure and of the pupil, frequently upon one side only. There may also be paresis of the external ocular muscles, more particularly of the external rectus, of central origin.

The anesthesia of leprosy includes, as a rule, in addition to loss of pain-sense and temperature-sense, also loss of tactile sensibility; while in syringomyelia tactile sensibility usually escapes. Exceptionally, however, tactile sensibility is retained in leprosy and

lost in syringomyelia. In leprosy the anesthetic areas vary in form and size. They are, as a rule, indiscriminately distributed all over the body. Often, however, the distribution of the anesthesia is peculiar on the extremities, involving the peripheral portions of the members like a glove or a stocking, the line of demarcation running at right angles to the axis of the limb. In rare cases the whole of the peripheral distribution of a cutaneous nerve is involved. The sensory changes of syringomyelia manifest themselves upon the trunk in the form of a girdle or in zonular arrangement. When present on the extremities, if the involvement be not total, the anesthesia pursues longitudinal lines; on the arms the inner or the outer margin is often affected; on the legs the anterior or posterior aspect. The sensory disturbance is segmental and corresponds to the portions of the cord involved in the disease, while the anesthesia of leprosy is dependent upon local cutaneous disease and at times upon disease of the peripheral nerves. When the anesthesia of leprosy has become so extensive as to occasion confusion, other characteristic cutaneous lesions appear that resolve any doubt in diagnosis.

Syringomyelia is often attended with slowly progressive spinal curvature (kypho-scoliosis), derangement of vesical and rectal function and spastic manifestations in the lower extremities. In leprosy the tendon-reflexes may be normal, or they are diminished or entirely wanting. In leprosy, as a rule, even before the appearance of manifestations of neuritis, it may be possible to detect peculiar spindle-shaped thickenings of peripheral nerves, especially of the ulnar and the peroneus. Not rarely the nerve-trunks are sensitive upon pressure, while in syringomyelia there is rather pressure-anesthesia. Leprosy is often attended with widespread glandular enlargement, while in syringomyelia only the glands adjacent to phlegmons or other complicating conditions of similar nature become enlarged.

From the foregoing it will be seen that while, as already stated, there is a good deal of clinical resemblance between leprosy and syringomyelia a careful analysis of all the manifestations in any given case will, as a rule, point the way to a correct interpretation of the symptoms present.

DR. YERSIN, THE DISCOVERER OF THE ANTI-PLAQUE SERUM.

Dr. YERSIN has recently been spending a few weeks in France and has returned to Annam with resources sufficient to enable him to produce a large supply of his serum against the plague. From the French papers we learn that while Dr. YERSIN is a naturalized citizen of France, he is a native of Switzerland, having been born there about thirty years ago. He is an officer in the Sanitary Corps of the French Colonies. He has energy and courage, and at the same time is

modest in demeanor and language. His birthplace was Morges, in Switzerland, his parents belonging to a French family that was driven from France by the revocation of the Edict of Nantes. At an early age he became distinguished for his wonderful thirst for medical science. In 1885 he was a medical student at the Hôtel Dieu, under Professor CORNIL. In the hospital there was a troop of Russian peasants who had been bitten by a mad wolf. They were sent to Paris by their government to receive the Pasteur treatment. One of them died, and while performing an autopsy on the body, Dr. YERSIN cut himself. He was sent to the Pasteur Institute, where he was vaccinated, and became the friend of Dr. ROUX, who made him his associate. The famous memoir of diphtheritic toxin, which marked the first step in the discovery of the croup vaccine was signed by ROUX and YERSIN.

The young doctor became a naturalized Frenchman, and in 1888 he was appointed professor in the technical bacteriologic laboratory, where he distinguished himself by his labors over the microscope. He applied for a place as doctor in the Messageries Maritimes, and set out for Cochin China. After a certain time spent in travel, he returned to the study of pestilential diseases of the far East, and obtained an appointment as doctor in the Colonial Service, while another disciple of Pasteur, Dr. CALMETTE, founded an institute in Cochin China and discovered a vaccine against the venom of serpents. YERSIN devoted his energies to the bovine pest and the plague. He received from the Colonial Ministry an order to go to Hong Kong to study the nature of the plague, the conditions in which it was propagated and to seek the most efficacious means of hindering it from spreading. KITASATO had previously discovered the bacillus.

When he arrived there, more than 3,000 Chinese had already succumbed to the Plague. They commenced to build, with great haste, temporary sheds, because the hospitals of the country were no longer sufficient to shelter the sick.

He found accommodations in a straw hut which he had made, under the authority of the British Government, and in the center of the principal hospital. The mortality was extreme, about 95 per cent., in the hospitals.

In his first experiments he isolated and studied the bacilli of the pest. "The pulp of the buboes," he says, "is in every case filled with short stumpy bacilli with rounded ends. Sometimes the bacilli appear as if they were surrounded by a capsule. They are found in great quantities in all the buboes and ganglions of the affected. The blood sometimes contains them, but in a lesser degree. We never find them in the blood, except in rare cases, which are rapidly fatal."

With these bacilli he made cultures which he used

in experimenting upon rats and guinea pigs. The first series of his experiments brought him to the following conclusion: "My observations, which were very suggestive, permitted me to suppose that the inoculation of certain varieties, but little or not at all virulent, with the specific bacilli would confer immunity upon the animals from the plague, and in that line I commenced my experiments."

He continued his new experiments in 1895, in Paris, and afterward at an isolated point on the coast of Annam, at Nha Trang, where he set up a laboratory. He inoculated the animals of the laboratory and afterward the horses, obtaining his serum for inoculating man.

The pest reappeared in China in the first months of 1896. Dr. YERSIN went there immediately with his flasks of serum. He landed at Canton, but the Chinese population would have nothing to do with the European doctor. In his autopsies he risked death, not only from contagion, but also from fanaticism. It was with the complicity of the grave digger, or the wagon driver that he was enabled to procure both the pus and the blood, and sometimes the bodies of victims of the plague.

Therefore, at Canton it was impossible for him to experiment with the new serum upon the numerous Chinese cases. But three seminarists of the mission were attacked by the disease. Dr. YERSIN cured them. Then he went to Amoy. There he inoculated twenty-three patients, out of which he cured twenty-one. After that everybody wanted to be doctored by him and all his serum gave out.

· IDIOPATHIC ARTERIAL HYPERMYOTROPY.

It seems a fair proposition to view senility as fundamentally and essentially a process of arterial degeneration, which may occur early or late, may set in insidiously or abruptly and may advance rapidly or slowly. Whatever its mode of onset, whatever its course, its development is inevitable and its termination invariable. The changes in the vessels are followed in turn by analogous alterations in other tissues and organs of the body until in the absence of accident or complication functional and nutritive processes are interfered with to such a degree as to be incompatible with the continuance of life. These changes may from the first be widely distributed and general, or they may begin or be more pronounced in some one organ or other in consequence of local physiologic and pathologic influences. The symptoms present in a given case will be determined by the extent, distribution and intensity of the morbid process, and the clinical pictures will be correspondingly varied and variegated.

An interesting contribution to the literature of this important subject has recently been made by SAVILL (*British Medical Journal*, Jan. 23, 1897, p. 188), who

describes a condition of hypertrophic increase in the middle or muscular coat of the smaller and medium-sized arteries throughout the body in varying degree independent of, though frequently associated with, chronic renal disease. To this abnormal condition he applies the designation idiopathic arterial hypermyotrophy and he now reports two cases with autopsy in addition to ten others previously reported.

The affection is not uncommon, especially during advanced life and in those who are prematurely old. A certain degree of cardiac and arterial hypertrophy may be looked upon as normal in the aged and be unattended with symptoms, but more than this is morbid and obtrudes itself by more or less marked manifestations. Hypertrophy of the middle coat of the arteries may go on for many years without any evidence of its existence, so long as the cardiac hypertrophy compensates for the increased peripheral resistance; or the thickening of the vessels may be accidentally discovered. The change in the walls of the vessels is to be distinguished clinically from atheroma by the absence of beading and from the fact that atheroma attacks primarily the large vessels.

The characteristic feature of the pulse of arterial hypermyotrophy is its perpetual state of high tension, resulting from the increased peripheral resistance, in conjunction with the secondary cardiac hypertrophy. Another prominent feature is vertigo, coming on without warning, usually after assumption of the erect posture and lasting for but a few moments. Sometimes it is accompanied by a feeling of faintness, and syncope may actually occur. Vomiting also is usually present at some stage of the disease. Paroxysmal dyspnea is another symptom attending arterial hypermyotrophy. Headache is a feature in most cases. Hemorrhage is a frequent complication, particularly into the brain. The urine displays no distinctive features. The daily quantity is likely to be somewhat diminished and the specific gravity slightly lowered. Gangrene of the extremities and angina pectoris are observed in some cases. Dropsy is usually absent and the pulse is as a rule slow and regular, but when the heart fails the pulse becomes rapid and irregular.

The chief therapeutic indication is the reduction of high arterial tension. To this end saline purgatives and a dose of calomel are often of use. Bleeding will occasionally afford prompt relief. Rest in bed alone or in conjunction with massage and passive movements may be required to relieve the overburdened heart.

FAT-EMBOLISM ATTENDANT UPON PHOSPHORUS POISONING.

It has always been recognized that phosphorus poisoning is attended with profound alterations in the blood, the most striking physical characteristics being its incoagulability and its change in color. The blood

corpuscles have been found to be distorted and destroyed, while the amount of fat in the blood is increased. Drops of fat and fat-crystals also have been found in the blood and embolic infarcts in the lungs. The changes noted are peculiar to the subacute cases of poisoning, rather than to the extremely acute cases. By a series of experimental observations upon dogs PUPPE (*Vierteljahrsschrift f. gerichtliche Medicin u. öffent. Sanitätswesen*, 3, F. xii B., Suppl., Heft, p. 95) has succeeded in demonstrating that fat-emboli in the blood attend subacute phosphorus poisoning, but not the most acute cases. By a fortunate circumstance he was afforded the opportunity of comparing with these observations the changes noted in a girl 20 years old, who died several days after drinking an infusion of match heads. In addition to jaundice, multiple hemorrhages, fatty liver and acute nephritis, fat-emboli were found in the lungs, in both the pulmonary and the bronchial vessels. The fat from which these emboli are derived is supposed to originate partly in the fatty metamorphosis of the large parenchymatous organs, especially the liver, and in smaller degree from autochthonous fatty degeneration of the elements of the blood and of the walls of the vessels. The hemorrhages that attend phosphorus poisoning are to be attributed to the state of the blood and of the vessels in conjunction with venous stasis. It is thought, besides, that the fat-emboli are in part also responsible for the bleeding. They aid further in explaining the occurrence of superficial gangrene, which is sometimes observed in association with phosphorus poisoning. Sometimes cardiac weakness and peripheral vasomotor paresis are contributing factors.

PROFESSIONAL COMMUNICATIONS TO PHYSICIANS SHOULD BE PRIVILEGED.

Dr. F. L. HALL of Perry, Ill., a member of the Legislature from the 34th District, January 27 introduced into the Legislature the following bill:

A BILL

For an act to provide for secrecy in communications between physicians and patients in suits at law or in chancery where the patient is a party in interest to such suit.

SECTION 1. *Be it enacted by the People of the State of Illinois, represented in the General Assembly, That no person duly authorized to practice as a physician or surgeon shall be compelled or permitted as a witness in the trial of any cause at law or in chancery in this State wherein his patient is a party in interest to such cause, to disclose any information which may be acquired in advising or attending any patient in a professional character, and which information was necessary to enable him to advise or prescribe for such patient as his physician or to do any act for him as a surgeon, unless the consent of the patient to the making of such disclosure is first had and obtained.*

All physicians in Illinois should immediately write to their Senators and Representatives in the Legislature asking them to support this meritorious measure.

Let us have a Department of Public Health!

CORRESPONDENCE.

"The Despised Office of Motherhood."

NEW YORK, Jan. 25, 1897.

To the Editor:—In the issue of your JOURNAL dated April 25, 1896, now nine months since, appeared an article entitled, "The Despised Office of Motherhood."

I have waited this long time hoping some male member of the profession would be chivalric enough to reply to it. It is so manifestly unjust to a very large number of women.

I have been a physician for nearly twenty years, a member of the AMERICAN MEDICAL ASSOCIATION for several years and a constant reader of the JOURNAL. I also belong to the fraternity so unceremoniously assailed; hence it is my duty to take up my pen in defence of my sex.

Your writer starts out with an illustration that belittles his subject.

These creatures of fashion, whom he describes, did have one redeeming quality: They were fond of dumb animals and were evidently humane to them. He characterizes them as daughters of wealthy parents, fashionably clad, as though these were merits.

Whereas these dolls of fashion are generally lazy and incompetent, ready to become the tools of impulse, as you know the old adage: "Satan finds plenty for idle hands to do" and it comes in here appropriately. The fault should not always be charged up against these ignorant young women, but, to the mothers who have trained them, and neither should they be pitted against the brain and brawn of the overwhelming majority of good women, who are the earthly Saviors of the race.

I have had a large experience with women, as patients as well as every other relation of life. I can assure you I have had more women come to me to ask me to aid them in securing good healthy children than to prevent or destroy them. Now, please make that fact as emphatic and prominent as you have the converse, if you will be just. Before making such a wholesale charge, you should differentiate a little. Allow me to arraign your sex.

How many, on an average, of the men you are personally acquainted with and can vouch for, are fitted, mentally, morally and physically to become ideal fathers, particularly with that old effete idea, "That boys must be boys and sow their wild oats?" Too well do we, as physicians, know the harvest such a sowing produces. Right here I would like to refer to an article by Dr. Henry J. Garrigues in the *American Medical-Surgical Bulletin* of Oct. 31, 1896. It has so much bearing on this subject. The thanks of all honest men and women are due the doctor for having the courage of his convictions and uttering them so frankly. "Protection for future wife and children" should enlist our every energy. I can corroborate his experience with much of my own.

Here let me assert another fact: Every case that ever insulted me with the desire for assistance in destroying the product of conception, was urged and backed by the man in the case—married or single—almost without an exception. It is a weak argument to bring the devotees of fashion in contra distinction with true women. A pretty doll face and a dainty dress will catch the average man every time—as against a sensible, thinking woman. I have in my mind's eye scores of cases where worth goes unsought.

The very parties your writer condemns the (daughters of wealthy parents) are the sources from which a large majority of men seek their mates.

Some of the most flagrant cases of opposition to child-bearing are among those who profess to be Christians. That, at least has been my experience. Ministers of the gospel are as derelict in duty, on these subjects, as the members of the medical profession.

As this is for professional eyes and ears, I will state other facts, *i. e.*, the crime of onanism, more than all others, is undermining the physical and mental well-being of both sexes, as well as stultifying the moral nature. Even members of the profession are not exempt from it, I am creditably informed. And what is worse yet, they teach the pernicious habit to the laity. When I have discovered the peculiar inflammation that results in such cases and attempt to remonstrate with them and show them the dire effects of such habits, they reply: "Why! Doctor So-and-so told my husband that was the best way to prevent conception."

This course will invariably destroy all natural desire for sexual relations in women where it is persisted in for any length of time as it is only a modification of masturbation. The latter, injuring only one party, while the first named injures both parties.

I am intensely interested in righting these sexual dissipations.

To accomplish the work as it should be done, we must begin with the children. Bring them to a healthy manhood and womanhood, free from any vices, with a thorough knowledge of the physical dangers that beset them. Prevent them from learning evil habits by giving them instructions in every line necessary to this end, dietetic, hygienic, etc. It has been asserted that man can be known by the food he eats. There is more to this than we at first think. Children should only have plain substantial nourishing food without condiments, tea or coffee, and no stimulants. Then give them a chart for the future to help them steer clear of the rocks and pitfalls that wreck so many lives. Teach them moderation in all things and their duty to each other, as husbands and wives, to their children, and the world at large. Too much mock modesty of parents has wrecked more lives than any pestilence which has ever visited this earth.

Parents allow their children to learn very important physiologic facts in a very unsatisfactory vulgar fashion, begetting idle curiosity and its train of mistakes and allowing them to drift away from parental surveillance. They read pernicious books appealing to the lower and baser nature, giving them distorted ideas of those functions that should be held sacred. Is it any wonder they go wrong?

To return to the office of maternity, we want physicians as a class to interest themselves in pregnant and parturient women. Instruct them and help them to accomplish this grand work with safety and comparative comfort, and then there will not be the aversion to it that is claimed. There are many hygienic and dietetic measures which secure this end; I am thankful to say that I have tried to do my duty in this direction with much success, as I have only had to use instruments twice in twenty years. One case of flattened pelvis, where the patient did not follow directions fully, and in the other case, weak heart action caused the expulsive force to be *nil*. I would like to quote from another brave article on "Social Purity and Marriage" by Dr. E. S. Bullock of New York in *The Polyclinic* of Dec. 15, 1896, but it would make my article too long. I trust, however, every member of the profession will read and profit by it. I assert, without fear of contradiction, another fact—there is not a woman who truly loves her husband, but wants children by him, and would go through fire and water to have them, particularly when she is allowed to choose the time and season. Where this condition obtains I will show you happy contented people. When they get ready for maternity they make a business of it. The children born under such conditions are models of health, happiness and fine dispositions. I have a number of such in my clientele demonstrating fully this proposition, and furthermore children thus born will do much to lift the world of humanity out of the "slough of despond."

I teach the mothers their duty to their children in no uncertain terms in regard to the physical care as well as the mental, of their bodies and, when they reach the age that renders them

amenable to physiologic law—they shall be made acquainted with every possibility that confronts them. This can be done with tact, in a manner and in language that would not offend the most fastidious ear. With knowledge hundreds may die, but ignorance will slay its millions. The patient quoted sounded the key-note when she said: "Give him bromid, do not dose me with damiana." Men should be taught moderation and to conserve their vital energies instead of wasting them as they do now. I remember seeing it stated in a medical work some years ago, that one ounce of semen was equivalent in vital force to forty ounces of blood. When you can fully impress men with this fact you will do a little toward stemming the tide of sexual dissipation that is well nigh appalling. If every physician will do his or her duty to right this fearful wrong as they become cognizant of its existence, it will be like throwing a pebble in the brook; we may not know where the ripples will end. Leave the results to a higher power.

Your hit at the new woman was rather pessimistic, to say the least. The bicycle, properly used, is no doubt the greatest boon yet devised for women.

The very fact that it develops the chest power and the muscles, increases the circulation as well as equalizing it, should commend them to us. Out of the many women I am personally acquainted with who ride wheels, not one has been demoralized, I am sure.

That bad people use the wheel is no argument against it any more than any other conveyance. It has been asserted by a great teacher: "That nothing improves morals better or more than good health."

If you will keep track of what you dub the "new woman" the best class of them, you will find them heart and soul engaged in trying to lift humanity up, God bless them; as types take Miss Willard and Lady Somerset. It is too late in the 19th century to try to impede their progress by sarcastic remarks. They do not weigh much with thinkers, be they men or women. In regard to the men who ride like monkeys, with constant pressure on the prostate gland! Is't that going to invalidate the parentage from the male side of the question ere long?

Poor women are blamed for all the short-comings on this maternity question. It is high time we have some X rays (so to speak) on the conditions of the opposite sex. Women are proud and loyal as a class. When they have made a bad bargain they try to shield those who have wronged them; and declare they did not wish children, when they learned to their sorrow they could not have them, through the incompetence of their husbands the result of youthful dissipation. Such sublime heroism merits a better fate. They will have it, too, when, as Dr. Bullock says, "Our intelligent women wake to the fact that our social law was not made for women alone—but applies in all equity to the opposite sex as well." Another thing: in securing offspring it is quality we want and not quantity. Parents have no right, human or divine, to invite guests they are not prepared to care for in every respect, physically, mentally and morally. It is brains that will count in the government of the world. Let capacity measure sphere of any and all people regardless of sex. "And may justice be done, though the heavens fall." I enclose a little article from one of our late magazines. It is a refutation in regard to time, and claims the aversion to children to be in the "long ago past." Therefore the "new woman" can not be charged with it.

I reiterate, if you canvass fairly you will find the male sex are keeping the children in abeyance. If it were proper to do so I could bring ample evidence to prove what I assert. And I am sorry to say it, many of our profession are in the category. In conclusion I would say: Give good women a fair chance and you will have no cause to accuse them of "despising the office of true motherhood."

Yours for truth and justice,
An old Subscriber and Constant Reader of the JOURNAL.

The Philadelphia Meeting.

BURLINGTON, IOWA, Feb 13, 1897.

To the Editor:—The communication of Dr. H. A. Hare in the JOURNAL of this date should, it seems to me, suggest to the Committee on Transportation the importance of getting a longer time limit for the return tickets of those attending the Philadelphia meeting. Let us have at least a fifteen day ticket, even if we have to pay relatively more for it. Truly yours,

H. B. YOUNG, M.D.

Professorial Chairs Vacant.

PHILADELPHIA, Feb. 5, 1897.

To the Editor:—Please announce that the Chairs of Anatomy, Clinical Surgery and Genito-urinary Surgery are vacant in the Medico-Chirurgical College. Only the Chair of Anatomy is salaried. All applications should be addressed to

ISAAC OTT, M.D., Dean.

Size of Dose of Tuberculin?

SEATTLE, WASH., Feb. 11, 1897.

To the Editor:—Will Dr. W. A. Weaver please explain what sized dose, and how he administers the tuberculin, as described in his article in the JOURNAL of January 16? Respectfully,

F. H. COE, M.D.

PUBLIC HEALTH.

Etiology of Ophthalmia Neonatorum.—Chartres contributes a long article to the December *Archives Clin. de Bordeaux* to call attention to a fact he proceeds to demonstrate, viz., that the serious ophthalmias are those produced by streptococci or by an association of streptococci and gonococci, or by these two and others. The gonococci alone are comparatively harmless and yield to treatment. The treatment should be prompt and powerful, consisting of copious irrigations with potassium permanganate, lime, boric acid and cauterization with nitrate of silver. This combination acts on all the various species of microbes which may be producing the ophthalmia. He concludes by insisting on the necessity of bacteriologic investigation.

The Milk Typhoid Epidemic at Kirkcaldy, Scotland.—In the report bearing on the late typhoid epidemic at that place, recently submitted by Sir Henry Littlejohn of Edinburgh, he states that in this epidemic just brought to a close there were 103 cases, with a mortality of 20, or 10.4 per cent. The origin of the outbreak was, in his opinion, clearly traced to a dairy. The Kirkcaldy town council have awarded to Dr. Mackay, medical officer of health, and Dr. Curror, £100 each, and Mr. Braid, sanitary inspector, £50, for the services rendered by them during the epidemic. Sir Henry Littlejohn, in his report, highly praises the ability and energy displayed by Dr. Mackay in coping with the epidemic.—*British Medical Journal*.

Governmental Regulations Against Imported Contagious Diseases of Animals.—The agricultural department has been taking steps to keep out of this country all animals that can in any possible way bring contagious diseases into the United States. Secretary Morton issued about January 20, a set of regulations providing for the inspection and quarantine of all animals imported from Canada into the United States, and the Federal officers at all the ports on the northern boundary have been instructed to look out for all future imports of cattle, horses, sheep, etc. Animals found infected with any sort of contagious disease are to be killed without compensation to the owner, or returned to Canada. The regulations provide that all animals shipped into this country from Canada must be accompanied by an affidavit made by the owner or importer, declaring the purposes for which the animals are imported. Horses for temporary stay, such as pleasure, exhibition and racing stock, are to be admitted without inspection.

Liability for Pay of Nurse.—While it may be that a request made by one person to perform service beneficial only to another may not alone raise the presumption of his intention to pay for it, when it appears that the requested service has been performed pursuant to such request, he, in the absence of authority from or ratification by such other person, is charged as upon an implied promise to pay the person so employed. This is illustrated in the case of *Ludlum v. Couch*. The plaintiff, who may be deemed to have been a professional nurse, was

requested by the defendant, a physician and village health officer, to go to the residence of one Peter Post, some of the members of whose family were sick with diphtheria, and nurse them. There was no evidence tending to prove that he was authorized by Mr. Post to employ the plaintiff for him or in his behalf, or that he was the family physician of Post, or had such relation to him. Under these circumstances, the appellate division of the supreme court of New York holds, Dec. 8, 1896, that the request of the defendant to the plaintiff was an employment of her to perform the services in question, and the only employment under which she performed them.

Encourage Every Worthy Health Officer.—Dr. Pemberton Dudley, in *Public Health*, January, expresses the opinion that the health inspector does not, as a rule, receive the coöperation to which he is entitled. He says, speaking to an audience of laymen and physicians: "We physicians—and we patients—ought to be very scrupulous and very intelligently careful about the way in which we receive and encourage and coöperate with our local health inspectors. They come to us when our homes are invaded by pestilential disease, just as much in the garb and character of a true friendship, as do our physicians and nurses. They ought to be welcomed as such, and their efforts furthered to the extent of our ability. There is, in the minds of some persons, a disposition to attach to the health officer and his inspectors, the responsibility for all the inconvenience and annoyance incident to the sanitation of contagious diseases, just as there are people who censure the weather bureau for all the cyclones. An intelligent patient of mine, into whose house scarlet fever had entered, determined that not a suggestion or direction of the inspector should fail of her cordial and energetic support and execution. Promptness, energy and persistence characterized every effort she made to prevent the disease from reaching other people. As a consequence, her three other children escaped the infection and, after a period of anxiety such as none but the maternal heart can know, her sick one recovered. Subsequently the inspector said to her something like this: 'Madam, your child caught the disease through somebody's mismanagement; but no other mother's child caught it through yours. So far as you had to do with the progress of this epidemic, it never got past your house, and if everybody would do as you have done, the disease would be quickly stamped out. No failure on your part has filled any other woman's home with mourning.' 'Well,' said the relieved mother, 'what a comfort it is to know that!'"

Valid Ordinance to Secure Pure Milk.—Chapter 203 of the General Laws of Minnesota of 1895, entitled "An act relating to the inspection of milk and of dairies and dairy herds, and to provide for the licensing and regulation of the sale of milk in cities," provides that the city council of any city may, by ordinance, provide for the inspection of milk and of dairy herds kept for the production of milk within its limits, and issue licenses for the sale of milk within its limits, and regulate the same, and may authorize and empower the board of health to enforce all laws and ordinances relating to the production and sale of milk for sale or consumption within such city, etc. This, the supreme court of Minnesota holds, in *State v. Nelson*, Nov. 6, 1896, authorizes the passage of an ordinance, such as one passed in Minneapolis, providing that any person desiring a license to sell milk in the city shall file with the commissioner of health of the city an application therefor, stating, among other things, the location or place from which the applicant obtains the milk, and, if he is not a producer of milk, then the name of the person from whom he obtains his milk, and also requesting the city to inspect his dairy and dairy herd, or the dairy or dairy herd of the person from whom he obtains his milk, for the purpose of carrying out the provisions of the ordinance, and providing that the commissioner of health shall

inspect such dairy and dairy herd, and cause an examination by the veterinarian of the department of health to be made of every animal producing milk for sale within the city, belonging to the applicant or the person from whom he obtains his milk, and further providing for the tagging of each animal examined and inspected. Such an ordinance, the court holds, has no extraterritorial operation, because it requires the applicant for a license to sell milk within the city to consent that the dairy herd from which he obtains his milk shall be so inspected, although such dairy herd is kept outside the city limits. The provisions in that regard go only so far as it is reasonably necessary to prevent the milk of diseased cows being sold within the city. This inspection is wholly voluntary on the part of the owner. If he does not choose to submit to it, the result merely is that he or the one to whom he furnishes milk can not obtain a license to sell within the city. So reasons the court. It also holds that a requirement of the ordinance that the applicant shall consent, as a condition precedent to obtaining such license, that the animals from which he obtains his milk shall be subjected to the "tuberculin test" is not unreasonable. Whether a license from a city under an ordinance passed pursuant to the foregoing statute is, as to the sale of milk in such city, a substitute for the license from the State dairy commissioner, provided for in Laws 1889, chapter 247, or whether it is merely supplemental and additional, the court says it does not decide. But, in either view, it holds the ordinance in question authorized by the act of 1895.

The Isolation Hospital Supplanting the County Pest House. Dr. Benjamin Lee, secretary of the Pennsylvania Board of Health, has addressed that Board recently, regarding the replacement of the old style pest house by something more modern and attractive. He said that while almost all of our cities and towns of any size have some kind of a hospital, which they usually call a pest house, most unfortunately it is in reality a smallpox hospital which can be made use of in case of epidemics of that disease. "The institution, however, from its very name is looked upon with horror by the community. People would rather die at home than go to a pest house to be restored to health. I was greatly pleased in visiting your city yesterday to find so admirable a detached hospital for the treatment of contagious diseases. I found in your hospital private wards intended for the use of persons in good circumstances—not those who desire to be treated at the expense of the community, but persons of means suffering from illness, which could be best treated at a hospital, as is the case with the vast majority of surgical cases, so that such persons could avail themselves of the best medical skill under the best environment, with the best nursing, and in every way the best opportunity for recovery. You have also in your isolation hospital a hospital to which any mother should not object to going with her child suffering from a contagious disease. In so doing she would accomplish a number of good results for her own family as well as for the entire community. She would avoid the risk of contagion to the other children and other members of her family, and would make it unnecessary for the house to be kept quarantined. The breadwinners of the household would thus be enabled to continue to attend to business as usual. There is a movement on foot at present in Philadelphia which took its origin with the women of that city, through the association known as the 'Women's Health Protective Association,' for establishing a hospital of this kind to be reserved entirely for pay patients. It is intended to establish a hospital with every comfort and every facility for the treatment of contagious diseases, and every precaution for preventing the escape of germs of these diseases outside of its walls. It is intended, if I understand it, that while this hospital shall be under the supervision, to a certain extent, of the Board of Health of the city, that is to say, its officers must conform

strictly to the regulations of the Board of Health, yet, if the parents or relatives of the sick person so desire, such person may enjoy the attendance of the family physician. It would be necessary in this case for the physician also to be subjected to the regulations of the Board of Health, but the arrangements would be such that these could be followed with very little personal inconvenience. I feel that this is a matter of very great importance, and one that all representatives of boards of health and of local municipalities should consider. The State Board of Health has adopted a resolution recommending to the municipal authorities of every center of population of 25,000 or upward, that they should establish a separate hospital for the treatment of such affections."

BOOK NOTICES.

Anomalies and Curiosities of Medicine: Being an encyclopedic collection of rare and extraordinary cases and of the most striking instances of abnormality in all branches of medicine and surgery, derived from an exhaustive research of medical literature from its origin to the present day, abstracted, classified, annotated and indexed. By GEORGE M. GOULD, A.M., M.D., and WALTER L. PYLE, A.M., M.D. Imperial octavo, 968 pages, with 295 illustrations in the text and 12 half-tone and colored plates. Price, cloth, \$6 net; half morocco, \$7 net. Sold only by subscription. Philadelphia: W. B. Saunders, 925 Walnut Street. 1897.

We read the following in the author's preface with surprise: "A curious case is invariably reported and the insertion of such a report is generally productive of correspondence and discussion with the object of finding a parallel for it.

"In view of all this it seems itself a curious fact that there has never been any systematic gathering of medical curiosities. It would have been natural that numerous encyclopedias should spring into existence in response to such a persistently dominant interest. The foregoing volume appears to be the first thorough attempt to classify and epitomize the literature of this nature."

The surprise deepens when we examine the bibliography and find that the names of Millingen and Eve have escaped mention.

Millingen, a British army surgeon, in 1837 wrote a work which was published in two volumes of 400 pages each, by Bentley in London. This work was entitled "Curiosities of Medical Experience." It was republished in Philadelphia by Haswell, Barrington & Haswell, in a single volume in 1838. There was little attempt at classification. Paul F. Eve in 1856 wrote a work, "A collection of Remarkable Cases in Surgery," a book of 858 pages, which was published by J. B. Lippincott & Co. in 1857. This extensive work was classified on the anatomic plan, that is to say all the cases were arranged according to the region injured or diseased.

In Eve's book the cases are reported as nearly as possible in the language of the original report. In the book under review a digest is made. Fournier's cases which he collected in the "Diction. des Sciences Médicales," article "*Cas rares*," is apparently made use of. Mr. Walter Dendy's pamphlet on the "Wonders Displayed by the Human Body," quoted by Eve, the writer has not seen, nor is it quoted by Gould and Pyle, nor in the Great Index Catalogue of the Library of the Surgeon-General's Office.

The scope of the work under review is much greater than that of Millingen, whose cases are irregularly arranged, and greater than the work of Eve, who limited his collection of cases to those of surgery.

The claim of the authors to have the only collection of rare cases in all branches of medicine holds good, and we can but admire alike the work itself and the wonderful industry that produced it. The book is more than a mere collection of rare cases, for the cases are not only systematically arranged, but instructively commented upon. Conditions, such as obesity,

are noted. There is also a chapter on epidemics. The illustrations are excellent.

The authors have rendered a very great service to writers and teachers, and many will have their labors greatly lightened by a reference to this storehouse of information. Practitioners will find here many a companion to the case that has puzzled them for months, and indeed there is no class of the profession who will fail to find the work useful.

Architecture of the Brain. By WM. FULLER, M.D. Illustrated: 8vo, cl., pp. 182. Grand Rapids, Mich. 1896.

This excellent work deserves to become very generally known. The plates are as good as they can be in black and white, and it is the most recent addition to the copious modern literature on the anatomy of the brain. The author has been a diligent and enthusiastic student of anatomy since his college days; for a number of years he was a successful teacher of this, the most important fundamental branch of medicine and although he has lived for a number of years in a rural city, he has pursued his favorite study with an ardor and originality that are refreshing in these days when physicians so generally employ all their time and energies in acquiring and increasing their practice. This treatise presents many features of great merit. The description of the anatomy of the brain is concise and clear.

The descriptions have been made "from dissections by the author, and have been carefully verified by comparison of longitudinal and lateral dissections, and by sections, all of which agree in proving the correctness of the representations herein described.

"These dissections have been permanently recorded by castings in plaster and the sections have been photographed and plates made, so that both the casts and the plates can be repeated at pleasure, thus enabling any who may take an interest in the anatomy of the brain to do so." They may also purchase reproductions of the casts if they wish.

The plates are interesting and instructive object lessons in studying the text, splendid substitutes for the actual dissections. The book will be alike valuable to the student and the practitioner; the former will find it the best instructor in obtaining an accurate knowledge of the structure of the brain and the latter the safest and simplest guide in locating cerebral lesions and injuries.

A System of Practical Medicine by American Authors. Edited by ALFRED LEE LOOMIS, M.D., LL.D., and WILLIAM GILMAN THOMPSON, M.D. Volume I. Infectious diseases. Illustrated: 8vo, cl.; pp. 985. New York and Philadelphia: Lea Bros. & Co. 1897.

The precision and accuracy of modern medicine in its practical applications have become such that few text books on systems accurately represent its present position.

"Such considerations," says Dr. Thompson, "render obvious the necessity for a systematic and practical work covering the entire field of general and specific medicine in its foremost state of development. To meet this want the late Dr. Alfred Lee Loomis, M.D., LL.D., undertook the authorship" and associated Dr. Thompson with him in its charge.

By omitting topics on hygiene, bacteriology, gynecology, *et cetera*, it "has been found possible to present a succinct and complete account of medical practice in its latest aspects, each article being a clinical monograph and proceeding from the cause and nature of a disease to its diagnosis, prognosis and treatment."

In the preparation of the work, the late Professor Loomis "secured the authors, apportioned their subjects, decided the arrangement and classification of the entire work, and discussed with Dr. Thompson many important details."

An inspection of the book shows that Professor Loomis made no mistake in choosing his associate editor, for the work is one which will reflect high credit on American medicine.

The contributors to the first volume are: I. E. Atkinson, M.D., Baltimore; John M. Byron, M.D., New York; Warren Coleman, M.D., New York; George Dock, A.M., M.D., Ann Arbor, Mich.; A. H. Doty, M.D., New York; Isadore Dyer, M.D., New Orleans; J. Crozier Griffith, M.D., Philadelphia; Walter B. James, M.D., New York; Thomas S. Latimer, M.D., Baltimore; Wm. Osler, M.D., Baltimore; Wm. Hallock Park, M.D., New York; P. Gervais Robinson, M.D., LL.D., St. Louis; George M. Sternberg, M.D., LL.D., Washington; James Stewart, M.D., Montreal; Wm. Sydney Thayer, M.D., Baltimore; Wm. H. Welch, M.D., Baltimore; Wm. M. Welch, M.D., Philadelphia; Hamilton A. West, M.D., Galveston; J. C. Wilson, M.D., Philadelphia.

The articles in this volume are: 1, Malaria; 2, Dengue; 3, Enteric Fever; 4, Typhus Fever; 5, Relapsing Fevers; 6, Yellow Fever; 7, Cholera; 8, Dysentery; 9, The Plague; 10, Influenza; 11, Epidemic Cerebro-spinal Meningitis; 12, Erysipelas; 13, Pyemia; 14, Septicemia; 15, Smallpox and Varioloid; 16, Vaccinia; 17, Varicella; 18, Scarlet Fever; 19, Rubella—Measles; 20, Rubella; 21, Diphtheria; 22, Pertussis; 23, Epidemic Parotiditis; 24, Tuberculosis; 25, Syphilis; 26, Leprosy; 27, Tetanus; 28, Infectious Diseases of Obscure Nature.

The limitations of space will not permit us to do more than to content ourselves by a general and unqualified commendation of the book. We regret that the editor ignores the metric system of dosage in the prescription writing.

The publishers have done their part well.

Ophthalmic Operations as Practiced on Animals' Eyes. By CLARENCE A. VEASEY, A.M., M.D. With 56 illustrations: 12mo, cl., pp. 99. Philadelphia: The Edwards & Docker Co. 1896.

"This little work," says the author, "has been prepared in the hope that it may prove of assistance to those beginning the study of ophthalmology, by enabling them to become acquainted with the technique of the various operative procedures through practice on animals' eyes, thus removing a certain amount of timidity and affording a larger experience and more confidence when attempting the operations on the human eye."

Lest some antivivisectionist might set up a prolonged howl, let us take note that the author recommends sheep's and pigs' eyes removed from animals recently slaughtered. The book is well conceived and well executed.

City of Chicago Second Annual Report of the Civil Service Commission to His Honor, the Mayor, for the year ending Dec. 31, 1896. JOHN M. CLARK, R. A. WALLER and CHRISTOPHER C. HOTZ, Commissioners. Cl., 8vo, pp. 286. Chicago: Printed for the Commission. January, 1897.

The successful working of the Illinois Civil Service law is a source of gratification to all who have had the pleasure of witnessing the results of the Commissioners' labor in the city of Chicago.

It is evident that the much neglected science of government of our great cities is being rescued from obscurity and the problem is rapidly being solved.

The operations of the Medical Board are creditable. It will be remembered that this board was recommended to be appointed by the Chicago Medical Society, and the commissioners very wisely accepted their recommendation.

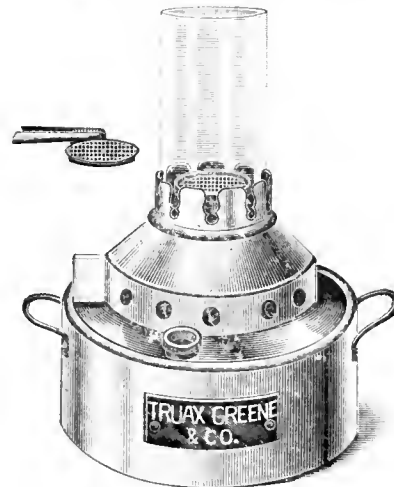
La Fol qui Guérit. Par T. M. CHARCOT. Tome VIII de la Bibliothèque diabolique in—8o, de 48 pages. Papier vélin, prix 2 fr.; papier Hollande, prix 3 fr. 50; papier Japon, prix 4 fr. Publications du Progrès Médical. Paris, 14 Rue des Carmes.

This brochure, edited by the distinguished Bourneville, is one of the last works of the illustrious Charcot, and is published by permission of Madame Charcot.

This is a scientific exposition of the faith cure; the author freely concedes that certain cases belonging to the domain of hysteria, are sometimes cured by "suggestion," and the philo-

sophic reasons for such a result are given in detail. It is like carrying coals to Newcastle to praise anything written by a master of his art, and we can not do better than to advise our readers to get the pamphlet and read it for themselves.

NEW INSTRUMENTS. FORMALDEHYDE GENERATOR.



The apparatus shown in the above illustration has been designed by Chas. Truax, Greene & Co., for the safe, convenient and economic production of formaldehyde by the oxidation of methyl alcohol. This is accomplished by decomposition of wood alcohol and without the use of an open flame, and where used for disinfecting tightly closed apartments, it is free from the possibility of fire while in operation.

It is convenient, economical and simple in construction, compactly made and requires no nice manipulation to secure the desired result. An apartment having a capacity of 2,500 cubic feet may be thoroughly disinfected by the generator, together with the infected furniture, bedding, etc., with one filling of the reservoir and without previous preparation of the room or its contents.

Formaldehyde (CH_2O) in its gaseous form answers fully the above requirements, as it possesses the properties of ready diffusibility and great power of penetration.

It may also be used in connection with a sterilizer constructed for the purpose of sterilizing instruments and surgical dressings. It is destructive of all pathogenic organisms without acting injuriously on the higher forms of life, or on the material or color of the articles subjected to its action.

NECROLOGY.

THOMAS G. ROWAND, M.D., Philadelphia Medical College, 1850, died in Camden, N. J., aged 68 years, on January 25. In 1862 he was an assistant surgeon in the New Jersey Infantry Volunteers, 24th regiment serving with them until their muster out. Notwithstanding his modesty he held many positions of trust, including a professorship in the University Medical College of Pennsylvania, a deputyship in the Quartermaster General's Department of the New Jersey Militia, two terms as coroner of Camden, N. J., 1864 and 1868, and president of the Camden Board of Education, 1867-68. In his earlier career, he served acceptably as a hospital surgeon in the third division of the famous Second Corps at Potomac Creek, Va.

SAMUEL H. CHARLTON, M.D., of Seymour, Jackson County, Ind., one of the oldest and best known physicians in Southern Indiana, died Jan. 12, 1897, of uremia, aged 70 years. He was a graduate of Louisville Medical University, was assistant sur-

geon of 6th Indiana Regiment; in 1878 was president of the Jackson County Medical Society, also president of Mitchell District Medical Society; in 1881 was first vice-president of the Tri-State Medical Society of Indiana, Illinois and Kentucky; in 1882 was vice-president of the Indiana State Medical Society and in 1888 was president of the same: in 1887 became member of International Medical Congress, which met at Washington, and served as a member of the council of the Section on Diseases of Children; in 1890 was president of the U. S. Examining Surgeons on pension board. He was possessed of a genial, cordial nature, qualities that endeared him to all who knew him.

HENRY HARTSHORNE, M.D., University of Pennsylvania, 1845, died at the age of 73 years at Tokio, Japan, February 10. He was a graduate of the Haverford College in 1834. He was elected professor of the Institute of Medicine in the Philadelphia College of Medicine in 1853, and in 1859 was chosen professor of practice of medicine in the University of Pennsylvania. He became professor of hygiene in the latter institution in 1866, and in 1867 was elected to the chair of organic science and philosophy in Haverford College. He also held professorships in the Pennsylvania College of Dental Surgery, Girard College and the Woman's Medical College of Philadelphia. He was the first person to ascertain by experiments on himself and others in 1848 the safety and effects of the internal use of chloroform. Six years ago Dr. Hartshorne went on a tour of Japan. He remained a couple of years, and formed a liking for the country. Returning to the United States, he consented two years ago to return to labor in connection with the missions of the Society of Friends. He was a brother of vice-president Charles H. Hartshorne of the Lehigh Valley Railroad.

ROBERT M. DENIG, M.D., Jefferson Medical College, 1838, died January 17, in Columbus, Ohio, to which he came in 1849. He was at one time Professor of Medical Jurisprudence in the Starling Medical College, and later on became lecturer on Diseases of Children in the Columbus Medical College, which position he held until that institution united with the Starling College. He retired from active practice about five years ago.

CHARLES W. COOPER, M.D., Northampton, Mass., where he was in active practice for twenty-five years, was lost overboard from the Hamburg Line Steamer Columbia about 300 miles from Sandy Hook, during the first week in February. The vessel was stopped, but he never appeared above the surface. His health becoming impaired he made a trip to the Mediterranean about four months ago with his brother-in-law, Dr. Fred Tuckerman of Amherst. He was a graduate of Harvard Medical College, in 1877.

ABNER C. JONES, M.D., of Muncie, Ind., died January 28, aged 48, of acute Bright's disease. Dr. Jones enjoyed the distinction of having been the youngest soldier that served through the war. He was an ex-commander of the G. A. R.

ALBERT WELLS KILBOURNE, M.D., New York University Medical College, 1874, a practitioner of Albany, N. Y., of twenty years' standing, died January 14. Three years ago he returned to Liberty, N. Y., where he was born in 1851. A cardiac aneurysm was the cause of his death.

BENJAMIN B. ADAMS, M.D., University of Georgetown, D. C., 1876, died suddenly in Washington, D. C., January 25, aged 46 years.

JOHN KIRKER, M.D., Bellevue Hospital Medical College, N. Y., 1864, died at his home in Allegheny City, Pa., January 23. He was a member of the AMERICAN MEDICAL ASSOCIATION and had served as a surgeon in the Union forces during the war.

CHARLES A. STARK, M.D., Dartmouth Medical College, N. H., 1884, died at his residence in Marshfield, Mass., January 22, aged 35 years. He was for a time on the staff of the New Hampshire Asylum for the Insane, located at Concord and subsequently practiced in Manchester, N. H. He returned

from Louisiana in 1889 and in the following year established himself at his last address.

WILLIAM A. CAREY, M.D., University of Pennsylvania, 1886, died in Philadelphia, Pa., January 29, aged 35 years.

ANDREW L. VON WITTKAMP, M.D., Jefferson Medical College, 1876, died in Philadelphia, February 2, from a sequence of cerebral hemorrhage. He came from Germany when an infant.

EUGENE Z. BRIEGVOGELLE, M.D., New York University, 1883, died at his residence, New York City, Feb. 12, 1897, of pneumonia, in his 47th year.

PHILIP HASTINGS FULLER, M.D., University Vermont, 1885, died at his home in Brooklyn, N. Y., of renal disease, February 12. He was born near Painesville, Ohio, in 1861 and came to Brooklyn with his parents when still a child.

MISCELLANY.

The Laryngoscope, published in St. Louis, has been selected as the official organ, for the year 1897, of the Laryngological Section of the New York Academy of Medicine. This selection, and the great probability of the same journal being chosen by other laryngological, rhinological and otological societies as their official organ, would indicate that the *Laryngoscope* has become what its proprietors stated they intended to make it, *i. e.*, the American Journal of Record for the specialties represented.

He Always Had Some "Small Change About Him."—A soldier wounded in the Franco-Prussian war recently evacuated a thaler through the rectum which had been in his body over twenty-five years. The bullet passed through his purse in his breast pocket and when it was extracted at the time a smaller coin was found with it. His health has since been good. The case has led to considerable discussion as to how the thaler could have found its way from the level of the seventh rib into the intestines without noticeable disturbance.—*Deutsche Med. Woch.* December 25.

Orchitis Implanted upon Prostatic Hypertrophy.—Dr. J. R. Gibson of Paisley writes to the *Lancet* concerning a case of the above character. His case was that of a man aged between 50 and 60 years, afflicted with enlarged prostate gland and requiring the use of the catheter before any urine could be drawn off, and who recently became afflicted with acute orchitis of one testicle, the orchitis being probably caused by the irritation of the catheter, as great difficulty was experienced in passing it. Almost immediately after the onset of the orchitis he could pass urine more or less freely, an act he had not performed for over a year, and the whole bladder symptoms underwent great improvement, an improvement which I am glad to state has continued since the orchitis got better.

Artificial Diphtheria Antitoxin.—Smirnoff has been continuing his efforts to produce an artificial substitute for the usual antitoxin and has succeeded. The liquid he prepares for the purpose is not so effective as antitoxin in the early stages of the disease, but later, when antitoxin loses its power, the artificial seems to display marvelous efficacy. It also works irrespective of the amount injected. His theoretical conclusions from his investigations are: 1, that antitoxin is only an oxidized toxin; 2, the electric current is only an excitant that can be modified according to the nature of the agent employed; 3, it acts through the chemic processes that occur during the decomposition of the salts. He is hopeful that it will be possible to manufacture antitoxins for tuberculosis, anthrax, etc., much cheaper than by the present methods. His process consists in electrolyzing toxin-bouillon in a U-shaped tube with a faucet at the lowest part, after the addition of .05 per cent. NaCl. The current passes through carbon electrodes. These

are replaced with silver electrodes, and .05 per cent. potassa is added to the liquid. The plates have to be changed once an hour, as the chlorid of silver that forms on them prevents their action. Four or five plates are necessary to neutralize all the chlorid. After 200 c.cm. of toxin have been thus electrolyzed for seven hours an antitoxin results that will cure guinea pigs fifteen hours after infection. Electrolysis for eight hours results in an antitoxin strong enough to produce its effect at the commencement, but too weak for later stages. If 1 per cent. of NaCl is added, electrolysis for three to four hours produces a very active antitoxin. This process produces antitoxin freed from every trace of toxins and of a standard strength and efficiency.—Russian correspondence of the *Presse Méd.* of December 23.

An Anecdote Regarding Erichsen.—The *Lancet* tells the following curious incident in the life of the late Sir John Erichsen: A serious fracture case occurred in a large hotel in the country and Dr. McNichol, of Dalmally, was called to it. When setting the limb, an old gentleman came to him and said he would be glad to give any assistance required, as he too was a medical man. He was thanked by Dr. McNichol and asked to use extension, etc., and to all the local man's directions the old gentleman gave ready obedience. The fracture was set and an adjournment made to the smoking room. "I must thank you for your assistance, sir." "Not at all; I was glad to be able to help in the matter. I think the case will do well, as the setting of the limb is perfect. That's my card." Dr. McNichol saw "John Eric Erichsen" on the card, and afterwards said he never felt so helpless in regard to making a remark fitting the occasion. "I'm glad," he said, "the fracture is set properly, for I learned the method out of your own book." There was a good humored laughter, and as they say about other pleasing functions, a happy evening was spent. Within a few weeks of each other they are gone, McNichol regretted in his small sphere as was Erichsen in his larger.

The Paris Night Medical Service.—According to *Médecine Moderne*, the public night medical service of Paris is maintained at a cost to the city annually of 145,000 francs, or about \$29,000. In return for this service the patients paid the city but 3,217 francs. One hundred and thirty-five doctors are employed, the yearly salary of each being 600 francs, or \$120. The London *Lancet*, January 16, in treating of a "strike" on the part of some of the physicians of this service, shows that the latter has in Paris, as elsewhere, been the subject of abuse. The service is highly appreciated by the population of Paris, but it is now maintained that persons who have means to pay for medical advice have availed themselves of its benefits. Such abuse, it is true, does not, as in the case of hospital abuse in England, represent a loss to the medical profession, for the medical men are paid eight shillings per visit by the municipality, but it is loss to the tax payers. The latter are therefore interested in preventing abuse, whereas if the proposal of the Prefect of Police were enforced there would be no check to the abuse. If the medical officers were paid a fixed salary it would not matter to any one except to the medical men themselves how many patients resorted to the night service or whether these persons were rich or poor. As it is, the payment being per visit, the authorities have every interest to watch and see that none but the poor avail themselves of the medical officers' service. It is proposed that the tax collectors should be employed to investigate the cases.

Two Surgeons and Their Fees.—Alfred Louis Velpeau, the greatest French surgeon of his time, had a severe lesson read to him by the mother of a patient, a young girl whose life he had saved in a critical case of croup. The mother brimming over with gratitude, went to see the famous surgeon, an abrupt and somewhat disagreeable person at the best of times, and reputed to be afflicted with inordinate greed. "I have come

to thank you for what you have done for us, and to offer you this as a token of our obligation," she said, placing a beautifully embroidered purse on Velpeau's table. Velpeau scarcely took the trouble to look at it. "I accept, Madame," he remarked in his ungracious way; "but, of course, this is without prejudice to my honorarium, which comes to 3,000 f." Thereupon the lady took up her present. "I am afraid I made a mistake then," she laughed; "there are five notes of 1,000 f. each in there. This makes us right then, Monsieur." And pocketing two out of the five slips of blue paper, she bowed, "I have the honor to wish you good morning." Sir Astley Cooper was wiser in his generation. The largest fee he ever received was in a less delicate but more original manner. He had been attending in his capacity of surgeon a West Indian millionaire, named Hyatt, with Drs. Lettsom and Nelson as physicians. The treatment was most successful, and in his joy Hyatt bestowed 300 guineas on each of the doctors. "But you," exclaimed the grateful patient, addressing Sir Astley, "you shall have something better." With this he flung his nightcap at the eminent operator. "Sir," replied the latter, "I'll pocket the affront." And he slipped the "affront" into his pocket. It contained a draft for 1,000 guineas.—*New York Times*.

Malpractice Question for the Jury.—*Moratzky v. Wirth* was an action to recover damages which the plaintiff alleged that she had sustained by the defendant's malpractice, while attending her as her physician during her illness due to a miscarriage, in not discovering and removing a remnant of the placenta. Unexplained, the evidence was sufficient to justify the conclusion that the defendant, in the exercise of that degree of care and skill which the law exacts of a physician, might and ought to have seasonably discovered and removed the remnant of the afterbirth. Wherefore, the supreme court of Minnesota holds, Dec. 28, 1896, that the question of his negligence in the premises was one for the jury, and that the trial court erred in dismissing the action. The evidence, it says, was practically plenary that the failure to remove the afterbirth materially aggravated and increased the blood poisoning of the plaintiff, even if it was not proved that it commenced after the defendant was called to treat her, and prolonged and intensified her pain and sickness. Such being the case, if the defendant was negligent in not removing the placenta, the court holds that the plaintiff was entitled to damages in some amount, and the case should have been submitted to the jury.

Privilege of Burial Can Not Be Limited to a Class.—The fact that the unlimited burial of the dead within a city is dangerous to life and detrimental to the public health may be a sufficient reason for the enactment of an ordinance fixing a term after which such burials shall cease within certain portions of the city; but, while burials are permitted within a district, the supreme court of California holds, *Ex parte Bohen*, Dec. 17, 1896, the privilege can not be limited to one class of citizens and denied to another class within the same district. In other words, the police power is to be exercised for the good of the entire public, and any restriction of the rights of the individual by virtue of this power must extend to all the individuals who might otherwise exercise the right. The right to prohibit burials within a certain district rests upon the proposition that any burial within that district is injurious to the public health and an ordinance permitting burials within a district to an extent greater in number than it prevents, as one allowing burial in lots already sold which have a greater aggregate capacity than those unsold wherein it is prohibited, can not be upheld as an exercise of police power. Nor can an ordinance forbidding the burial of human bodies within the city, or upon any designated portion thereof, as upon unsold cemetery lots, be sustained, if such burial be permitted upon other (sold) lots similarly situated; and the owner of land can not be restrained from selling it for the purpose of being used as a place of burial, if burial therein is not at the time forbidden.

Cincinnati.

AT THE MEETING of the Academy of Medicine Dr. Charles A. L. Reed read a paper on the "Sequelæ of Cholo-lithiasis."

Dr. J. W. PRENDERGAST, the health officer, is preparing an ordinance to prohibit promiscuous expectoration in street cars and other common carriers. He is also vigorously prosecuting his reforms in the direction of a pure milk supply for the city. His intention is to have the cows examined for tuberculosis by means of the administration of tuberculin, and then have them kept under rigid observation. A bacteriologic bureau as a department of the city health department, is another one of Dr. Prendergast's many progressive and commendable ideas.

THE ANNUAL REPORT of the staff of the Cincinnati Hospital was recently submitted and it shows that there were 4,812 patients discharged from the hospital wholly or partially recovered. The total number of patients received at the hospital was 5,254. This was an increase of 35 over the year previous. The death rate was 8.4 per cent. Of this Dr. Dandridge says it is to be understood that no less than 98 patients were received in a dying condition and did die within twenty-four hours. The pressing need of more commodious quarters for the contagious diseases, nurses, and another operating room was emphasized by President Dandridge. An appropriation of \$12,000 was made for the month of January and \$9,000 for the next five months to cover running expenses.

STEPS are being taken to have the legislature pass a law prohibiting the distribution of suggestive literature relative to diseases of the sexual organs.

Washington.

THE GEORGETOWN UNIVERSITY HOSPITAL.—Through the munificence of Georgetown University, the assistance of the medical department of the same institution and the generosity of several prominent citizens, Georgetown Medical School will have a modern hospital under its control for clinical teaching of its medical students. The hospital will have free dispensary, free emergency wards, chambers and wards for pay patients, operating rooms and lecture halls. The conduct of the institution when in operation, will be in the hands of a religious order of sisters, whose services have already been secured. The practical management of the scheme is now in the hands of a building committee, consisting of Dr. Joseph Taber Johnson, chairman; Rev. J. Havens Richards, S. J., president of Georgetown University; Drs. George Kober, C. H. A. Kleinschmidt and G. L. Magruder, ex-officio dean of the medical department.

REPORTED FAVORABLY.—The House District committee has reported favorably the following bills: House bill 9,821, authorizing the Commissioners to collect a fee of 50 cents for the issuance of transcripts from the records of the health department. House bill 9,976, to punish impersonation of inspectors of the health and other departments of the city government.

FOR THE CONTAGIOUS DISEASE HOSPITAL SITE.—The item in the District appropriation bill for the purchase of a site for a contagious hospital met with almost the unanimous approval of the entire House Appropriations Committee. The allowance of \$110,000 to be placed in the hands of the Commissioners for the purpose indicated, was voted upon separately. Members say there is little doubt that the item will be approved by the House. The Commissioners already have something like \$5,000 left of an appropriation made some time ago for the selection of a site.

TO CHECK POLLUTION OF WATER SUPPLY.—Mr. Gallinger has given notice in the Senate of an amendment he intends to offer to the sundry civil appropriation bill for the investigation of the pollution of the water supply in the city. The resolution is "To authorize the marine hospital service, under the direction of the Secretary of the Treasury, to investigate the sources of contamination of rivers and other natural sources of water supply, where the sanitary condition of the people of more than one State or Territory or the District of Columbia is affected or threatened to be affected by such pollution, and to report upon what legislation is necessary to remove such pollution, provided the first investigation shall relate to the Potomac River."

MARYLAND UNIVERSITY ALUMNI ASSOCIATION.—The first annual banquet of the Washington branch of the University of Maryland Alumni Association was held on January 29 at the National Hotel. Dr. J. H. Mundell was chosen president, Dr.

J. W. Bayne and T. Morris Murray vice-presidents, and Dr. I. S. Stone secretary and treasurer.

MEDICAL SOCIETY.—At the meeting of the Society held January 27, Dr. Bishop reported some physical and therapeutic facts on static electricity. Dr. A. F. A. King and Dr. Smart, U. S. A., reported cases of dermatitis from Roentgen rays; Dr. Dufour, a case of foreign body in the nose and presented the specimen. At the meeting held on February, Dr. Fry read the essay of the month, entitled "Report of the Obstetric Work of Columbia Hospital for the year 1896." Dr. Stone made remarks on the preparation of formalin catgut. Dr. S. S. Adams presented a polypus which he had removed from the rectum of a child, 3 years of age.

THE PUBLIC SERVICE.

Army Changes. Official List of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from Feb. 6 to Feb. 12, 1897.

Major Robert M. O'Reilly, Surgeon, is granted leave of absence for two months, with permission to go beyond sea.

First Lieut. Francis A. Winter, Asst. Surgeon, relieved from duty at Ft. Grant, Ariz., and ordered to Washington, D. C., for examination as to his fitness for promotion.

First Lieut. William E. Purviance, Asst. Surgeon, will proceed from Ft. Columbus, N. Y., to Washington, D. C., and report for examination as to his fitness for promotion.

Major James C. Merrill, Surgeon, will be relieved from duty at Ft. Sherman, Idaho, upon the arrival of First Lieut. G. A. Skinner, Asst. Surgeon, and ordered to report to the Surgeon-General for duty.

First Lieut. Guy C. M. Godfrey, Asst. Surgeon, is relieved from duty at Ft. D. A. Russell, Wyo., and ordered to Ft. Sheridan, Ill., for duty.

The following named medical officers will be relieved from duty at the Army Medical School, Washington, D. C., upon completion of the course about March 12, 1897, and ordered to take station as follows: First Lieut. Basil H. Dutcher, Asst. Surgeon, Ft. Leavenworth, Kan.; First Lieut. Leigh A. Fuller, Asst. Surgeon, Ft. Meade, S. Dak.; First Lieut. Franklin M. Kemp, Asst. Surgeon, Vancouver Bks., Wash.; First Lieut. George A. Skinner, Asst. Surgeon, Ft. Sherman, Idaho; First Lieut. Carl R. Daruall, Asst. Surgeon, Ft. Clark, Texas; First Lieut. William E. Richards, Asst. Surgeon, Ft. Grant, Ariz.; First Lieut. Louis P. Smith, Asst. Surgeon, Ft. D. A. Russell, Wyo.; First Lieut. Marshall M. Clond, Asst. Surgeon, Ft. Sill, Okla. Ter.

Change of Address.

Alford, R. L., from Vadaia to Laddonia, Mo.
Carter, R. H., from Lynville, Tenn., to Belton, Texas.
Cooper, E. H., from Galesburg to Henderson, Ill.
Carroll, C. C., from 509 Fifth Av. to 259 W. 75th St., New York, N. Y.
Fullenweider, R. C., from 582 W. Madison Av. to 7100 S. Chicago Av., Chicago, Ill.
Love, J. N., from 3642 Lindell Av. to 3507 Olive St., St. Louis, Mo.
McDaniel, E. B., from Portland to Cove, Ore.
Mullen, T. R., from Akron to Marcus, Ia.
Poehler, F. T., from Waseca to Morristown, Minn.
Scates, D. W., from New York, N. Y., to 410 N. 12th St., Waco, Texas.

LETTERS RECEIVED.

Amos, W. F., Portland, Ore.; Allen, Ulaamor, Jersey City Heights, N. J.
Bausch & Lomb Optical Co., Rochester, N. Y.; Ballantyne, Wm. & Sons, Washington, D. C.; Bennett, Chas. E., Wauseon, Ohio; Biddle, James G., Philadelphia, Pa.; Battle Creek Sanitarium, Battle Creek, Mich.; Blakely, T. G., St. Louis, Mo.; Birkhahn, A. M., New York, N. Y.; Barnum, F. E., Utica, N. Y.; Beckes, L. M., Vincennes, Ind.; Bush, Bertha E., Chicago, Ill.; Barnes, Wm., Decatur, Ill.
Cato, J. B., Huntsville, Ill.; Chas. Roome Parmele Co., New York, N. Y.; Clark, J. F., Paris, Texas; Cabbage, Samuel T., Philadelphia, Pa.; Carpenter, G. A., Fargo, N. D.; Cook, S. E., Lincoln, Neb.; Collis, S., Philadelphia, Pa.; Cross, Geo. D., Chester, Pa.; Cummings, W. H., New York, N. Y.
Da Costa, H. D., New York, N. Y.
Enos, Thos. R., New York, N. Y.
Files, F. H., Sioux Falls, S. D.; Forline, H. H., Houston, Texas; Fortin, E. R. P., Foxboro, Mass.; Ferguson & Goodnow, Chicago, Ill.; Froelich, H., Chicago, Ill.; Fisher, Geo. A., Chicago, Ill.
Graves, C. Herman, Chicago, Ill.; Gerrish, M. F., Seymour, Ind.; Gressner, H. B., New Orleans, La.; Grosvenor, L. C., Chicago, Ill.
Hessert, Wm., Chicago, Ill.; Horsfall, Wm., Marshfield, Ore.; Hammond, Wm. A., Washington, D. C.; Hygeia Sanitarium, Citronelle, Ala.; Holmes, F. W., New York, N. Y.; Hall, J. T., Chicago, Ill.
Johnson, J. B., Sheboygan, Wis.
Klebs, E., Chicago, Ill.; Kiernan, Jas. G., Chicago, Ill.; Kercher, John, Chicago, Ill.; Kraft, Wm., New York, N. Y.; Katharmon Chemical Co., St. Louis, Mo.
La Coste, H. D., New York, N. Y.; Londonderry Lithia Spring Water Co., Nashua, N. H.; Lippman Bros., Savannah, Ga.
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LECTURE.

ACUTE CATARRHAL INFLAMMATION OF THE STOMACH.

A Clinical lecture delivered in Rush Medical College.

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CHICAGO, ILL.

The patient whom I place before you this morning is, you see, confined to his bed. He was brought to the hospital three days ago, in a state of alarming prostration, vomiting and purging, and unable to retain anything in his stomach. This condition had been induced by a prolonged debauch, in which the usual accessories—wine and women—had been combined with almost fatal effect. Being only 22 years of age, and of a delicate organization, his stock of vital energy was insufficient for the occasion. Though considerably relieved, he can not yet tolerate the sight or smell of food; and ever since his admission to the hospital, he has been fed with nutritious enemata, and his stomach has been given perfect rest. His tongue is thickly coated; his breath is offensive; there is a small patch of herpes on his lower lip; his bowels, which were quite loose, on admission, are now only moved twice a day; his urine was scanty, high-colored, and acid. This specimen was passed shortly before leaving his ward; it is more copious than previously, and, now that it is cool, has deposited a copious brick-dust sediment that is composed chiefly of urates. The matters that were vomited when the patient first entered the hospital were very acid, slimy, and latterly of a greenish color and bitter taste. The acidity of the vomitus was found to be consequent upon the presence of lactic and butyric acids. Free hydrochloric acid was entirely absent. After the subsidence of vomiting there were frequent paroxysms of hiccough interspersed with belching of gas and the ascent of acrid fluids into the pharynx and mouth. These evidences of gastric uneasiness have now ceased to occasion any considerable annoyance, and will soon disappear, but the patient still complains of frontal headache with a feeling of intra-cranial fulness that is aggravated during each systolic impulse from the heart. On raising his head from the pillow, there is an overpowering sensation of dizziness. The special senses are painfully exalted, and there is tenderness all over the epigastric region when pressure is made below the xiphoid cartilage. The whole abdominal wall is morbidly sensitive to pressure, but the epigastrium is more susceptible than any other part. There is complaint of burning pain felt at intervals between the scapulae, especially after an attempt to take food of any kind. When admitted to the hospital the bodily temperature was 102 degrees F., and the feeble pulse-beat was 118 per minute. This morning, however, the temperature is 98.2 degrees F., and the pulse

is quite normal, though rather weak and easily excited.

Since we can not open this man's stomach, and look into its cavity, I must tell you what would have been found had he died two or three days ago. The mucous lining of the organ would have been covered with mucus, and through its translucent layer would have been visible the reddened membrane itself. The pyloric extremity of the stomach is the seat of severest inflammation in such cases; and there the color is deepest, and the swelling of the mucosa is greatest. Some day Professor Hektoen will have the opportunity to show you such a stomach, and I ask you then to observe the manner in which the evidences of inflammation, redness and swelling, are intensified in the vicinity of the pylorus, where it is not unusual to discover actual ruptures of the small vessels in the mucosa, with general deep staining of the membranous surface, while in the cardiac extremity of the viscus the vessels are only slightly prominent, giving them an appearance of arborization upon a comparatively pallid background of nearly normal mucous membrane. In many instances the surface presents a patchy appearance, indicating local variations in the intensity of the inflammatory process. This local variation differentiates the appearances caused by inflammation from the uniformly diffused hyperemia that flushes the mucosa during the act of digestion. Microscopic examination shows that the active proliferation of cells that occurs during inflammation differs from what takes place during digestion chiefly in the tumultuous and excessive character of the process, and in the substitution of mucus for gastric juice as the final outcome of glandular action. The connective tissue also exhibits the results of exudation and inordinate multiplication of its elements. The blood and lymphatic capillaries present the usual changes that are witnessed in connection with inflammation in other parts of the body.

The history of this case refers the disease to excessive drinking of alcoholic liquor. But in many cases no alcohol has been taken. Some of the most violent cases of acute gastritis are excited by the use of tainted meats or sweets that have been accidentally transformed into culture media for the growth of poisonous bacteria. Several times I have been called to treat whole families who had been violently attacked with vomiting and collapse within a few hours after eating ice-cream or "floating island," which had been kept in a damp and moldy cellar. A few years ago nearly one hundred persons in the State of Iowa were thus prostrated on one of the hottest days in summer at a wedding feast at which the company had been regaled with chicken-meat in a condition of incipient putrefaction. In like manner, the disease is often induced by eating unripe fruit and coarse vegetables that produce mechanical irritation of the stomach. It is sometimes produced by accidental swallowing of coins or other objects which jugglers are wont to conceal in

their mouths. When occasionally by over-eating, it is not so much the result of excessive distention of the stomach as of the fermentations that are set up within the gastric cavity. The products of fermentation and decomposition irritate the mucous surface, and in that manner excite inflammation.

Acute inflammation of the stomach is frequently due to disturbances of the nervous system. To this cause must be referred the effect of sudden cooling of the body when overheated, either by exposure to cold air or by copious draughts of ice-water. Anxiety, lack of sleep, and inordinate sexual excitement are frequent causes of acute catarrh among neurotic and arthritic subjects. The disease is sometimes caused by disorganization of the mucous membrane through the introduction into the stomach of over-heated liquids, or chemical corrosives like acids, alkalies, corrosive sublimate, tartar emetic, alcohol, croton oil, colchicum, etc. Inflammation is also sometimes excited by the poison of gout, uremia and cholemia. It is a common incident in the course of the infective diseases, such as measles, scarlet fever, typhoid fever, erysipelas, etc. Among young children it is often noted in connection with acute intestinal catarrh as the result of bad feeding and exposure to various infections. After adult life has been reached it is observed among males more frequently than among females, and is often associated with ill health that is caused by tuberculosis, syphilis, cancer, chlorosis, hysteria, and chronic obstruction of the portal circulation dependent upon hepatic, pulmonary or cardiac diseases. It is sometimes due to infection with discharges that are swallowed from diseased oral, nasal, or pharyngeal cavities, such as are encountered in cases of salivation, syphilis, tuberculosis, and gangrene of the respiratory organs. Occasionally, it accompanies peritonitis; and it may result from an ascending inflammation of the small intestine.

Excepting the cases of young children and of violent toxic catarrh, the disease tends to recovery. Sometimes its duration is very brief, as after an occasional temporary excess in eating and drinking; but the duration is usually about one week. Relapses are frequent; and there is always danger that the disorder may be thus prolonged, and gradually subside into a condition of chronic gastric catarrh.

The treatment of these cases should begin with thorough evacuation of the stomach, so as to remove all local causes of irritation, and to procure rest for the wearied organ. Our predecessors, when called to treat a brawny rustic who was brimful of beer and cabbage, were in the habit of giving an emetic containing ten grains of ipecacuanha, ten grains of zinc sulphate, and half a grain of tartarized antimony. This was usually effectual, but the resulting commotion was extraordinary, and was sometimes productive of coolness toward the prescriber. For such a patient as you have before you, a hypodermic injection of one-tenth of a grain of apomorphia would be quite sufficient, and would have the additional advantage of avoiding all irritation of the gastric mucosa. If the stomach be distended with gas, so as to produce discomfort, and to be noticeable on percussion, it may be expelled by the aid of alkalies. To children and delicate females may be given dram doses of the milk of magnesia, or tablespoonful doses of Sir James Murray's fluid magnesia, frequently repeated until relief is procured. To more vigorous patients should be given five grain doses of sodium bicarbonate, or a

tablet of purified sodium salicylate, or a grain or two of resorcin, either singly or altogether, according to the severity of the case. These drugs should be administered in wafers or capsules, and may be washed down with copious draughts of Vichy water, or Selters water, or carbonated lithia water or plain diluted lime water.

If there be diarrhea or intestinal rumbling, indicative of the passage of irritating substances into the bowels, a cathartic should be administered. Drastic purgatives must be avoided, and the choice should fall upon mild cathartics, such as ten grains of calomel laid upon the tongue and followed by a five grain tablet of sodium bicarbonate—the ordinary soda-mint tablet of the shops. Or a teaspoonful of calcined magnesia, thoroughly moistened with mint water may be given every two hours until an operation of the bowels is procured. These remedies may be aided by a large enema, and, after the subsidence of vomiting, by the administration of an ounce of castor oil floating upon a monthful of hot tea or lemonade, or disguised by the froth of fresh beer. It should not be given with whisky or other distilled liquor, for the reason that catarrhal inflammation of the gastric mucosa is always aggravated by alcohol.

For the relief of pain the abdomen should be covered with a large hot poultice of flaxseed meal into which have been stirred a dram each of chloroform and tincture of opium. If there be repeated vomiting and pain that is unrelieved by external application, a hypodermic injection, containing one quarter of a grain of the sulphate of morphia with the one hundred and twentieth of a grain of atropin, should be administered. If the patient finds the weight of a poultice disagreeable, it may be exchanged for light flannels wrung out of hot water and covered with oiled silk, or a large piece of spongio-piline similarly moistened may be applied to the abdominal surface. In this way the patient before you has been relieved of the most distressing symptoms of his disease. He now takes a little hot chicken broth every two hours, and is allowed rice-water, toast water or barley water for drink. Tomorrow, he will be allowed to take hot milk in addition to these liquids. As he is not suffering with diarrhea, the milk need not be boiled, but only heated to a temperature of 160 F. This will be sufficient to destroy all ordinary germs without detracting from its appetizing and nutrient qualities. He will also receive ten drops of dilute hydrochloric acid in four ounces of water after meals three times a day, for the purpose of stimulating the excretory organs of the body to effect the complete removal of the products of inflammation, and, incidentally, to replace the free hydrochloric acid which is absent from the gastric juice during an inflammatory attack.

ORIGINAL ARTICLES.

IS THE INJECTION OF AIR IN HYPODERMIC MEDICATION A SOURCE OF DANGER?

BY CHAS. T. McCLINTOCK, M.D., PH.D.

DETROIT, MICH.

In concluding a paper on "The Cause of Sudden Death after Antitoxin," Seibert and Schwyzer (American Pediatric Society, May 24, 1896) say: "We here express our firm opinion that the sudden deaths reported after antitoxin injections were caused by

injected air and not by antidiphtheritic serum." I believe that this conclusion is without any justification whatever. It has been shown over and over again that relatively large quantities of air could be injected directly into the circulation in the lower animals without serious consequences. Senn, Hare, Adamkiewicz and others have reported experiments in this line with the conclusions that the danger from air injections is small indeed.

Nevertheless, it is believed by most practitioners that the accidental injection of even a small bubble of air may be followed by very severe consequences. Many of the older books teach this. The experiments and conclusions of Drs. Seibert and Schwyzer have been widely quoted and doubtless will add to the dread that many physicians have of hypodermic medication. As said before, I believe that their conclusions are wholly wrong.

The following experiments and the results agree substantially with those of Senn and Hare. In the production of antidiphtheritic serum it occasionally happens that a horse is paralyzed from the injection of the diphtheria toxin. In such a case it is customary to kill the animal with chloroform. Recently I had two horses so far paralyzed that they were unable to get on their feet. They were ordered chloroformed, but my assistants having read of the conclusions of Drs. Seibert and Schwyzer asked permission to try the effects of air injection. Horse No. 1, 20 c.c. air injected into the jugular, no effect; after five minutes 20 c.c., no effect; after five minutes 40 c.c., no effect; after five minutes 80 c.c., no effect; after five minutes 160 c.c., labored breathing. Horse No. 2, 320 c.c., into jugular; after one minute quickened respiration, spasmodic contractions of muscles; after four minutes, hiccoughs lasting ten minutes; fifteen minutes, uneasy but respiration slower, an occasional hiccough; two hours later no apparent effect. Several hours later this horse was given 600 c.c. air in the jugular; after one minute struggling, spasmodic respiration. It acted as if choking, profuse sweating, temperature falls 0.4 degree; after ten minutes, symptoms all gone. Fifteen minutes later 1,200 c.c. air injected; quiet, almost stops breathing; breathing stops ten seconds, then continues normal after a few minutes; after waiting twenty-five minutes and no symptoms appearing, the animal was chloroformed.

Dog, weighing about twenty pounds. The jugular was laid bare and with a 20 c.c. syringe, sixteen of these syringefuls (320 c.c.) were one after the other injected. One minute after the injections began, quickened and labored breathing set in; in fact the symptoms were practically the same as in the horse, dyspnea. A few minutes after the injections were stopped the animal recovered and normal breathing was reestablished. After an hour the injections were repeated with practically the same results.

Rooster, a small bubble of air injected; no apparent effect; then 1 c.c., the bird becomes somewhat dyspneic, acts just as a chicken that has run for some distance, gasps for air, soon recovers entirely.

Rabbit, injected with 20 c.c. air, decided action at once, quickened respiration, spasmodic contraction of muscles, etc. After two minutes, respiration less frequent and gradually stops, three and three-fourths minutes, dead.

Guinea pig, injected with small bubble of air, no effect; after three minutes 1 c.c., quickened respiration, etc., but animal recovers entirely.

These experiments were repeated on different animals with similar results.

In observing these animals one is struck by the similarity of the phenomena to those of dyspnea, and indeed they are dyspneic. The air entering the heart and remaining there as an air embolus, as some would say, stops the circulation; or it passes the heart and forms air emboli in the branches of the pulmonary artery; this for the time shuts off the blood from the portion of lung supplied by that particular vessel and the animal becomes dyspneic. It is easy to see that if enough air is injected, the circulation in the lungs may be so nearly stopped as to cause death, but one or several bubbles of air would merely temporarily close a few of the branches of the pulmonary artery. This air would be absorbed by the blood in a very short time, especially as it is in contact with venous blood and under arterial pressure.

The prevalent idea that if the ventricle is once distended with air it can not empty itself, owing to the fact that the air is perfectly elastic and during the contraction merely becomes smaller in bulk, without forcing open the valves and escaping, I do not believe is justified. While the air is perfectly elastic and its volume would decrease with the increasing contraction of the ventricle, so inversely its pressure would increase and as the ventricle practically obliterates its cavity at the close of the contraction, it seems to me that the pressure must open the aortic valves and force the air on.

The rabbit was killed in the above experiments with 20 c.c. of air, but a corresponding amount for a forty pound child would be 400 c.c., or far more than enough to occlude all the branches of the pulmonary artery.

As for ordinary hypodermic medication, or serum administration, I believe the danger from air injection is absolutely *nil*. In using the Koch syringe for giving small measured quantities of serums, toxins, etc., it is customary, in order to be sure that the entire amount of fluid is injected, to allow one or more small bubbles of air to escape from the needle. During the past six years I have made literally many thousands of such injections into rabbits, guinea pigs, rats and mice, and I have yet to see any harm come from it.

But there are sudden deaths following the injection of serums; how are we to explain them? Experiments seem to show that the serum *per se* is not responsible; the carbolic acid or trikresol does not deserve the blame, and if air can not be proved guilty, what is it? It seems to me that the question is as yet unanswerable. I have read somewhere of a case, I think it was reported from Louisville, Ky., where a strong man, standing in a doorway, was stung on the forehead by a bee; he fell and expired almost instantly. Wood, in his "Therapeutics," says: "I have seen the injection of a sixth of a grain of morphin followed inside of a minute by complete unconsciousness, collapse, arrest of respiration, dropping of the jaw and apparent death."

As having a possible bearing on the case I record the following: I have made many hundreds of hypodermic injections into patients of nuclein solution. These injections varied in amount from two or three to two hundred minims. In some five or six instances I have noted immediate, marked, alarming symptoms. In these injections I was always scrupulously careful to see that the syringe contained no air. In one case

I gave a small injection to a young man in the back; he was standing half-stripped; I gave the injection and turned around to put away the syringe. The patient fell headlong on the floor. He arose immediately, and beyond feeling a bit faint, showed no other symptoms. This patient had just learned that he had tuberculosis and was nervous and disheartened. In the other cases, the patients were lying down; immediately following the injection the face became livid, and there was more or less unconsciousness for a few seconds. On recovering, which was complete in a few minutes, they would say that they became faint, or had a "gone" feeling. The phenomena, however, suggested cerebral congestion, rather than anemia. In each of these cases the patient walked home after a few minutes, and there was no apparent after-effect.

As said before, I have no explanation for the sudden deaths following the hypodermic administration of serum, but I feel sure that air is not responsible. It seems to me that it will be a gain to give definite form to our ignorance in the matter by calling these phenomena, shock.

ETIOLOGY OF DISEASES PECULIAR TO WOMEN.

Read at the Marion County Medical Society and at the Forty-Seventh Annual Meeting of the Indiana State Medical Society held at Fort Wayne, May 28-29, 1896.

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The object of this paper is to bring before you the most frequent causes of diseases peculiar to woman, which come under one's daily observation, and which are to a great degree avoidable. I shall discuss the habits and influences which deteriorate her power of endurance and diminish her capacity for resisting disease. Observation proves that women not exposed to degenerating influences, can compete in strength and endurance with men of their race and in some savage nations they are regarded as superior to them.

The truth of this statement is now being verified by the Cuban Amazons, who are taking a prominent part in the fights between the insurgents and the Spanish troops. These women, many of whom have husbands in the ranks of the Cuban army, have exhibited on frequent occasions, courage, endurance and fighting skill to a greater extent than many of the men. These women are not, as a rule, remarkable for personal beauty or cleanliness, but they are strong of limb, vigorous in action, and can use a rifle, revolver or knife with the best of the men, and whenever there is any fighting to do they go into the thick of it with energy and dash.

In the lower order of animals this equality in the female is still more marked. From such facts we can readily see that if women were properly developed and placed beyond causes which interfere with their physical well being, they would be in no great degree inferior to man.

There are two periods in the life of women in which they are peculiarly susceptible to morbid influences which, if not removed, will almost surely produce either structural or functional disease, oftentimes both, viz.: Puberty and menopause.

One of the most frequent diseases appearing at the age of pubescence is anemia, which oftentimes pre-

vents the appearance of the menses at the usual age and gives rise to grave forebodings upon the part of the mother and frequently leads to unwise attempts to force the establishment of the menstrual function. Amenorrhea during menstrual life, although treated of in most of our gynecologic works as a separate disease, is in all cases a mere symptom of disease, either constitutional or local, or an indication of the absence, or a rudimentary state of the uterus or ovaries, or of pregnancy. Among the most frequent constitutional diseases that produce amenorrhea in young girls and unmarried women are anemia and chlorosis and these may be produced by a long siege of sickness of any kind that destroys or impairs digestion and assimilation. Less frequently in our country they are produced among the poor by insufficient food and clothing and long hours of toil.

The most frequent local causes that produce cessation of the menses are as follows, viz.: Occlusion of the uterus or vagina, atrophy of the uterus, atrophy of both ovaries, cystic degeneration of the ovaries, pelvic peritonitis and ante flexion of the uterus. The cervical canal may also be congenitally or accidentally closed and the vagina may be occluded from congenital or acquired atresia.

There is a condition of the nervous system called by Dr. Hodge of Philadelphia, "Sedation," and by Dr. Thomas, "Atony of the Nervous System," that sometimes causes cessation of the menses. It consists in a decrease of the excitability, vigor and activity of the nervous agency which controls the functions of different organs and has for its cause physical and moral influences, such as mental depression, indolence and luxury, want of fresh air and exercise, etc. It is a very common thing to hear a physician say: "I have a case of dysmenorrhea which is giving me a great deal of trouble and nothing seems to do her any good." Probably it has never occurred to him that dysmenorrhea, like amenorrhea, is only a symptom of disease and may be produced by several separate and distinct causes and the treatment must be directed to the removal of the cause. Any condition affecting the structure of the uterine walls, or its appendages, or the peri-uterine structures, making the nerves supplying these parts morbidly sensitive, will produce pain at the beginning of the menstrual flow, while anything producing obstruction to the flow, such as stenosis of the cervical canal, flexions, etc., may produce pain during the entire period.

The desire to render girls accomplished at all hazards has originated a system of forced mental training which greatly increases the irritability of the brain and nervous system, while at the same time sedentary occupations are followed to the exclusion of active exercise out of doors. This powerful influence on the nervous system, and especially on the reproductive system, is quite frequently overlooked. No amount of mental training or degree of mental development will fit a woman for the physical duties of a wife and mother, or render her capable of bearing children competent to resist the inroads of disease.

The woman who neglects physical exercise is peculiarly susceptible to uterine and ovarian trouble at the menstrual period. Exposure to severe cold during menstruation without adequate protection from warm clothing, is liable to produce inflammation of the mucous membrane of the uterus. Such an inflammation once excited will oftentimes continue for years

and in time end in interstitial metritis, entailing in its progress, dysmenorrhea, sterility, pelvic pain, gastric disorders and impaired digestion and nutrition. Cases of pelvic peritonitis sometimes develop at this trying period of congestion and nervous exaltation.

The menopause is that period in a woman's life during which the menstrual function is gradually abolished through atrophy of the uterus and ovaries. It has been called the "critical period," because certain diseases, such as cancer of the uterus, are more likely to occur at this period than at any other time and diseases already existing are liable to be aggravated. There is a widespread belief among women that the "change of life" is necessarily accompanied with many distressing symptoms, which will cease when the change is fully accomplished and not before. This erroneous belief is too frequently fostered by physicians and has caused many a woman to refuse medical consultation until disease has advanced too far to be amenable to the physician's art. The menopause is a physiologic process and a woman whose general health is good and who has no disease of the reproductive organs, will usually pass through this period with almost uninterrupted physical comfort.

The most distressing and most fatal malady to which women are subject at this period of life, is cancer of the uterus, and so stealthy and insidious is its approach that many women pass beyond hope of cure before they experience any serious or alarming symptoms. Women should be taught by their physicians that the menopause is not necessarily accompanied by pelvic pain or uterine discharge of any kind; on the contrary, such symptoms are indicative of disease and should be carefully inquired into. They should be taught that pain is not present in the first stage of uterine cancer and that it is only when the disease has advanced to a hopeless stage that it produces pain. Every woman who has borne children should submit to frequent pelvic examinations while passing through the menopause in order that cancer may be detected in its early stage and early operation resorted to for its cure. If this rule were generally adopted, it would result in the saving of many precious lives that are otherwise doomed to a horrible death.

Constipation is a fruitful factor in the production of general as well as local diseases and frequently aids in the production, if it is not a direct cause, of displacements. The full bowel resting upon the body of the uterus will aid in the production of flexions and versions and in conjunction with other causes may produce pelvic inflammation and it certainly aggravates whatever disease may be present in the pelvis.

After the expulsion of the embryo, either at full time or at any period of pregnancy, the muscular structure of the uterus undergoes a process of fatty degeneration and absorption, which has received the name of involution. The process occurs rapidly after abortion, but after labor at term it requires six weeks under the most favorable conditions for its accomplishment. In order that involution may proceed with normal rapidity and certainty, perfect rest is essential. The woman who after parturition resumes her usual occupation before the completion of involution, invites subinvolution, displacements of the uterus and its appendages, and a general relaxation of the pelvic tissues, the occurrence of which will render her an invalid for months or for years, perhaps for life.

It is now universally recognized that lacerations of the pelvic floor are the chief cause of cystocele, rectocele and prolapsus uteri, and a large proportion of cases that consult the gynecologist are suffering from diseases that might have been prevented if the obstetrician had not neglected one of his most obvious duties, viz., the early repair of lacerations.

Lacerations of the cervix uteri are, in some cases, important factors in uterine pathology, but in many cases in which their existence is recognized by inspection, they produce no evil results whatever. Dr. T. A. Emmet first recognized the significance of the lesion and taught us how to repair it, and yet there are few who believe his statement that "at least one-half of the ailments among those who have born children are to be attributed to laceration of the cervix." That they do occasionally produce subinvolution and hypertrophy of the cervix, undergo cystic degeneration, produce sterility, dysmenorrhea, etc., there can be no doubt and the frequency with which cancer of the cervix appears upon the site of an old laceration is significant. But after cervical lacerations have been given due credit for all the mischief they are capable of doing, the fact remains that many times they have been wrongfully accused and as a result the operation of trachelorrhaphy has been greatly overdone.

That criminal abortion constitutes a prolific cause of many diseases of the uterus and its appendages, no one engaged in the practice of medicine can for a moment doubt. Dr. P. F. Chambers of New York, says: "In my experience the most frequent cause of pelvic trouble among married women is abortion and in the majority of cases abortion artificially or intentionally produced." Dr. Grandin says he is satisfied that fully 50 per cent. of the pelvic troubles of women could be traced to improperly treated abortions. Dr. Wm. M. Polk says abortions are the most common cause of disease of the appendages. Dr. Andrew F. Currier says the production of criminal abortion is probably responsible for more of the serious diseases which affect the pelvic viscera of women than any other cause. When we consider the vast multitude of women who habitually resort to the criminal abortionist to be relieved from the responsibility and inconvenience of child bearing, the wonder is that the crude and dangerous methods by which the act is usually committed, does not produce more chronic invalidism than superficial observation would lead one to suppose.

Specific vaginitis is one of the most frequent causes of pelvic and peritoneal inflammation. Many authors place it in percentage next to abortion and puerperal sepsis, but the frequency of this disease probably depends upon the character of the population in each particular community. The investigations of Noeggerath and the teachings of Tait have thrown a flood of light upon this subject. The fact is that until Tait opened up the realms of abdominal surgery and revealed the true character of the inflammatory diseases of the pelvic organs, very little was positively known of the ravages produced by this disease. Dr. H. W. Longyear of Detroit, Mich., says that latent specific vaginitis produces more cases of pelvic inflammation requiring celiotomy among women of the upper classes than any other cause. There was a time when this disease was thought to be of little importance, but it is now known to be a terrible and oftentimes a fatal scourge among women.

The mismanagement of the third stage of labor I believe to be one of the most fruitful causes of diseases of the reproductive organs. Undue haste in the delivery of the placenta is almost sure to result in leaving fragments of the secundines within the uterus, which may and sometimes do become the source of both present and future trouble. Dr. W. D. Porter of Cincinnati, in an article on the "Third Stage of Labor," says: "Efforts at expulsion of the placenta previous to its detachment are clearly wrong."

About twenty years ago Credé published his method of delivering the placenta, a procedure familiar to us all. Suffice it to say, that it has been grossly abused to the lasting detriment of a large proportion of women, who have been subjected to it too soon after the completion of the second stage of labor. The method scientifically applied at the proper time is a very safe and efficient one. Many physicians, heedless of the results that may be produced by interfering too soon, deliver the placenta before the uterus has regained its impaired contractility, caused by the long and oftentimes violent contractions of the uterus that finally result in the expulsion of the child. The probable results of undue haste in this most important part of the physician's duty, is the retention within the uterus of placental and membranous fragments, which not only cause frequent recurring post partum pains that fret and worry the patient, destroying her rest and protracting her convalescence, but frequently become the source of sepsis which, if it does not end fatally, is almost sure to cause subinvolution, chronic endometritis, metritis, salpingitis, peritonitis, displacements, etc.

Dr. Frank C. Ferguson, in an article published in the *Indiana Medical Journal*, of 1891, sums up the matter as follows: "The complications of incomplete abortions and the retention of fragments of secundines after labor, are primary and secondary. The principal primary complications are, 1, post-partum hemorrhage; 2, septicemia; 3, pyemia; 4, acute puerperal metritis; 5, lymphangitis. Should the patient happily escape these dangerous diseases, the principal secondary complications to which she may be subjected are, 1, subinvolution; 2, prolapsus; 3, versions and flexions; 4, long continued recurring metrorrhagia and menorrhagia, which sooner or later produce profound anemia, leading oftentimes to the development of tuberculosis or other maladies."

I have not attempted to enumerate all the causes that contribute to the ill health of women, but have spoken chiefly of the most prominent causes and those which are to a very large extent preventable. When proper attention is given to the physical training and education of our girls at the time of puberty; when a radical change is made in the social life of the wealthy; when women are thoroughly instructed concerning the evil results of improper dressing, the ill effects of constipation, and the terrible results of criminal abortion, and when physicians are universally held responsible for ill health produced by the accidents of parturition, the mismanagement of labor and the lying-in period, diseases peculiar to women will be far less prevalent than they now are.

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ON INIENCEPHALUS.

Read at the Meeting of the Chicago Pathological Society, Dec. 14, 1896.

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St. Hilaire defines a monstrosity as a serious deviation from the specific type, complex, apparent on external view and congenital. His classification of anomalies and monstrosities has generally been followed by teratologists since his time. A large family of monsters is characterized by a defective closure of the cranial vault or the vertebral laminae. There are many varieties according as the defect is in the cranial bones, the spine, both cranium and spine, or parts of each or both. In a large number the brain is entirely wanting or rudimentary. Such are the anencephali or derencephali, the commonest of all, the so-called frog or owl fetuses. In another class the brain is present, although the mal-development of the bones has caused all or part of it to lie outside the cranial cavity. Sometimes the posterior defect is confined entirely or mostly to the vertebral laminae and we have spina bifida, through the defect in which meningocele usually protrudes. The class in which the brain is wholly or in part outside the cranium is the exencephalian. This is subdivided into those with and those without spinal fissure.

Without spina bifida:

1. Notencephalus; brain largely outside the skull through occipital defect with posterior encephalocele.
2. Proencephalus; anterior encephalocele.
3. Hyperencephalus; podencephalus; cranial defect in vault.

With spina bifida:

1. Exencephalus proper; cranial bones rudimentary and brain lies mostly or entirely outside on the back. The spinal defect may involve a few or all vertebrae.
2. Iniencephalus; considerable or all of the brain is covered by the cranial bones, but the tilting backward of the head makes the margins of the occipital defect come closely in contact with the margins of the spina bifida so that some of the brain lies upon the spinal cord and in the spinal gutter, although covered wholly or in part by the bones of the cranial vault, which act as vertebral laminae. There may be an encephalocele or not. Ballantyne states three cardinal characteristics of iniencephalus: occipital defect, spina bifida and fetal retroflexion. The dividing line between iniencephalus and exencephalus proper is not absolute and some few cases might be classified differently by different authorities. Taruffi groups iniencephalus, notencephalus and exencephalus proper into one species which he calls "mero-acrania postero-spinale."

Iniencephalus is a rare form of monster. Isidore Geoffrey St. Hilaire, writing in 1836, says that only three cases had been thus far reported. Taruffi, writing in 1889, says that only about twenty cases had been reported of mero-acrania postero-spinale. I have collected every case reported in accessible literature, including an exhaustion of the Catalogue of the

Surgeon-General's Office, U. S. A., and the Index Medicus, omitting one case undoubted and one doubtful which I can not find in original or abstract. To these I add one case delivered by myself and two from the museum of Rush Medical College, dissected by me with the assistance of Dr. L. J. Mitchell and with the permission of Prof. Ludvig Hektoen.

The cases recorded below divide themselves into three general classes. The first includes those without protrusion of the brain beyond the box formed by the cranial bones and the open vertebræ. This class may be called *iniencephalus clausus*. The second includes those having a small encephalocele and, with the first, comprises the typical iniencephalic class. The third includes those cases where the occipital opening is large enough to allow the escape of a large portion of the brain. The last two might be called *iniencephalus apertus*. Of the iniencephali clausi I have collected nine cases, viz.: By Fleck⁴, Royal College of Surgeons of England⁶, Coffin⁸, Yocum⁹, Landucci¹⁰, Ballantyne^{11, 2} (two cases), my own case and one from Rush College Museum.

My case is as follows: Primipara, 25 years old, in sixth month of gestation, abdomen enlarged correspondingly, twins, male. One was normal and appeared to be five and one-half months along. This one lived for twenty hours in an incubator. It is 10 inches long, weighs 590 g., has finger nails half out to ends of digits and undescended testes. The second was dead and somewhat macerated, 6½ inches long, weighed 190 g. There was a common placenta and chorion, two amnion and two cords. The smaller twin presented the appearance of great shortening of the back. From back of head to anus is only ¾ inch, while from chin to pubes in front is 4½ inches. The face looks forward and upward, while the cranium is turned sharply backward, covering most of the dorsum. The neck is edematous and has no furrow between chin and sternum. The abdomen is very protuberant. Dissection shows the parietals overlying the upper two-thirds of the spinal column. Cutting the fibrinous attachments of the cranial bones to the spine and turning the head forward reveals an extensive spina bifida as far as the second lumbar vertebra. All the cranial bones are normal except the occiput. The basilar portion articulates with the atlas, but the bone broadens out so as to leave a large foramen magnum, which opening is continuous with a large defect in the squamous portion and makes a figure eight with the latter opening. The squamous plates of the occiput are represented only by an acute triangle on either side of the opening articulating anteriorly with the parietal. The margins of the bony defect in the occiput are closely attached to the ends of the widely divergent transverse processes of the cervical, dorsal and first lumbar vertebræ. Thus it will be seen that the spinal canal is covered above by the remnants of the occiput and the parietals which form a sort of roof along the dorsum. At the bottom of the spinal canal lies the cord and over it, contained in the cranium, lies the brain. Thus we have an *exencephalus*, for while the brain does not escape into the outer world, yet it does lie partly outside of the cranium and in the spinal canal. The defect is in the occiput or "inion" and therefore the variety is "*iniencephalus*."

The cervical spinal column curves downward and forward, making a concavity with the dorsal portion which turns backward under the cranium. The cerebral hemispheres are apparently of normal size.

The first Rush College case is an unmarked specimen without history. Female, Beclard's center in the femur present, nails to ends of digits and otherwise apparently of full term. The length is only 12¼ inches, but the shortness is explained by the marked foreshortening of the back due to the tilting backward of the head. The face looks forward and upward, leaving very little furrow below the chin. There is an opening in the abdomen near the navel, allowing some of the viscera to be outside the body.

Dissection reveals a complete spina bifida to the tip of the coccyx. The cranium extends as far as the lumbar region, attached ligamentously to the transverse processes as in the former case and forming a roof over the spinal canal. There is no encephalocele. There is much lordosis of the cervical spine and right scoliosis of the whole column, so that the ribs are so irregular as to deform the chest. The opening in the occiput consists of a large foramen magnum 1½ x 1½ inches. The width of the spinal cleft is at its maximum 1½ inches. There is slight talipes varus of both feet.

Of *iniencephalus apertus* first come those with small encephalocele. Of this class I have collected eight cases, viz.: By Dugés^{12, 1}, Potthoff¹⁴, Cruveilhier,^{13, 14} Drew and Jackson¹⁵, Lawther¹⁶, Vernier¹⁷, Remfrey¹⁸ and the second case found by me in Rush College.

This last is marked 140 and is without history. Female, toe nails less than half and finger nails two-thirds out to tips of digits; apparently about seventh month.

Beside the usual tilting back of the head and shortening of the dorsum there are two soft tumors upon the back. One protrudes from a bony defect in the skull to the right of the median line and hangs over the right shoulder, measures 2¾ x 2¼ inches and is shown by dissection to be an encephalocele. In the median line, and occupying the lower two-thirds of the dorsal region, is another tumor covered by membrane and allowing the cleft spine to be felt beneath. It measures one and one-fourth by fifteen-sixteenth inch and is shown by dissection to be a meningocele. The opening in the cranium through which the lateral tumor escapes is between the rudimentary plates of the squamous occiput which, in the form of acute triangles, are articulated with the parietals at the lambdoid suture. The bony defect here is continuous with the enlarged foramen magnum below and forming a figure eight with it. The margins of the foramen lie flat upon the spinal column and are ligamentously attached to the bony margins of the spina bifida. Thus the occiput covers the spinal canal, causing the shortening of the back of the fetus. There is complete spina bifida to the tip of the coccyx, widest under the cranium. There is lordosis of the cervical and kyphosis of the lumbar vertebræ. The axis of the spinal column is also turned to the right in the cervical and dorsal regions (right scoliosis).

Of the third class, namely, *iniencephalus apertus* with large encephalocele, I have collected five cases, namely: By Hull¹⁹, Gros²¹, Budin²², Rogers²³ and Bonnaire²⁴. As in most classifications, the distinction between iniencephali and exencephali proper becomes indefinite at the boundaries. A few cases might, by different authorities, be classed in either category. One such case is reported by Poelman²⁵, but this seems to be an exencephalus proper with cyclops. Turilli³, in the section on micro-acrania

posterior-spinal, mentions ten cases collected by him where the cranial defect was in the occiput. This class he considers synonymous with the iniencephalus of St. Hilaire. Only one of these do I think a true iniencephalus and that is one reported by Hull and already referred to by me. Beside these of Taruffi, I find reference to two whose original reports I am unable to find. One is a specimen depicted in Ahlfeld's Atlas⁷ and shows a skull with enlarged foramen magnum, therefore may be iniencephalus or notencephalus. Vrolik³² also depicts a skull with similar defect, but further particulars are wanting. St. Hilaire states that one of the three cases of iniencephalus reported up to his time was by Burkhardt³⁶ but I can nowhere find original, or abstract of the latter's article.

A résumé of the twenty-two cases collected by me shows a few interesting facts. In all cases there was a marked tilting back of the head and extension of the cranium on to the dorsum. The rhachischisis extends to the sacrum or farther in ten cases, to the last dorsal in two, to the middle dorsal region in four, through the cervical region in three and not stated in the rest. Anterior spina bifida in two, diaphragmatic hernia in four, hydramnios in six, club foot in three, hydrocephalus in one, umbilical hernia in one, celosomia in two, deformities or displacements of the alimentary tract in eight, myelocoele in one. In one the external oblique took an origin from the clavicle and in another the gluteus maximus from the occiput. Four were born living, seven dead and the rest not stated; two were male, seven were born of primiparae, four of multiparae and the rest not stated. Only twice is it stated that there was twin pregnancy, in seven not stated and in the rest the language would imply single births.

The group of monsters exhibiting cranio-rhachischisis is a numerous one. Anencephalus occurs once in 7,143 births³⁷ and about two-thirds are female³⁹. Of the exencephalians the least rare is notencephalus; the proencephali are rather more rare and the podencephali rarest in the human species but common among animals. The exencephali proper and iniencephali are both very rare, the latter the most.

There are two important sets of views as to the etiology of such monstrosities. The pathologic theory explains the anomaly by disease of the fetus itself acting early in its history and depending for the different forms of anomaly upon the date of beginning.

The embryologic theory now held by the majority of authorities, explains malformations by arrest of development, usually from pressure at an early embryonic period. Dareste⁴⁴ considers the cause to be pressure and adhesion of the amnion to the tissues developing beneath it. He experimented with the eggs of birds, chiefly by unequal heating of different parts of the egg during artificial incubation, and was even able to a certain extent, by varying the point of greatest warmth, to produce different forms of monster at will. The arrest of development of the amnion, consequent on his treatment of the egg, modified the evolution of the different parts of the embryo by the compression it exercised upon them. The cranio-rhachischisis monsters he took to arise from compression and adhesion of the cephalic hood of the amnion which tended to shorten and flatten the cerebral vesicles.

Curious and interesting tales are told by ancient and medieval writers about all sorts of possible and fabulous monsters, but teratology practically begins

with St. Hilaire in the first half of the nineteenth century. His classification of monsters and anomalies remains satisfactory to almost all the wants of teratologists today. Later teratologists have devoted themselves to the etiology of the subject, as is evidenced especially in the experimental work of Dareste and his followers. The fields for experiment as well as for observation are relatively so small that the advance has been also small, still much has been and is being done. Teratology is pathologic embryology and the advance of the former must depend largely upon that of the latter. Although experiment will in the future, as in the past, do much to clear up these obscure problems, yet we will continue to be largely dependent upon careful descriptions of carefully made dissections.

(For discussion see Society Proceedings, page 417.)

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A New Tapeworm.—In the journal of the College of Science of the Imperial University of Tokyo, Professor Ijimi of Tokyo, and Professor Kurimoto of Nagasaki, describe an enormous tapeworm which they denominate "bothriocephalus sp." It measured 10 meters in length and 25 millimeters in breadth at the broadest portion. Its expulsion was brought about with a dose of extract of male fern.—*New York Medical Journal*.

TUBERCULOSIS—INFECTION THROUGH MILK AND THROUGH BAD SANITATION.

Read before the Iowa State Medical Society, April 15, 1896.

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In the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION of Feb. 8, 1896, Dr. Edward F. Wells of Chicago announced the proposition that pulmonary tuberculosis is declining in prevalence, and supported the assertion by some very complete and carefully compiled statistic tables. These statistics seem authentic and it is hard to doubt the conclusions; yet our journals and periodicals in general are filled with startling statements of its prevalence.

Dr. J. Collins Warren, professor of surgery in Harvard University, says that tuberculosis probably affects more people than any other form of infectious disease, and estimates that one out of every five deaths is due to this disease.

Professor Law of Cornell University is quoted in Vol. xviii of *The American Veterinary Review*, as having said: "If the 5,490 deaths from tuberculosis which occur every year in the city of New York could be brought together in an epidemic lasting but one week, no smallpox, cholera or yellow fever scare would approach the panic which would thus be created."

From various statements we glean that the average ratio of deaths in the human family from tuberculosis, to the total mortality, is about 14 per cent., while in some localities it reaches as high as 40 or 50 per cent. Professor Law says "if we take the whole civilized world and compare with the tuberculosis mortality all the accumulated deaths from war, famine, plague, cholera, yellow fever and smallpox, we find that the latter wanes into comparative insignificance."

These astounding statements from men of national reputation, must carry no inconsiderable weight. Such appalling mortality as is here depicted enlists our interest in a search for the potent causes, and we find that it is a disease both of man and lower animals; that it is communicable from the one to the other; in fact, that it is intensely infectious, and in a plain sense contagious: that the conditions under which conveyance and transmittance of the infection occur, are numerous and variable in the extreme, and that once contracted it is terribly fatal. These complex conditions unite to cause the high mortality.

Of the various avenues whereby the tubercle bacilli gain entrance to the human economy, one of great importance is via the gastro-intestinal route.

As has been said, the disease is communicable from man to the lower animals and *vice versa*. Of all the lower animals, cattle are the most commonly affected: especially is this true of milch cows, and although Sims Woodhead finds some difference in the vital pathogenic characteristics of the two bacilli, recent investigation proves that bovine tuberculosis, or *Perlsucht* as the Germans call it, and human consumption are identic.

Fleming in his "Manual of Veterinary Sanitary Science and Police," in speaking of its geographic distribution among animals says: "Tubercular phthisis or tuberculosis probably prevails among the domesticated animals over the entire globe." In Mexico 34 per cent. of the animals slaughtered for food are found to be tubercular. In Europe and England it is exten-

sively present and has long been recognized as a common disorder among animals.

In the United States it is prevalent from shore to shore. Dr. Simonton in an article in the *San Jose Mercury* of January, 1896, states that 15 per cent. of the cattle in California are infected, while reports by the Cattle Commission of Massachusetts give the percentage in that State variously from 8 to 35. From results of tuberculin tests thus far made, the percentage in Iowa is from 12 to 14. We can safely put the average throughout the United States among cattle from 5 to 12 per cent.

Hence the question of infection of man through animal products assumes a colossal importance. Of all the animal products milk, being used so extensively in the raw state, is by far the most dangerous.

In the report of the Royal Commission on Tuberculosis in the *American Journal of the Medical Sciences*, September, 1895, experiments are reported in which pigs, guinea pigs and rabbits were fed on uncooked milk from tuberculous animals, and the disease was thus caused in a very large percentage of subjects used. Control experiments with animals kept under similar conditions but which received no tuberculous food, gave negative results. The uncooked food produced the disease in all of eight pigs, all of five cats, fifty-six out of eighty-four guinea pigs and eight out of ten calves that were fed with it. Prof. W. M. Late Coplin of Vanderbilt University, Nashville, Tenn., reports experiments with similar results. Dr. Palmer of Massachusetts reports equally conclusive tests. In experiments made at our Iowa Agricultural College over 60 per cent. of the animals fed upon the condemned milk contracted the disease.

In the human race it is known that children are most frequently affected with intestinal tuberculosis, and the *American Veterinary Review* of December is authority for the statement that over half the deaths of bottle fed children in cities are due to tuberculosis.

From all the above statements, we must conclude that the possibility of milk from tuberculous animals containing the infectious elements is undeniable.

It has been stated that only those cows having tuberculous udders are capable of producing bacilli in the milk. The unfortunate fallacy of this is shown by one of an exhaustive series of experiments conducted by the trustees of the "Massachusetts Society for the Promotion of Agriculture," quoted by Drs. Stalker and Niles in Bulletin No. 29 of I. S. A. C. Exp. Station, published in November, 1895; twenty-one healthy calves were fed on milk from tuberculous cows. At the conclusion of the experiment they reported: "Of the twenty-one animals, eight, or over 33 per cent., were shown to be tuberculous. That the cows from which milk for these feeding experiments was derived were free from tuberculosis of the udder is shown by an appended table of their history, and the results of the postmortem."¹

I am prone to believe, with the above society and Drs. Stalker and Niles, that "with the evidence here presented it is undeniable that milk from tuberculous cows with no appreciable lesion of the udder may, and frequently does, contain the bacilli of the disease."

Hence it is seen that milk from cows affected with the disease to any extent, whether the udders appear diseased or not, is very apt to contain the bacilli (and as a matter of fact, differential diagnosis during life

¹ Table not inserted with this article.

between tuberculosis of the udder and simple mastitis is often impossible).

When we consider the wide-spread prevalence of the disease among cattle, and the practically unrestricted public distribution of milk, and the enormous quantities yearly consumed in the raw state, we do not wonder at the high rate of mortality in the human race.

Sanitary science includes a consideration of all that can be done for the prevention of disease and promotion of the public health. The application of rules and enforcement of laws promulgated by this science is known as sanitation. If the sanitary rules are not rigidly applied, or the laws are disregarded, we have unfavorable or bad sanitation. The negligence shown in permitting the spread of tuberculosis by infected milk is bad sanitation. But more commonly we look upon the expression "bad sanitation" as meaning some condition of improper or inefficient sewerage or other menace to public hygiene.

The hygienic environments and state of sanitation have much to do with the tuberculosis problem, in so much as bad sanitation causes a lessened state of health and vitality, and hence renders the body easily invaded. Furthermore, conditions of filth and moisture, and decaying organic matter, such as is afforded for example, in some of the dark, damp, illy ventilated tenement houses of cities, are very favorable to the life and thrift of the tubercle bacillus.

No condition of bad sanitation can actually originate *per se* the germs, but various conditions of unfavorable sanitation are conducive to activity of the infection, which conditions, combined with some special predisposition on the part of the individual, result in his ultimate infection.

Perhaps the most frequent manner of infection in the human species, even more so than via the gastrointestinal route, is by inhalation of bacilli in the air, containing the dust of dried sputum expectorated unrestrictedly by tuberculous individuals. In the same manner, and from the same cause, public berths in sleeping cars and ships, cabs and other public conveyances are especially dangerous. Another source exists in use of contaminated water supplies, public baths, water closets, etc.

The practice of dealing in second hand articles, particularly clothing, is an especial menace to those so engaged. Along this line the *Iowa Health Bulletin* of November, 1895, calls our attention to the matter of infection through the sale and use of bed mattresses made of old rags.

The common procedure among children in our public schools, of cleaning the slate by fingers moistened in the mouth, and passing the slate to the next neighbor to repeat the operation, is one especially calculated to spread such a disease as tuberculosis.

The sale of tuberculous meat and of fruit which has been exposed to street winds and bacillus-laden dust are also matters of no mean magnitude in the spread of the disease.

In fact this disease has been transmitted from man to man, man to animal, animal to animal, animal to man, from place to place, until it would seem that man's life continues at constant hazard, and his survival is a momentous marvel.

Indeed, I believe were it not for that mysterious something within us, which Sternberg has termed partial immunity or "natural resistance," the already high mortality must needs be multiplied many times.

For the conditions have now become such that no doubt many of us inhale or ingest tubercle bacilli every day of our lives, while only those hereditarily predisposed, or in whom natural resistance is at a low ebb, become favorite seats for the development of the germ.

Woodhead has summed up these conditions necessary for infection as follows:

1. The presence of the bacillus tuberculosis in such a position and for such a length of time that it obtains a coign of vantage, so to speak, from which to attack the tissues of the body.

2. Some weak point in the epithelial surface, made by disease, or due to irritation or bad food, by which the organisms may attack the deeper tissues in sufficient numbers to insure their being able to hold their own in the struggle for supremacy that ensues.

3. The comparatively low vitality of these deeper tissues brought about by imperfect nutrition or irritation, the cells of which they are composed being no longer able to deal successfully with any large number of bacilli that can, under ordinary circumstances, find their way thus far.

Much has been done in various parts of the country toward controlling and preventing the spread of this disease, and our literature today is replete with conflicting plans for its complete eradication. A résumé of what has been accomplished and a discussion of the floods of contributions to our literature, on the subject, would be of intense interest and profit.

CHURCHILL'S METHOD APPLIED WITH SUCCESS IN FORTY-FIVE CASES OF PHTHISIS PULMONALIS.

BY T. BLANK, M.D.

ST. LOUIS, MO.

Too little attention is paid to "Churchill's method" of treating consumption, although it is still the best method, and if well studied and rightly applied will result in a cure in a great many cases. We can not expect much good from it at the last moment; it must be applied early. In the incipient stage and in the beginning of the cavernous stage, ninety cases out of a hundred can be cured by the Churchill method. But the physician, in order to succeed, must study it closely. He must be a good observer, otherwise he will fail or do harm. The Churchill method depends upon phosphology; if there is a decrease of molecular or intra-organic combustion, due to want of phosphid (oxidizable phosphorus) element in the bioplast (or bioplasmic principle, as Churchill calls it), then the tissue breaks down and the soil for the tubercle bacilli is prepared.

That the tubercle bacillus is the cause of tuberculosis no scientific man will deny. But considering the wide distribution of the tubercle bacilli and the many chances for infection, it is really wonderful that so many escape the disease. Koch himself drew attention to the slow growth of the tubercle bacilli, so that in many cases they are eliminated before they have gained a foothold.

Now we come to the point. What is the condition that favors a foothold of the tubercle bacillus? It is the deficiency of the phosphid (oxidizable phosphorus) element. If this element is not present in sufficient quantity in the tissue the oxygen we inhale with the air is not utilized to the fullest extent, owing to a lack of oxidizable phosphorus in the organism

which, acting by its chemic affinity, is necessary to secure its combination with the proximate principles of the blood and instead of normal bioplasmic material being produced, a broken down tissue is substituted—the soil for the tubercle bacilli. The Churchill method supplies this oxidizable phosphorus in the form of chemically pure hypophosphites.

It is really astonishing to see patients improve all around and gaining from one to two pounds per week by supplying the long-needed oxidizable phosphorus, a regular godsend as a drink of water would be to a dying man in a desert.

But the improvement consists not only in gain of weight, cessation of cough, night sweat, fever, etc., but in the lungs a process is taking place most interestingly. Dead cells, broken down tissue, millions of tubercle bacilli are expectorated, while under the influence of hypophosphites new normal bioplasmic tissue is formed, tissue which will resist the bacilli until the last one is expectorated.

I have made repeated microscopic examinations of cases, discharged as cured, and could not find a single tubercle bacillus; they were gone, though plentiful at the beginning of the treatment.

Churchill used the hypophosphites of soda, lime and quinia. He never combined any of these. He gave but one salt at a time, because each salt has a different action. For instance, in the incipient stage and in the second stage, where the expectoration is tight and the cough troublesome, the hypophosphite of soda is indicated, because it favors expectoration and clears the lung of dead tissue, but watch it closely: if expectoration is too free that means too rapid softening of the tubercular deposit, and then the lime salt must be given. The lime salt reduces expectoration and softening, as in Case No. 23, where the expectoration was reduced from a pint and a half per day to only a few tablespoonsfuls in measure. The action of these different salts is so distinct that it vexes me each time I see an advertisement of syrup of hypophosphites of soda and lime together, claiming to be according to Churchill. Such statements are false; Churchill never used these salts in combination in this disease.

The hypophosphite of quinia is given in the initial treatment of far-advanced cases, and later on soda or lime salt is given according to indications. Why is it that the brilliant results obtained by Dr. J. F. Churchill in the Parisian Hospitals are not generally obtained? This is due to several causes. 1. Most of the commercial hypophosphites are not chemically pure, therefore valueless. 2. If the chemically pure hypophosphite salt is not incorporated with pure syrup immediately after its manufacture it will be rapidly injured by age. 3. Many physicians have given a combination of different hypophosphite salts, believing that they apply the Churchill method. This is the most frequent cause of failure.

Of the forty-five cases I have treated within the past three years, I have given, at the conclusion of this paper, the history of the most important, barely mentioning, for want of space and because it would be tiresome to the reader, those, the history of which has been similar or identical with those published in detail.

I will say that the wonderful success which has resulted from my use of the Churchill method in this disease has so convinced me of its worth that I shall continue its use until, as I trust, we shall be able to cure 99 cases out of 100.

Before closing let me express my sincere gratitude to R. W. Gardner, New York, who does so much to spread the teachings of Churchill.

Case 1.—Mr. John W., East St. Louis, Ill., age 20 years; date of consultation June 19, 1893.

History: For about a year has complained of a cough, dry and hacking in the beginning; expectorated blood some months ago; lost considerable in weight during the last few months; there have been night sweats, but not severe; appetite failing.

Examination of lungs: Infra-clavicular region in left side sunken; inspiration in this region rough with dry râles; expiration blowing (bottle sound); on right side, same condition; percussion, cracked-pot sound. Microscopic examination of sputum (made June 23) showed tubercle bacillus.

Treatment: Syrup hypophosphite of soda (Gardner), half teaspoonful, t. i. d., after meals.

Report, July 1, 1893: Patient feels stronger already; expectoration not much increased; continued syrup soda, same doses; gave eight fluid ounce bottle.

Report Sept. 2, 1893: Patient has been in Kansas City; accepted work there, as he felt strong enough to do so; has gained in weight; appetite good; during the last two weeks of August, cough disappeared entirely, but now there is some cough again, continued syrup of soda hypophosphite, half teaspoonful, t. i. d.

Report, Sept. 9, 1893: Patient still gaining in weight; sleeps better than ever before; no night sweats; appetite good; very little cough; continued syrup of soda hypophosphites, 20 drops, t. i. d.

Report, Oct. 3, 1893: Patient is doing nicely; still gaining in weight; total gain since the beginning of treatment, twenty-five pounds; no cough nor expectoration; discontinued the syrup soda hypophosphite.

Report, Dec. 12, 1893: Patient at office again; intends to go West to accept work; as a matter of precaution he wants to take a bottle of medicine along, but as he has felt so well since October he thinks he will not have use for it.

Remarks: I have not seen the patient since the date of last report, but from patients whom he has sent I have heard that he came back from the West and is living in East St. Louis again, in good health. The last indirect report I received about him was in 1894, the exact date I have not recorded.

Cases Nos. 2 to 9, inclusive, were so similar in their general characteristics and history that I have not considered it necessary to give a detailed account of them. They were all in their general features duplicates of Case No. 1. The tubercle bacillus was found in every case, at the beginning of treatment, by microscopic examination; indeed I do not diagnose a case of consumption until I find the bacillus present.

Case 10.—Miss A. L. B., age 21 years; date of consultation, June 5, 1894.

History: Since February, this year, patient has been suffering with amenorrhea; lost rapidly in weight, six pounds in as many weeks; all last winter patient suffered with cough, dry at the beginning; now there is expectoration with little cough effort; expectorates small lumps, as she expresses it.

Examination of lungs: Left and right supra-clavicular region affected; on both sides, expiration blowing (bottle sound); inspiration rough, rolling, with moist râles; right and left infra-clavicular regions show dulness on percussion; inspiration in those regions rough, with dry râles (but very fine). Microscopic examination of sputum showed tubercle bacillus.

Treatment, June 7, 1894: Syrup hypophosphite of soda (Gardner), half teaspoonful, t. i. d., after meals.

Report, June 18, 1894: Expectoration slightly increased; thinks she feels somewhat stronger but not much; decreased the dose of syrup hypophosphite of soda to 20 drops, t. i. d.

Report, June 28, 1894: Patient feels stronger; sleeps well; appetite is increasing; coughs very little; the expectoration is brought up with very little effort; she no longer notices lumps in the expectoration; same treatment continued.

Report, July 15, 1894: Has gained one pound in weight; feels strong; appetite good; hardly any cough; expectoration just as I want it; continued syrup hypophosphite of soda, 20 drops, t. i. d.

Report, Aug. 7, 1894: Patient looks well; has gained another pound since the last visit; there is a little lassitude; discontinued syrup hypophosphite of soda on account of this.

Report, Aug. 27, 1894: The lassitude has not left her; close examination shows that she had a chill about a week ago; fever followed the chill; some sweat after the fever had left

her; since then she felt chilly and feverish, off and on; headache; sleepy during the day; loss of energy; slight cough again; diagnosis, malaria: gave quinin solution.

Report, Sept. 5, 1894: Feels better; has not been feverish in last few days; feels no longer sleepy during the day; no headache; continued quinia in smaller doses and added Fowler's solution.

Report, Sept. 15, 1894: There are no longer symptoms of malaria; coughs very seldom; hardly any expectoration; discontinued all medication; gave order to report again in two or three weeks.

Report, Oct. 8, 1894: Expectoration a little tight; appetite fair; no symptoms of malaria have reappeared; continued syrup soda hypophosphites, 20 drop doses, t. i. d.

Report, Oct. 20, 1894: Expectoration no longer tight; appetite fair; no symptoms of malaria have reappeared; continued syrup hypophosphite of soda, same dose; gave order to discontinue the medicine for a week if expectoration should get too free.

Report, Nov. 25, 1894: Patient has regulated the medicine according to the condition of the expectoration; there is now neither cough nor expectoration; has gained four pounds since the last time she was weighed; syrup hypophosphite of soda, 6 fluid ounce bottle, dose 20 drops, t. i. d. Gave order to commence with the medicine in about a week from now; take it for one week, every day; then every other day.

Report, Feb. 23, 1895: Patient has not taken any medicine for about two months; has some of it on hand yet; no cough nor expectoration; feels better than for years.

Remarks: Patient is married. I treated her husband in the latter part of November, 1895, for indigestion, etc. Says that his wife has not been sick since she saw me last. "If he only had her stomach he would not suffer with indigestion," was one of his remarks. I have not heard of the family since then.

Cases Nos. 11 to 22 inclusive, are all similar to case 1, and are not reported in detail. The tubercle bacillus was found by microscopic examination in every one of these cases, at the commencement of the treatment. The examination for the bacillus was not regularly made at the close of the treatment, as it would involve some expense to the patient, and it seemed unnecessary, as they were feeling well. One of the cases where the bacillus was plentiful at the beginning of the treatment, showed a very few bacilli after some months' treatment.

Case 23.—Mr. J. B. W. History: Patient has had a cough for about two years, dry and hacking in the beginning; later it commenced to get loose, and patient coughed up lumps of a greenish, yellow color: soon commenced to lose flesh. For the last six months, severe night sweats; shortness of breath for about a year; feels very weak; coughed up blood, off and on, within the last year; had a severe hemorrhage eight months ago; the last hemorrhage, fourteen days ago. Cough very troublesome during the night; no appetite; fever in the evening. Examination of the lungs: Both apices affected. On left side, infra-clavicular region, a large cavity; blowing hollow sound on in- and expiration; cracked-pot sound on percussion, very distinct. The tubercular process has extended to the pleura, and the result is a very painful "tubercular pleurisy." Microscopic examination of sputum showed tubercle bacilli. Treatment, June 5, 1894: Syrup hypophosphite soda (Gardner), half-teaspoonful doses, t. i. d., after meals.

Report, June 15, 1894: Patient's appetite a good deal better; feels stronger and better all around; sleeps better too; has coughed no blood; those severe and painful pleuritic pains have disappeared entirely, and that is the reason, as patient thinks, that he sleeps so nicely now; expectoration amounts to about a half pint, during twenty-four hours. Gave this time, syrup hypophosphite of lime (Gardner), half-teaspoonful, t. i. d., after meals.

Report, June 25, 1894: Feels twice as strong as he did at the last call: appetite very good; sleeps well; expectoration reduced from a half a pint, to about two tablespoonsful in twenty-four hours: patient is certain that it is not more; those pleuritic pains have not reappeared, which patient seems to appreciate more than all the other improvements. Same treatment continued.

Report, July 5, 1894: Patient has been taking medicine just thirty days; feels well and strong; sleeps well and appetite is fine; has gained three pounds since he came under treatment; expectoration gets a little too dry, therefore, changed the

medicine. Syrup hypophosphite soda, dose 20 drops, t. i. d., after meals.

Report, August 15, 1894: Has been without medicine for four weeks. Felt well and strong all that time; in fact, he felt so well that he considered wood-sawing in his yard the best thing to kill time. A slight hemorrhage followed ten minutes' work; expectoration about four tablespoonsfuls again; changed medicine immediately. Syrup hypophosphite lime (Gardner), dose 20 drops, t. i. d., after meals.

Report, August 25, 1894: Expectoration amounts to about two tablespoonsfuls during twenty-four hours. Same treatment continued.

Report, Sept. 15, 1894: Patient has gained four pounds in addition to the three pounds gained up to July 30. Expectoration about one and a half tablespoonsfuls during twenty-four hours. Syrup hypophosphite lime, 20 drops, three times every other day.

Report, Sept. 30, 1894: Patient doing nicely. Same treatment continued.

Reports up to June, 1895, a year after commencement of treatment, are so monotonous, that I leave them out.

Report, July 15, 1895: Patient at office again; will leave for Colorado in a few days, and wants two large bottles of the medicine; gave him syrup of hypophosphite of soda, 12 ounce bottle, and syrup hypophosphite of lime, 12 ounce bottle. Being under treatment so long, he knows exactly when to take each, according to the amount of expectoration.

Received a letter about a month later. Therein patient states that he felt fine, and has the greater part of the medicine on hand. Through his uncle, I heard that he got careless, on account of feeling so strong and well, and exposed himself to unnecessary risks, and had, in the beginning of 1896, a relapse. He did not come under my treatment again; why, I do not know. He died a few months after the relapse.

Cases Nos. 24 and 25 are so similar to others given, that they are omitted.

Case 26.—Miss W. J. A., age 27; date of consultation, July 15, 1894. History: For four years patient has suffered with cough, which was dry and hacking during the first year; had severe night sweats last winter; lost in weight, especially within the last few months; had also a hemorrhage last fall; feels very tired, weak and worn out; fever in the afternoon, and toward evening; headache quite frequently; glands of the neck enlarged; shortness of breath; weight 110 pounds.

Examination of the lungs: On left side, infra-clavicular region, a circumscribed catarrhal area; on right side, infra-clavicular region, a large cavity. Microscopic examination of sputum showed tubercle bacilli, in great numbers. Treatment, July 16, 1894: Syrup of hypophosphite soda (Gardner) dose one-half teaspoonful, t. i. d., after meals.

Report, July 23, 1894: Patient looks better; on some days she felt really "good"; there is fever every evening, without chill preceding. But about two, and sometimes three times a week, she gets a severe chill, and a higher fever than usual follows. There is no doubt that we have to do with two kinds of fever, one a "hectic fever," and the other a "malarial fever." She feels also an aching in the joints, bones and muscles, before the malarial fever appears. Gave quinia in solution; discontinued syrup hypophosphite soda.

Report, July 26, 1894: Patient feels a great deal better, after taking the quinin mixture. Continued quinia mixture, to be taken every other day. On the days between, continued syrup hypophosphite soda, half-teaspoonful doses, t. i. d., after meals.

Report, August 7, 1894: Feels well and stronger than before; long walks no longer exhaust her; during the last few days, the cough is more frequent, and somewhat dry. Increased the dose of syrup hypophosphite soda, to 40 drops, t. i. d., after meals.

Report, August 14, 1894: Patient feels stronger than at the last visit; cough is still very troublesome; expectoration amounts to about four tablespoonsfuls during twenty-four hours. Changed to syrup hypophosphite lime (Gardner), 20 drops, t. i. d., after meals.

Report, Sept. 1, 1894: Patient has been without medicine for ten days. During all that time she felt well; cough and expectoration diminished; her strength is not quite as good as when she is under the influence of the medicine but nevertheless she feels 10 per cent. stronger than eight weeks ago. Syrup hypophosphite soda (Gardner), half-teaspoonful, t. i. d., after meals.

Report, Sept. 10, 1894: Feels stronger since she has taken the medicine; cough very moderate, and not troublesome. Same treatment continued.

Report, Sept. 22, 1894: Patient feels well; expectorates very little during the day; only in the morning, and that does not

amount to much; gained five and a quarter pounds since the beginning of treatment; present weight, 115 $\frac{1}{4}$ pounds.

Patient lost weight during the first few weeks: my books give no record of this, but I remember the case well. Gave syrup hypophosphite soda, half teaspoonful, t. i. d., after meals.

Report, Oct. 14, 1894: Has been doing nicely all that time; during the last few days she complains of pleuritic pains; hardly any cough; has gained two pounds more; present weight, 117 $\frac{1}{4}$ pounds. Syrup hypophosphite soda, same dose and mustard plaster to the chest.

It would make the report too lengthy to continue the record. Patient took the hypophosphites steadily up to August, 1895, that is, a little over a year, counting from the day of first consultation. From August, 1895, she took the hypophosphites only occasionally. During the year 1896, she called several times at my office feeling generally well, and working every day. The least little cough, or loss of strength, was always promptly attacked with a bottle of syrup hypophosphite, and the battle ground was ours in a day or two.

It was a hopeless case of four years' standing, with a large cavity already formed, as it came under my observation. As I saw her last, I could not help thinking about "then and now."

The cases Nos. 27 to 45 inclusive, were similar in their general features to case No. 1. It would be tiresome to give the histories of them in detail. The cases I have outlined are fairly typical of the others, and my favorable experience in the past, is now continually being repeated, as new cases come under my care; all progressing well, and may form the subject of another contribution in the future. There can be no uncertainty concerning the diagnosis: every case was established beyond a doubt by the detection of the tubercle bacillus.

A BRIEF REPORT OF THE RESULTS OF A BACTERIOLOGIC INVESTIGATION OF THE NASAL MUCUS IN ONE HUNDRED CASES OF CHRONIC NASAL DISCHARGE.

WITH SPECIAL REFERENCE TO THE PRESENCE OF THE KLEBS-LÖFFLER BACILLUS.

Read before the Philadelphia County Medical Society, Jan. 27, 1897.

BY EUGENE LARUE VANSANT, M.D.

Professor of Diseases of the Throat and Nose, Philadelphia Polyclinic; Laryngologist and Aurist to the Howard Hospital, etc.

PHILADELPHIA, PA.

Although a full report of the following investigations will be published later, still it may perhaps be of interest to those who are present this evening to hear a brief report of the results obtained. The patients included in the investigation all had one thing in common, namely, a chronic nasal catarrh; none of them were subject to any acute febrile affection, but were simply the walking cases that I see daily in my office and at my service in the Polyclinic and Howard Hospitals. Great care was exercised in their examination to exclude all those showing any of the well known clinical signs of diphtheria. The bacteriologic examinations were made by Dr. W. J. Gillespie, and in the more important cases afterward reviewed by myself. The examinations embraced 113 cultures of specimens taken from 100 different patients. Of these patients, twenty-five suffered with chronic atrophic rhinitis, thirty-one with chronic hypertrophic rhinitis, fourteen with chronic rhinitis, sixteen with chronic purulent rhinitis, seven with nasal syphilis, two with disease of the accessory sinuses, four with acute rhinitis, one with fibrinous rhinitis.

The bacteriologic examination shows the presence of diphtheria bacilli in no less than thirty of the cultures examined, these cultures representing the dis-

charges found in twenty-six different patients. In four additional cultures (obtained from three patients) organisms strongly resembling diphtheria bacilli were present. In fifty-eight cultures, staphylococci were found. Of these, seven were recognized as staphylococcus aureus, five as staphylococcus albus, one as staphylococcus citreus. The great majority of the cultures contained many diverse forms of organisms, such as bacilli, cocci, diplococci, etc. Leptothrix was found in four, bacillus subtilis in six and yeast cells in two of the cultures.

Of the twenty-six patients with diphtheria bacilli in their nasal secretions, eleven were cases of chronic atrophic rhinitis, three were cases of chronic purulent rhinitis, five were cases of chronic rhinitis, three were cases of nasal syphilis, one was acute rhinitis and three were cases of hypertrophic rhinitis. For each disease examined the proportion of cases with diphtheria bacilli was as follows: Eleven in twenty-five cases of atrophic rhinitis, three in sixteen cases of chronic purulent rhinitis, five in fourteen cases of rhinitis, three in seven cases of nasal syphilis, one in four cases of acute rhinitis, three in thirty-one cases of hypertrophic rhinitis, none in two cases of accessory sinuses, none in one case of fibrinous rhinitis.

The following clinical histories were obtained in some of the cases where diphtheria bacilli were present:

John McM., age 16, occupation store boy, consulted me in November, 1896, complaining of nasal obstruction and of muco-purulent catarrh with post-nasal dropping. He stated that the duration of the catarrhal symptoms had been about six months, but although his general health had been below his usual standard, still at no time had there been fever or symptoms of any acute disease. Upon examination of the nose it was seen that the cartilaginous septum was deflected to the right, producing stenosis with marked obstruction, while on the left side the lower turbinal was hypertrophied. Both nasal chambers contained considerable muco-purulent secretion. He also had a chronic granular pharyngitis and some slight enlargement of the tonsils. Cultures were made from the nasal secretion and the bacteriologic report was that it was almost a pure culture of diphtheria bacilli. Upon investigation it was found that a younger sister of the patient had had diphtheria four months previously, and furthermore that different members of the family (which comprised ten children whose ages ranged from a few months to 19 years) had all suffered more or less from nasal catarrh and sore throat during the summer and autumn. This led me to decide to make further examinations. Six members of the family were examined and cultures taken from their nasal chambers, with the following results: One, a school girl of 8, was found to have chronic purulent rhinitis with muco-purulent secretion. Bacteriologic examination showed "a few diphtheria bacilli in involution forms." Another, a girl aged 9, was found to have chronic purulent rhinitis with muco purulent nasal secretion. Bacteriologic examination showed "staphylococci, numerous leptothrix and numerous small bacilli." Another, age 11, also a school girl, was found to have chronic purulent rhinitis with beginning atrophy and muco-purulent nasal secretions. The bacteriologic report was "staphylococci and long slender bacilli." A fourth member of this family, age 6, a school boy, had purulent rhinitis with beginning atrophy and muco-purulent nasal secretion, also subacute follicular tonsillitis. Bacteriologic report, "large, heavily stained bacilli, resembling diphtheria in form." The mother, age 40, showed fibrinous rhinitis with a thick white membrane clinging to both sides of the septum, with muco-purulent nasal secretion; the mucus membrane of the pharynx reddened and congested (no pseudo-membrane on pharynx). Bacteriologic report, "staphylococci and small, irregularly stained bacilli." The mother stated that all the children had been in good health previous to last July, but since then had been continually suffering from a catarrhal condition of the nose and throat. All of the children examined were weakly, listless and anemic, but at no time during the past six months had any of them suffered from an acute illness.

Lizzie C., age 38, mill-worker, sought relief for chronic nasal catarrh, complaining of formation of crusts with thick muco-

purulent nasal secretion, the duration of the symptoms extending back many years. Examination showed an advanced atrophic rhinitis, the lower turbinates had completely disappeared. The middle turbinates were enlarged, congested and polypoid. The pharynx was dry and glazed; mucous membrane atrophied; no membranous deposit seen anywhere. Bacteriologic report, "typical culture of diphtheria bacilli." Questioning and investigation revealed no source of the infection. The patient had no symptoms of any acute condition, and all the members of the family were well. This patient was kept under treatment for some months. Cultures were taken from the nasal mucus at different intervals and with the exception of a time when certain local treatments were being applied the diphtheria bacilli persisted. Each bacteriologic examination gave the same positive results.

Mr. P., age 35, occupation grocer, consulted me six years ago, suffering from constitutional and nasal syphilis. The lower and middle right turbinate bones had been exfoliated. The left nostril was normal. The patient's health at that time was very poor, having lost forty pounds in weight. Appropriate treatment, however, soon restored him to his normal weight; his general health improved and he discontinued his visits, except at long intervals. Last September he returned, complaining of poor health with pain in the region of the frontal and ethmoidal sinuses and reported a loss of fifteen pounds in weight. Examination showed the right nasal chamber filled with crusts and muco-purulent secretion. The lower and middle turbinate bones, as before stated, had been exfoliated. The chamber was very large and some uncovered bone could be detected in the region of ethmoidal cells. Cultures were taken from the nasal chambers, and the bacteriologic report was "a typical culture of diphtheria bacilli." Inquiry revealed no source of the diphtheritic infection. The patient was placed on active syphilitic treatment and again rapidly regained health. Cultures were made from time to time from the nasal mucus and diphtheria bacilli repeatedly found.

Many of the other patients with diphtheria bacilli in their nasal secretions, gave somewhat similar histories to those just cited.

REMARKS.

It is not the intention of the author to discuss in this paper the specific virulency or non-virulency of the diphtheria bacilli found in such a large number of these cases. Some experiments with cultures from several of the patients are about to be made upon animals and may throw some light upon this point. Many interesting points, however, occur to one's mind upon contemplating the results already obtained by this investigation, and some of these may be said to be positively demonstrated. Thus, it would seem proven that in a large percentage of chronic nasal catarrh the secretions are infected with diphtheria bacilli, staphylococci and other bacteria.

The importance of this fact in surgical procedures upon the nose, throat and adjacent parts, particularly the eye, is evident. Certainly the surgeon should precede such operations by a clinical and bacteriologic examination of the nasal chambers, and when necessary institute treatment to remove the nasal infection. Such treatment should include very strict disinfection of the nasal chambers, and the author would state that in most cases he had no difficulty in quickly effecting this purpose, although for a permanent removal of the germs, treatment must be continued for some time, for in a number of cases after stopping the local treatment, the diphtheria bacilli were found to return and were recognized in the cultures.

Again, the diphtheria bacilli were chiefly found in cases of atrophic rhinitis, chronic purulent rhinitis and nasal syphilis. In other words, where a pathologic condition of the nasal chambers with altered and morbid mucous secretions continues for a considerable length of time, thus offering a suitable soil for infection, not only by the diphtheria bacilli but

by many other germs, as was ascertained by the bacteriologic investigation. Now, it is well known to us that in such cases we frequently find several members of the same family afflicted with the same disease, and although certain inherited and acquired constitutional dyscrasias frequently underly such conditions, yet we are impressed with the great importance not only of disinfection but also of avoidance of infection to others.

From this point of view, the common use of a handkerchief among the children of a family, such infected children sleeping with healthy ones, or the indiscriminate kissing of children, may be mentioned only to be unreservedly condemned. Again, in all the cases where the diphtheria bacilli were present, the patients were observed to be in ill health, being listless, pale and anemic. It was also observed, that after treatment was instituted, not only the local condition but also the general health greatly improved. It may therefore be possible that in such cases there is a slight chronic toxemia caused by the nasal condition.

Again, it is quite probable that in such diphtheria, infected nasal secretions may account for the present wide spread of diphtheria, indeed, several instructive instances have come under my notice; it is to be hoped, therefore, that the proposed investigation upon animals to determine the virulence of the bacilli will aid us in forming some positive decision.

In conclusion, it gives me great pleasure to acknowledge my indebtedness to Dr. W. J. Gillespie, whose careful and painstaking laboratory work alone enabled me to collect the material for this report.

1929 Chestnut Street.

ACUTE OTITIS MEDIA.

BY B. MERRILL HOPKINSON, M.D.

Member of the Medical and Chirurgical Faculty of Maryland and the
AMERICAN MEDICAL ASSOCIATION.
BALTIMORE, MD.

After a very careful and interested study of the paper upon the above affection by Dr. Norval H. Pierce, and the discussion by some of his colleagues, members of the Chicago Academy of Medicine in the JOURNAL of Dec. 19, 1896, I have felt impelled to report a case, in which the treatment followed was very dissimilar to that advocated by the essayist and his confrères.

The case I shall herein report occurred in my own person, and is but a description of many others occurring in the practice of my very able and accomplished medical attendant, as well as in that of his students, and I am proud to number myself among the latter.

I fully endorse what was said by Dr. Wm. L. Balinger in the discussion of the paper, viz.: "Dr. Pierce is to be congratulated upon the pathologic and bacteriologic portions of his thesis;" and I take pleasure in adding, that his clear exposition of the etiology of this most distressing affection, also calls for hearty praise and commendation.

It is only along the lines of treatment that I must and do take issue; and in order that my position may be made plain, and as well for the sake of brevity, I will detail as concisely as possible the history of my case, calling attention in passing to certain modifications in treatment, as compared with that advocated by Dr. Pierce.

On Wednesday, Feb. 5, 1896, I used in a Birmingham douche, a 50 per cent. solution of glyco-thymolin

for the relief of a mild attack of post nasal catarrh, and upon subsequently blowing my nose rather too vigorously, became conscious of having forced some fluid into the Eustachian tube, thereby infecting the tube and middle ear and enabling me to clearly demonstrate the etiology of the following inflammation.

On Thursday night after a day of some uneasiness I attended a performance of an oratorio, noticed a beginning of confusion of sounds, and commencement of pain and upon reaching home instilled into the external ear a warm solution of cocain and atropin, hoping for a subsidence of symptoms, or, perhaps I ought to say, hoping that I was not to be afflicted by otitis media.

I did not succeed in wooing the goddess of sleep, save for brief intervals, and early Friday morning I called upon my friend and teacher, Dr. Julian J. Chisolm, who made a diagnosis of acute otitis media, and prescribed as follows: Frequent applications, ten or twelve times daily of an antiseptic solution by means of an ordinary ear syringe, the injections to be made as hot as could be borne with comfort, and an abundant quantity of the solution to be used at each application. The solution used by me was mercuric chlorid, 1 to 1000.

The relief derived from following this advice, must be felt in order to be realized, and just here let me say from experience, not alone upon others, but from the best of all, upon myself, that I should never advise cold applications, until I have fully demonstrated that heat was of no avail.

The inflammation increased in violence during the day and night, and the frightful pain I experienced for the following five days, paroxysmal in character, has, I am sure, increased the volume as well as the quality of my compassion for other sufferers for all time. In addition to the hot antiseptic injections, Dr. Chisolm ordered me to keep the drum membrane well inflated by using a modified Politzeration, viz., by grasping the nose and blowing steadily many times daily. This afforded me some little relief from pain each time it was performed, and I had recourse to the action times without number. I was advised to use morphin in suitable doses to procure sleep, if I so desired, but I had sufficient courage, thanks to my athletic training, to refrain.

I desire now to call attention to the use of a drug ordered by Dr. Chisolm and not mentioned by Dr. Pierce or his colleagues; and I regard its use as beneficial in the highest degree in the treatment of the affection under consideration. I refer to pilocarpin muriate and I am sure that in my case, and in many others, middle ear inflammations have been terminated without suppuration by the combined use of this drug and the treatment outlined above.

He ordered one $\frac{1}{4}$ gr. dose upon retiring and also another during the day, if I remained at home, but as I did not abandon my work at any time, I only took the dose at night. The effect of the pilocarpin about thirty minutes after its exhibition was simply delightful. There was complete muscular relaxation and capillary dilatation, and I was simply dripping with perspiration from every pore in my skin. The sialagogue effect was also well marked in my case, but this is not constant.

After the excessive effects of the drug somewhat subsided, I was enabled to secure a few hours' quiet sleep, and I am sure if I had remained at home and used the second daily dose, my troubles would have ended much sooner than they did.

I reported daily to Dr. Chisolm or his son, Dr. Frank M. Chisolm, and they were daily surprised upon examination to find an intact drum head, a history of continued violent pain, and no discharge. Just at this point I think there should be a distinct emphasis laid upon the injunction to all physicians, never to perform paracentesis unless there be distinct bulging outward of the membrana tympana, demonstrating the presence of fluid in the cavity of the middle ear. Upon the eighth day the inflammation subsided rapidly, and while musical sounds produced a most distressing jargon for some days longer, daily improvement was observed, and by the 16th I was able to attend to my duties with some degree of comfort to myself.

During the height of the inflammation the watch could not be heard upon close contact; afterward it could be heard at a rather abnormal distance, farther by several inches than the unaffected ear, giving a most happy result to a most unhappy affliction.

I will not speak upon the subject of paracentesis, for the necessary removal of pus, and the subsequent treatment in such cases, as my object is simply to report my own case, and the treatment followed, in order to demonstrate that resolution may follow even so violent a case under the treatment as related.

In conclusion, allow me to say that I do not charge the Bermingham douche or the solution used as being the causative factors of my trouble in any way.

I should have known better, as a physician, than to have blown my nose after the use of spray or douche, save in the gentlest manner possible, and here let me sound a note of warning to physicians, even to specialists, who prescribe douche or spray, that they warn their patients of the danger of using violence in blowing the nose immediately after the use of such means to relieve catarrhal troubles, for by so doing many cases of middle ear disease will be avoided.

THE DYING FADS OF PROSTATIC THERAPY.

Read before the St. Louis Medical Society, Jan. 15, 1897.

BY G. WILEY BROOME, M.D.

ST. LOUIS, MO.

In order that I may be clearly understood I will here state: That unless we attribute to the words of a speaker or writer the same ideas which he intends to convey by them, we can never arrive at his conclusion. It will therefore be necessary that the ideas which I intend to convey by the title or heading of this paper should be explicitly understood, so as to prevent the misunderstanding or misconstruction of the remarks which are to follow: The words fad and faddist as used here are intended to convey the ideas expressed in the following sentences, viz.: A fancy adopted and pursued for a time with irrational zeal. An important matter imperfectly understood, taken up and urged with more zeal than judgment or discrimination. In connection with this explanation I wish to emphasize a statement to the effect, that no reflection whatever is intended upon those who originated and developed by painstaking and conscientious research new methods of prostatic therapy, which may be, and are, contemplated in the light of fads at the present time. I would not for a moment allow the impression that it was anything but the most commendable spirit that moved the deservedly celebrated medical gentlemen who first introduced and advocated prostatectomy

by various methods, castration, tying the vas deferens or the massage of the prostate through the rectum for the relief of chronic prostatic obstruction. And yet I wish at this time to emphasize just as strongly my condemnation of the practice with many physicians of alluring these unfortunates on to an untimely death with the enticing promises held out by the manufacturers of many proprietary medicines advertised and certified to as possessing great curative powers, when in reality the only benefit derived from their use is to increase cash in the pockets of the manufacturers themselves, and who in most cases never examined the prostate gland when diseased, or are capable of comprehending it in a physiologic or pathologic light.

It would seem both fair and proper for me at this stage of the consideration of the subject and before the various methods of treatment which are to be condemned and relegated to the domain of faddery, that I consider briefly and in plain language the following questions relating to the prostate gland.

1. How does it differ when hypertrophied and in this condition?

2. What complications are entailed? Lastly

3. What would appear to prove the most rational thing to do to relieve the patient without incurring any mutilation, increasing the suffering or adding to the dangers of a fatal termination.

1. Then how does the prostate differ when hypertrophied? I have two specimens for exhibition to show the macroscopic difference between a normal prostate and anabolic prostate; I might talk for a week and not make the difference so clear as it will appear by the objective instruction, and as to the macroscopic difference in the structures of the two prostates. Dr. Fisch will make the demonstration with the microscope and from the explanation you will see that the structure formed in any of these chronic enlargements consists of a multiplication of almost all of the normal tissue elements and an augmentation of the entire gland. The histologic structures are not necessarily however in the same relative proportions, nor arranged in the manner of the normal prostate; for in the majority of cases the connective tissue of the gland is the part most concerned in the hypertrophy, the glandular and muscular elements taking little or no share. In a few instances there is a general hypertrophy of all the tissues of the organ: Glandular, muscular and stromal, and very rarely the glandular element is in excess. The gland attains the greatest size when the enlargement is chiefly due to connective tissue hypertrophy.

Now as to the 2d question: What complications are entailed? I have a specimen here showing the early stage of infective inflammation of the inner wall of the bladder, which of course is a complication resulting from the enlarged prostate, the earlier complications come on rather insidiously, micturition becomes more and more frequent especially at night and is not followed by a sense of relief but of unrest and uneasiness in the bladder, eventually expulsive efforts are futile and retention becomes complete. Decomposition in the urine soon takes place and besides an offensive odor it becomes turbid, the reaction changes to neutral, then alkaline and ammoniacal and acute cystitis is set up, and the patient's distress is at its height, added to this condition vesical calculi may form and complicate and aggravate the prostatic symptoms, later the ureters and renal pelves become dilated and secondary changes occur in them due to infection from the inflamed bladder, *pari passu*, with the renal

changes, the general health suffers, rigors and attacks of fever occur, and uremic poisoning or septic infection and coma bring about a fatal termination.

And now as the last question: What would appear to prove the most rational thing to do, to relieve the patient without incurring any mutilation, increasing the suffering or adding to the dangers of a fatal termination? If I were asked to answer this question in one word I should say without any hesitation whatever, and in the most earnest and emphatic manner possible—*rest*. I have never forgotten for a moment the impressive teaching of Professor Gross, when upon the subject of the surgical treatment of inflamed parts. He himself was clearly cognizant of the great importance and value of rest in the alleviation of pain and in the restoration of an inflamed part long before Hilton wrote his small but valuable book on Rest and Pain. I recollect so well when Professor Gross lecturing on this subject, he would suddenly stop when he came to the latter end of his lecture to begin the treatment after deliberating for a minute and casting his eyes from one student to another, apparently to satisfy himself that he had the absolute attention of every listener, he would say: "The first requisite, gentlemen, in the treatment of an inflamed part is rest." Then after a pause, during which he would again sweep the amphitheater with his eyes, *rest*. Then rising to his full magnificent height and folding his arms he would bend majestically forward and in the most earnest and forceful manner possible repeat, "In the name of God, *rest*."

To give the inflamed bladders of these poor unfortunate old men rest, appears to me to be the most rational thing to do to relieve the patients. Simple rest, nothing else! For it is the want of rest that kills them. They die because they can get no rest from the distress of the bladder, and no rest for the mind or the body, and thus their agonies increase until death mercifully closes the scene. How may rest be secured to patients in this condition, may be asked, without incurring any mutilation, increasing the suffering or adding to the dangers of a fatal termination? I answer that in my judgment, based upon extensive practical experience and clinical observations, there is but one plan of treatment yet devised that will afford the patient anything like prompt relief and the hope of a restoration to health or the rest that he is praying for without entailing any mutilation whatever; and that is by easy, complete and permanent suprapubic drainage together with occasional disinfecting irrigation. No other method of treatment in my opinion possesses rationality or is free from effects essentially calculated to intensify the patient's present suffering and unrest. The specimens I exhibit here, ought to satisfy any one that at least in some cases a prostatectomy attempted for the purpose of establishing a low level channel in order to enable the bladder to void its contents and for other reasons of great importance is beyond the limits of honest legitimate surgical procedures, whether the enlarged prostate is attacked through either of the three routes, viz.: Perineal, urethral or suprapubic or the operations attempted by means of the finger-nail, knife snare, gouge, scissors, chainsaw, or thermo, galvanic, or actual cautery. These operations in these cases must be relegated to the domains of antiquity and faddery.

It is not within the scope or intention of the writer of this paper to even introduce a discussion relative to certain tumor formations in the prostate, in which sur-

gical interference may be clearly indicated and warranted, notwithstanding obstructive and other symptoms are marked in the case. For here, as is present everywhere, the benign tumors are encapsulated and all encapsulated growths are amenable to successful surgical enucleation, when the tumor mass is situated so as to be at all accessible. I furthermore wish to say as was intimated at the outset of this hurriedly written paper, that I have nothing but words intending to convey the most profound respect and veneration for the names of Mercier who first practiced urethral prostatectomy, and Bottini who first advocated galvano-caustic prostatectomy, and Harrison who was first to carry out the operation of perineal prostatectomy, and also for Mr. McGill who first devised and practised suprapubic prostatectomy. These methods of treatment were results of calm conscientious and honest deliberation, but should be no longer cultivated, and when we come to contemplate the Raumm-White operation of bilateral castration for the cure of chronic enlargement of the prostate a feeling of the greatest misgiving and doubt comes upon us at once. It is difficult to understand how any one can conscientiously believe when he undertakes the operation how the distress and the diminution of the cystitis and cystopyelitis is to be alleviated and the patient, already in the greatest agony, be relieved by this mutilating operation. A similar onslaught was inaugurated a few years ago on the normal ovaries, and women were spayed for a cause and sometimes for no cause at all, only a consideration, and the male is being emasculated to cure his enlarged prostate, but as has turned out in some instances where the operator exercised more zeal than judgment, instead of an enlarged prostate a stone was found, or a simple specific cystitis existed. But the fad will go on to reap its harvest for the pocket of the operator and for the grave its victims for a while; just as the fad of castrating women flourished for a time, men will be castrated for stone in the bladder, chronic cystitis, malignant and tubercular diseases. For it is not always easy or possible to make a positive differential diagnosis between hypertrophy of the prostate and some of the conditions which simulate it closely. Castration is such an easy operation that every tyro in surgery has attempted to perform it upon willing subjects, suffering from obscure affections of the bladder complicating hypertrophy of the prostate gland. But I trust that the day is very near at hand when the removal of any normal organ for any purpose will not be countenanced for a single moment.

THE TREATMENT OF ALCOHOLISM BY SUGGESTION.

BY F. A. BURRALL, M.D.
NEW YORK.

In the *Tribune Médicale* of Jan. 13, 1897, is a notice of an article by M. Tokarsky (*Wralch*, 1896, No. 31), on the "Treatment of Alcoholism by Suggestion," and which seems to me as likely to interest both the general practitioner and the specialist in nervous diseases.

The profession and the public have come to regard the victim of chronic alcoholism as a neurotic, under the influence of a nerve degeneracy, which implicates most readily that condition of nerve tissue of which instability is the prominent feature. These terms are perhaps somewhat vague, yet they are sufficiently definite to convey the idea. It is not the self-contained, vig-

orous constitution with strong power of resistance and obstinate vitality, which yields readily to the baleful influence of alcoholic excess, but the sensitive and the neurasthenic; such material as goes to the formation of the "nervous" part of society. Since this view has become more generally adopted and alcoholism has been treated as a disease, my experience has been that more cures have been effected. It is not strange that this should be the case, and the result also indicates how much the continuance or cure of alcoholism depends on the improvement of the mental or "nervous" condition. A man who is regarded as a brute by his neighbors, and who is scoffed at for not using his "will power" and throwing off a disgusting habit, is in a deplorable and crushing condition. He is often refined and cultivated when not under the influence of alcohol, yet soon transformed into an impersonation of all the lower traits of humanity by the taking of a few glasses of an alcoholic stimulant.

The habit may have been formed by the protracted use of alcohol which has been prescribed by a physician; he may have inherited a predisposition to its use; at all events the will power has been overcome, and he feels that society does him a great injustice by treating him as a criminal when he knows that he would give anything to rid himself of the bands which seem stronger than adamant.

Now, for such an one to feel that he is not a criminal any more than the patient who when under ether, before the operation, fights in delirium, is a great aid in the restoration of self-respect and hope. If he is a sick man he can look for sympathy and medical treatment. In fact, society has often dealt with the inebriate most unjustly. It has placed all kinds of temptation in his weak path, and then punished and degraded him for having walked into them.

Since the view that alcoholism is a neurosis has been adopted, various plans of treatment have been brought forward and used in many cases with complete success. In estimating the value of these different methods, we come in contact with the same difficulty which encounters us in the study of most nervines, in fact of most medicines which are given in neurasthenia. Where does the medicine *per se* show its effects, and where does what is popularly called "mind cure," exert its action? Often, discrimination is impossible. I have known the use of strychnin, atropin and chlorid of gold and sodium in very minute doses, repeated at short intervals, to be followed by cessation of the liquor habit in several cases of alcoholic habitués. We may regard, as combining to produce this effect, the "suggestion" accompanying each dose, the substitution of one habit for another, the cumulative effect of long continued dosage and the *personal* influence of the physician. We see how difficult it is to say surely where the curative influence exists. To turn from a digression which was naturally suggested by the subject, the following extract is subjoined.

"The treatment is as follows: The patient is hypnotized (*endormi*), preferably when he has drunk nothing during the day. For chronic alcoholics the treatment is begun during a period of abstinence. From the first *séance* the "suggestion" is made to the patient that he should drink no more. Two days afterward the same experience is repeated. Usually after two sessions there is an improvement, and the third treatment can be deferred two or three days

¹ The patients were not restricted in their drinking, but soon lost their taste for it.

later. Gradually, the intervals between the visits are lengthened, until they are made every two, three or four months. The treatment can not be considered as complete under a year, since this length of time is considered necessary to observe all the variations to which the nervous system is subject. In favorable cases, patients stop drinking from the commencement of treatment. If they continue after the third *séance* or commence during treatment, it is regarded as a proof that good results are not to be expected and that 'suggestion' is unavailable as a remedy."

With suggestion M. Tokarsky employs strychnin in combination with opium. The strychnin is given in doses of 3 milligrams, gradually reduced to 1 milligram, which is continued for six months. After strychnin arsenic is used, or iron, etc. While the strychnin is used the watery extract of opium is advised in one dose of 15 milligrams.

In some cases of what he terms alcoholic neurasthenia, good results may be obtained by hydrotherapy. Still, all these therapeutic agents do not exert a satisfactory effect if unaccompanied by suggestion.

We believe, however, that there is an influence akin to suggestion, which is often exerted by the physician upon his un hypnotized patient, and which is very useful in the treatment of inebriety.

It is a question whether the use of opium in cases like those referred to in the above article is not attended with the danger of forming a new habit. It should certainly be used with care.

The subject of inebriety is one of such deep interest that it is at present engaging an unusual amount of study. It is of universal importance and intimately connected with human happiness and misery.

A COUNTRY DOCTOR.

BY THOMAS H. SHASTID, A.B., M.D.

GALESBURG, ILL.

For more than thirty years it has been my good fortune to possess the acquaintance of a certain country doctor—a man unknown to the world at large, but yet, like many another of his class, a man that the world would honor itself in honoring.

Even in my youngest days I knew him. His tall form, his lean but kindly countenance, his thin hair and tuft of chin beard, were among the earliest images of my childhood. Often I played in his yard. Often he would call me into his office where he sat at study, there to read to me from his books, or to demonstrate to me the bones of a skeleton, or, if the day were clear, to show me in his microscope the structure of the kidney or lung. Often, too, I went with him on his rounds; many a long summer day we rode, from farmhouse to farmhouse, uphill and downhill and along prairie, until at last, as the darkness settled about us, I clung close to his side and fell asleep beneath his arm. I naturally did not much understand in those days the various excellences of the doctor's character; but I recall how kind and gentle he always seemed to me, and I remember especially the keen sense of childish pity with which, when I happened to awake one stormy night, I heard him drive from the stable and down street in the cold wind and rain.

In my youth and early manhood it was my pleasant lot to pursue the study of medicine under this doctor, and then I ever found him both a skillful physician and a man of most interesting and amiable

personality. His dominant passion, I think, was his love of children. I have never seen another man in whose affections children held so large a place. He used to shout at the children as we passed along the road, and if sickness were not urgent he would stop his horse, call them to the side of his buggy, and teach them to count in Latin and Greek. How many a bright toy did he not take to sick children of the poor! How many a word of endearment did he not speak to them! And how many a night, when only he was up, did he not study, hour by hour, to relieve the sufferings of children the more especially!

A hundred instances occur to me of the doctor's intense devotion to children. What a night was that when Joe Shepard, worthless fellow, came in at 10 o'clock, dripping from top to toe with rain! The lightning flashed incessantly and roar after roar of thunder burst about our very ears. Joe took up his position next the stove; the night was chill. The doctor was abed, where indeed he had been for three days, sick of a fever. Would the doctor come to see his folks? No; it was out of the question, he was sick himself. "It's mainly the little feller, Doc." "What! Not the one I gave the jumping-jack to?" "Yes, him," said Joe. "All right," said the doctor, "I'll go." And go he did, though I had to help him dress.

The doctor had once in his care a child to whom he had taken a great fancy—a child of poor and shiftless parents who lived far out in country, "on the back of another man's farm." There was not the slightest prospect of pay in the case, and the house was so situated as to require much time and trouble to reach it. Yet the doctor visited the child regularly and gave it his most earnest thought and devoted attention. Day after day we went to the cottage and day after day the doctor's face grew more clouded and anxious. At last there came a change. Yes; the child was certainly better, though the disease was treacherous. Then, one day, the doctor took with him a toy book—a brilliantly colored affair—and he showed it to me on the way, and said how cheap and poor a thing it takes to make a child happy, and how much more intense, besides, the happiness of childhood is than the happiness of older life. I stayed in the buggy that day and waited for the doctor. As he entered the doorway I saw the toy book sticking from his pocket. He was not long gone, and when he came out his head was bowed and he had his handkerchief to his nose, blowing vigorously, and from his pocket still projected the toy book.

And the children appreciated the kind doctor. They used always to answer his shout as we passed along the road; and now and then some urchin more enthusiastic than the rest would come tearing down to the gate, mount it, and shout after us his "*Unus*, one; *duo*, two," until we were out of sight. Many of them used to call him "*My* doctor." And I have seldom seen anything more touching than once when a sick, indeed almost a dying, child spread its thin, blue lips into a smile and murmured "*My* doctor," as the doctor approached its bed.

Next to the doctor's love of children came his love of nature. When, on our rounds we left a farmhouse the first thing was, as a matter of course, to discuss the case. That over, he invariably talked of the pleasant sights and sounds around us. It mattered not what the day was—sunny day or cloudy, colored day of autumn, white day of winter, budding green

day of spring—all days alike were to him beautiful and pleasant. Even days of storm he found not wholly unacceptable. He used to say that a man listening to the rain on his buggy-top and his horse's hoofs in the pools would, if normal, possess a sense of shelter and snugness never felt elsewhere.

But his favorite days were those of early summer. Then it was that he fairly grew ecstatic. Then it was that he talked by the hour of a meadow lark that sang from a rail-tip; of a field of wheat where a red and yellow reaper clicked and clacked round a square of standing grain; of the blue-vaulted sky and its infinite distances and its massive piled-up clouds that sailed along like chains of floating mountains. The clouds, indeed, which were the doctor's greatest delight of all, sometimes inspired him so much that he broke into verse. His lines were always somewhat stilted and bombastic, but no one could have known it better than he did himself, for he always overcharged them purposely as he neared their end, and then laughed at them heartily. Then, too, the clouds always suggested Italy. Italy—that was his theme. Italy—the land of Cæsar and Cicero, of Virgil and Horace—for the doctor was a classical scholar—but, better still, the land where cloud and sky are more than elsewhere on earth of divine and inexpressible beauty. "I shall certainly go to Italy some day," he would always say, "when I get money enough ahead."

There was one side of the doctor's character which, upon first acquaintance, you might not have suspected—his humor. Shy and even timid among strangers, he became, at times, among his older families and when we two were alone together in the buggy, the most jovial and jocular of men. Many a moment in the sickroom he rendered lighter with his merriment, and many a convalescent, leaning on elbow and listening to his happy talk and clear ringing laugh, must have thought that even sunshine could have been no better. In the buggy he sometimes stooped to nonsense. I can hear him now singing:

"Oh, a green peach pudding and a blackberry pie,
A black cat kicked out a yellow cat's eye."

But his funny moods never lasted long. He was essentially a grave and serious man, full of cares and full of tenderness and pity for the sick.

Indeed these qualities of tenderness and pity serve to explain, I think, in some measure, his intense devotion to his studies. Medical works were to him not mere dry treatises on science. They were storehouses of facts that were to be of service to suffering humanity. Whenever he read of a disease he seemed to see some person that had it. Whenever he read of a remedy, he seemed to see some pallid countenance looking up imploringly for relief. Every new book, every new number of a journal, he read with the utmost avidity, as one whose brother was condemned to die might read some legal document in which he expected to find a word of reprieve or pardon.

Even in his experiments, to which, for some years at least, he was greatly given, you could trace the influence of his kindness and sympathy. In his little one-room office—an apartment of his house—he would not infrequently sit up half the night pouring this thing into that and triturating something else with the other; and the commonest object of his search was—to find some way of rendering nauseous medicines pleasant and palatable. Agreeable pharmacy, you see, we did not have in those days. None

of his experiments, I believe, ever came to anything. He lacked the necessary apparatus, and more than that he lacked the necessary leisure. But some of the ideas he worked on in those days have since been taken up by large manufacturing houses and have made them rich and famous.

As might be supposed from his great sympathy, the doctor almost never refused a call. Whether he was summoned in the daytime or in the early evening, or in the later evening when only he was up sitting at his books, or in the far dead of night, he was always ready for duty. Suns were never glaring enough, nights were never dark enough, roads rough enough or muddy enough, rains pouring enough, frosts cold enough, snows deep enough, winds loud or chill enough to keep him from the sick. And "rich or poor" made no difference. The only question was, did some one need him?

I remember that one morning after the doctor had been out all of a black and stormy night, we were very much startled by seeing his horse come tearing down street to the gate, without driver, without buggy, and with only a few pieces of harness clinging to his back. A messenger arrived shortly afterward to say that the doctor had been run away with, and had been thrown from his buggy, but that he had not been much hurt, and hence had got another horse and buggy, and would make another call or two before returning home. He was really in a sad and sorry plight, as we found when he got back. His clothing was torn and covered with mud, his face was scratched and bloody, and his arms and shoulders were so badly bruised that we wondered they had not been broken. He was sick, too, for several days. We scolded him not a little because he had not come back as soon as he was hurt. But what could he do, he said. There was a poor old sick woman a few miles further down the road, and a few miles further still a sick child, both of whom needed assistance badly; and as for himself, why *he* could wait.

I know of nothing more suggestive of the hardships of the doctor's life than a collection which he used to keep in a drawer of his office of the various buggy lanterns which at one time or another he had used in his practice. Why he kept them I never knew. All of them were useless. Most of them were eaten out by rust; some of them—curious, patented things—had never been of service; others were mashed and twisted from runaways and wrecks. But they told a story of many a bad night.

A man who once saw those lanterns said to me that at a time when he was sick for several weeks he used as he lay of a night to watch for the light of the doctor's lantern as it first appeared at the turn in the road. One night he became much worse. And, as he was a poor man and the night was so dark and stormy, he feared that the doctor would not come in time. And, lying there in agony, he took one of those strange fancies that sick men not infrequently take. He said to himself that if the doctor's light appeared by 1 o'clock, the usual time, he would live; if not, he would die. And he lay and waited. And a little before 1 the doctor's light appeared. It seemed to him, he said, the brightest star that ever dawned. I have often thought that in the many years of the doctor's practice ten thousand other eyes must have watched no less eagerly for the light of his lantern as it came shining down the country road, bearing its messages of life and health and happiness and joy.

Into the sickroom this doctor must have come like

hope. You could tell by the compression of his lips that he meant to save; and you could tell by the calm of his eye that his sympathy had not perverted his judgment. He had a way, when he began to examine a patient, of whistling softly to himself. Then he went slowly and cautiously from symptom to symptom. Nothing escaped him. There was no hurry. No matter how sickly the time or how sleepy and aching his head, everything must be gone over systematically, carefully, critically. Some one thing might make all the difference. I can see him now rubbing his spectacles to make sure he has read his thermometer with the utmost accuracy. Then, when he took up his "pill-bags" and placed them with the band across his knees and spread out the powder-papers on the band and took up the bottles and dosed the medicine on the papers, and then took up the papers one by one and folded them, you saw in every step the same great precision, the same thoughtful care. What a void he must have left in the sick-room when, at last, the round of instructions gone over for the second and even the third time, he shouldered his "pill-bags" and departed! Surely no money could ever pay such a doctor, and surely, had he not had a family of his own, scarcely a thought of money had ever entered his head.

I must relate an incident that illustrates the doctor's intense and bulldog-like pertinacity in a hand-to-hand encounter with death. A man who had taken an overdose of morphin was given up by his other physicians to die. Nothing, they said, could now be of any service to him. Anything further done to keep him awake would be mere unnecessary pain and torture to him. But *this* doctor did not give him up. He stayed with him day and night. When the lungs threatened to breathe no more he started them with electricity or with burning paper to the nape of the neck and the spine, or with artificial respiration. The neighbors came about, as neighbors sometimes will, and said it was a sin and a shame, that it ought to be stopped, that the misguided doctor was simply mutilating a corpse. But the doctor did not heed them. He turned his other cases to the other doctors and kept on. He tried everything of which he had read or heard or dreamed. The hours of the night wore slowly away. The hours of the next day wore slowly away. And then those of the next night. Finally, at sunrise on the second day, the last of the effects of the morphin had gone and the man stood up and looked upon the earth and lived. His neck and back were somewhat blistered and sore, but he lived. And he lives today.

Well—even in these later years my acquaintance with this country doctor does not cease. He is still in active practice, and on my visits to my native town I always meet him and always ride with him in the country. Our rides have not much changed. Again he discusses the cases, again he shouts at the children, again he talks of the beauty of field and sky, again he says he means to visit Italy some day when he gets money enough ahead.

I am inexpressibly pained, on some of these visits, to observe that the furrows in his face are growing deeper; that his form, once erect and elastic, is getting stiff and stooped, and that his clear, almost ringing, voice is beginning to show, though happily at long intervals, the tremors and quavers of age. Yet his kindly face and his old-time figure still make, I ween, no less pleasant a picture as they enter the sick man's doorway, and his cheery voice still makes to

the sick man's ear no less pleasant and hope-inspiring music. Still he goes about his duties, still he goes on his mission of health-giving and hope-giving, still he responds to the calls of rich and poor alike, by night and by day, in sunshine and in storm. Sometimes I think that he has done enough, that forty and odd years of practice on those hills should constitute sufficient of duties performed for any one man. And yet I know that did he cease to practice he would be unhappy, and that many a sick child would miss "my doctor," and that many a sick man or woman, looking out at window, would long in vain to see the old white-headed physician come once more, "pill-bags" in hand, along the path.

Such, gentle reader, is my weak and inadequate description of the character of my father. Being my father, he naturally occupies in my estimation a higher place than could possibly there be given to any other man. And yet, if I err not, there are practicing in the length and breadth of this country many hundreds, nay, possibly even thousands, of country doctors who, in skill and in judgment, in geniality and kindness, and tenderness and sympathy, and ready response to calls, and dogged and never-ending pertinacity in the fight with our old and common enemy—disease—are *almost* the equals of my father. What more could I say for them?

THE MENDACITY AND FILTH OF QUACK ADVERTISING.

BY JOHN MADDEN, M.D.

MILWAUKEE, WIS.

"O Lord! Lord! how this world is given to lying."

In a conversation, a short time ago, with a gentleman who is the business manager of a great and influential newspaper, the subject of what doctors could or should do in the way of making themselves known through the columns of the lay press, was discussed at some length.

The journal which this gentleman serves is unusually clean, and he assured me that in a single year he had rejected "medical" advertisements which would have brought his paper an income of fifteen thousand dollars at least. These rejections were made upon the grounds that the matter rejected had a direct tendency to corrupt public morals; that it was filthy, obscene, and often a direct invitation to the public to become accessory to the crime of manslaughter. He mentioned one instance, coming to his own observation, in which the innocent boys and girls of a morally clean neighborhood were defiled by the filthy literature sent out by a local quack in answer to a letter written by a bright young lad who wanted to find out what the advertisement meant. This paper however continues to publish the gray-headed frauds which have grown fat on printer's ink and divers new frauds improved by the terminology of modern medicine.

Now this gentleman is a good business man and he very naturally regards this matter from a business standpoint. He sees no reason why an honest physician or surgeon, or all honest practitioners of medicine, in fact, should not be willing to modestly announce their names and location in his journal. He thinks, and justly too, from his standpoint, that having purged his columns of everything objectionable in medical advertising excepting the ordinary mendacity which attaches to all kinds of advertising, honorable medical

men would not be in bad company and his paper would receive some merited compensation for that which he rejected.

In reply to this pleading and answering for myself alone, I wish to point out what seems to me to be the objections to medical advertising.

If a man is known by the company he keeps it would be well for the physician to examine the character of the medical advertisements which appear in the newspapers before he decides to be one of the advertisers. He may easily find them for they are everywhere in print, and their pretensions are great and numerous. For the purpose of determining their character, let us make an examination of those cut from one issue each of five newspapers, four of them published in Milwaukee and one in Chicago. These yield a total of 131 advertisements. Revising this count by cutting out all but one of the advertisements appearing in two or more of the papers, there are still more than one hundred; about one hundred and fifteen. Nothing is gained by separating them into advertising doctors and remedies advertised; so it appears better to examine them from the standpoint of public policy and its relation to moral ethics. Accordingly these advertisements fall naturally into three classes: Those that are false, those that are false and filthy, and those that are false and filthy, and criminal.

By far the greater number of "medical advertisements" (I wish here to apologize to the medical profession every time I use the word medical in this connection) belong to the first class. They represent to the public that they can cure certain diseases, that as a matter of fact they have cured thousands of such cases, "in their worst form," after they had been given "up by the doctors," and that no patient treated by them had ever died of the disease. You may say that nobody believes such lying as this; but it is a peculiar psychologic fact that thousands do believe them.

If the patient be not seriously ill and would recover speedily had he taken no medicine at all, makes the diagnosis of Bright's disease of the kidney (Had he not read the symptoms in his almanac?) and forthwith takes Dr. Quack's medicine or consults Dr. Quack himself, is he not, after a speedy recovery, as ready to give Dr. Quack any number of testimonials as he was to fill Dr. Quack's pockets with money?

As to chronic cases, I wish here to raise the question as to whether patients ill with long continued diseases should not have guardians appointed to keep them out of the hands of this as well as every other kind of shark. Can one be of sound mind when his brain cells have been for months saturated with the ptomains of a disease like tuberculosis? That, however, is another story.

Here then are the objections to this class of medical advertisement. The patient makes his diagnosis while he is as ignorant of human anatomy and the symptoms of disease as he is of the duties of the Grand Llama. No matter how trifling his ailment he believes he is a "pretty sick man." If this quack doctor makes the diagnosis he is sure to be very sick. In either case he is imposed upon and in all cases, and he swallows stuff that he were better without and is always fleeced of his money. It may be objected that all advertisers set forth their claim upon public patronage with small regard for the truth.

It may be said with truth that the merchant who says he is selling his goods below what they cost him or that his goods are far superior to those of his neighbor yet he is selling them for less money, is saying what he knows is not true; but the public has its safeguard in the fact that only ordinary judgment is necessary to disprove the claims of this kind of advertiser, while years of study and investigation are necessary to deal properly with the falsehood of the medical advertiser. If the merchant sells a garment which he advertises to be "all wool," the purchaser has only to burn in a gas flame a few threads pulled from the material to prove or disprove the statement; but a careful chemic analysis is necessary to determine the character of the advertised nostrums.

Thousands of cases come yearly to the notice of the medical profession in which some poor victim has been robbed of his money or his health or both by the representations of the advertising mountebank. Two prominent cases of this kind were brought to the notice of the writer. The first patient had contracted syphilis and immediately went to the "Hot Springs," the Mecca of syphilids and there he met one of the fraudulent "doctors" which curse the place, and from this man he bought twenty pills "warranted to contain no mercury and to cure the disease inside of two weeks!" For these pills the young man was to pay \$160, \$60 at the time the pills were purchased and the balance when a cure was effected. After paying the \$60 he had just enough money left to bring him home, and immediately upon his return he presented himself at my office with a mercurial sore mouth. The most remarkable thing about his case was the pertinacity with which he believed the statement of the rascal who robbed him of this \$60.

He was fully convinced, however, when a simple chemic process yielded a large globule of metallic mercury from three of the pills. He knew what metallic mercury looked like. Another case was a victim of too much "catarrh snuff." He was a catarrh snuff "inebriate," in fact. Physicians know what this means, but the laity must be told that the principal ingredient of this snuff is cocaine, the most seductive and most ruinous of all stimulating narcotics. He became a "cocain fiend" and is today, if he is not dead, wrecked beyond hopes of recovery, and the amount of money he has paid for Dr. Fraud's "catarrh snuff" must have made that rascal considerably richer. How many more victims this deadly snuff can claim is unknown, but the number can not be inconsiderable. The writer has met this Dr. Fraud. He wears the garb of a gentleman, is suave in manner, and his shirt front is decorated with conspicuously large and brilliant diamonds. Last year his business brought him a profit of more than 50 per cent. on a "capital stock" of \$100,000. The man who sells intoxicants over the bar calls things by their right names and pays the State and city a large license for the privilege. Let the temperance reformers not forget that there may be worse things than the liquor traffic.

It is not contended that all the nostrums advertised are harmful as those above. Many are only inert or unnecessary, and are purchased largely by poor people who can not spare the money thus spent, for the price of nostrums is high. Some are amazingly bombastic, some refreshingly foolish, some setting forth ideas so gray with age that their author might have been a medical student with Hippocrates, talking as

they do, of the humors and "what humor is the worst of all humors." Here is a fellow who wants to convince us that we are sick or well according to the condition of our "inside nerves," and that his "inside nerve tonic" is just the thing our inside nerves have long suffered for. Everything is fish that comes to their nets and they or their medicines are the "only divinely appointed" for the regeneration of humanity. There is, indeed, not a passion nor a prejudice which is not played upon by the gentlemen of the quack profession. Here is an amiable old divinity whose eccentric methods in Germany have been transplanted in America. He is not a doctor of medicine, but came of his ideas by some sort of ecclesiastical introspection. He is a fad, and milady loves a fad. She will rise early in the morning to trot around in the wet grass barefooted, give up corsets, eat plain food, and go to bed early, all because it is delightfully unconventional. Her family physician has a hundred times warned her against late hours, the eating of indigestible food and the taking of too little exercise; but the family physician, you know, is a dry old chap, given to considering medicine as an exact science, and the entire absence of frills about him makes him something of a stick. It is different with dear old divines who practice medicine; but, some day milady will adopt a new fad.

In the same paper from which the above advertisement was cut, a religious paper, by the way, are found others in clerical garb. Here is one with a nice little chapel in the foreground saying that Brother Jones' tea is good for the liver, kidneys, stomach and blood; for salt rheum, pimples, blotches, coughs and colds. Here is another reverend gentleman who has a medicine that cures about twenty-five serious diseases, beside "increasing the flow and power of nerve fluid." He owes an explanation to the medical profession. Here is another one for the cure "of dropsy" (is it possible that intelligent men still call dropsy a disease?) and here is another which says, "your doctor will tell you this is true." Now this is a rather large story for a religious paper to publish. There are others. One of them, a testimonial from a Methodist minister out in Iowa. It is perhaps a sign of the times when a Methodist minister's letter is published in a paper whose religion is not Methodist.

When I was a student in college I had a good but mischievous chum, who used to annoy me by reading quack medical advertisements to me. He is a lawyer now, and I trust he does not carry any of that kind of humor in the court room with him. If you gentlemen are tired of this, I beg your indulgence a few moments to a class of medical advertisements which are as mendacious as those just described, but filthy beside, and still another which are a stain upon our civilization.

The most prominent of the second class of advertisements mentioned above are those which call the attention of young men all over the country to a physiologic process that almost invariably comes with puberty, is as natural at that time as is breathing to the newborn infant, and is an evidence of health and not of disease. A new life is opened to the boy; he has different thoughts, different feelings, and his nervous system has grown wonderfully sensitive. All this is played upon by the rascally quack, and if the poor boy is unfortunate enough to get possession of one of this fiend's pamphlets he suffers untold misery and is often made at least temporarily insane. Speaking

of cases of this kind, an eminent French writer in the *Journal de Médecine de Paris* says: "In the United States such cases are innumerable, and such hallucinations are fostered by the public press, that venal and unscrupulous in the extreme as to money-making by fraudulent advertisements, prints horrible faces of men before and after treatment. The only wonder is that medical men of that country do not rise up and demand the suppression of such vile newspaper ads. Advertisements that send scores of American young men to the asylums and drive many more youths to suicide. No civilized nation in the world except America would tolerate such 'journalism.'" If this French doctor should come to America he would see how little our reputable medical men have to do, as yet, with shaping medical legislation. But that can not be dwelt upon here. It is another story. If this gentleman came to Milwaukee and picked up one of our afternoon papers he would find half a dozen or more of such advertisements which he so justly condemns. Should he cut all the quack advertisements out of this same paper, he would not have much of the paper left.

One shrinks from mentioning all the nastiness which meets his eye in the daily newspapers, in the shape of medical advertising. They are the luring traps set for the foolish boy or young man, to lure him into a den of thieves with promises it is impossible to fulfill, rob him of his money and kick him into the street worse than when he entered.

The last and greatest offense against public decency, the law and good morals, of which I wish to speak, is that class which advertises a willingness to commit a crime which our statutes have defined as manslaughter. It is astounding that these so thinly disguised advertisements are allowed in the public press. Here is one, verbatim, with the name left out. It appears daily in at least two of our city papers: "Ladies needing confidential treatment may consult —, specialist in female complaints; cures all female irregularities, skillful and scientific." What does this mean? Ask any physician the cause of at least nine-tenths of all female irregularities, and how they are cured by such advertisers, and you will have a key to the situation. Positive proof as to what this class of treatment means is not lacking. About a year ago a woman bearing the same name as that signed to the above in the newspapers, and, undoubtedly the same person, was tried in a court in this State for the very crime which she now advertises to commit. A physician well known to the writer, gave testimony as to the possibility of committing the crime in the way described by the State's witnesses, which was at once affirmed. She was quickly found guilty by the jury, and the trial judge, with apparent reluctance, gave here the shortest possible sentence, namely, four years in the State prison at Waupun. After serving eighteen months, the trial judge signed her application for a pardon, and our late pardoning Governor set her free. She now announces that she is apparently ready to commit the same crime "skillful and scientific." But Milwaukee papers are not the greatest offenders. I hold in my hand nine advertisements of the same import, expressed in surprisingly plain language, taken from one column of a Sunday issue of a Chicago daily. Truly, good Sunday reading. Perhaps it will be argued that Chicago is not a moral city, that only in Constantinople is it so easy to get rid of undesirable citizens. There is this dif-

ference, however: Representatives of the great European powers are watching the wrongdoings of the Mussulman and the people of all civilization are looking toward the slaughter; but America heeds not nor cares not for the slaughter of thousands of citizens unborn and unprotected; and the murderers may safely advertise openly in the Sunday papers their disgusting criminal "business."

On January 29 last, speaking before the New York Academy of Medicine, President Cleveland said of this class of criminals: "Within the limits of your professional power and influence you seek to restrain any reproach to criminal malpractice, yet newspapers disgustingly, though covertly, advertise in the way of such crimes and startle their readers with sensational tales of death and misery to which they are directly accessory. I need not suggest such evils are allowed to exist by reason of the insufficiency of our laws or a laxity in their execution. I have intimated that for this condition you are not responsible in a professional sense, but are you sure you are doing all in your power as citizens to remedy the situation."

Today we find this shamelessly hypocritical statement in an editorial of a Chicago journal, which publishes on another page several of the very class of advertisements which Mr. Cleveland has characterized as "disgusting" and criminal: "The President urged upon his hearers the public duties that peculiarly devolved upon them as professional men and as citizens. The warfare against charlatanism, miraculous cures, all sorts of pretenders who prey upon the sick and the afflicted, not to speak of the ever-increasing cases of criminal malpractice, should not only be unceasing but it must largely be directed by the medical profession." "If," said the President, "enactments already in force are neglected or badly executed, you should not forget that it is your privilege and duty to insist upon their vigorous and honest enforcement. If members of your profession were oftener found in our National and State legislative assemblies, ready to advocate reformatory measures you have demonstrated to be necessary and to defend your brotherhood against flippant and sneering charges of impracticability, the prospect of your bestowal upon your fellow-men of the ripened results of your professional labor would be brighter and nearer."

This is undoubtedly truth, and yet it demands large exceptions. Medicine, no less than law, is a jealous mistress and exacts from those upon whom she would confer her highest favors the most undivided affection and submission. It is an arduous profession, but there should be a stage in the doctor's career where he could give up some of his private duties and devote more time to the demands of high citizenship. Congress and the State Legislatures would be greatly bettered by representatives from the medical profession. But whether in office or out he ought still to remember his ordinary obligations to the community in which he lives by attending primaries, conventions and elections and thus do all in his power to advance the cause of honest government.

The editorial closes with the Pecksniffian statement that, "this is what the President chiefly meant and his words may well be pondered by the profession everywhere." Do you see through the thin veil which is meant to hide this man's hypocrisy? Another "great" Chicago daily of the same date notices the President's speech in an editorial three-fourths of a

column in length; but not a word does it say about that part of the speech which says, "Yet newspapers disgustingly, though covertly, advertise in the way of such crimes." This is too vigorous a criticism of an important and, no doubt, highly profitable department of this journal's advertising. Anyone who would take the trouble to examine its columns for a few days will find that it freely lends its aid to its dishonest brethren not only in the form of advertisement and news, but in its editorials also. No doubt it does this for money, but is the secular journal which does this a whit better than the blatant rascal and his remedies which it advertises and commends to its subscribers?

It is not possible to read without a thrill of joy the first recognition of this abominable crime by a layman of Mr. Cleveland's influence, but the heart shrinks from a task compared to which the cleansing of the Augean stables was a school boy's morning task. Is it possible that the medical profession can do nothing in this matter?

Then there are the infallible "pennyroyal" and "oil of tansy" medicine for the purpose of criminally interrupting the function of gestation. From taking the latter with unlawful intent the writer has seen one death and one case of violent poisoning in which the escape from death was very narrow.

In writing the above I am aware that I have only touched the border of the kingdom of quackery. There is the faith curist, the divine healer, the therapist and pathist of every kind and condition. There is the woman who will make you beautiful by plastering certain abominable mixtures upon your face, and the one who would make your bust at least six inches larger. This reminds us of the story of an advertising charlatan in London who declared to the public that he could make long men shorter and short men longer. It was surprising to see the number of long and short clients he accumulated in a short time. Soon, however, after gathering up a good many of Her Majesty's coin of the realm, he suddenly disappeared, leaving a large and sorrowing clientage. A wag hearing of the circumstances, remarked that the mountebank had fulfilled at least half of his contract, for were not the long shorter, a good deal shorter, while, of course the short were shorter than they were before? As to a woman making a bust larger there seem to the writer, for physiologic reasons, to be insurmountable obstacles.

Such, then, is the character of the company to which the honorable medical man is introduced, no matter how modest his announcement, if he allows his name to appear in a newspaper. Surely, it is a company from which he must shrink with loathing and disgust. Beside, what chance would the physician's modest card have to attract the attention of the public in the midst of all this florid mendacity, this filth and criminality, this portraiture, and all the other trappings which aid the professional fraud to catch the dollars of the trusting public?

There are still other reasons why the physician may not advertise as the term is understood by the laity. Suppose he should say to the public that he has spent so many years in a certain university, where he received the foundation for a medical education, that he afterward took his medical degree in its department of medicine and surgery, then, after practicing general medicine ten or twelve years, he went to some large city, where he was a student of Professor Jones,

the world's greatest specialist in a certain class of diseases, and that he was a resident here to practice Professor Jones' specialty? Now, all this would be unobjectionable if it did not appear as an advertisement in the foul company of the secular newspaper medical advertisers; but what good would it do the advertiser? The public never heard of Professor Jones, his name nor portrait never appeared in the papers, therefore his student must be a poor stick. Beside, have they not their own great specialists at their very doors, with a column of testimonials, headed by the rascal's portrait? The attitude of the public toward the medical profession and all things relating to cures is an anomaly.

They seem to have kept pace with all forms of learning except in medicine. Here the grotesque painted and befeathered medicine man is still with us. Here only are miracles worked, and the newspapers give us so many each week that the spirits of the patriarchs of old must blush with envy (if spirits ever blush). In all other departments of human activity the miracle is conspicuous by its absence. No thirsting Moses has in modern times struck the pinnacled rocks of the Bad Lands and caused a stream of pure water to flow therefrom, nor has any modern Jonah taken a summer vacation trip to Europe in the stomach of an accommodating whale, nor does anyone now turn water into wine, though the knight of the white apron has been suspected of turning wine into half water.

How long before the public will learn that the laws of health and disease are as inexorable as those which regulate the seasons and day and night. If your friend and brother, O public! is all but destroyed by the tubercle bacillus, and your family physician, who has been like a father to you, tells you that the grim reaper is near at hand, will you take him to the advertising miracle-working quack who has "never lost a case of consumption," and have his days made uncomfortable by the foolish bombastic rant of this fellow who wants only your money and then have him insult you by telling you that your friend and brother was "not brought to me soon enough."

Why does not the lawyer advertise? He might say, for instance, that he never lost a case in which he had defended a murderer, although he has had hundreds of such cases. How long would a judge permit such a lawyer to practice in his court? Would the public give heed to a lawyer of this kind, except to spit upon and spurn him? Yet the statement is not as absurd as that of the medical quack who advertises to the same purpose, and yet the learned judge is willing to give a signed testimonial, mayhap with his portrait, which Dr. Fraud proudly displays in his next advertisement.

What, O learned and incorruptible judge! has the noisy rascal whose nostrums you thus commend ever done for the cause of humanity? Do you know that he has invariably stolen a common instrument of the medical profession, dressed it in the garb of ancient mysticism, put the mask of miracle upon its face and sent it forth to rob under the pretense of doing good? Be lenient with the man who comes before you charged with getting money under false pretense, for you are accessory to the crime.

Why do not ministers of the gospel advertise? Using the language of the fraudulent medical advertiser they might tell of new and improved ways of saving the soul, discovered by some pious man in cen-

tral Africa or the Fiji Islands. These reverend gentlemen might say that thousands and thousands of happy souls are in paradise today, which were all saved by their methods, and that they can give treatment by mail at \$3 a week. I have before me an advertisement which contains the following, signed by a gentleman who writes "Reverend" as a part of his name. He declares that: "When I entered Dr. Fraud's Institute I had catarrh of the head, throat, stomach and bowels. Under Dr. Fraud's incomparable treatment I got entirely well. I was not only cured of my infirmities, including deafness, but completely reestablished my health." Suppose now that the Rev. Jones used the same methods to get "trade" as Dr. Fraud uses and suppose (which requires some imagination) that the Rev. Jones had converted by a "new method" Dr. Fraud, and made him an honest Christian gentleman. It would be only proper and reciprocal for Dr. Fraud to give the following testimonials: "When I met the Rev. Jones I was a very bad man, I suffered with dry rot of the soul, lack of conscience and the difference between truth and falsehood was not known to me. Indeed, so bad was my case that I had no remembrance of ever having known truth or honor. After remaining in the Rev. Jones' Hallelujah Institute and taking his salvation incantations and regenerating rubbings, I became again a good man and promise to give back as far as possible all that I have got by fraud. I shall advise all persons similarly afflicted to go to Rev. Jones' Institute." If the Rev. Jones is shocked because things sacred to him are thus treated flippantly, let him be told that there are no things in our lives more sacred than truth, honor and charity. How much of any of these virtues is possessed by the fraud whom he is helping to continue in this shameless imposition upon the people.

The above, then, are my reasons for not putting any kind of advertisements in the newspapers, and I think they are also the reasons of my professional associates. When will our lawmakers compel those debased men and women who so lightly trifle with valuable human lives, to give satisfactory proof of the truth of their claims or to be at once suppressed? Honorable members of the medical profession are every day doing deeds, which, when compared to the silly gabble of the blatant fraud, shine as the electric arc light to the penny rush. They are forming ties which bind them to beautiful, intelligent and loving households, who give to them the priceless honor of gratitude and confidence which no other man receives, and in no other profession or calling does a member receive the ungrudging honor of his fellows for meritorious deeds more than in the medical profession.

MISCARRIAGE PRODUCED BY GUNSHOT WOUND PENETRATING THE UTERUS.

BY J. A. BAUGHMAN, M.D.

NEOGA, ILL.

Mrs. J. M., living near this place, seven months advanced in pregnancy, while descending a flight of steps holding a child in one arm and a loaded rifle in the opposite hand, dropped the weapon in such a manner as to discharge it, the ball entering her right thigh back of and a little below the trochanter major. It ranged upward through the obturator foramen, through the broad ligament into the uterus and amniotic sac, liberating the fluid contents thereof

through the os uteri. I was hastily summoned, and went prepared to make an abdominal incision if necessary.

Although American born, she belonged to the race of the great unwashed, and my first act was to borrow from a kind neighbor some linen, of the sort akin to godliness, enough to dress the patient and her bed, after I had administered a prescription of *sapo domesticus* and *aqua communis* applied externally.

I examined the vagina and bladder carefully for injuries, but found none. I then delivered the dead fetus and the placenta in the course of an hour, and controlled a postpartum hemorrhage of considerable severity. With my hand in the uterus I could feel the point of entrance of the bullet, but could find no exit, in fact I do not know what became of the ball. I ordered a vaginal douche and kept myself in readiness to do a laparotomy should troublesome symptoms arise. Her recovery was very rapid and uneventful, in fifteen days the patient was again delving in her household duties, renouncing the doctrine of immersion, happy in having forestalled Malthus' precept of not marrying without a fair prospect of supporting a family.

If some of our city gentry who are engaged in checking over-population are on the *qui vive* for something new I advise them to try a gun.

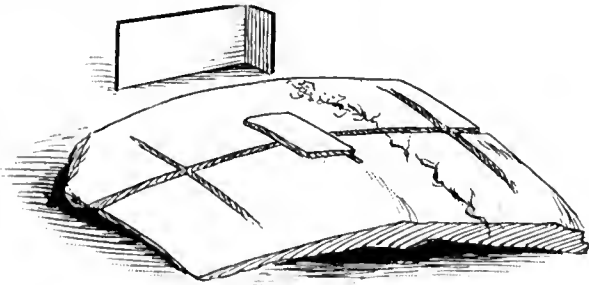
A SIMPLE METHOD OF ATTACHING THE CALVARIUM AFTER POSTMORTEM.

BY H. A. SIFTON, M.D.

MILWAUKEE, WIS.

Every one who has done any number of autopsies has been annoyed by the displacement of the skull cap after the work is finished. To remedy this a number of methods have been devised to retain it in place, such as cutting the bone at an angle, sewing the temporal fascia, but none, so far as I know, has proven satisfactory.

This led me to devise the following:



Just before ready to remove the calvarium, mark the skull with the saw on each side at right angles to the circular incision. When ready to replace the skull cap incise it to the depth of half an inch at the point marked, then incise the skull (on the proximal side) at the point marked to the same depth. When the calvarium is replaced this makes a slit the width of the saw half on each side of the circular incision. Now insert into this slit a small piece of sheet copper with one end turned over for a head. If the wedge of copper is thickened on the edges by a few strokes of the hammer, it will hold so much the better. The copper of the wedge should be about as thick as the saw plate, and can be cut with a scissors. It holds the skull cap in perfect position and can be applied in half a minute.

SURGERY ONE HUNDRED YEARS AGO.

AN HISTORICAL STUDY

BY DR. GEORGE FISCHER.

DEDICATED TO THE GERMAN SURGICAL ASSOCIATION.

TRANSLATED FOR THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

BY CARL H. VON KLEIN, A.M., M.D.

CHAPTER I.—DOCTOR AND BARBER.

(Continued from page 362.)

Barbers practiced side by side with physicians. A characteristic, in the broadest sense of the word, of the eighteenth century may be expressed: Medicine and surgery were sharply separated and German surgery lay almost entirely in the hands of the barbers. A cursory glance into the past of German surgery shows that in spite of the great fondness of Germans for war and the chase in the twelfth and thirteenth centuries, it was little valued and, at times, even left to the butchers (carnifices), who opened the corpses of the great and embalmed them. If one of the nobility had been harmed by a surgeon when bleeding him, the surgeon was sentenced to a fine of 160 scudi, and in the case of death the law gave him into the hands of the relatives of the deceased, who could do with him as they pleased. The contempt shown for every phase of surgical work was particularly due to the papal Councils, which with the pretext, "*ecclesia abhorret a sanguine*," forbade the monks in the monasteries to perform surgical operations, although they had hitherto practiced surgery. Servants and tonsors were employed for these operations and the result was that they gradually became independent surgeons, and began to travel through Germany as itinerant rupture-surgeons and lithotomists. After the church convention in Rouen (1092) the monks were not permitted to wear a beard. Five hundred years afterward, Sigismund, Archbishop of Magdeburg, made regular trips *contra barbam*, and one time, when he gave an elaborate banquet in Mansfield, in 1564, he ordered all the beards, except the mustaches, of those present to be cut off; similar orders he gave in Braunschweig, Wolfenbüttel and Halle. After the accession of the youthful kings of France, Louis XIII. and Louis XIV., a beardless chin was considered an especial ornament. Consequently someone was needed to dress and shave the beards, which had their fashion, just as the cut of the clothes and the shape of the hats. Thus originated the barber. Gradually he, being a good follower of the church, was permitted to have a barber shop, journeymen and apprentices, and to practice surgery on a small scale, that is, bleeding, bandaging wounds and ulcers, etc. His calling was thought a very inferior one, for he, like the bath-keeper, was not recognized as a craftsman, and, like the shepherds and hangmen, was not considered of good repute. In the certificates of birth of the mechanics it was very explicitly stated that "bearer is born in wedlock of honest parents, not descended from serfs nor related to barbers or bath-keepers, not vandals, but of true German nationality."

The cause of this contempt lay in the fact that guilds and fraternities guarded their privileges very strictly, and barbers, and more especially bath-keepers, were not considered eligible to membership. This disbarment, resting upon groundless prejudice, could only be removed by law. The Emperor Wenzel took the first step in this direction in the year 1406, when he was rescued from captivity in Prague by the daughter of a bath-keeper and out of gratitude made her his mistress, declared that bath-keepers and bar-

bers were respectable. But Wenzel was an ex-Emperor, consequently his charter could carry no rights. As early as 1538, in the March of Brandenburg, the bath-keepers, after a required examination, were permitted to bandage and cure the wounds, and the barbers, that is, "those careful masters of the barber and surgical trade," were promised protection from the quack doctors; but it was not until 1548 that the imperial diet (Reichstag) in Augsburg declared them both eligible to the guilds. Their masterpiece (meisterstück) was the shapening of knives and scissors. Now the children of linen weavers, shepherds, barbers and so-forth, if they were legitimately born and had lived honestly, were received by all artisans without question. In the March of Brandenburg special guilds were formed for barbers and bath-keepers, having their own constitutions. In 1686, Emperor Leopold I. declared their profession an art, and placed it above the apothecary's in rank and authority, and changed the masterpiece (meisterstück) to the making of salves and plasters. As the beard gave rise to the barbers, so for her bath-keepers and her hospitals Germany has to thank the Crusades in the eleventh century and the leprosy which they introduced. The pilgrimage to the holy sepulcher gave occasion for the establishment of hospitals for the care of the sick pilgrims, and it is said that the first one was erected about the end of the fourth century. During the crusades several brotherhoods were founded which assumed the care and protection of pilgrims and attended the sick soldiers. Among the most noted of these was the Order of the Knights of St. John, the Knight Templars and the German Order. On their return home various princes brought with them certain members of these orders and commissioned them to erect infirmaries in their own states. Thus, in 1159, Albert I. brought some of the Knights of St. John to his margraviate of Brandenburg, where they established hospitals for the care of the lepers, who, after the return of the crusaders, became very numerous in Europe (in France in 1225 there were 2,000 hospitals for lepers, "Leproséries"), each one of which was endowed with 100 sols by Louis VIII. His son, Louis the Good, founded in 1260 a special hospital for the Egyptian blind. Soon the number of hospitals and cloisters was insufficient for the lepers and bath-houses were built, and the necessary bath-keepers were engaged, in order to prevent the spread of that disgusting skin disease through the general neglect of cleanliness among the upper and lower classes. The greater part of surgery gradually fell into the hands of barbers, but operations were generally left to the itinerant mountebanks. The charter of the bath-keeper extended only to bathing and cupping; later on, where he also undertook bleeding, the treatment must be done in their own homes, for they were generally not allowed to enter the houses of the patients. Subsequently bathing was much neglected and finally discontinued entirely and the bath-keepers took to practicing surgery, but much later than the barbers, not until the middle of the eighteenth century. They were permitted to do so publicly in several countries after having passed the examination required of the barbers. In Prussia, however, they were not allowed to undertake any surgical cases, except the treatment of wounds and chronic diseases.

In order to see what was expected of an honorable and educated barber and bather of the 18th century, read the writings of "the faithful Eckardt, the daring

surgeon" of 1698. After many years of apprenticeship, they must visit large hospitals and journey to noted surgeons, then serve as field or ship's surgeons. A knowledge of Latin and modern languages as well as botany was important. Before all he must study anatomy, for "without it surgery is nothing," and he must make himself known to industrious scholars, 'not drain the beer glass.' The lack of cadavers was supplied by the carcasses of animals, since if doctors did not shrink from studying them, then "an impudent barber's or bather's apt journeymen would not consider it beneath his dignity to follow them." For surgery, the books of Fabriz von Hilden, Paré, Würtz and Scultet were recommended. Among the sixteen different virtues of a barber, which the faithful Eckardt enumerates, the fear of God stands first. "He should be careful, prudent, temperate and ready to use both hands with equal dexterity, prodigal in nothing since foresight is one of the most beautiful adornments of a surgeon. No idler can accomplish anything, for the science of surgery demands the whole of a man. . . . By discreet encouragement he will awaken confidence in those disheartened. . . . A conscientious barber will not bleed a patient in order to get two or three groschen, unconcerned as to whether it is advisable or not. But many are such desperately bad knaves, that, if they are not paid promptly they will do the patient great injury so that they must serve him still further. . . . He should not boast of his cures at the beer rooms. He must not handle his patient roughly as a pig handles a beggar's sock, nor tyrannically abuse him when ill-tempered. He must discriminate between the gentler and coarser natures; he must ingratiate himself with men as he would with a dog. . . . He should not be so hard on his patients, that they would prefer to see the hangman rather than the barber. . . . He must consult the physicians and obediently follow their instructions. . . . His apparel is not to be adorned with ribbons, cords and laces, because cuffs and ruching are a great hindrance in bleeding. . . . He is not to ask twelve thalers, if he has earned but two. . . . Arrogance seems most prevalent among barbers, as a common saying would imply: 'Barbers are proud animals.' It is astonishing to see what an amount of conceit is fostered by the master and his journeyman, making themselves very conspicuous on the streets and by-ways, the master with his projecting punch and solemn step as if the world were too narrow for him. . . . He must not cast envious glances at a successful co-worker, not take away a patient from another, but faithfully assist him when attending serious cases. I am surprised to see the great hatred and envy which the barbers entertain for the bath-keeper, and even the dirty-faced apprentices show among each other the beginnings of this developing hatred. . . . Not blindly is he to operate; my good friend, remember it is human flesh, not oxen or swine, and the skin is of priceless value. In serious cases he is to consult physicians and other masters. He, who has only learned shaving and yet wishes to be a surgeon, is startled as if plunged into hot water when called upon to attend a case: another stands as if he were fastened to the spot." Thus writes Eckardt.

The German surgeon of the 18th century or more strictly speaking the barber, for the path to practical surgery lay almost without exception through the barber shop, was in general exceedingly ignorant and unskilled. Nor is this so surprising, when his unhappy

education was no different from that of any workman. If there was a boy among the lower classes, destined to become a barber, he was apprenticed to a barber-surgeon when he had scarcely learned to read and write German in the public schools and had been confirmed. The parents pay a fee of 50 thalers to a demonstrator; 75 thalers yearly for board and lodging. Sometimes the district physician examined him to ascertain if he could write legibly and read Latin; if he could not he was refused. The Archbishop of Würzburg demanded that the young applicants be well behaved, with adequate intellectual faculties and bodily strength, with gentle heart, that they could read and write, be well instructed in Latin, and possess enough means for the purchase of books and instruments (1787). The apprentice learned to shave and then went from house to house, the whole day; the little time remaining to him, he had to sharpen his knives, spread plasters and pick lint, besides take care of the children and use the same light as the maid, for it would have been disrespectful to make use of the light of his principal's wife. He attended to all menial labor inside and out, and was in general the servant of the master and his journeymen. An advertisement gives the following description of his exterior appearance:

"Last Friday morning, the 7th of January, Christian Heinrich Springer, an apprentice of the surgeon and bath-keeper Mr. Buße living in Jurusalem Street, secretly ran away, out of spite; he is 17 years old, fairly good looking, has a pointed nose, light brown hair, wears a bran new pearl-colored piquesche, with dark yellow buttons, a blue coat with red lining, blue vest, Manchester trousers and has on a new pair of boots; he who can furnish any information of the whereabouts of the rascal, will be rewarded." (*Spencersche Zeitung*, January 11th, 1774). After a time, the apprentice was taken to visit a patient and then the arts of bleeding, cupping, of giving an enema, of applying leeches, and sometimes of extracting teeth, were practically taught him. Since the master himself, as a rule, understood nothing of the subjects, he either gave no instruction at all in anatomy, physiology or surgery, although pledged to do so, or else his teachings were nonsense. The law passed in Prussia in 1734 required three years' apprenticeship for barbers, which time having been served he presented his master with the usual set of silver instruments; had then to be thankful, "that such a poor creation of God had even learned to shave a beard à la mode or spread a plaster." Before the apprenticeship was ended, however, an examination was necessary, but often the whole guild was too stupid, or too lazy to prepare one. Whoever the presiding principal of the establishment was, a miller, tailor or any other workman, signed the indenture of the apprentice, whereupon the apprentice became a journeyman. Now he went on his travels, once more going through the whole course of shaving. The journeyman lived at the home of his master and was not allowed to marry. When he had served some sixty or more customers, and now and then bled some one or bandaged a patient's wounds for his master, he received as wages his dinners and six or at the most eight good groschen a week. This paltry sum scarcely sufficed for even his most immediate wants; therefore he began to dabble in his own account and frequently developed into a careless braggart. Study was out of the question, because attendance at the lectures in the larger cities was not possible after their fatiguing day's

work, the want of books for the purchase of which money was lacking, and with the disquiet prevailing in the house, and if a few of them very diligently began to study, they did themselves more harm than good because of their deficient education. Much of that which they studied they misunderstood; they crammed their brain with disconnected ideas and they became intolerable, arrogant gossips. After six or seven years a journeyman could be become a master. To attain this position he had to apply to a district physician, collegium medicum or a faculty, present his indenture and his certificate of time served as journeyman, and then pass an examination. The Prussian regency preferred an application from a city man to that of a peasant; then if a surgeon wished to settle in a large city, he must pass an examination in anatomy at the anatomical amphitheater of Berlin and take a course in operations. If he established himself in a village, no course of study was required, only an examination before the physician of the district.

The barbers and bath-keepers of Prussia, the first country to recognize the importance of regulating the practice of medicine, were under the control of the Collegium Medicum. This was founded Nov. 12, 1685, by the great Kurprince Frederick William, who, at the same time introduced the first medical code in Germany. The Collegium Medicum had the jurisdiction over all the health officers.

In 1724, under Frederick William's successor, the Kurprince Frederick III., the college attained its greatest activity and was made the Ober. Colleg. Med. (chief college), there being one such in each province. Its faculty consisted of a Minister of State, who was the principal, the body and court physicians, the district physician and the older practitioners in Berlin, the body surgeon and surgeon general, the court apothecary and three surgeons and two apothecaries. Beside this chief college and the provincial colleges, there had been since 1719 a so-called Collegium Sanitatis, founded on account of the plague that had broken out in Hungary, which was at first called pest collegium, because it was obliged to devise measures for protection against the plague, contagious diseases and cattle plague. In 1762, there was such a sanitary college in every province.

The greatest progress in the German medical system was due to the famous edict of Sept. 27, 1725, a memorial of King Frederick William I., perfected by Eller and Stahl, which decreed everything possible at that time and contained very appropriate precepts, which did not undergo a radical revision until a hundred years afterward. Similar medical institutions soon sprang up in various German cities, in Braunschweig in 1747, in Dresden in 1768 and in Hildesheim in 1783. The above-mentioned edict provided that the barber and bath-keeper "should lead a righteous, temperate, retired and sober life, in order to be at their best when their services are required, be ever ready in the day time or at night to assist their neighbors intelligently with their skill and scientific knowledge . . . and during the time of a plague and death, to be ever ready to respond when called to the hospitals." Similar in substance was the ordinance by Marie Theresa (1770): "Surgeons and bath-keepers must live in a moderate, honorable and God-fearing way, exercise as much diligence and precaution as possible, be indefatigable day or night and must willingly enter the hospitals in time of plague and death.

For their pains they are to receive a reasonable recompense, etc."

The masters attended to the mechanical part of their work and prepared all external remedies themselves when they were not obliged to procure them from an apothecary. Beside this they dabbled in medicine without permission, knowing nothing at all of the science. Those who were caught in such dishonorable business were fined twenty thalers or received corporal punishment, and if they led a dissolute life, or in case of drunkenness, their concession could be taken away from them. In case the barber's trade was not lucrative, he endeavored to fill other positions beside; for instance, it is said that Henckel's father was surgeon, municipal judge and postmaster at the same time. Barbers were so envious of each other, that one of them would begrudge a piece of bread in the hands of another, as the following saying of the time verifies: "A potter is hostile toward a potter, a singer to every singer." Purmann said in his "Lorbeerkranz" (paper) that in order to obtain the patrons of some of their colleagues they practice foul means and tricks along with their trade.

The bath-keepers, however, did not rank with the barbers in Prussia, where the former were subject to a heavy penalty for calling themselves surgeons and where they were not allowed to use more than four basins; not until the year 1779 were the bath-keepers united with the surgeons and at the same time the bath-keeper's guild was incorporated with the that of the barbers.

That young men of ability were not desirous of entering a class of such inferior rank as the barber-surgeons, was not surprising. As late as 1790, good surgeons were rare in Germany. The ratio was everywhere one skilful surgeon to ten who were barbers, skilled only in shaving and cupping. Before the masses they tried to cover their gross ignorance, but the poor unfortunates who fell victims to them were made more miserable than they had been. Once Siebold was called upon to examine the country surgeons of a prominent state in practical surgery and was not a little astonished to find that there was scarcely one of fifty who knew the first principles for the cure of wounds. The mechanical part of the work was the remunerative one, therefore the most important; the scientific was only incidental. Surgeons were compelled to do shaving, which in reality belonged to the duties of the hair-dresser; for aside from the few privileges granted to body and court surgeons, also to the surgeons of the royal hospitals by the order of the cabinet, no surgeon, however skilled in his art, was allowed to practice the same unless he was the head of a barber shop and bath-house, kept assistants and apprentices and belonged to the barber-guild. In case of the demise of a surgeon in Austria, his widow had to procure a registered pharmacist within six months, or she had to marry one in order to preserve the license for her apothecary (1773). Intelligent men complained, at the beginning of the century as well as at the end, of the melancholy fact that German surgeons were educated in the barber shops, lamenting bitterly that surgery should be associated with the barber trade. However, the union remained; no one wished to stir up a wasp's nest. One needs only to read the counsels by Plenck how to educate useful surgeons for the state, to see that mere talking could not better the condition of affairs: for instance, it was said that the apprentice

was to be 16 years old, must possess genius and understand Latin, and above all things study anatomy and physiology; but for the latter, only diligence and a good memory are necessary and little genius, and can be acquired by even a dunce. In the eighteenth century there was no one to undertake a thorough revision and nothing to hope from the Reichstag under the political conditions then existing. Among the conditions was the fact that the social position of surgeons was necessarily on the lowest round of the ladder. In the middle of the century, the practice of surgery was not considered a business for an honorable man, and barbers' and apothecaries' journeymen were not permitted to carry a sword. A surgeon was not admitted into good society nor tolerated in a circle of physicians. If his treatment resulted unfavorably, he was pursued by hatred and animosity.

C. C. von Siebold bitterly deplored the position of surgeons. He was very enthusiastic when he began practicing, had had considerable experience in surgery during the Seven Years War and in France, but nevertheless had to contend with great difficulties before he could enter society, with his profession. His good will and his high intentions were scorned and frustrated. Beside this the peasantry were greatly prejudiced against operations. Siebold relates that the operation for cancer of the lip was so frightful to the ordinary man that he refused to submit to it, and another man with hydrocele endured two punctures every year for twenty-eight years, rather than permit an operation for a radical cure. Soon after extirpating a cancer from the breast of a woman, Siebold discovered that a new one had formed in the armpit, necessitating another operation: so to avoid a sensation, and that the public might not smirch his reputation, he removed his patient to another town, where he successfully performed the operation. The physician boasted of his own education and disdainfully looked down upon the surgeon and surgery in general, a very natural consequence. Even Zimmermann considered the relation of surgery to medicine the same as that of geometry to higher physics. There certainly were good reasons for watching the barber, considering the great dangers to which the public were exposed when, after years of wandering about plying his razor, he suddenly as a master undertakes to treat fractures, luxations, herniæ and maternity cases! Therefore the district physician had to look after the books and instruments used by the surgeon, and had to see that the pupils were properly instructed by him, and not detained from their studies by agricultural labor or domestic duties. In this control there was one evil so great that every contention of rank between physicians and surgeons appears ridiculous and absurd; the physician understood little or nothing of surgery. While at the university the physician was obliged to content himself with theoretic lectures, and he seldom or never saw surgical patients and never laid a hand on one. The very famous physician, G. E. Stahl, wrote an Introduction to Surgery which is not read today, for in it, among other things, he thought little of the difficulties connected with trephining and bronchotomy, but was more concerned about the healing of a wound in the trachea, and agreed with the surgeons as to castration for rupture. Even at the end of the century there were comparatively few physicians in Europe who could correctly diagnose important surgical cases. The dentists of Germany were just as poorly off. A. G. Richter said:

"Dentist is a despicable name in most German ears, and dentistry with us is a profession which demands nothing more than the skill to draw a tooth: one is almost ashamed to concern himself with it, and he the more willingly leaves it to the unskilful and ignorant, the more generally people neglect the proper care for the preservation of the teeth."

Now, imagine a consultation between physician and surgeon. Under penalty of losing his practice, the state ordered the latter to call in a physician in all complicated surgical cases. In some towns, they were obliged to notify the authorities when assuming charge of a serious case, so that they could caution the patient to seek advice from greater men. In a consultation the physician demanded the control of the case in question and reserved for himself the right to judge of it and prescribe the surgical remedies required. As a Doctor of Medicine he claimed a higher rank, and he did not even consider a surgeon who had obtained his doctorate as his equal. His dignity would have been lowered had a surgeon had the last word; in general, he would not consult with the surgeon but simply expected his own directions to be followed. Many obeyed the physician in order not to offend him. A qualified surgeon finally acted as his judgment dictated, and if called in first to a serious case, revenged himself by not summoning a physician until he had applied the bandages. The many disputes resulted in disagreeable scenes, and if neither party gave up, the matter ended in a lawsuit.

An essay by Stahl on "The Duties of a Physician when Attending Surgical Cases," strengthened the physicians in their determination to oppress the surgeon as much as possible. If so noted a man did not encourage the surgeon, but subjected him almost completely to the commands of the physicians, the difficulties with which surgeons had to wrestle to raise their standing can well be imagined. The treatment of internal diseases was allowed the licensed physician, while the surgeon was permitted to practice surgery and obstetrics, which in Prussia were connected with each other till 1791. If a physician wished to practice surgery or any part of it, as, for instance, couching for a cataract, he must get a permit from the collegium medicum. In the country, on account of the scarcity of physicians, a separation of the two sciences could not be very strictly maintained: there bath-keepers and barbers treated everything that came their way. When no physician had settled in a village or town, the surgeon also treated internal diseases, but with the restriction that he was to prescribe no strong purgatives or emetics, opiates or narcotics, etc.; in syphilis he was not to employ a salivating treatment, and in high fevers not to do any bleeding. Every district had its special surgeon, to whom several villages were assigned, where he alone had the right to keep journeymen and apprentices, and to do the shaving and cupping. These official surgeons were expected to possess sufficient skill to attend to all operations, as tracheotomy, trephining, herniotomy, when they could not be postponed. The restriction of freedom in the trades was also extended to the Prussian capitals, where only twenty German and six French surgeons were allowed to practice (1725), beside the court and private surgeons. In lawsuits, surgeons were also summoned. The six city surgeons of Berlin, under the direction of the city physician, had to examine the prostitutes, treat the poor, and in case of sudden casualties to render immediate assis-

tance; at first, without any recompense, but later, in 1780, for a salary of 100 thalers.

Until the year 1800 every German surgeon carried on a medico-legal business, but after surgery was separated from medical law, had to undergo a special examination. On account of the different degrees of education among the surgeons they were divided into classes, wherein every petty state being distinguished, exercised a sovereign right different from its neighbor. The Bishop of Hildesheim had three divisions of surgeons: 1. Those who practiced all branches of surgery, called official surgeons (Amtschirurgen). 2. Those who treated only fractures, luxations, wounds, swellings, inflammations and so forth. 3. Those who shaved, cupped and bled. The promotion into a higher class depended upon a new examination (1782). The earldom of Lippe possessed: 1. The medical surgeons, who were permitted the entire practice of surgery, with the condition that in important operations a physician must be summoned; they could also offer immediate help for internal diseases. 2. The licensed surgeons or barbers, who attended only to the surgical diseases, for which they had been especially examined. The examination was conducted by the city physician, who should "examine so critically, with a gentle manner, not forbidding nor peevish" (1789). In Austria in 1805 the surgeons were classified into: 1. Doctors of surgery—an Austrian creation to which we will refer later—they were required to show knowledge of general medicine, just as the doctors of medicine were required to have a knowledge of general surgery. They had the same rights and the same duties. 2. Medico-surgeons, who could practice surgery in all its phases and were permitted a restricted practice of medicine, but obliged to summon a physician when performing important operations. 3. The bath-keepers for inferior surgery. Klysterizing, except in surgical cases, was expressly forbidden the Austrian surgeon and was the business of the apothecaries. In order to break up the dispute between barbers and the bath-keepers, both were usually called surgeons since the year 1773 and all indentures were worded the same way. With the physicians and apothecaries they were placed at the assemblies in the first class for their yearly requisitions, but were put on the fourth class list for their payment of war taxes, which in their case amounted to 12 guilders out of the 100 guilders. Considering their inferior social position, the income of surgeons was very good, if we compare the surgical tax of that time with that of eighty years afterward, for the Prussian tax of the year 1815 was still in force with the exception of a few changes in the 1876 tax.

The following are some of the fees allowed (Mgr.= about 23 cents U. S.; Thlr.=about 70 cents U. S.):

| | Lippe, 1780. | Prussia, 1815. |
|--|-----------------|--------------------------------------|
| For treating a plain wound one week (1 bandage) | 12-18 mgr. | 1 ² -2 ³ thlr. |
| For treating a complicated wound one week (1 bandage) | 21 mgr.-1 thlr. | 1 ² -1 ³ " |
| Trepanning | 2 " | 8 ¹ -12 " |
| Setting of a dislocation of the upper part of the arm | 4 " | 3 - 6 " |
| Setting of a dislocated thigh | 8 " | 10 -20 " |
| Treatment of a plain fracture of the arm or foot of a young person (setting) | 4 " | 1 - 3 " |
| Treatment of a plain fracture of the arm or foot of an old person | 5 " | 1 - 3 ¹ " |
| Operation of a cataract | 8 " | 8 -15 " |
| Operation of a cataract on each eye | 12 " | 12 -22 ¹ / ₂ " |
| Operating a fistula on lachrymal gland | 6-10 " | 6 -10 " |
| Operating and treating cancer of the breast | 10 " | 8 -15 " |
| Operation and treatment of an ulcer on the seat | 1-10 " | 5 -10 " |
| Operating a polyp in the nose | 4-6 " | 6 -10 " |
| Operation and treatment of a cancer of testicle | 8 " | 10 -20 " |
| Operating and treating of aneurysm | 8 " | 6 -12 " |

| | Lippe. | Prussia. |
|---|-------------|---------------------|
| | 15 Thlr. | 8 -15 Thlr. |
| Amputating the thigh and treating the same (upper part of arm and upper of thigh) . . . | 10 | 10 -20 |
| Amputating the arm and treating the same (forearm and lower part of thigh) . . . | 1 | 2 - 4 |
| Amputation of fingers and toes with treatment . . . | 15 | 20 -50 |
| Lithotomy of adults . . . | 8 | 20 -50 |
| Lithotomy of children . . . | 6 | 10 -20 |
| Herniotomy of adults . . . | 4 | 10 -20 |
| Herniotomy of children . . . | 1-3 | 3 - 5 |
| Price for a cramped fracture . . . | 4 | 5 -10 |
| Operating and treating paracentesis of the chest . . . | 21 mgr. | 2 - 4 |
| Operation of phimosia . . . | 5 thlr. | 6 -12 |
| Tracheotomy . . . | 1 | 1 $\frac{1}{2}$ - 1 |
| Setacene . . . | 6 mgr. | 2 $\frac{1}{2}$ - 1 |
| Enema . . . | 12 | 2 $\frac{1}{2}$ - 1 |
| Tobacco enema . . . | 24 | 1 - 2 |
| Catheterismus (douche) for men . . . | 18 | 1 $\frac{1}{2}$ - 1 |
| Catheterismus (douche) for women . . . | | |
| Extracting a tooth . . . | 3 mgr. | 1 $\frac{1}{2}$ - 2 |
| Bleeding . . . | 4 | 1 $\frac{1}{2}$ - 2 |
| Putting on leeches (which are thrown in) . . . | 2 | 1 - 2 |
| Putting on leeches (which are paid for) . . . | 1 | |
| | Repetitions | half price. |

As a further illustration, a comparison of prices of the necessities of life of that time (during the war years of 1740-65) and today will serve, which stand at a ratio of 1 to 4 (One kreuzer equals 1-10 cent United States, florin equals 25 cents United States):

| | 1740-65. | 1872. |
|----------------------------|------------|------------|
| 1 pound beef . . . | 4 kr. | 19 kr. |
| 1 pound carp . . . | 7 " | 22 " |
| 1 pound codfish . . . | 5 " | 14 " |
| 1 sheep . . . | 1 fl. 40 " | 8 fl. 40 " |
| 1 calf . . . | 1 " 30 " | 10 " 30 " |
| 1 pound of rice . . . | 7 " | 10 " |
| 1 pound of raisins . . . | 7 " | 28 " |
| A quantity of barley . . . | 5 " 0 " | 14 " 0 " |
| 1 glassful of brandy . . . | 20 " | 40 " |
| Total . . . | 8 " 58 " | 35 " 23 " |

Nothing worked more injury to the art of healing, or laid a greater obstacle in the way of the development of German science, than the separation of surgery from medicine. This was unknown to the Greeks and Romans, and if the ancients did divide the science of medicine into dietetics, medicine and surgery, they had no such separation in mind. One person carried on the three. The separation existed since the time of the council, which, as has been said heretofore, forbade the clergy to perform any bloody operations. Various causes helped to maintain the separation. Among them were the continued oppression of the Roman hierarchy, the papal decrees, which in consequence of the contempt for surgical work, formerly separated medicine and surgery. For example, the University of Paris refused to admit a student who had not foresworn the study of surgery; and, furthermore, the denunciation of the study of anatomy by the church retarded the progress of surgery. Each profession was considered so difficult that but a few could at the same time master and practice the two, and many of the city physicians thought the study of surgery too burdensome and disgusting. But the main reason was that the physicians had no desire to be associated with the surgeons, whose station in life was so little respected. So it very seldom happened in Germany that a physician was also a surgeon, and it was an extremely difficult matter to eradicate the deep-seated customs. The physicians watched with Argus eyes all the efforts made in that direction.

When Mederer, in 1774, was appointed professor of surgery in Freiburg im Breisgau, he delivered an initial address on the necessity of combining medicine and surgery. In consequence he was persecuted by the public: the physicians stirred up the medical students and surgeons against him: they threatened to assault his house and to abuse him during the lectures. He nevertheless clung to his assertion and did all that he could to uproot this prejudice. When, in 1796,

twenty-two years later, he took his departure from his pupils, he referred to the above incident in his last lecture. The students serenaded him at night and sent a deputation to beg pardon for the affair. Mederer thanked them and once more assured them that the time would come when both sciences would be united. He himself would not see the day, but would die unconcerned, in as much as the new Constitution of France contained the fundamental principle to combine medicine and surgery, and the Royal Sanitary Commission of Vienna unanimously resolved in favor of their union. The subject once opened became the burning question of the day and prominent men urged the connection.

The association of the two sciences was indeed close and their boundaries entirely undefined. History showed that the healing art, when separated, always suffered a decline and all classical scholars of earlier times were arrayed in favor of the union. It was desired that no other difference except the practice of his special profession might exist between the physician and higher surgeon, and that the former ought to know surgery theoretically and the latter the principles of medicine. Indeed, in country practice and in war it was not possible to maintain such a separation. A. G. Richter repeatedly remarked that no one could be a good surgeon who was not a physician at the same time.

As time passed on, this prejudice among the physicians began to wane, because men like Richter, Siebold, Mursinna, Loder and others in person set an example, showing the possibility of the combination. In 1797 the Electoral Academy of Erfurt called for a prize essay on the subject: "Is it necessary and possible to combine medicine and surgery theoretically as well as practically?" Of the fourteen papers submitted twelve decided in favor of the union, one against it and one was doubtful. But the wise men of Erfurt were still so set in their prejudices that they awarded the prize of twenty ducats to the only one who had spoken against the question. This one was the district physician of Hanover, J. H. Jugler, whose reasons for the most part would scarcely stand a test, and a portion of them were truly absurd. He deemed it slavery if men like Werlhoff, Frank Zimmermann and Wichmann were to perform bleeding, apply leeches and to apply a seton; not even the country doctor had time to attend to these when an epidemic raged. It would be cruel to take the bread of the bath-keeper, and quite unheard of to demand that all resident surgeons should first study medicine and the physicians should learn humble surgery. Moreover, he maintained that there was a great lack of institutions where young men could be practically trained in both departments, and other like arguments.

The suggestions that were made to elevate surgery were of little use, because they forgot to uproot the evil. The request was made that apprentices be excused from playing nurse and doing the work of a common laborer, and that the journeymen should receive stipends to further their scientific education, yet the instruction imparted would be of little avail, as they had had no school training and no education, and many scarcely understood their mother tongue. It was demanded that even the shops of barbers who died should be bought by the prince and he in turn should sell or rent it to a hairdresser who had proven his ability to shave a beard.

The great step toward improvement lay in the abolishment of the guilds and fraternities, wherein Vienna, in 1783, set the good example. There they abolished the fraternity of the surgeons and declared that shaving was the business of the hairdresser. The journeymen continued for a while to live from the customers of their masters, but attended the surgical lectures until they received a position as surgeon. Not until the beginning of the nineteenth century did the rest of Germany catch the spirit of this new movement. They now demanded that a person be both physician and surgeon. In Bavaria the corporations of the bath-keeper and surgeon were abolished in 1804 and no one was permitted to practice surgery without having studied medicine (1808). In Prussia the rules established in 1786 regarding the settlement of physicians and surgeons were annulled in 1808, so that they could establish themselves wherever they pleased and so enjoy their freedom of trade. In the year 1811 the barber license was no longer essential for the practice of surgery; shaving of the head was entirely separated from the practice of surgery and open to everybody; the privileges of the barber were abolished and to pursue the barber trade only a license was needed.

(To be continued.)

INFANT MORTALITY DURING LABOR, AND ITS PREVENTION.

BY Z. LINCOLN WHITMIRE, M.L., M.D.

URBANA, ILL.

(Concluded from page 357.)

Cord around some part of the child.—When such a case occurs the hand should be placed in the uterus and the loops of the cord drawn down and slipped over the part encircled. When this is done delivery may proceed normally.

Knots in the cord.—This is of rare occurrence. The knots are made early in gestation, as a rule, the fetus then being small enough to pass through the loops of the cord. In such cases the child is usually dead before the end of gestation, and the first indication that trouble exists is the occurrence of premature labor. If the knots occur later and are not tight enough to retard circulation, an early diagnosis is almost impossible. As soon as the uterus begins to expel the child the knots tighten, circulation is checked and a stillbirth is inevitable. If the physician can detect by the color of the presenting part that the circulation is being interfered with he may (in very rare instances) be able to deliver with sufficient promptness to save the child.

Prolapse of the cord occurs fully as often as any other complication that involves the cord. It is usually the result of a relaxed condition of the uterine walls, heavy cord and an unusual amount of motion on the part of the child, and after the membrane ruptures it is very easily diagnosed. Before the membrane ruptures it may be detected between pains. When such a state of affairs is present the child's life may be lost by the cord being compressed between the presenting part and the walls of the passage, which it is the duty of the physician to prevent. A case of prolapse of the cord may be handled in one of the following ways: 1. The cord may be pushed back and held there, if necessary, while labor progresses normally. 2. The child may be delivered as rapidly as possible, paying little attention to the cord. If the first

plan is adopted it will be found possible in some cases to replace the cord so that it will remain throughout the delivery, though this is rare. It is the rule that the easier the cord is replaced, the less likely it is to remain there. Sometimes it can be held there with the fingers, but the best plan is to tie it to a catheter and push it back to its proper place, where it may be held till delivery is complete. However, even that will be found to be impossible in some cases and the second plan will have to be adopted. My experience has been that the greater number of living children may be secured in these cases by delivering as rapidly as possible, using forceps if necessary, and paying no attention to the cord except to use it as an index to the pulse of the child.

Placenta previa is a complication that fortunately is very seldom met with, for it is fully as dangerous to the mother as to the child. The child's life is endangered if the placenta is torn from the uterus before the child is in a position to use its lungs, because it then dies from asphyxia, while the mother is apt to die from loss of blood.

When a case of placenta previa is present it is usually recognized early by the severe hemorrhages, which begin about the sixth or seventh month. They are frequently so excessive as to bring on premature labor or to oblige the physician to do so. Hence few cases of placenta previa reach full term, but when one is found at full term it is to be handled as follows:

Introduce two fingers within the os and detach the placenta from the walls of the uterus for a distance of two or three inches all around, and if necessary, push the placenta to one side.

Rupture the membrane, and if there is an unfavorable presentation turn the child so as to make the breech engage in the os, or if there is a head in the first instance that presents, the forceps may be used if a speedy delivery is indicated, which is usually the case.

A partial detachment of the placenta may sometimes check the hemorrhage. The strength of the woman is the main thing to care for and that may be done by the usual means.

After waiting in vain a reasonable time for the uterus to expel the child the physician may deliver by art.

It will sometimes be found necessary to dilate the os, and this may be done with the dilating instruments, though in most instances the fingers will prove not only to be sufficient but to be the very best for the purpose. Watch carefully for post-partum hemorrhage, for it is apt to follow a case of placenta previa.

This brings us to the third and last general class of complications, viz.: Those located in the child itself. This class has three divisions, the first being:

Large head.—By this is meant a head that is too large to be delivered naturally. Such cases are not of uncommon occurrence. They may be easily recognized by the manner in which they progress. As far as their effect upon the child is concerned and as to the manner of treating them, they are very similar to cases (above cited) of deformed pelvis and cases of obstructed passage. That is to say, the child's life is endangered by uterine contractions, and in order to deliver the child successfully the obstruction must be removed or circumvented. Since the child's head is the obstruction (owing to its size) we may not remove it, but we may remove the size of the head by compressing the skull with forceps. When this can not be done and a living child is to be secured, symphysectomy or Cesarean section must be performed.

A large body offers the same dangers and is to be treated in the same manner as a large head, except that forceps can not very well be used to advantage. It is claimed, however, that when the breech presents the forceps may be used with good effect; but that is also disputed by equally good authority, and with reason, because the breech can not be compressed like the skull. It has also been advocated that blunt hooks should be used in the axillæ of a large-bodied child, after the head had been delivered, but experience will soon teach one that artificial hooks of all kinds should be avoided and if it is necessary to use a hook the fingers will be found to be all that is needed.

Face presentation.—In a face presentation the head is thrown back so that the occipital bone rests on the base of the neck, while the chin is thrown forward. This presents the longest diameter, and with a medium-sized head in this position an uninterrupted delivery is impossible. Before delivery can be effected the head must be righted so that the crown presents. This may be done by pushing the body back so that the head can be moved to the proper position. Sometimes it may be accomplished by allowing the woman to assume the knee-chest position, when the head may be moved after the body has gravitated toward the abdominal cavity, while at rare intervals the body will slip back between pains and the head come down of its own accord. When the proper position of the head has been acquired the delivery may proceed according to existing circumstances.

Breech presentation is an abnormal position that is quite common. It is easy to diagnose even before the membrane ruptures, and after that it is almost impossible to mistake it. In a case of this kind there is no danger of the child's life till after the body is born and head and cord are passing together over the perineum, when the danger becomes quite imminent. While in this position the cord is compressed so that circulation through it is completely stopped. Even when labor progresses with normal speed through this danger point the child sometimes dies, and when anything interferes with its progress at this point the child is sure to be killed unless something is done to prevent or to lessen the danger. Hence it is the duty of the physician to see that the labor proceeds through this stage rapidly and without pause, and before it reaches this stage he should see that everything that is necessary to be used in resuscitating the child is placed close at hand.

Breech presentations are slower than head presentations, on account of the soft and yielding character of the breech not being so well adapted to the work of dilating the os nor to holding the ground that has been gained.

This slowness of labor and the prolongation of the pain and suffering through which the woman has to pass are great causes of weakening her resisting powers, so that when the body is born, and the parts contract down around the neck, the relief experienced is so great that it is almost impossible to secure another pain. Hence a very possible result at this period is the occurrence of uterine inertia, and it could not occur at a time when it would be more apt to prove fatal than just then. When the body and legs are born they will serve as an excellent register of the child's enduring powers, and for this purpose they should be kept constantly under the eyes of the physician.

It is always best to wait a short time for the uterus

to act, and it is also a very good plan to administer to the woman some warm drink or a teaspoonful of brandy, but the moment the child begins to lose its healthy pink color the physician should begin to deliver the head. Seldom will he have time to apply the forceps; but even if he has time, it is far better in these cases to use the forceps nature has given him—his hands—for they are far superior to any that man has contrived when cases of this character are to be handled. Allow the body of the child to rest upon one hand while the other is placed so that the fingers, which are along the sides of the child's nose or in its mouth, may have a good hold. Then by pulling the chin well down upon the breast and guiding the direction of the traction by moving the body with the other hand, the child may be rapidly and easily delivered. If it is not already dead, measures may be taken to resuscitate it.

Next to the danger from the pressure on the cord is that of an arm being pushed down along by the side of the head. In a case where a small child is being delivered by the breech this might serve as a protection to the cord, but it is not usually safe to allow it to remain in this position. It must be replaced. The physician who allows such cases to continue without replacing the arm is sure to see a great majority of those children born with a crushed arm or skull, or a crushed or dislocated shoulder.

Twin labor is generally not a dangerous case, though it is always more or less exciting. One or both of the children are usually small enough to render the delivery an easy operation, and when any trouble comes it is because they become head-locked or get wedged in the passage. When both attempt to enter the passage at once they may become wedged. This may also occur when one has reached the outlet and the other tries to enter it. When one child is born by the breech its chin may catch under the chin of the other child, which condition forms what is known as the head-lock. In either of the above positions they check the progress of labor till something is done to remove them from their locked position, and if they are left alone too long death will follow from uterine pressure. To avoid this, the physician must do as follows: Push one child up, if possible, and allow the other to pass. Should this be impossible, one child should be sacrificed to save the other. This question may arise: Why not perform symphysectomy and save both children? It is easily answered. Twin labor is not the natural labor of the human race, and since it is an abnormal condition it is probably responsible for the fact that one of the twins usually dies, and sometimes both. Hence, inasmuch as it is the rule for one of them to die, it is not good logic to advise the mother to subject herself to the dangers of an operation that, after all, is apt to result in the loss of one of the children, when by sacrificing one of them in the first instance she will be free from those dangers.

This completes the nineteen main causes of infant mortality during labor and the discussion of their respective merits, and after a careful reading of the whole it can be seen that the causes of death and the remedies for each complication may be expressed in a very few words. Most of the dangers to the child's life are from uterine pressure, and the remedy for all of them is a prompt and rapid delivery. The exceptions to the causes are as follows:

1. Uterine inertia.—With this the child dies, be-

cause its head is left too long on the contracted condition necessary in passing over the perineum, or, in a breech presentation, from pressure on the cord at the same period in the case.

2. Short cord.—Here the contractions of the uterus are indirectly responsible for the trouble and produce the main cause of death, which is the rupture of the cord (asphyxiating the child before it is able to use its lungs). The tension of the cord may also stop the circulation through it in cases where it is shortened by knots or being wound around some part of the child.

3. Placenta previa.—In this the child dies from asphyxia, caused by an insufficient connection between the placenta and the uterus.

As mentioned before, the remedy in each case is a prompt delivery. That does not mean that the forceps are to be used regardless of circumstances. They are to be used only when absolutely necessary. Remember that forceps are to be used to save life and not merely to save time. Make it a rule, if you can, that your labor cases must be placed under your exclusive care before the eighth month of gestation.

Let every examination be thorough. Do not examine your patient too often, but at the same time do not allow such a caution to prevent you from being thoroughly informed as to the progress and condition of the case.

Through the whole of the confinement you should be cool, without being frigid; gentle, without being timid, and rapid, without being hasty. In short, if there is one case more than another in the whole field of medicine and surgery that every attribute of the true physician is needed to treat properly, it is that case where he is at the bedside of a woman who is about to become a mother.

By bearing these thoughts in mind and having a thorough knowledge of the subjects herein mentioned, with the ability to make a practical application of that knowledge, there is no doubt that any intelligent physician can meet and successfully handle any case of labor, be it ever so complicated.

Fourteenth Biennial Report of the Board of State Commissioners of Public Charities for the Years 1895 and 1896.

ARTHUR R. REYNOLDS, M.D., PRESIDENT.

(Concluded from page 366.)

At the last session of the legislature a law was enacted authorizing county judges to take children having no parents out of poorhouses and to place them in homes, without cost to the county. It was believed by some that this law would remove the children from the almshouses, but it has failed to do so, and can not touch the class of cases above referred to, in which vicious and irresponsible parents compel county officials to maintain their children in the almshouse year after year. In preparing this report, the Board sent a letter to every county judge in the State, as follows:

"1. Will you please state how many, if any, children you have released from almshouse and placed in homes under the statute approved June 21, 1895?"

"2. Will you please make any suggestions you can as to needed changes in the law regarding destitute, neglected or dependent children?"

"A reply at your earliest convenience will be a favor to the State Board of Charities. Kindly answer upon this sheet, if practicable, and forward in enclosed envelope."

Replies were received from fifty-five judges. In fifty-four cases no use had been made of this statute. In one case one child had been committed under this act.

In a few cases suggestions were made by county judges. We quote as follows:

Hon. Chas. H. Donnelly, McHenry County:

"I would suggest that more power and authority be given to the county judge in regard to the control of dependent boys, and some of the power which is now vested in the trustees of training schools be taken away. In my opinion, the County Court ought to be vested with full power to release from such institution any child whenever, upon a proper showing, in his opinion such child should be released."

Hon. Rufus C. Bailey, Winnebago County:

"I would suggest a change giving authority to the Court or some proper tribunal, for instance the Judge and Chairman of the County Board or a committee appointed by the County Board, to place such children in private families, and when necessary to pay for their care in such families for a reasonable time and charge the county with the same."

Hon. Orrin N. Carter, Cook County:

"I believe the law regarding dependent children should be changed in such a manner that the authorities managing industrial and training schools should report to the County Court of each county once every six months, the disposition made during the six months last past before such report, of the children committed to the school from such county."

"I think I should also be in favor of an amendment to the law, forbidding the keeping of children in an industrial or training school longer than, say, one year, without an order of the Court which committed the child to the school, permitting on proper showing such child to be kept a longer period of time."

Hon. Colostin D. Myers, McLean County:

"I think it were well if the law relating to homes or schools for dependent children was amended to allow the court in which the proceedings for commitment are had to retain jurisdiction of the case with power to discharge or vacate the order of commitment upon proper showing."

"Also that provision be made that the court may by summary process compel a parent to contribute to the support of the child and the expense while it remains an inmate."

"In more than one instance I have known that parents were unfit and do not care to control their children, but have means whereby they could and should be compelled to support them. While the salvation of the children should be of first concern, yet it is an imposition upon the public to relieve the parents of their natural and proper burden if they have means."

Hon. Robert H. Lovett, Peoria County:

"The law with reference to dependent children should be changed so that girls past the age of 13 taken from houses of ill-fame should not be sent to the same industrial school with virtuous children. *Virtuous* children should not be compelled to associate with *lewd* ones. I will not send them there. I refused yesterday to send a wayward girl (16 years of age) to our Industrial School. The trustees of these schools should be compelled to find homes for children in a certain number of years. They get children *in* and never get them *out*. This means a great expense to the county."

"The Home should be under the direct control of the Board of Public Charities and the Board of Supervisors."

Hon. Carl E. Epler, Adams County:

"Dependent boys, and boys under 10 years of age, stealing and not liable as under age to commit crime, need attention. The law provides for their being sent to industrial schools, but provides no schools, leaving that to private enterprise. Lack of room for such boys and lack of proper attention and care will impose them on the State as paupers and criminals if not cared for by the State."

Hon. Isaac Hudson, Moultrie County:

"I have had but one such case called to my attention under the new law and the law did not apply to it because the father of the children is living. The circumstances in that case were such that I believe some amendment is needed to make the law fit such conditions."

"The children were taken to the poor farm and left by their father. I think if possible the law should be amended so as to fit cases of abandonment, and in case a parent on account of worthlessness or dissolute habits fails to provide for his or her children, it should be regarded an abandonment. Such children are frequently in a worse condition than if they had no parents living, and the future welfare of themselves and the community requires that they should be provided with better surroundings."

INDUSTRIAL SCHOOLS.

The laws under which the industrial schools of the State exist, were enacted because of a profoundly humane and generous feeling. They are a recognition of the fact that the child of neglect must be cared for in new surroundings, if he is to become a useful citizen and not a menace to the community. So rapid has been the growth of the State, and unfortunately

so correspondingly rapid has been the growth of a class of dependent and neglected children, that the great industrial schools, especially those for boys, are sadly over-crowded, and their proper and legitimate work rendered difficult by the failure of our present law to provide the judge with authority to dispose of the child in any way save by sending it to an industrial school.

The schools have an absolute power of discharge, which is necessary in certain cases, but which is liable to abuse, since the child who may be discharged from the school for a good and sufficient reason is not remanded to the court under the law, but is left in the same situation as before he was declared dependent. A case was recently brought to the notice of this Board, supported by sworn statement, in which the County Court, after a full hearing, adjudged dependent a boy of 6 or 7, directing the father to pay the board of the child at school. The father was known to be irresponsible financially. Both parents had been proven in court to be improper persons to have the custody of the child, yet the mother applied to the officer of the school for the child and he was given back to her. Thus upon the same day upon which the court had determined that the mother was an unfit person to have the child, and as compelled under the law had confided the child to the guardianship of the school during his minority, the school abandoned the guardianship to this same parent. While we trust that such instances are rare, we submit that the possibility of their occurrence shows the wisdom of the county judges above quoted in advising that the powers of the county court be extended.

We believe that such legislation as we have advised above is entirely in the interest of the proper management of industrial schools. The existence of the industrial schools in Illinois renders unnecessary the establishment of the State School which might be necessary if the industrial schools did not exist or could not be utilized for temporary care in cases demanding it. The legislation advised will protect the industrial schools in their legitimate work and tend to prevent the over-crowding now so prejudicial to their usefulness.

Quarterly reports under the headings shown below for the schools for boys and girls respectively are now filed with this Board.

St. Mary's School at Feehanville now cares for nearly 400 boys. The economy and efficiency of its administration is most admirable. It needs, in our opinion, enlarged buildings, so arranged as to afford better opportunity for separating different classes of boys. It also needs some improvements in the plumbing and bathing arrangements, especially good and sufficient bath rooms. The location of this school upon the Des-plaines river is ideal.

The school at Glenwood has about 250 boys. It has the advantage of a system of separate cottages, which permit somewhat more personal supervision and separation of inmates. The location here, too, is excellent.

Chicago Industrial School for Girls, on 49th and Prairie Avenue, is an admirable well ordered institution. It cares for an average number of about 163. The school teaching is above the average found in such institutions, and there is a careful use of the text-books used in the public schools, which we specially commend. The industrial work is good and practical, and the children seem well cared for.

The Illinois Industrial Training School for Girls at South Evanston has much improved its grounds and has erected a handsome addition to its buildings since our last report.

The Industrial School for Girls at Peoria has an average of about 36 inmates.

It is the opinion of the Board that all of the schools which endeavor to place girls out in country homes, should also make a point of teaching them dairy work, the care of poultry and gardening, and should endeavor to interest them and make them proficient in those occupations which pertain to country life. And for this reason we consider that such schools should be situated in the country. We append below statements of the industrial schools above named.

EDUCATION AT THE SOLDIERS' ORPHANS' HOME.

During the last year a building for manual training has been erected at this institution. We would recommend that manual training be made a part of the educational plan for the children under 14, and that a head teacher or superintendent for the school be appointed, who shall under the superintendent of the Home have sole charge and direction of all the educational work of the institution. It is particularly necessary that this school should be brought to the highest possible efficiency. There are inherent difficulties in educating large numbers of children thus gathered together and deprived of that intimate association with their parents and elders which forms so large a part of natural education. These children too are cut

off from the education and stimulus of the street which is by no means all bad. These difficulties are not realized at first, but they exist and can only be met by great effort to make the school practical, interesting and stimulating. The Board trusts that it may be made a manual training school of the best type and a model to the State.

In pursuance of the same principle which has influenced the Board in recommending the placing out of children in homes, the Board would advise that these children be placed in homes on reaching the age of 14 years or before if possible, and that when necessary to their proper schooling or training until they reach 16 a sum shall be paid for their living and teaching, not exceeding the cost of maintenance in the institution, but that the period of their retention in the Home be limited to the present age 14 years.

COOK COUNTY.

The charitable work demanded of Cook County is so vast as compared with that demanded in any other county of the State that here the county almshouse has been differentiated into a county hospital with an average of 1,000 beds, a detention hospital for the insane, an infirmary and an insane asylum.

Following is the report of Cook County Hospital for 1895:

| | |
|---|--------|
| Patients on hand Jan. 1, 1895 | 794 |
| Number of patients admitted to Hospital | 14,861 |
| Total number cared for | 15,655 |
| Number of patients discharged | 13,629 |
| Number of patients | 1,194 |
| Total number remaining in Hospital Jan. 1, 1896 | 892 |
| Average number of beds, 1,000. | |

MATERNITY WARD.

| | |
|---|-----|
| Births | 395 |
| Deaths (infants, includes still-born) | 64 |

HOSPITAL.

As regards the Cook County Hospital the Board renews its former suggestion that medical students be allowed upon the wards. During the last year there have been repeated assurances of gross misconduct and neglect of patients upon the part of certain doctors, and there is at all times a laxity of attendance upon the part of staff physicians, from which the patients suffer, being left as they are to the care of internes. This great free hospital contains a destitute population as evidenced by their presence here. Their sickness and helplessness certainly compel sympathy, and we have no doubt that it was with a view to protection of the patients as well as to put an end to a quarrel among the schools that the old practice of bedside teaching was discontinued in this Hospital.

Free hospitals are found in all great cities of the civilized world and they are everywhere open to bedside teaching, and in consequence enjoy the services of the most distinguished physicians and teachers of medicine in their respective cities. It seems plain that the theory that the free patient in return for the benefit received in the hospital shall give opportunity to students of medicine and thus repay society, results in the patients obtaining the services of the most eminent men in the medical profession. While the other plan now followed by Cook County leaves the wards closed to students and therefore deserted by their teachers, and the patients abandoned to the mercy of untrained fledglings in the medical profession, or to physicians whose appointment is due to some other cause than fitness. In situation, equipment, buildings and nursing force this hospital is all that can be reasonably demanded.

In the opinion of this Board the usefulness and efficiency of the Cook County Hospital would be greatly enhanced if it were superintended by a competent medical man. Medical skill is required in the housing, feeding and clothing of patients just as much as in the prescribing of drugs. Private pay hospitals are in their every detail managed by medical men and public opinion demands not less in the care of the poor whom the public assume to treat when ill. It is not a fair charge to make against the profession of medicine whose members embrace those well known to be the most humane and gentle of men, that the admission of students upon wards of a hospital would result in unkindness or maltreatment of patients, for their lives are devoted not only to relieving and healing the ills of the race but to the prevention of disease as well.

This Board unqualifiedly believes that the admission of students to the wards in small groups in company with the attending physician or surgeon would be of benefit to the patients and submit that the medical man is the best judge of how and when such visits should be made.

We renew our suggestion that some provision for convalescents other than Dunning be afforded. It is our belief that many a self-respecting man or woman is turned into a pauper by being sent from the County Hospital to Dunning for convalescence.

INFIRMARY AND INSANE ASYLUM.

The population of the Infirmary and Insane Asylum is fully discussed in the Appendix. The insane are overcrowded and the Infirmary inmates on the men's wards as well. In the opinion of the Board the Infirmary population should be entirely removed from Dunning.

It is too near the city limits for an almshouse. The line of city saloons across the street from the grounds are a source of constant disorder and mischief and form a strong argument for the withdrawal of the Infirmary, since there is no power to compel the withdrawal of the saloon.

The Board would urge that the records of the Infirmary, be more carefully kept, especially that the very large duplication be noted. This is further discussed in Appendix II.

Whether the insane of Cook County are cared for by the State or by the county, they should not be removed farther than their present location from their friends and relatives, who can now reach them at a trifling cost. The present location is wholesome and adequate for an insane hospital if the entire plant could be used and the buildings remodeled, but it is not enough for Infirmary and insane asylum too.

At present the Cook County Insane Asylum receives many curable and recent cases owing to the crowded state of the Eastern and Northern hospitals. Its vital lack in an administrative sense is a competent medical superintendent to have sole responsibility for the care of the patients.

A reorganization of the patients themselves under medical supervision should be made so as to keep more of them employed in various ways. The idleness and dulness of these wards is oppressive to the observer even in contrast with other similar institutions.

DETENTION HOSPITAL.

Patients are brought to this hospital for security pending a legal inquiry as to their mental condition. They are often in a state of acute mania, a condition demanding medical care and good nursing. While the Board believe that the conduct of this hospital has somewhat improved, it can not be considered as adequate.

The detention hospital should be under practically the same nursing charge as in Cook County Hospital. It should be under the medical charge of physicians who are specialists in mental disease, and should be visited daily in turn by at least two such physicians. If this were done it would render natural and easy the change from jury trials to inquiries by commission in Cook County, and that, too, without consuming more time than the present plan. The County Judge has the right under the law to appoint as commissioners in lunacy two qualified physicians in regular and active practice, when no jury trial is demanded or appears to the judge to be necessary. By appointing as such commissioners doctors who should serve for a period of ninety days, more or less, visiting the hospital daily during their term, and thus seeing each patient repeatedly, a medical decision in each case could be secured which would be of real value, and if presented to the judge would certainly facilitate rather than retard the proper disposition of these cases. Such medical attendance combined with the nursing of a sick ward would doubtless result in the cure of some acute cases without recourse to a State Hospital.

2. As to the development of the spina bifida, I have shown in a case of dwarf fetus, no longer than 16 m. in the fourth month of development, that the alteration begins at the time of the formation of the chorda dorsalis, probably by adhesion of the flat embryo to the egg membranes, hindering the occlusion of the opened spinal canal and the development of the spinal marrow.

3. In this case it seems to be remarkable that notwithstanding the general arrest of development the formation of head and limbs shows normal forms. As the intervertebral ganglia in such cases are developed the normal formation of the extremities is regular. Other cases of rachiochysis and amelia can not depend upon the destruction of the spinal marrow. It seems that in micromelia the development of the limbs is retarded by mechanical obstacles, probably the shortness of the amnion. In this case the amnion was normally developed, and no obstacle formed to prevent the development of the limbs. That the place of the first adhesion of the fetus to the egg membrane can not be detected is explained by the high power of regeneration in the egg and fetus.

4. It may be remarked that the abnormal conditions in this case of iniencephalus, as in so many other cases of malformation, are caused by the presence of another well-developed fetus.

EXHIBITION OF SPECIMENS.

Dr. E. R. LE COUNT showed a *cyst of the urachus*. The patient from whom this specimen was obtained was admitted to the Cook County Hospital Feb. 27, 1895. He was a man 52 years of age, white and single. He was admitted for an illness which began four weeks previously with frequent micturition and pain in the region of the kidneys. Examination revealed an enlarged prostate. Symptoms of cystitis with retention of urine, hydronephrosis and uremia prevailed, and death occurred April 9.



Bladder and cyst of the urachus, greatly reduced in size.

SOCIETY PROCEEDINGS.

Chicago Pathological Society.

Regular meeting was held December 14, 1896.

Dr. ARTHUR R. EDWARDS, Vice-President, in the Chair.

Dr. HENRY F. LEWIS read a paper entitled "Iniencephalus, with demonstrations." (See page 388.)

Dr. EDWIN KLEBS—In reference to the very interesting subject discussed by Dr. Lewis I have only a few remarks to make, as I have not specially studied the subject.

1. I would say that I do not like the name of iniencephalus, as the foremost alteration is in the spine, showing the highest degree of spina bifida or rachiochysis. As the whole fetus with well formed head and extremities shows a high degree of retardation of growth, it may deserve the name of a dwarf-growth. The head is retracted by the shortness of the spine; the upper and lower extremities approach one another. In comparison with the well known cases of microcephalia and micromelia (diminished growth of head and limbs) one would give to this monster the name of microrachia.

Autopsy abstract: The bladder is large with markedly thickened walls. Each lateral lobe of the prostate is the size of an English walnut. At the summit of the bladder and separated from the bladder cavity by a thin membrane, is a cyst the size of an average orange, which contains a thick, turbid, viscid, brownish fluid. The lining of this cyst presents an irregular surface, but there are no distinct rugae. The irregularities of the cyst lining are present upon the upper surface of the intervening septum between it and the bladder cavity, and the rugae of the bladder are continued upon its inferior surface. The ureters are dilated, as are also the pelves of both kidneys. Careful dissection failed to reveal further urachus remains in the abdominal wall or about the navel. Microscopic examination of the septum between cyst and bladder cavities disclosed the fact that the muscular coats of the bladder wall were not continued into the septum. This fact, taken in conjunction with the position of the cyst and the fact that the peritoneum of the abdominal wall was reflected upon the back of the cyst and from thence upon the back of the bladder, leaves no doubt

but that the cyst represents the unobliterated and dilated lower end of the urachus.

Dr. F. E. WALLACE presented a case of *suppurative pancreatitis*.

Mrs. F., aged 26 years, Irish nationality; mother of two children. She was admitted to St. Elizabeth Hospital Oct. 26, 1896. Family history negative.

In the past two years she has had four or five attacks of pain in the region of the gall bladder with slight icterus. She has also had one miscarriage. Her present illness dates back five weeks, when she had attacks of pain in the epigastric region with nausea, vomiting and thirst. These symptoms persisted for three weeks and then abated under treatment. Five days ago vomiting began and persisted up to the day of her entrance into the hospital. She was admitted for an operation, a probable diagnosis of gallstones having been made.

On admission her condition was as follows: Temperature 100.4 degrees, pulse 114, strong and wiry, hurried respirations; face highly flushed; nausea and vomiting; pain in epigastric region; great thirst; bowels confined, and passing small quantities of urine.

Urinalysis showed one-fifth by bulk of albumin and large quantities of biliary coloring matter. The operation was postponed. Sp. gr. 1.015 and an acid reaction.

Alcohol sweats were given and following the use of this treatment the albumin diminished one-half.

Oct. 27—Thirty-two ounces of urine passed in the previous twenty-four hours. The symptoms of nausea, vomiting and thirst continue.

Oct. 28—Patient passed but 16 ounces of urine in the last twenty-four hours.

Oct. 29—Heart seems growing weaker and is passing but little urine; the feces and urine being voided at the same time. During the last three days the temperature has been one to three degrees above normal and the pulse above 100.

In the evening of October 29 she passed into a deep coma and died at 11 p. m., the treatment having been symptomatic.

The autopsy was made by Dr. E. R. LeCount. A synopsis of the postmortem findings follows:

Body and tail of pancreas consisted of shreds of necrotic tissue extending across and lying free in a cavity formed by the stomach, the retro-peritoneal and perirenal adipose tissue, the transverse mesentery, the duodenum and the tissue of the lesser omental cavity, as well as some loops of the small intestines and colon. The walls of this cavity were necrotic, dark gray and slaty in color. The cavity contained fecal matter from perforations of the colon and stomach. The head of the pancreas was the least involved.

There were many small gallstones and the gall bladder was contracted and small from connective tissue bands in the walls.

Disseminated in the omentum, mesentery and abdominal fatty tissue generally were small grayish areas such as are seen in fat necrosis. Acute parenchymatous nephritis was present. The spleen was small. The heart and lungs appeared normal.

Dr. ARTHUR R. EDWARDS presented:

1. *Urethral stricture with extravasation of urine.*

These specimens are from a case of urethral stricture in which the patient had been treated on a previous occasion for stricture and retention of urine (as a sequence of the stricture) successfully by dilatation of the urethra with sounds. The patient left the hospital after this dilatation had been effected. The history of the interval between his discharge and return to the hospital is somewhat meager, except that he stated he suffered again from retention of urine and was unsuccessfully treated by sounds by a physician. The sounds were passed many times, consisted of various calibers and shapes, and the patient had had a considerable quantity of blood escape from the urethra, but the passage into the bladder was not reached. The patient

entered the hospital in a delirious condition, and the true state of affairs was not appreciated, as the history was obtained only after his death. He had been in the hospital some little time with retention of urine when periurethral abscess pointing in the perineum, which was incised and which shows in the specimen. There was afterward infiltration of urine, not so much into the perineum, the scrotum and the soft tissues of the external genitalia as upward into the abdominal muscles, especially into the recti.

At the necropsy the findings in the rest of the body were practically negative, except there were in the lungs, which are unfortunately not here, one or two small metastatic abscesses in the right lower lobe. In some of the larger veins outside and back of the bladder there was a suppurative thrombo-phlebotic process. The specimen itself distinctly shows the stricture, and proximal dilatation of the urethra, the stricture being about two inches from the external meatus. Further up is the point where the incision had been made from the back of the urethral abscess into the urethra itself. Just above the point of division of the urethra where the tissues are disorganized we found a peri-urethral abscess. The cut which you notice about the neck of the bladder was made at the opposite direction to see if there was a deeper process in the prostate. There was very intense cystitis, para- and peri-cystitis. The recti muscles on each side of the pubes were greatly disintegrated, and the foul decomposition had extended to a lesser degree over quite a distance in the abdominal walls.

The pathologic process did not extend to the ureters or to the kidney.

2. *Carcinoma of the cervix uteri.*

The second specimen is an ordinary carcinoma of the cervix uteri in which a history was given of the disease lasting for about twelve months before the patient entered the hospital. She was in the hospital only a comparatively short time before she died. Three or four months prior to her admission there was a very offensive discharge, which was present when the patient was admitted.

An examination showed the pelvis to be extensively infiltrated with the neoplastic masses. The abdomen was somewhat rigid and contained palpable masses.

The subphrenic organs are shown here, although they are of little interest beyond the invasion of the liver by the tumor and, what is more interesting, the invasion of the diaphragm, which shows distinctly. In the hilus of each lung the secondary deposits were lacking; yet on the upper surface of the diaphragm the lungs were adherent to it and the subpleural lymphatics are involved.

PRACTICAL NOTES.

Argentamin in Ophthalmics.—Hoor has recommended argentamin as a substitute for silver nitrate in eye affections where the latter is indicated. Argentamin is chemically ethylenediamine-silver-phosphate. Unlike silver nitrate, which when crystalline is acid in reaction, and when fused neutral in reaction. Argentamin is alkaline, and this accounts for the fact that its application caused only slight and transient local reaction, a point much in its favor. It never gives rise to a deposit on the abraded or ulcerated cornea, which nitrate of silver sometimes does, nor to staining of the conjunctiva, nor to the disagreeable metallic taste associated with the use of the latter. It may be used in 3 or 5 per cent. watery solution, once or twice a day, or oftener if required. It seems to have all the advantages and none of the disadvantages of silver nitrate.—*British Medical Journal*, October 17.

Successful Treatment of Whooping Cough with Inhalations of Mentholized Formic Aldehyde.—According to the experience of P. Rosenberg, the inhalation of the vapors disengaged by a solu-

tion of 60 per cent. formic aldehyde in methyl alcohol to which menthol has been added, produce a peculiar effect on the mucous membrane of the respiratory passages, which can be utilized in cases of phthisis and especially of whooping cough. He has demonstrated that inhalation commenced with the first appearance of whooping cough, have succeeded in arresting it in the course of a few days. Commenced later, they are equally useful in diminishing the number of the paroxysms and abbreviating considerably the duration of the disease. The windows and doors of the room are closed air tight and 5 to 10 c.c. of the methyl solution of formol, with the menthol, are evaporated in a saucer by means of a "very feeble source of heat."—*Bulletin de la Soc. de Pharm. de Bordeaux*, December.

Salol in the Treatment of Non-Diphtherial Throat Affections of Children.—In the *Journal des Practiciens* for December 5, M. de la Carrière remarks that the internal employment of salol in angina has given excellent results, and that he has prescribed it in cases of amygdalitis, acute angina, and non-diphtheritic cases, whatever might be their cause. It is a general antiseptic and analgesic, with an elective action on the pharynx. It quiets the pain and the dysphagia almost immediately, it brings about a rapid relaxation in the physical symptoms, it prevents the formation of abscesses, and it always shortens the duration of the disease, especially if administered in the beginning. The daily amount for an adult is sixty grains. For children the adjustment of the dose is easy, as salol is always well borne, for trouble with the kidneys, which is the only contraindication, is exceptional in them. The amounts to be taken daily are as follows: For children a year old, eight grains; for children two years old, fifteen grains; for children three years old, twenty-three grains; for children four years old, thirty grains; and for children eight years old, forty-five grains. This amount is sufficient until the age of fifteen, when it may be increased to sixty grains without inconvenience, if necessary.

With regard to the mode of administration, de la Carrière recommends the following formula:

| | |
|----------------------------|-------------|
| R. Salol | 30 grains |
| Sweet almond oil | 60 grains |
| Syrup | 450 grains |
| Distilled water | 2.5 ounces. |

Peppermint, orange-flower water, vanilla, or cherry-laurel water may be added to make it aromatic.

This quantity is sufficient for three doses during the day. Salol may be given at mealtime, as it does not disturb the digestion. The employment of this drug should be suspended if the urine appears of a dark color.

Treatment of Tuberculous Epididymitis.—Dr. W. L. Rodman, in the *American Practitioner and News*, January 9, states that his experience leads him to say that in the vast majority of cases the disease is primarily in the epididymis. [This is also the view held by Monod and Terillon.—ED.] He has examined many specimens removed by himself and others and has never yet seen a case where it was not demonstrated that the disease began in the epididymis. He has seen many cases in which the disease is limited to the epididymis and others in which the body of the testicle became involved later. A patient may have considerable disease of the epididymis for years without any other part of the genito-urinary tract becoming involved. If the disease is bilateral more conservatism should be observed than if it is unilateral. If it is clearly unilateral it is best to sacrifice the testicle. "My belief is that a man is about as well off with one testicle as with two. A patient whom I exhibited to this society about two years ago, after a unilateral castration, has since become the father of a child and tells me there is no difference in his condition sexually. In view of the fact that I have been in the habit of practicing partial operation in benign tumors I can understand how this same

plan of treatment can be pursued in tubercular disease of the testicle. But it must be remembered that here we are dealing with something in the nature of a malignant disease and we must be more radical. I would not castrate if the prostate was involved also. How many cases of tubercular disease of the epididymis of the testicle get well? I can not recall a single case where I have practiced castration that has come back to me with involvement of other parts of the genito-urinary tract. There may have been recurrences, but they have not come to me; as such cases follow one, I take it none have occurred."

Dr. Howard Kelly's Operation in Ectopic Pregnancy.—In the *Johns Hopkins Hospital Bulletin* for December, Dr. Kelly has a paper on the treatment of extra-uterine pregnancy by vaginal puncture. He has now the records of ten cases treated with good results in this way since 1882. There has been no mortality, and relatively little suppuration. He describes the operation as follows: I do not consider it necessary any more to make the abdominal incision. After an accurate diagnosis of the case, outlining the sac and its relations by abdominal and rectal palpation, and after careful vaginal palpation to determine the proximity of the sac to the upper vaginal wall, a point is located behind the cervix in the vaginal fornix close to the sac, and a pair of sharp scissors is plunged upward in the direction of the axis of the pelvis. The scissors are then opened and some of the fluid blood usually trickles out at once. Larger scissors are then introduced, if need be, and the opening widened by withdrawing them with blades open. It is important to have a large opening, both for the purpose of getting two fingers in to clean out the sac and for good drainage afterward. The torn edges of the wound never bleed excessively. The sac must be delicately cleaned out, and everything brought away down to the shell of the sac and surrounding adhesions. In one of these cases I brought out a well-defined Fallopian tube cast, due to hemorrhage in the tube. The cleaning out is followed by irrigation, after which the sac is plugged with gauze, which is left in for several days, and sometimes longer, and then the wound is washed out daily until it closes. I know of no instances of more than moderate suppuration following this plan of treatment.

Eclampsia Caused by Leucomaloes.—By means of venous fistulas on animals (Eck's method), Massen has established the extreme importance of the functions of the liver in the processes of oxidation occurring in the animal organism, and the toxic action of the amin-carbonic acid generated by the incomplete oxidation of the nitrogenized substances. This acid produces in animals an intoxication resembling in every respect the picture of eclampsia. He has also studied with the microscope the lesions of the viscera in eclampsia. The parenchyma of the liver shows profound alterations, and the other organs a general and severe intoxication. By a series of parallel researches he has become convinced that eclampsia is caused on the one hand by a disturbance of the processes of oxidation in the pregnant woman, and on the other, by a subsequent intoxication from the products of the incomplete oxidation, among which amin-carbonic acid plays the principal role, although analysis of the urine in eclampsia does not disclose an excessive amount of this acid. The urine, however, always contains a large quantity of leucomains; before an attack of eclampsia the quantity of leucomains in the urine is always two and one half to three times the normal, rapidly diminishing after the attack. He announces therefore that eclampsia is in fact a leucomainemia. Leucomains are found normally in much greater abundance in the pregnant woman than in the non-pregnant, but as they circulate in the organism they do not produce any disturbance unless the balance of the nervous system is destroyed by extreme pain or some other excitation of the nervous system.—*Presse Méd.* from *Cbl. f. Gyn.*, 1896.

Alterations in the Cremasteric and Bulbo-cavernosus Reflexes in Neurasthenia.—It is unnecessary to dwell upon the value of a sign that would enable the diagnosis of neurasthenia to be made with certainty, without depending upon the statements of the patient, whose reliability is frequently questionable. Critzman calls attention to the absence of certain reflexes which he has invariably found wanting in well defined cases of neurasthenia in the male, and suggests that their absence may prove an important aid in the diagnosis. The cremasteric reflex is entirely absent and the other is profoundly modified. This is contrary to the usual ideas in regard to neurasthenia, according to which the reflexes are exaggerated. There are two methods of exciting the cremasteric reflex, one when the patient is in the decubitus dorsal and the other when he is standing. The latter is the most reliable. The patient should stand erect, facing the physician, and raise and hold his shirt himself. The slight effort this requires draws his attention away from the physician's maneuvers. It is best not to inform him of what is sought, but keep the conversation on indifferent subjects. The skin of the upper inner part of the thigh is then irritated with the nail of the right forefinger or the wire brush of the electric apparatus, *always from above downward*. As this is done the testicle on this side is at once drawn up toward the external inguinal ring. This always occurs in normal health and in children, Critzman states, and with equal energy on both sides, perhaps a trifle stronger on the left. It can also be excited by strong pressure with the thumb on a level with the ring of the third adductor or on a level with the internal condyle of the femur at the point where the internal saphenous nerve is in the groove separating the sartorius from the vastus internus. It fails to present itself in cases of varicocele of the spermatic cord, with relaxation of the scrotum, and in bilateral orchitis, in ataxia and hemiplegia, but it persists otherwise, even in cases of impotence not due to any organic lesion. In his nine cases in which it was conspicuously absent, the general health was good; the patients looked flourishing; there was no varicocele to be discovered nor relaxation of the scrotum, and they had never had double epididymitis. But they were all subject to hereditary neurasthenia, which manifested itself in the most various ways, as he describes at length in the *Presse Méd.* of December 12. He invites discussion of the subject and further confirmation of his assumption of the connection between neurasthenia and the absence of the cremasteric reflex. The bulbo-cavernosus reflex is produced by placing the left forefinger on the bulb of the urethra, while with the right hand the dorsal surface of the gland is irritated with the edge of a piece of paper, or by lightly pinching the mucosa, when the left finger perceives a more or less energetic shock due to the contraction of the ischium and the bulbo-cavernosus. This reflex does not show such decided modification as the cremasteric, but in the neurasthenic subjects examined it was either absent or very weak, or very slow in appearing.

Improved Suppositories.—The ideal suppository can not be made of glycerin, as this irritates the tissues more or less, while it is impossible to sterilize it satisfactorily. It often contains also products prejudicial to the tissues. Cocoa butter also fails, as it seems to be impossible to blend the medicaments with it in regular proportions throughout, some containing more than the required amount and some less, while it may be entirely absent from parts of the suppository. A new material has been found admirably adapted for the purpose, agar, used to such an extent in bacteriologic investigations. One part of the finely pulverized agar, heated in the water bath with 29 parts water for a few minutes, produces a gelatinous mass that pours out easily and hardens soon into a smooth, slippery, tenacious, resistant substance, which dissolves readily when used as a suppository. As it has an acid reaction, it is neutralized by the addition of 0.1 gram natrium bicarbonicum to

10 grams of pulverized agar. The medicine (which must be soluble in water) for the desired number of suppositories is put in a bottle with 1 part neutral pulverized agar and 29 parts by weight of water and the whole energetically shaken. The cork is then tied on tight and the bottle placed for five to ten minutes in boiling water. Paraffin paper has been found the best material for the molds. Small pieces of the paper, 4 cm. square, are rolled up in a cornucopia, the points turned up and the cornucopias set up in a frame made of light thin wood with two or three concentric plates, 5 to 9 centimeters in diameter, in which holes have been bored to receive the molds (about 3 mm.). The frame is placed in the scales and the hot agar mixture is poured into the molds. The suppositories are left in the paper molds until used. Some medicines that are not soluble must be rubbed into the pulverized agar first and then finished as above. Others, like tannin, are prepared without heat (tannin 1 part, mixed with pulverized agar 2 parts and kneaded into the suppository form with 7 parts water). Medicinal pencils and vaginal balls are made in the same way. Ten per cent. iodoform bougies are made by mixing 1 gram neutralized agar with 3 grams iodoform in a bottle and adding 29 parts water as directed above, pouring the hot mixture into suitably prepared paper mold in corresponding holes in the frame. Balls are made by pounding parchment or wax paper with a suitable stamp into round holes in a block of wood, and the hot mass is then poured into the paper cups thus made. (L. Lewin and Eschbaum, in the *Deutsche med. Woch.* of January 7.) Suppositories for the ears could also be made in the same way.

A Case of Cretinism Treated by Thyroid Extract.—Mr. Rushton Parker reports in the *British Medical Journal* the case of M. K., aged 8 years. This child's mother had congenital defects of cleft palate and hare-lip and underwent severe shock a short time prior to the birth of the daughter. In no other respect was there anything noteworthy in the family history—no goitre, no consanguinity, and the four grandparents living to a good age. During infancy it was noticed that she differed from other children in being always very still and quiet, in sleeping inordinately, and in never crying. Up to 6½ years of age she remained very stunted in growth, propped up all day on a chair, being unable to sit up or stand, usually very stolid, sleeping indefinitely, breathing very noisily and unable to recognize people or to speak. She was very cold, liking to be near the fire. Her actions were very slow, so that she would take a full minute to raise her arm when asked to shake hands. Her face was swollen, so that her eyes were often scarcely visible; her lips were swollen and livid; her tongue was swollen and livid and commonly protruding; the teeth were black and stumpy; the mouth seemed always full of phlegm; the bridge of the nose was sunken and the tip flat; the neck was thick, the thyroid gland quite imperceptible; there were soft swellings above the collar bones and similar masses outside the nipples; the limbs were short and stumpy, the belly was swollen and an umbilical hernia protruded to the size of a walnut. The hair of the head was not noticeably scanty or coarse. A five-grain thyroid tabloid was given every week-day in one dose for the succeeding six months, during which time the swelling gradually vanished from the tongue, then from the face, then from the body and limbs, so that in a few months her mother thought she felt quite a stone lighter, although she had grown some inches in height. On November 28, after twelve months' treatment, she had very much the appearance of any healthy child from 2 to 3 years of age, but being unable to talk, with the exception of saying a few simple words, and having several healthy permanent incisors, most of the old, black, stumpy teeth having vanished. The thyroid treatment caused no unpleasant symptoms whatever, so that it was never discontinued or the dose reduced; but the impression throughout has been that the child was taking just about as much as she could tolerate, being occasionally on the verge of diarrhea and feverishness.

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SATURDAY, FEBRUARY 27, 1897.

COMPARATIVE PATHOLOGY.

The fact that Chairs of Comparative Pathology have been established in Harvard University and in the University of Buffalo shows that more interest is being taken in this country in this subject, which is bound to throw much light on human pathology. It is the purpose of this article to point out some of the analogies between pathologic processes in man and those in the lower animals.

We find some affections occur only in animals, a small number are peculiar to man and some are rare in man though common in animals. "No matter," says QUATREFAGES, "which kingdom (animal or vegetal) they belong to, races have their pathologic characteristics as well as their external or anatomic ones; man is not exempt." Domestication and captivity are potent factors in the determination of disease processes. Thus wild animals are rarely attacked by the infections or intoxications, yet domesticated or wild animals in captivity are subject to nearly the same pathogenic factors as man. In the case of wild animals contracted space for exercise and inappropriate diet are responsible, in the case of the domesticated animals insufficient or inappropriated food and cramped quarters. For instance in the Faroe and Shetland islands the cattle and ponies are given dried stock fish when the supply of hay runs short. It is interesting to note that the more cultivated or "finer" the breed of domestic animals, the more liable it is to disease.

Beginning with the intoxications, animals in the

vicinity of chemical works may be poisoned by arsenic, lead or zinc, either from grazing on leaves or grass on which these fumes have settled, from drinking out of water courses contaminated by the discharges from the works, or possibly by inhaling the fumes themselves. The ox resists mercury less than the dog, and this animal less than the horse. The horse and dog on the contrary are more easily intoxicated by lead than the ox. Plumbism in the horse is attended by many of the symptoms noticed in man—gingivitis, nephritis, paralysis (CADIOT: "Traité de Pathogénie Générale," I, p. 103). On the other hand many animals are capable of resisting substances poisonous to man. Thus the herbivora may eat belladonna for some time without producing any evil effects, and rabbits may eat it until their flesh is so tainted as to be actually dangerous to man, yet show no signs of poisoning. So too, goats frequently eat stramonium, and ROBERT has shown that the hedgehog can take large doses of eyclamin, which is intensely toxic to man, without any untoward results.

As regards infections and parasites we find that the bacillus coli communis is found in the intestinal canal of nearly all mammals, and FLINT (JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, Feb. 29, 1896) has shown that it occurs in some of the lower vertebrates, also, snake, frog, turtle. It frequently causes fatal diarrhea in rabbits when this microbe alone is found in the stools. Avian diphtheria seems to differ from the human variety by the absence of the KLEBS-LOEFFLER bacillus. Typhoid does not seem capable of transmission, though the bubonic plague is, and nearly all the accounts speak of the immense mortality among rats. Of bacterial diseases capable of transmission from animals to man or *vice versa* we find anthrax, hydrophobia, glanders and tuberculosis. While the first three of these are decreasing the last is increasing among men. Animals vary in their susceptibility to the tubercle bacillus: thus while it is frequent in the ox, and especially common in grain-eating birds, it is not frequent in the horse and pig, but somewhat more so in the sheep and goat. As regards monkeys it is now believed that its supposed frequency has been somewhat exaggerated. It has even been found in snakes on two occasions. This seems incredible, as these animals have their blood lower than the temperature necessary for the growth of the bacillus tuberculosis. BLAND SUTTON, who reports one of the cases, attributes it to the increased heat during the breeding season while the eggs are being incubated.

DANILEWSKY, some four years after LAVERAN's discovery of the plasmodium, found similar organisms in the blood of birds, and GRASSI and FELETTI confirmed his observations, though among the domesticated species they were only able to find them in pigeon's blood. Recent researches of DANILEWSKY led him to

conclude that malarial infection both in animals and man is produced by a parasite of the blood, that it can be discovered in blood drawn from the vessels, and that these cytozoa give rise to the formation of melanin, which may be detected in the spleen, liver, bone marrow, etc. With regard to the larger parasites, whose name is legion, space forbids any detailed synopsis. Suffice it to say that tapeworms, round worms, flukes and hematozoa are all found in lower animals. No human parasite seems to inhabit animals, and but one of the animal parasites, *tænia cucumerina*, is at all frequent in man.

Malformations and monstrosities are also common; some varieties, as diprosopus, are more frequent in animals. According to ST. HILAIRE at least three-quarters of the known monstrosities belong to mammals, the other quarter to birds. Teratomata are common in fish, snakes and batrachians; even tapeworms have two heads, and various other monstrosities. VIRCHOW mentions an interesting malformation met with occasionally in Polish hens, which have large topknots. The roof of the skull under this topknot is sometimes wanting, and a sort of meningocele is formed. AS BLAND SUTTON points out, we have a condition here somewhat similar to *spina bifida occulta*, the feathery topknot corresponding to the tuft of hair found overlying the *spina bifida*.

Of degenerations it will be sufficient to mention the mucous, which may be called a physiologic process in fish, producing the slime covering their bodies more or less. In the group of myxinoids this is seen in an extreme degree; a species of *bdellostoma* of our Pacific coast with a slender body about twenty inches long, if placed in a pail of water, will quickly convert it into slime from the mucous glands on the sides of the body. Attention may also be directed to the fatty infiltration of the liver of "Strasburg" geese.

Nor are instances of hypertrophy and atrophy wanting. Good examples of the former may be found in the foot-pads of animals kept in dirty cages, or the hoofs of cows and horses in damp pastures or dirty stables, or again in the warts on the noses of animals grazing in stubble fields. A good example of the process of atrophy may be seen in the right ovary and oviduct of female birds; the chick has two at first, but the right atrophies.

The formation of tumors is frequently observed. According to CADIOT (op. cit.), the dog is most often affected with neoplasms, then the horse, cat, ox, pig; they are somewhat frequent in birds, but in this group they exhibit special histologic characteristics. As in man, benign tumors are found in the young animal, sarcomas in the adult, carcinomas in the aged. Lipomas and myomas are rare, osteomata somewhat common, especially in fish. Odontomes are very common; typical specimens are often met with in gnawing ani-

mals and in elephants. Sarcomas are very common also and are met with throughout the mammals, also in fish and snakes. The melanotic variety is frequent, and many persons have probably noticed them in gray or white horses, where they form large masses around the anus. Cancer seems to be almost unknown in wild animals, but it is not infrequent in the domesticated species. FIELD has reported two cases in cats (JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, Dec. 29, 1894.)

We now come to the general diseases. During the smallpox epidemic of 1894 in Chicago Dr. WARREN noticed the transmission of this disease to the horse and cat, including the formation of papules, vesicles and pustules (Report Dept. Health, 1894). A few weeks ago an epidemic of spinal meningitis was reported among the horses at Phoenixville, Pa., which was attended with a large mortality (*Medical Record*, Jan. 30, 1897). Rickets is common in dogs and carnivora in menageries from eating flesh with little or no bone in it. Gout is met with in birds and sometimes in reptiles. Osteo-arthritis is widely distributed. It seems to be the most frequent bone disease in animals. Rheumatism is met with in horses; animals imported into Japan from China and Corea are said by the *Sei I Kwai* to be invariably attacked and crippled by this disease. HARRISON narrates a case of chronic rheumatism in a giraffe.

Concerning special diseases those of the circulatory apparatus present the same lesions as in man. Race horses are often subject to cardiac hypertrophy and it is not rare to read of them dropping dead during races. A case of septic endocarditis, with vegetations at all the orifices, is reported in a calf five weeks old (Trans. Path. Soc., London, 1893). Pericarditis, with or without obliteration, is found even in birds, and HARRISON mentions purulent pericarditis in a young lion.

In the *Bristol Med. Chir. Journal* for December 1894 is an extremely interesting paper by Dr. A. J. HARRISON, in which he gives details of numerous necropsies on the wild animals dying in the Bristol zoologic gardens. Speaking of pulmonary diseases he states that monkeys are very susceptible to chest affections, and that he was struck by the very small ratio of lung tissue. "The lungs of monkeys seem to correspond very much with what we see about their antics, a succession of little movements, quick and often; a leap; a scramble, then a rest; a period of quick breathing and then a pause." This author also states that the large cats are very prone to inflammation of the lungs, and almost every postmortem examination shows evidence of recent or remote disease. Pneumonia in the domesticated animals seems to be of two varieties, one of which is contagious and is due to a microorganism isolated by SCHUETZ.

Lesions of the intestinal tract are numerous and

varied. Intussusceptions are common in dogs. HARRISON mentions a case of stricture of the colon and invagination in a brown bear. Hernia may be considered here; this is somewhat common in monkeys, sheep, horses and dogs. As BLAND SUTTON points out, it seems strange that it is not commoner in animals, for the funicular process remains patent in many of them.

Among diseases of the genito-urinary system may be mentioned nephritis, common in dogs, and paroxysmal hemaglobinuria in horses. Rupture of the uterus and difficult labor are also met with in the inhabitants of menageries. Many of the cases are undoubtedly due to contracted pelvis following rickets. Even venereal diseases are found; horses in France are sometimes affected with *dourine* or *mal de coït*, which is propagated by sexual intercourse and is very contagious. It seems to be but slightly analogous to syphilis. HARRISON mentions a case of rupture of an enlarged spleen in a lion following coitus, and LARCHER states that birds frequently have cerebral hemorrhage under such circumstances.

Nervous affections are more common in domestic animals and especially the "finer" bred dogs and race horses. Epilepsy in the goat was first noted by HIPPOCRATES; it is found besides in the horse, ox, pig, dog, cat, and in birds. Rabbits and roosters may be thrown into a cataleptic state by holding them steady for a few moments and drawing a line with chalk in front of their nose; frogs by holding them in the same position. Cretins are found among calves and dogs; the latter animals are also subject to dementia and chorea, and horses to acute mania. The Polish hens before alluded to, according to SUTTON, are given to performing circular movements and walking sideways if excited. Birds bear anesthetics very badly. HARRISON mentions a cockatoo which died under chloroform, and the writer has seen two similar cases in a canary and parrot.

The lower animals are not without their vices; for example, many monkeys are addicted to masturbation, also dogs. It is also seen in stallions and bulls, and cock turkeys are said to make use of round stones for this purpose.

We learn from this array of facts that the same rules governing disease processes in man govern those in the lower animals also.

THE PROBLEM OF POPULATION.

The "depopulation" of France, as it has been called, has brought out within the last two or three years a considerable amount of social theorizing in the secular press, and this has to some extent invaded the current medical literature, which as a rule leaves economic questions alone. The subject of population, however, which is one of the most important social questions, has also its medical bearings, and can be treated

more freely and fearlessly in some respects from a medical than from a purely economic standpoint. As regards France, the problem is a simple one; there is no question as to the fertility of the Gallic people, the evidence of the conditions in Canada is sufficient to prove their virility. In France the lowered birth rate is without much doubt the natural result of the saving and thrifty tendencies of the mass of the French people. If France had not the largest public debt in the world, and if this was not held by its own people in minute subdivisions, and further, if instead of the general heirship of all the children, some law of primogeniture or other expedient of inequality was the rule, it might again reach its old birth rate and the fears of its statesmen be allayed. The present difficulty in France is a direct result of economic conditions, their civilization has reached a static phase as regards population, and this is due in this special case to the general well-to-do condition of its people. They are, with of course lower ideals of comfort and standards of living, more generally than any other people, in the creditor class, and, as in that class in other lands, their birth rate decreases.

The prevalent militarism at the present time, the law of universal service, with its results in the way of delayed marriages, the extension of sterilizing venereal diseases, etc., though it undoubtedly has its part, can not be properly credited with the reduction of the death rate to any great extent, for it notoriously has no such effect in other European countries where the same conditions prevail in this regard. In Germany there is no marked decrease of births, and the population increases in spite of emigration; nor are any such complaints as those from France, heard from other quarters in Europe. Her ailment seems to be peculiar to herself and it is believed that the reasons given are the correct ones to account for it.

It is more than probable that the methods by which the result is brought about directly are not all such as can receive medical approval. Of course there is no such state of affairs as prevails in some Oriental countries where the courtesan is an honored member of society and infanticide is legitimized; but there must be a certain social demoralization that is more or less disastrous to society, altogether apart from the national enfeeblement in fighting material, if population is repressed by general practices of any kind that interfere with the order of nature. The present state of affairs in France, and it may be to some extent locally elsewhere, is certainly not a satisfactory one, and so far as it may be due to a moral dry-rot, and a spread of any kind or form of sexual vice, is most unsatisfactory.

The present tendency in civilization to the growth of great cities is bound to have a deleterious effect upon the population. It has been said that "Paris is France," and this may suggest a theory of French decadence.

The same causes however exist elsewhere and it is not impossible that the same evils may follow them.

The medical bearings of the subject are sufficiently obvious, and it is probable that the remedy, if there be one, will have to be administered largely by the aid of the medical profession in educating the public, encouraging correct notions upon certain matters of sexual morality, and generally pointing out the proper ways of conduct and living. The idea of marriage is, or should be, connected with that of the family and where they are separated one of the greatest stimuli to progress is done away with, and when a nation or a people, as a whole, shirks the struggle for existence in this particular, when fatherhood or motherhood is not looked forward to as the most desirable result of sexual union, then that people may expect sooner or later to yield to some more virile race in the struggle for national prominence or national life. It is unfortunate for France that economic conditions have so apparently hastened or temporarily produced this symptom of decadent or senile civilization.

PHTHISIS WARDS IN ITALIAN HOSPITALS SIX DECADES AGO.

The contagious nature of phthisis was an accepted doctrine with the Irish Royal College of Surgeons and the Scotch and continental schools with which it was in affiliation, nearly two centuries ago. The opinion as to the contagious nature of phthisis lasted longest in Italy and Spain. In Naples no one could conceal phthisis under penalty of three years at the galleys for common people and three years imprisonment and a fine of 300 ducats for the nobility. A physician who failed to report phthisis was liable to a fine of 300 ducats for the first offense and a banishment of ten years for the second. To aid a consumptive in the invasion of quarantine was punishable by fine and six months imprisonment. In Spain and Italy consumption was literally a "terror" to the community. In 1839 GEORGE SAND traveled in Spain with CHOPIN, the musician, then affected with the phthisis, to which he succumbed a decade later. On installing themselves at Majorca, SAND writes:

"At the end of a month poor CHOPIN had called in a physician, two physicians, and even a third, each a greater ass than his colleagues, if such a thing be possible. Each went away spreading the news throughout the island that the stranger was a consumptive in the very last stage. And what a commotion it caused! Phthisis is very rare here and is generally considered contagious. We were regarded literally as pestiferous, all the more as we did not attend mass. The proprietor of the little house that we had rented, brutally put us out of it and brought a process against us to force us to rehabilitate the reputation of his house contaminated by our presence. The indigenous magistracy pluck us as though we were chickens."

At Barcelona new trials and tribulations awaited them. On leaving the hotel, CHOPIN had to pay for the bed and bedding he had occupied, which were

seized and burned by the police. In a letter (dated at Rome, Nov. 6, 1802) in which CHATEAUBRIAND announced to FONTANES the death of Madame DE BEAUMONT, the following passage occurs:

"For the balance I am very much embarrassed. I had hoped to save a couple of thousand crowns from the sale of my carriages, but by law dating back to the time of the Goths, phthisis is declared a contagious malady here in Rome, and as Madame DE BEAUMONT had ridden in them a few times (twice or three times only) nobody will purchase them."

The room in which poor KEATS died was treated in like fashion.

The Italian hospitals had isolation wards for phthisis. Of them, Dr. A. L. PIERSON wrote six decades ago (*Medical Magazine*, April, 1834).

"The patients with tubercular phthisis are separated from the rest by being placed in a separate ward, in a building having a small court-yard to separate it from the principal edifice. The belief in the contagiousness of the disease is as predominant at Naples as at Rome. In both cities it is customary to sacrifice the clothes and furniture used about the sick, and even to scrape the walls and tear down the woodwork of the chambers in which they have been sick. But if consumption be contagious, how perfectly inadequate is this protection by separation. For multitudes who occupy beds in other parts of the hospital on account of other diseases are tuberculous, and consequently must be poisoning the air with phthisical emanations. I was indeed astonished at the number of consumptive patients which this hospital contained. Nearly one hundred beds were occupied by cases of confirmed phthisis. One can hardly realize that so much has been said and written to recommend this city as a residence for consumptives, when some of the best informed Neapolitan physicians estimate the deaths by consumption among the residents at one-fourth of the whole mortality. A separate ward for consumptives is terrifying enough to those who enter it and might well bear the inscription: 'Let him who enters here leave hope behind.'"

THE PLAGUE AND FAMINE OF INDIA.

The varied correspondence from Bombay agrees upon the proportions of the visitation, with the telling commentary that the sanitary conditions are not improving. From Bombay the report comes that "the natives employed in the shops were the first victims. In one large German establishment three natives only out of eighteen remain. The rest are dead; and the Europeans are already beginning to drop off. The plague advances."

In that city the death rate has become quadrupled over the ordinary, when the population counted up to 800,000; now also the panic has become of the wildest. "Several native quarters in the city are absolutely deserted. The cotton mills, that employed thousands of hands, are closed. Merchants and business men have all disappeared, and both importation and exportation have completely stopped. From morning till evening," continues the account, "there is a procession of funerals; and in the evening the sky is reddened with the fires that consumes the bodies. An absolutely terrifying spectacle is presented at the Queen's Road Square, where the Hin-

doos burn their dead. For a considerable distance we can see the huge columns of smoke and hear the wails of the relatives, the lugubrious sound of the cymbals, and the crackling of the blazing wood."

As regards the famine, the same drama of horrors, with the more or less spectral details, possesses the stage. The famine belt is roughly computed to be 1,300 miles long and 400 miles wide, while a fresh food supply is impossible until September. Add to this as evidence of almost incredible vitality that individual adults not infrequently descend in weight to less than fifty-six pounds. "Mere skin-covered skeletons," is the graphic phrase employed.

CORRESPONDENCE.

The Object of the Berlin Leprosy Conference.

NEW YORK, Feb. 16, 1897.

To the Editor:—In a correspondence with Dr. Goldschmidt, December, 1895, a plan was devised by the writer for the formation of an International World's Committee, composed of delegates of all governments. This plan was submitted to Dr. Hansen, who approved of it, and submitted it to the Norwegian government through his chief, Dr. Holmboe. The answer came back that before Norway issued the invitation, it was necessary to obtain a general opinion of the leading leprologists. Dr. Hansen said that his government would probably ask a credit of parliament for the expenses of the Congress.

The Provisional Committee was formed of Goldschmidt, Hansen and Ashmead. The plan was explained to the public in medical newspapers, and was brought to the attention of the leprologists through private correspondence. It seemed to be generally approved. It remained to determine the seat of the Congress. Here there was a divergence of opinion. Some were for Bergen, others for London. Moscow was proposed also, especially as there was to be there a general medical Congress.

When we had brought the matter so far, suddenly Dr. Ehlers started a committee of his own. It seems that before we had thought of a Congress he had, perhaps two years before us, revolved in his head, "while investigating leprosy in Iceland," a plan for some kind of palaver, or learned talk, between *renowned* leprologists who, giving their opinions either in German, or English, or another language, would by their eloquence destroy the scourge of leprosy. Anyone will admit that there was not much originality in the idea.

He succeeded in forming a committee in Berlin, and persuaded Dr. Hansen to go with him. They issued an invitation to a debate.

Our idea was, and always has been, that the only way to combat and eventually destroy the dreadful scourge, was the isolation of lepers, enforced by law. In one generation, leprosy not being hereditary, the victory would be complete. Remedy for the disease there is none. Experimentation with the bacillus for twenty-five years has resulted in nothing. The disease is certainly contagious, and spreads only by contagion, directly or indirectly. Therefore isolation alone can conquer, and no learned talk, no amusing communications of experiences, are of any use. Any man who really, as a physician and a philanthropist, wants truly to fight the dreadful enemy, must stand for isolation. Salaries may be gained, high positions may be occupied, commissionships may be enjoyed, the honor of being sent as delegates to conferences, or other palavers, may be obtained, and, though a number of *renowned* leprologists, whose works are *known*, will become still more

renowned and their works still better *known*, yet leprosy will continue to gnaw at the vitals of the race.

Dr. Ehlers speaks of the "capacity of discussing a good cause." This is, in his opinion, all that is wanted in Berlin. As if that good cause had not been discussed by men even greater than Dr. Ehlers himself for 2,000 years!

We wanted to *do something*; they come together to talk.

Dr. Ehlers says that the governments are only invited to send delegates, but that these delegates will have no special function in the Berlin Conference.

That is, every active means against the disease must be avoided like poison, and nothing but talk is to take place, absolutely nothing but talk. It is a conference to amuse us fellows, us leprologists, not at all to destroy the most horrible punishment that ever nature has put upon mankind.

Dr. Ehlers says that he has "no use for governments," because they have always neglected the holy name of hygiene. But we wanted only that, and did not think, and do not think now, that anything can be done except by "stirring up the governments." Does Dr. Ehlers really believe that talking is better than "stirring up the governments?" Can the disease be stopped in Iceland in any other way than by the operation of the Danish government? Will they stop it by the talk and reciprocal compliments in Berlin? The doctor himself in his *known* works, says that in no other way can leprosy be conquered in Iceland except by isolation. But these things seem to be expected to happen, only a hundred years after the Berlin Conference has met, and the great talking has come to an end.

Until our great grandsons see that happy ending, let us talk and discuss, and enjoy the company of all the *renowned* leprologists, and praise their celebrated works. Talk is the order of the day.

To put our opinion in a few words: We want to have official delegates from every government, to meet at stated intervals, who will form a permanent committee.

We declare at once that we are contagionists, and that we do not believe that anything but absolute isolation can destroy a disease which afflicts nearly a million of human beings. Such a committee can not but be for isolation. In this respect, we are intolerant. We are also intolerant in this: We condemn every effort that is made against vaccination. We are for vaccination as we are for isolation. We confess to be entirely intolerant in this respect.

There is to isolation but one great opponent today, it is England. The maintenance of her 200,000 Hindu lepers, not to speak of her West Indian and other lepers, would be an enormous expense. England is opposed to isolation from utilitarian considerations. Recently, as Mr. Jonathan Hutchinson tells me, measures for the isolation of lepers in India were withdrawn from Parliament because of the opposition which he led against them. His opposition was certainly not of a scientific, and still less of a philanthropic character.

The Berlin Conference will meet, the Berlin Conference will go. It will have been very interesting; it will be, as Prince Bismarck said to the Battenberger, "a pleasant thing to remember afterward," but there will be at least (probably much more than) 200,000 lepers in India, 100,000 in China, 100,000 in Japan, 27,000 in Colombia, 5,000 in Russia, 3,000 in Brazil, 500 in Cuba, 500 in the United States and 159 in Iceland, the place where Dr. Ehlers has had his only experience of leprosy, and where he prepared himself for the palaver which is to take place in Berlin, October, 1897. There the world will be told by several *renowned* leprologists how the leper problem can be solved without isolation; but if the numbers quoted above are not increased at the time when all that science becomes public, I shall be very much astonished.

Very interesting theories will no doubt be expounded. If Dr. Wernich were living, he would, if he had not changed his

mind since he wrote on leprosy in Japan, explain how the disease arises from a depravity of digestion, caused by the excessive absorption of rice. He, I suppose, is one of the *renowned* leprologists whose works are *known* to Dr. Ehlers, and it is to be hoped, for the amusement of all the scientists who will meet in Berlin, that there are still other men living who possess no less imagination than Dr. Wernich.

We do not care very much about the greater or less renown of a leprologist; this is absolutely of no account in our business. We might say that Dr. Hansen is the greatest of leprologists, because he chanced to light on the bacillus. Yet the discovery of the bacillus has not saved one human being, has not diminished the sufferings of a human creature. If a thousand leprologists, as great as Hansen, meet, they will not do more than Hansen himself has been able to do. Not any of the *known* works of the learned gentlemen can do more than the discoverer of the bacillus has been able to do. All that the greatest of leprologists has been able to do, was done by isolation, imposed by his own government, and independently of the bacillus, and *without palaver*.

ALBERT S. ASHMEAD, M.D.

P. S. In a letter dated Nov. 16, 1896, to Dr. Goldschmidt of Paris, Dr. Ehlers, the Secretary of the Berlin Leprosy Conference Committee, said "that he could assure him that Dr. Hansen had never approved the project of Dr. Ashmead, and that the latter acted without any kind of authority from the Norwegian government, and even without the formal authorization of Dr. Hansen."

In a letter to me dated Sept. 4, 1896, Dr. Hansen says: "I should best like if you and Dr. Goldschmidt alone took the task of convoking the Congress on your shoulders; but should you think it very desirable to have my name, you may use it, but on the condition that the Congress is only regarded as arranged by us. If the Congress then will meet in Bergen, I hope still that the Norwegian government will pay the business matters; the best would be, if the participating governments each paid their tribute."

"If the Congress shall not be secured without its help, the government will probably ask a credit to furnish the Congress with a secretary, local (place), for the meetings, and other matters of business."

This shows conclusively, I think, that Dr. Hansen permitted the use of his name on our provisional committee, and gave us warrant to use the name of his government.

ALBERT S. ASHMEAD, M.D.

"Independent Medical College" Mill.

TECUMSEH, MICH., Jan. 8, 1897.

To the Editor:—I inclose you what purports to be a medical journal. It certainly is the rankest thing I ever saw. Is it not likely that it is the child of the Wisconsin Eclectic Medical College? You will notice that the editor is J. Armstrong of Chicago. I have looked him up in Polk's Medical and Surgical Register of the United States, 1896, and find that he lives at 683 W. Van Buren St., but following his name is the little star that refers to the following note at the bottom of the page: "No report received in answer to inquiry regarding graduation." J. H. Randall, Ph.D., M.D., is given as associate editor, but his name does not appear at all in Polk's Register and I mistrust he is a myth. I am lead to this belief by comparing the name, with those given on page 14 in the article, "Report of Proceedings of the United States Medical Liberty League." It is stated that several persons met to organize the league in response to invitations of the faculty of the Independent Medical College, and in the proceedings the names of five M.D.s., are given, namely: J. Armstrong, Mary E. Sellen, C. K. Drumheller, A. J. Clausen, J. H. Randall. The first two are given in Polk's Register. Mary E. Sellen is or was a resident of Columbus, Ohio, and her school of practice is given as "Sci.," if any one knows what that is. The names of the other three organizers of the United States Medical Liberty League can not be found in Polk's Register anywhere in the United States.

I have no doubt that J. Armstrong and Mary E. Sellen are the prime movers and that they are the officers and members of the league. On the last page of cover is an advertisement of the Independent Medical College, which announces that "This school advocates a new and successful method of acquiring a medical education." The names of the members of the faculty are not given if there are any, but as the announcement is the baldest possible bid for the sale of diplomas without college attendance, and as the journal is avowedly opposed to all medical legislation, it is almost certain that J. Armstrong and Mary E. Sellen are "the journal," the league and the college, all in two. On page 16 are the opinions of doctors who have read No. 1 of the *Medical Liberty News* (this copy is No. 2) and have words of commendation for it. There are just six of them, and three of them have the suspicious and tell-tale star following their names in Polk's Register, and the names of the other three do not appear at all. The object of the "Liberty league" seems to be to organize and raise funds to oppose all medical legislation and in case any member of the league is prosecuted for illegal practice to help him with funds and prestige. On page — occurs this fine statement: "We also declare persistent and uncompromising warfare against the practice of *vivisection* *tive animals*."

I send the pamphlet to you in the hope that you will put it into the hands of the proper officials and that they can by legal means shut up the "diploma mill" at least. Their journal and the "league" are beyond the reach of the law, I fear.

I am very respectfully yours, L. G. NORTH.

Massage.

CHICAGO, ILL., Feb. 15, 1897.

To the Editor:—In the JOURNAL, issue of Jan. 9, 1897, there appeared a part of a serial article on "Massage," written by myself, which was "to be continued." As the continuation did not appear, I wrote to you about February 12 inquiring the reason thereof and received from you the following reply:

"Dear Doctor:—I have your letter of February and have to say that after publishing the first part of your article we had a protest from Dr. Douglas Graham, in which he claimed that a large portion of the history of massage was taken from his book, a charge which seems to be sustained, etc."

1. Now, as a matter of fact, I did quote Dr. Douglas Graham some and wherever I did I think I gave him credit for it. I did not put his name at the end of each line, but at the end of certain articles. If I should have neglected to do this in any instance it was an oversight and I beg pardon of Dr. Graham.

2. I challenge Dr. Graham to prove that the "Ancient History of Massage" as I have written it is *entirely original with him*, and I will prove to him that there are a score of books on the subject by other authors who use language similar or like it in part. Dr. Graham can not quote ancient history and call it his own.

3. Get a number of books on any subject (medical), as surgery, for instance, and does not one author quote the other or a dozen others?

4. I do not know as I quoted Dr. Graham any more than other authors; if I did, then he ought to be proud of it.

Since when is medical literature private property?

Respectfully yours, JOHN KERCHER, M.D.

Embryonic Specimens Wanted.

BALTIMORE, MD., Feb. 20, 1897.

To the Editor:—During the last ten years I have appealed to physicians from time to time to send me the human embryos which fell into their hands, and have in this way procured some very valuable specimens. These specimens have been cut into sections, and are now being modeled and studied very carefully. Yet a number of important stages are still wanting, and I therefore ask through your columns that physicians send me any material which they may obtain.

The best method to preserve human ova is to place the unopened ovum, without handling, and as soon as possible, in strong alcohol. By this method the embryo within is well hardened for future microscopic study.

It is very injurious to wrap these delicate specimens in cotton before sending them by mail or express. A perfect method is to place the preserved specimen in a bottle filled completely with alcohol, thus imitating the condition of a *fetus in utero*. If there be no air or cotton in the bottle, it is almost impossible to injure the embryo by shaking it. Very sincerely yours,

FRANKLIN P. MALL,

Professor of Anatomy, Johns Hopkins University.

Spitting in School Rooms.

PHILADELPHIA, PA., Feb. 4, 1897.

To the Editor:—If the numerous articles that are being published throughout the United States in the leading newspapers are true; that is, that tuberculosis is an infectious disease, and one of the most dangerous ways of spreading the disease is through the spittle, do you not think the placing of steam or hot-water pipes, coils or radiators in a school room where fifty or sixty pupils are congregated for hours, is highly unsatisfactory? The spitting upon the floor in a school room by teachers or pupils whose antecedents were infected with tuberculosis seems to us would dry, become finely powdered and, as all of the air in a room must go to the radiating surface to be reheated, would be the means of thoroughly distributing the germs of that disease. Possibly this is true of other diseases, such as diphtheria, scarlet fever, smallpox, etc. What is your opinion on the subject? Respectfully yours,

The SMEAD & WILLS WARMING AND VENTILATING CO.

The "Surfeit."

ATLANTA, GA., Feb. 14, 1897.

To the Editor:—Will the erudite editor of the JOURNAL kindly inform me what is meant by the term "surfeit," as applied to the affection to which the death of medieval monarchs was commonly ascribed? We read that Henry VIII died of "a surfeit"; was this his malady, or is it a vaguely facetious reference to his uxoriousness?

BERNARD WOLFF, M.D.

ANSWER:—Crapula (or *cræpula*). It is also *κραπαλη*, a surfeit. A disorder from something taken into the stomach, and occasionally a sickness or at least a loathing of the offending matter. It sometimes signifies a plethora from indulgence and full but improper feeding, in which case perspiration is checked and eruptions formed on the skin. It is sometimes called the *cholera accidentalis*.—Bartholomew Parr's "London Medical Dictionary," 1819.

The Various Quoted Stanza Again.

To the Editor:—Many years ago I picked up in London an old volume of medical rhymes published in the last century, and in this "God and the doctor" ran thus:

"God and the doctor we alike adore,
Only when in danger, not before,
The danger o'er both are alike requited,
God is forgotten and the doctor slighted."

This is certainly another verse than any quotation so far given in the JOURNAL.

W. S. CALDWELL, M.D.

PUBLIC HEALTH.

Vaccination in Afghanistan.—The *Gaz. d. Osp. e d. Clin.*, January 5, states that Miss Lilius Hamilton, special physician to the Emir of Afghanistan, has succeeded in impressing upon her royal client the importance of preventive vaccination. He has ordered the necessary steps to be taken to introduce it into his domains, with Miss Hamilton in charge of the service. More than a fifth of the children there die every spring from smallpox, and the country will owe a large debt of gratitude to "Jenner's valorous proselyte," when such ravages cease.

Epidemic Icterus.—G. Mori publishes a study of an epidemic of thirty cases of icterus at Chiuse, in the *Gaz. d. Osp. e d. Clin.*, of January 10. His conclusions are that it was caused by some infective agent belonging to the same category as the microbe of malaria, and that this agent entered by the mouth and produced a duodenal gastro-enteritis. The toxic products of this infection then affected the main biliary passages, from the portal vessels to the hepatic cells, resulting in icterus.

Is Consumption Disappearing?—Dr. Arthur Ransome, of Manchester, England, thinks that "if phthisis were to continue to diminish in prevalence at the same increasing rate of decline for another thirty years it would then have entirely disappeared. The first great drop in its rate took place in the decade 1840 to 1850, about the time that serious attention began to be given to sanitary reform and especially to land drainage. It then remained scarcely reduced for about seventeen years; but from 1867 to 1894 it has been steadily on the decline. It is in this period that most of the great sanitary work has been carried out in this country." Surely here is an indication in what direction an effort should be made toward stamping out a disease which is said to carry off one-seventh of the human race. One would think insurance companies would be the first to promote a reform of this character, but they will not. Their method of covering a risk is to charge an extra rate. There is no extra rate against death from consumption.—*Medical Examiner*.

The Anti-Cholera Serum of Kitasato.—The *British Medical Journal* has an annotation regarding Kitasato's work in regard to cholera prevention, from his assistant bacteriologist, Dr. Nakagawa. The latter reports the results of the serum in one hundred and ninety-three cases. The former rate of mortality (among Japanese) has been about 70 per cent. In these cases the percentage was lowered about 20. The subsidiary results are similar to those of diphtheria antitoxin: 1. Urticaria, very common. 2. Arthralgia, observed in only eighteen cases. 3. Myalgia in six cases. The difference in prognosis, according to the time which had elapsed before coming under observation, is shown as follows: Less than eight hours, no deaths; eight to twelve, 22.2; twelve to twenty-four, 32.1; twenty-four to forty-eight, 39.7; forty-eight to seventy-two, 38.7; over seventy-two, 31.1 per cent. mortality. Three cases were observed in children under two years of age.

Cholera in England.—A note of alarm has been struck by the news that a transport with cholera on board had arrived at Plymouth Sound. It is questionable how the infection got on board, but most probably it was conveyed from Port Said by the fruit purchased there. Probably in any other country but Britain the disease would have been landed and gained ground, but here Dr. Williams, with Surgeon-Major-General Hamilton set to work and took immediate and perfect precautions. The excellence of our medical officers of health can not be overestimated. Our readers may remember that in 1892, although thirty-five cases of cholera reached these shores, it did not spread in one single instance. We do not think England will ever be again visited by such terrible epidemics as those of sixty or less years ago: the medical inspection arrangements are so perfect and our system so excellent, despite the silly people (some of them members of the medical profession) who "rush in where angels fear to tread" and advertise their stupidity by trying to create panics. Our present arrangements are not merely for infected parts, but they provide for careful watching over possible far away centers of infection. They are in every way practical and far above the extraordinary mystical performances (called "hygienic") of continental countries.—*Medical Times* (London), January 23.

The Death Rate of London in 1896.—The total number of deaths in London in 1896 was 81,721, with a rate of mortality of 18.2 per 1,000 living; the population was estimated on July 1, of

that year, at 4,421,955. The deaths of infants under one year were in the proportion of 160 in each 1,000 registered births. The death rate in London was lower in 1894, at 17.4 per 1,000; and in 1893 and 1895 at 20.9 and 19.4, respectively. Measles cost 3,692 lives, diphtheria with croup, 2,663, whooping cough 2,931, scarlet fever only 940, enteric fever 564, typhus 5, diarrheal diseases 3,192. The mortality by measles, diphtheria and whooping cough was in excess of the average of the ten years last past; that by variola and scarlet fever was lower. The death rate from all causes, at 19.4 per 1,000, with only two exceptions, is the lowest on record for that city and was 1.6 per 1,000 lower than the ten years' average. Of reportable diseases, smallpox had 225 cases with 9 deaths, scarlet fever 25,647 cases, diphtheria 13,808 cases, measles and whooping cough sickness cases are not registered, membranous croup had 446 reported cases that are included in the total for diphtheria, enteric fever 3,190 cases, erysipelas 6,436 cases, puerperal fever 277 cases. Total report cases 49,705. Work done by the medical profession, in the way of report making, not much under 131,426 cases, and certificates of death, not a small item.

Bovine Tuberculosis in New York.—The action taken by the Health Department of New York City regarding tuberculous cattle and the milk supply is of considerable importance to that community. It has been found that 15 per cent. of the 1,500 cows within the limits of this municipality were diseased and killed by order of the Board. The herds in the great dairy districts of the State are doubtless, equally with these, purveyors of the bacilli of tuberculosis to the people of that city and of all the other cities and towns of the State. In the face of these facts the Legislature has failed thus far to appropriate money for the protection of the people against this great menace to the health of this and future generations. The State Board of Health stands ready to co-operate with local boards in this matter, but can do nothing without funds for the employment of experts and the compensation of cattle owners whose animals it is found necessary to destroy. The time has come when the people should demand that this preventable disease should be stamped out, and whenever such demand shall be made we believe it will be heeded.—*Medical Review*, January.

New Instructions for English Vaccinating Officers.—New instructions have been issued by the Local Government Board, relating to public vaccinators, the following paragraphs being substituted for those similarly numbered in the schedule of the previous order: (5) "Endeavor to maintain in your district such succession of cases as will enable you to vaccinate with lymph directly from arm to arm at each of your contract attendances. When stored lymph, whether humanized lymph or calf lymph, is used, it should be preserved either dry on ivory points thickly charged and constantly well protected from damp; or liquid in tubes hermetically sealed at both extremities. With all stored lymph caution is necessary, lest in time it have become inert, or otherwise unfit for use." (6) "Consider yourself strictly responsible for the quality of whatever lymph you use or furnish for vaccination. In storing lymph, be careful to keep separate the charges obtained from different subjects and to affix to each set of charges the name, or the number in your register, of the subject from whom the lymph was derived. Keep such note of all supplies of lymph, whether humanized lymph or calf lymph, which you use or furnish, as will always enable you to identify the origin of the lymph. Do not employ lymph supplied by any person who does not keep exact record of its source."

Antisepsis in the Treatment of Infantile Diarrhea.—The part played by bacteria in the production of the diarrhea of infants was suspected and practically admitted by many long before the researches of Escherich and others had established this theory of its origin upon a scientific basis. According to the

observer just mentioned, the two forms of germ life most active in the diarrhea are the production of bacterium coli and the bacterium lactis. The influence of the latter will suffice to explain why it happens that a large number of cases of infantile diarrhea—we might almost have said all such—become amenable to treatment when the usual milk dietary is reduced, or even for a short time discontinued, in favor of one consisting of fresh raw meat juice. The bacterial hypothesis explains also the success which has in a number of cases attended the temporary discontinuance of all nourishment and the substitution in its stead of boiled and subsequently cooled water given frequently in small quantities. This method, which has recently attracted some attention in France (*Journal de Clinique et de Thérapeutique Infantile*, January 14), is not altogether novel. Its *modus operandi* in cleansing and procuring rest for an overwrought bowel while maintaining blood pressure by its ready absorption calls for little explanation. Something also remains to be said in favor of the procedure, often successfully employed in the case of dysentery, which obeys the same teaching, and by combining a sedative with an excitant of the liver aims at producing by means of the bile the moderate action of an antiseptic force which is resident in the body itself.—*London Lancet*, January 30.

Lack of Consistency of the Royal Commission on Vaccination in Great Britain.—At the last council meeting of the Epidemiological Society, held on Jan. 15, 1897, it was resolved to submit a resolution, in reference to the recent report of the Royal Commission on Vaccination, to the next ordinary meeting for adoption, in tenor somewhat as follows: That this society while noting with satisfaction the pronouncement of the Royal Commission as to the value of primary vaccination, and the necessity for maintaining it, regret that, although the report also brings forward conclusive evidence as to the value of revaccination, the Commissioners have not *had the courage of their conviction and recommended legislation which would place it on the same basis as primary vaccination*. The Epidemiological Society in former years took an active part in the question of vaccination, and its carefully prepared report on the subject was of material assistance to the Legislature in framing the Vaccination Acts. Doubtless the increasing proof of the need of revaccination as a protective which the experience of later times has brought may have weighed with its council in submitting the above resolution to the society. If it does nothing more it will at any rate show that those who have the best opportunities of judging the question are persuaded of the importance to the community of securing a system of revaccination comparable to that to which Germany owes her immunity from smallpox.—*London Lancet*, February 6.

Model Buildings for the Tenement House Class.—The City and Suburban Homes Company of New York, incorporated in July last with a capital stock of \$1,000,000, which is said to have been more than fully subscribed, is founded for the purpose of supplying improved dwelling places to wage-earners. The first block is to be on a plot of ground between Tenth and Eleventh Avenues and Sixty-eighth and Sixty-ninth Streets. Each building is to be 100 feet square, and of the 10,000 square feet 3,000 are to be given up for light and ventilation; each is to have an interior courtway 30 feet square, and in a block 200 by 400 feet an east and west courtway 20 feet wide runs through the entire block. Each building is to be divided into four compartments by walls from cellar to roof; the construction is to be slow-burning, and the stairways are to be fireproof and brick inclosed. *The Independent* says: "The tenement does not merely repress, it destroys. Transfer to it the most intellectual and refined family in America and in the course of a few generations—provided the usual condition of complete helplessness were added to poverty—the process of degeneration

would be completed. The sole real reform of the tenement is its abolition; there is no middle stage. The architect of the first block of improved dwellings expects to be able to show that the construction of separate dwellings upon the usual city lot is a senseless waste of ground-area in walls, and makes proper lighting and ventilation impossible; while by building in common upon such lots the waste in walls can be minimized, more space for light and air can be had, no rooms need be dark and interior open spaces can also be had. A reach beyond improved tenements is also intended; suburban homes in the shape of detached and semi-detached cottages are proposed along rapid transit lines. The purchaser is to pay down 10 per cent. of the price, having ten to twenty years for the remainder; an interesting feature is that the company will insist on insuring the purchaser's life, at its own expense, as a guarantee to his family. It would be insincere and idle to pretend that decent dwellings are as profitable to the owner, in money, as the abominable tenement has been or could be; it is for the law to say and see that the latter profit shall cease to be. But decent dwellings can be reasonably profitable; happily, there is no room for doubt about that. They are a fair investment and capital need not fear to take counsel of philanthropy."

NECROLOGY.

ABRAHAM VAN NEST BALDWIN, M.D., College of Physicians and Surgeons, New York, 1882, died from pneumonia at his home in New Brunswick, N. J., February 14. He was a son of Dr. Henry R. Baldwin and was born Nov. 16, 1858. Among the positions held by him were the Secretaryship of the Health Board, of which he was also a Sanitary Inspector, and held a membership in the Board of Education, his second term of service. He was a man of much industry and promise.

RALPH ERSKINE SWINBURNE, M.D., Bellevue, New York, 1877, died of acute atrophy of the liver, at his home in New York city, February 14. He was born at Rouse's Point, New York, Dec. 27, 1853 and came to New York in 1874, beginning general practice in Fordham, when it was a far distant suburb. In 1879 he came to Harlem (N. Y. city), and devoted himself to diseases of the eye, ear, throat and nose, believing that they were more satisfactorily treated in groups, than by the current methods. In 1881 he founded the Harlem Eye, Ear and Throat Infirmary, of which he became chief surgeon. He was also consulting ophthalmologist of the J. Hood Wright, formerly the Manhattan, Hospital. He was a member of the Academy of Medicine, of the County Medical Society, and of the Harlem Medical Association. He was a nephew of the late Dr. John Swinburne of Albany, N. Y., after whom the artificial quarantine island was named, and who for some years was Health officer of the port of New York. A daughter by his first wife, a son and second daughter born six hours previous to his death, together with the mother are his survivors. His mother is also still living.

SATURNINO M. JIMENEZ, M.D., Jefferson Medical College, 1878, was a son of Antonio Jimenez, a planter of Mantanzas, Cuba, where he was born in 1851. After a distasteful trial of the shipping business in this country he began the study of medicine, and after his graduation went to Paris. After a year spent in that city he returned to Philadelphia to enjoy the benefits of the hospitals there but finally came to New York to manage the practice of a friend who was compelled to go to Europe for his health. He was a member of the Marti Relief Association and was well known in the Cuban colony. The date of his death was February 17.

S. GRATZ MOSES, M.D., Medical Department University Penn., 1895, died in St. Louis, Mo., Feb. 22, in his 85th year. He was a Pennsylvanian by birth and before going to St. Louis was physician to Joseph Bonaparte, the elder brother of

Napoleon. As a member of the AMERICAN MEDICAL ASSOCIATION he was well known, particularly in its earlier history. He has the credit of having established the first dispensary in St. Louis.

HENRY A. CREAMER, M.D., Bellevue Hospital Medical College, New York, 1892, died in Brooklyn, N. Y., aged 25 years, on February 20. He was the youngest son of the late Dr. Joseph Creamer of that city.

Dr. LEVI W. BALLARD, a graduate of Cleveland Medical College, 1848, at Auburn, Washington, January 30, age 81 years.

—Dr. J. J. Armstrong, at Caldwell, Idaho, January 14, 1897.

Dr. F. Froman, at Caldwell, Idaho, Jan. 7, 1897, aged 73 years.

SOCIETY NEWS.

New York Academy of Medicine.—At the annual meeting in January (see JOURNAL, February 6), the President reported the following officers for the ensuing year: President, E. G. Janeway; vice-president, Everett Herrick; trustees, Joseph D. Bryant, Clement Cleveland; committee on library, C. H. Knight; on admissions, Thomas E. Satterthwaite. The scientific business of the meeting was introduced by a paper by Dr. H. D. Chapin upon the prevention of the spread of contagious diseases, in which the author emphasizes the view that the public schools were the most potent factor in such spread. Especially is this true of the schools in the poorer sections of the city. All the elements favoring the spread of disease are found there. The ventilation is poor and the cubic air space insufficient, being much less than the board of health requires for lodging houses. Great stress was laid upon the unsuitableness of the wardrobes and places for hanging clothing. Damp clothing should not be hung in the school room nor should it be placed in close unventilated wardrobes, so favorable to the development of pathogenic germs. Dry, well-ventilated rooms should be provided for this purpose. In the discussion following this paper, Dr. George B. Fowler, health commissioner, called attention to the work which is being done by the board of health of the city. He stated that the city has been divided into thirty-five districts, with an inspector for each district, whose duty it is to report all cases of contagious diseases to the department, and that by this system it was expected to reduce the rate of contagious diseases in this city by at least 5 per cent. Dr. Fowler presented statistics showing the difference between the years 1888 and 1896 in the death rate by contagious diseases. 1, the percentage by population; 2, the percentage by cases; 3, the total number of deaths, showing a marked decrease in 1896 over 1888. He stated that much of this decrease was due to the system of inspection established by the board of health, and that he was perfectly satisfied that the death rate can be still further diminished. He believed that this would be the better accomplished if the board of health had thorough control of these cases, and emphasized the fact that at the same time the profession at large would not be interfered with in the least.

Milwaukee Medical Society.—At a meeting of the Milwaukee Medical Society held on the evening of Jan. 26, 1897, action was taken regarding the antivivisection bill, No. 1552, recently favorably reported to the United States Senate. A committee of three was appointed by the president of the Society to draft resolutions expressing the sense of the Society upon this matter, to report to the Society at the next regular meeting. This committee met in accordance with instructions and reported the following:

MR. PRESIDENT: Your committee to whom was referred the matter of framing resolutions to express the sense of this Society in regard to the bill to prevent vivisection in the District of Columbia, have the following report to make:

WHEREAS, The United States Senate Committee on the District of Columbia has reported to the Senate a bill No. 1552, to suppress vivisection in the District of Columbia, recommending it for passage, and,

WHEREAS, The Milwaukee Medical Society believes that the favorable report thus returned to the Senate is the result of

misrepresentations to the committee by certain fanatics who have no proper knowledge of vivisection and its relations to modern medicine and surgery; and that this Senate committee have heard practically no evidence from those who by their knowledge of this matter are capable of properly representing it; and,

WHEREAS, The passage of this bill would entirely suppress modern and progressive methods of medical investigation in the District of Columbia, therefore, be it

Resolved, That the Milwaukee Medical Society most heartily disapprove of this pernicious bill and beg of Wisconsin's Senators and members of the lower house to do all they can honorably do to prevent its passage, at least until they have heard from the teachers of physiology and biology of our leading medical colleges. Be it further

Resolved, That a copy of these resolutions be sent to each of our United States Senators and Representatives as soon as it may seem expedient to the Society to do so.

J. M. MADDEN, M.D.

U. O. B. WINGATE, M.D.

SAMUEL H. FRIEND, M.D.
Committee.

At a meeting of the Society held on the evening of Feb. 9, 1897, a motion was made to amend by adding that copies of these resolutions be sent to each medical association of Wisconsin, sufficient for their endorsement, one to be sent to each of the United States Senators and one to the Congressmen in whose district the societies meet.

This amendment was amended by including, for the same purpose, all higher institutions of learning in the State, the university, colleges and normal schools.

American Laryngological, Rhinological and Otolological Society.—The meeting of the Southern Section of this Society will be held in New Orleans, La., Wednesday, March 3, 1897, at the new St. Charles Hotel.

Address of welcome by Dr. Jno. B. Elliott, Chairman of Reception Committee. Opening address by Dr. W. Scheppegrell, President of the Section, "The Progress of Laryngology." Address by Judge A. G. Brice, Chairman Auxiliary Reception Committee, "The Division of Labor and the Development of Specialism."

Papers will be read by Drs. E. B. Dench, New York, N. Y.; A. W. Calhoun, Atlanta, Ga.; Robt. C. Myles, New York, N. Y.; Arthur G. Hobbs, Atlanta, Ga.; Augustus McShane, New Orleans, La.; T. C. Evans, Louisville, Ky.; Norval H. Pierce, Chicago, Ill.; D. Ziem, Dantzig, Germany; J. A. Stucky, Louisville, Ky.; Louis J. Lautenbach, Philadelphia, Pa.; Edward F. Parker, Charleston, S. C.; J. Aloysius Mullen, Houston, Texas, and W. Scheppegrell, New Orleans, La. Members of the medical profession are cordially invited to attend.

Officers of the American Laryngological, Rhinological and Otolological Society: Frank Hyatt, president, Washinton, D. C.; Robt. C. Myles, secretary and treasurer, New York, N. Y.; vice-presidents, Frederick L. Jack, chairman eastern section, Boston, Mass.; John S. Mabon, chairman, middle section, Alleghany, Pa.; W. Scheppegrell, chairman southern section, New Orleans, La.; James E. Logan, chairman western section, Kansas City, Mo.

Southern section: W. Scheppegrell, president.

Reception committee: J. B. Elliott, chairman; W. S. Bickham, J. D. Bloom, W. E. Brickell, Chas. Chassignac, F. Formento, C. A. Gaudet, Joseph Holt, A. McShane, B. A. Pope, E. T. Shepard.

Schuylkill (Pa.) County Medical Society at its last annual meeting elected the following officers: A. F. Bronson, M.D., president; H. C. Bowman, M.D., vice-president; J. W. Coble, M.D., secretary.

MISCELLANY.

Appointment. Dr. R. G. Black of Castle Rock, Wash., has been appointed superintendent of the St. James Hospital at Vancouver, Wash.

The Journal of Cutaneous and Genito-urinary Disease has changed its management and is now published at 115 West 84th Street, New York. It is edited by James C. Johnston, M.D., and George K. Swinburne, M.D.

Calculus in Wharton's Duct.—A tumor in the mouth was about to be extirpated when it opened spontaneously and discharged a calculus, which Lavoine assumes had originated in Wharton's duct.—*Nord Méd.*, January 15.

Five Months' Retention of Fetus.—Nearly six months elapsed before the fetus was finally expelled from the uterus. It was mummified, and the placenta was distinctly albuminous.—*Lyon Méd.*, No. 51, 1896.

Kobert's Resignation.—Dr. E. R. Kobert, professor of pharmacology, dietetics and the history of medicine at the University of Dorpat, Russia, has resigned his chair and left Russia to assume the management of the Brehmer Sanatorium. His name is familiar in connection with various preparations.

Dispensaries in Private Residences in Havana.—The bishop and a physician named Ponichet have each established a free dispensary for children in the ground floor of their homes and in the former the children also receive an allowance of milk. The children in the orphan asylum have been transferred to a convent and the asylum turned into a military hospital.—*Archivos de la Policlínica*, January.

The "Ophthalmic Record," now in its sixth year has been enlarged and improved and its editorial and publishing offices removed to Chicago. It is edited by the well-known ophthalmologists, George E. de Schweinitz, G. C. Savage, Casey A. Wood, John E. Weeks, F. C. Hotz, H. V. Würdemann, W. E. Hopkins, Harold Gifford. T. A. Woodbury is editorial secretary. Published at 214 South Clark Street.

Bequests to Hospitals.—Mrs. Mary L. Wood of Bridgeport, Conn., has left by will a bequest of \$15,000 in cash and other property of value. Of this amount \$10,000 is set aside to establish two free beds. Mrs. Wood some time ago donated \$20,000 to the same institution for the purpose of building a suitable surgical ward. The Bridgeport Orphan Asylum, the Protestant Widows' Home and the Charitable Society will also get about \$20,000 each.

Insurance Fees Forty Years Ago.—The *Boston Medical and Surgical Journal* (Vol. ix) some forty years ago expressed the following views anent life insurance companies, singularly like those pretty generally held by the profession today:

"Of all corporations they seem to be the most soul-less. An institution which pays a medical man one dollar (when it pays him anything) for an opinion which no lawyer would give under fifty dollars, is not likely to listen to any proposition about reducing its charges, however probable it seems that its earnings would thereby be greatly increased."

In Memoriam of Professor Huxley.—A memorial very fittingly conceived and carried out by some of the friends of the late Professor Huxley will henceforward be a mark which English travelers in Switzerland will strive to attain. On the shores of Sils Lake at Maloja, in the Engadine, a spot which was to Huxley what Asolo was to Browning, a huge block of granite has been engraved with the following inscription: "In memory of Thomas Henry Huxley, the illustrious English writer and naturalist, who passed many summers at the Kursaal Hotel, Maloja. Erected 1896."—*American Practitioner and News*, January 9.

Professor Koch's Plans.—Professor Koch has so nearly concluded his work in South Africa that he will soon return to Berlin. He will take with him his newly discovered serum, which promises to become an immunizing treatment for the rinderpest. He is unable to state whether or not he will be able to prevent all domestic animals from being infected with the disease. He has demonstrated that sheep and horned cattle are the most liable of all animals to contract the disease. Dogs, monkeys and rodents enjoy complete immunity from it. Dr. Koch, it is said, does not purpose to go to Bombay to study the bubonic plague, despite the fact that he has been asked to head the commission which is to be sent to Bombay for that purpose.

Cilium Within Anterior Chamber Causing Tumor.—At the December meeting of the Liverpool Medical Institution, Mr. R. Williams showed a drawing of a tumor of the iris due to the presence of a cilium in the anterior chamber. The patient, a stonemason aged 22 years, had received an injury to the left eye two years previously. As evidence of this there was a linear scar on the cornea opposite the tumor. The cilium lay across the upper part of the anterior chamber with its root apparently embedded in the tumor. The tumor was rounded and supposed to be a cyst; when the anterior chamber was opened and the cilium removed the tumor was found to be devoid of cyst wall, and was probably composed of proliferated epithelium from the root sheath of the hair.—*British Medical Journal*.

Large Gifts to Charities.—In December, 1896, Miss Thurston, the last member of a wealthy and generous Brooklyn family, died and by her will just admitted to probate, a fortune has been distributed among various charities and institutions. About \$25,000 was given outside the city of her home, but her benefactions to the charities in Brooklyn were equally large: Brooklyn Home for Consumptives, or Garfield Memorial Home, \$3,000; Faith Home for Incurables, \$2,000; Brooklyn Howard Colored Orphan Asylum, \$2,000; Brooklyn Bureau of Charities, \$3,000; and four other charities \$20,000 among them. During her lifetime Miss Thurston had given much more than remained to be distributed by the will, and it is said that she was personally known to but few of her beneficiaries. "She lived very simply that she might have the more to spend on others," has been aptly and truthfully said of her.

Washington's Medical Nephew.—It is not generally known that a nephew of the first President of the United States was a member of the medical profession. Dr. Bailey Washington entered the United States Navy as a surgeon in 1810. He died Aug. 5, 1854, at the age of 72. He was the surgeon of the *Enterprise* when she captured the *Boxer* during the war of 1812. He afterward acted with great efficiency on Lake Ontario under Commodore Chauncey and was selected by him as fleet surgeon, although a junior officer in the service. He was afterward fleet surgeon under Commodores Rogers, Elliot and Patterson in the Mediterranean, and closed his active sea service during the Mexican War. At the time of his death he was consulting and visiting surgeon of the navy yard and marine barracks in Washington.

An American Physician at the Persian Court.—Dr. William S. Vanneman, born in New Jersey, educated at Princeton and the University of Pennsylvania (class of 1888), is court physician to the Shah of Persia, having under his care the half-thousand wives and servants of that newly crowned potentate. Dr. Vanneman was born thirty-three years ago, on a farm near Salem, N. J. He went to Persia as a missionary under the direction of the Presbyterian Board of Missions. When the cholera raged in Persia Dr. Vanneman rendered heroic and valuable service, which brought him under the notice of the highest officials in the Persian Kingdom. During the summer time, the court officials and their harems pass their time at Tabriz. Here in 1895 Dr. Vanneman made the acquaintance of the late Shah's youngest son, and on several occasions attended the Prince and the members of his harem. His skill quickly made the Prince his friend, and when the latter's father was murdered by a fanatic last May, Dr. Vanneman was one of the first to extend his sympathy. Not long after, when the Prince was named to succeed his father as Shah, the new ruler sent for the American and offered him the position of court physician. In August last, Dr. Vanneman and his wife set out from Tabriz accompanying the Shah's harem to Teheran. The caravan consisted of twenty carriages—about all there were to be had in the land—and 500 horses laden with men, women, children and baggage. The journey was expected to take three weeks, the caravan traveling from twenty-five to

thirty miles daily. Dr. Vanneman and his wife occupied one of the carriages, and they had three tents for camping at night.—*New York Press*.

The Earliest Human Ovum.—At the recent meeting of the Naturforscher-Versammlung at Frankfurt-on-Main, Professor Leopold exhibited microscopic sections of the youngest human ovum ever detected. The uterus of a woman, aged 30, was removed for cancer of the cervix. The interior was carefully examined. An undoubted ovum as big as a lentil was seen, making a prominence on the surface of the uterine mucous membrane, which was hypertrophied in its neighborhood. The periphery of the ovum was bounded by a deep groove devoid of mucous membrane. After careful inquiries it was concluded that the ovum had reached the eighth day after conception. Great pains were taken when accurate drawings had been made of the undisturbed ovum to procure successful sections. The highest expectations were fulfilled. The arrangement of the villi, and the opening of the arterioles of the endometrium into the intervillous spaces came out very clearly. A full report of this remarkable case, well illustrated, will, we understand, be published. Dr. Kanthack has added to the museum of St. Bartholomew's an instructive specimen of a very early human ovum in its membranes. Histologic study of the human embryo and its envelopes during the first few weeks of development is much needed. We must not rely too far on homologous structures in the lower mammals, where the anatomy and physiology of the genital tract differ in important details from the same in our species.—*British Medical Journal*.

The Tendency to Specialism and to Surgery which distinguishes these closing days of the nineteenth century, is manifested in every branch of science. One of the latest evidences is the recent announcement of the *Gazette Méd. de Paris* that henceforth it is to be devoted exclusively to surgery. The name will remain the same, but its scope will be limited to this department of the healing art. It states that the demands of the day necessitate the separation of the theoretical from the practical, and that the various scientific periodicals will have to devote themselves to certain specialties, as none can contain them all—the long studies, the practical notes, the miscellaneous news in every branch of science, and the records of experimental work. Such remarks seem strange to the readers of the *JOURNAL*, which publishes in a week as much as the *Gazette* in months, and leads them to rejoice anew in the wonderful capacity of these columns in which each specialist finds the news, the progress and the technical instruction in which he is most interested, brought to him every week from all over the globe and indexed for his ready convenience in each issue. The *Gazette*, and similar publications, with their limit of twelve pages of large type per week are of course forced to restrict themselves to some specialty, of which the readers of the *JOURNAL* also get the benefit, as their contents are reviewed each mail in these columns.

The Surgical Corps of the Cuban Army. While accurate details regarding Cuba in general are extremely difficult to obtain, yet the reports which have reached us indicate that a great deal of excellent work is now being done by the surgical staff, whose members have displayed a degree of skill and conscientiousness which is somewhat surprising. They number about ninety men and are assigned to the six army corps of the insurgents. When we consider the organization of this army, which is without a basis of supplies, is constantly on the move and waging a sort of guerilla warfare, the difficulties attending the proper care and management of the wounded can be readily appreciated. Yet in spite of all this, the principles of modern surgery are carried out to the fullest extent permissible. The surgeons are well supplied with instruments and a fair supply of antiseptics, which the climatic and other conditions render absolutely essential to good work. It may

he said that the surgical corps is far superior in every way to that of the Spanish army, whose hospitals, even in the city of Havana, are filthy and overcrowded and in no degree provided with the essentials of surgical care. While the executive officers are inefficient and often uneducated, the reverse prevails among the ranks of the insurgents. The surgeon general is a graduate of one of our colleges and has had a military training, while no small number of the corps is composed of Americans and Cubans who are regular practitioners of medicine. Nearly all are well qualified and skilful. Under the circumstances, therefore, it is not surprising that they have acquitted themselves with honor if not with glory.—*New England Medical Monthly*.

Washington.

FAVORABLY REPORTED.—The House Committee has made a favorable report on Mr. McCormick's bill to regulate the sale of poisons in the District of Columbia.

THE X-RAYS IN COURT.—The X-rays were recently used in a case before the police court to determine the existence of a fracture of the forearm, claimed to have been produced during a recent arrest.

THE PURE FOOD BILL.—House bill 9842, relating to the adulteration of foods and drugs in the District, introduced at the instance of the Medical Society, has been reported upon favorably by the Commissioners, as amended by the Health Officer. This measure provides that adulterated foods or drugs shall not be sold or exchanged in the District, and that the courts shall construe the provisions against all forms of adulteration liberally, so as to prevent the mischief intended to be guarded against. The term "drug," as used in the act, includes "all medicines for external or internal use, antiseptics, disinfectants and cosmetics." The term "food" includes confectionery, condiments, and "all articles used for food or drink by man."

THE WASHINGTON DIRECTORY FOR NURSES.—The annual meeting of the joint committee of the Washington Training School for Nurses and the Medical Society, was held on the 8th instant. The report of the superintendent and the secretary showed the directory to be in a flourishing condition, and giving entire satisfaction to the public and the physicians. The number of independent directories in the city tend to scatter the nurses and their official records, hence to obviate this objection and centralize the supervision of the nursing community and raise the standard, a special committee, consisting of Drs. H. L. E. Johnson and S. S. Adams, was appointed to coöperate with the different directories and medical societies in securing concentration of nurse registration and supply, in one headquarter or clearing-house. If this coöperation and centralizing is accomplished it will be of the greatest advantage to the nurses, the schools, the public and the physicians.

COMMITTEE ON PUBLIC HEALTH.—At the meeting of the committee on public health of the Board of Trade, held on the 9th instant, it was agreed to urge an appropriation from Congress to secure the reclamation of the Anocostia flats after the plan proposed by the engineer corps of the army. At present there is no greater disease-producing element in any city in the country. The Army, Navy, Interior Departments, and the Health Department have repeatedly urged the abating of this nuisance, and demonstrated its influence in disease production. The petition should receive prompt consideration and action by Congress.

A RESOLUTION AFFECTING QUARANTINE.—Senator Elkins, of West Virginia, has introduced the following joint resolution:

"WHEREAS, in view of the alarming nature and spread of the bubonic plague, now prevailing in India and adjacent countries, and in view of the danger of this scourge being brought to the United States:

"Resolved, That at any port or place in the United States where the Secretary of the Treasury shall deem it necessary for the prevention of the introduction of contagion or infectious diseases that incoming vessels, vehicles or persons should be inspected by a national quarantine officer: such officer shall be designated or appointed by the Secretary of the Treasury, on recommendation of the Surgeon-General of the Marine Hospital Service, and at any such port or place no vessel, vehicle or person shall be admitted to entry without the cer-

tificate of said officer that the United States quarantine regulations have been complied with."

MEDICAL SOCIETY.—At the meeting of the Society held on the 10th instant, Dr. Norton read a paper on Infantile Scurvy and Rachitis; Dr. Shands reported a case of Hare-lip; Dr. Perry, a case of Necrosis of the Tibia; Dr. Prentiss, a case of Erythromelalgia, and presented the patient; Dr. Burnett, cases and specimens of old wound (gunshot) of orbit and temporal bone, bullet exhibited; large penetrating wound of cornea and iris.

WASHINGTON OBSTETRICAL AND GYNECOLOGICAL SOCIETY.—At the 257th meeting of the Society held on the 5th instant Dr. H. L. E. Johnson read the paper of the evening, on Atresia of the Uterine Canal after the Menopause. He referred to his original article on that subject published in the JOURNAL on Dec. 7, 1895.

THE PUBLIC SERVICES.

Army Changes. Official List of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from Feb. 13 to Feb. 19, 1897.

Capt. Philip G. Wales, Asst. Surgeon, is granted leave of absence for four months, to take effect upon his relief from duty at Ft. McPherson, Ga.

Major Robert M. O'Reilly, Surgeon, will be relieved from duty as attending surgeon in this city (Washington, D. C.) by Major William R. Hall, Surgeon, and upon expiration of his present leave of absence will proceed to Ft. Wayne, Mich. for station, relieving Lieut.-Col. J. M. Brown, Deputy Surgeon-General. Lieut.-Col. Brown, on being thus relieved, will proceed to New York City, and upon the retirement of Col. Charles T. Alexander, Asst. Surgeon-General, May 3, 1897, will take charge of the medical supply depot in that city.

PROMOTION.

Capt. John M. Banister, Asst. Surgeon, to be Surgeon with the rank of Major, Jan. 26, 1897.

Navy Changes. Changes in the Medical Corps of the U. S. Navy for the week ending Feb. 20, 1897.

Surgeon R. Whiting, placed on retired list Feb. 15.

Asst. Surgeon J. C. Rosenbluth, detached from the "Raleigh" Feb. 20 and ordered to the "Massachusetts."

Change of Address.

Cook, J. E., from 128 Franklin Ave. to 258 Pearl St., Cleveland, Ohio.
Coffman, G. L., from 1654 California Ave. to 1521 S. Compton Ave., St. Louis, Mo.

Getzlaff, Bruno, from Fitzgerald, Ga., to St. Peter, Fayette County, Ill.
Holmes, H. R., from Portland to Salem, Ore.

Kent, J. L., from Dublin, Va. to 101 East 25th St., New York, N. Y.

Read, Flora A., from 520 to 502 Main St. Fond-du-Lac, Wis.

Roach, J. F., from 3308 Lucas Ave. to 4349 Forest Park Blvd., St. Louis, Mo.

Ross, G. M., from Masonic Temple to 2139 Wabash Ave., Chicago.

Seaman, Gilbert E., from 225 Grand Ave., to 315 Goldsmith Bldg., Milwaukee, Wis.

Waterman, Oscar M., from Milwaukee, Wis., to 59 Washington Market, Milwaukee, Wis.

Younger, Wm. J., from San Francisco, Cal., to Auditorium Hotel, Chicago.

LETTERS RECEIVED.

Ashmead, A. S., New York, N. Y.; Atkinson, W. B. (2), Philadelphia, Pa.; Aronson, Emil (2), Dallas, Texas; Albertson, E. W. (2), Minneapolis, Minn.

Barto, J. H., St. Louis, Mo.; Bode, Henry, Brooklyn, N. Y.; Broughton, Geo. A., Pomona, Cal.; Baughman, J. H., Neoga, Ill.; Bailey, W. G. (2), Pekin, Ill.

Chaille, S. E. (2), New Orleans, La.; Center, Chas. Dewey, Quincy, Ill.

Cokenover, J. W., Des Moines, Iowa.

Druggists' Circular, New York, N. Y.; Davis, Howard Lee, New Haven, Conn.; Davis, F. A. Co., Chicago; Doleber-Goodale Co., Boston, Mass.

Eagleson, J. B., Seattle, Wash.

Fuller's, C. H., Advertising Agency, New York, N. Y.; Fairman, E. W., Broadhead, Wis.

Graves, C. H., Chicago; Gilman, R. E., Brooklyn, N. Y.; Gardner, R. W. (2), New York, N. Y.

Hoyd, H. F. (2), Buffalo, N. Y.; Hummell, A. L., Advertising Agency, New York, N. Y.; Hoffman, M. W., Dubuque, Iowa; Haralson, H. H., Biloxi, Miss.; Hall, F. L., Perry, Ill.; Hektoen, L., Chicago.

Imperial Granum Co. (2), New Haven, Conn.; Instant Cut-Off Co., Port Huron, Mich.

Judd, W. H., Janesville, Wis.; Journal of Cutaneous and Genito-Urinary Diseases, New York, N. Y.

London, L. C. (2), Priam, Ind.; Lichty, John A., Clifton Springs, N. Y.

McCassidy, J. H., Dayton, Ohio; McNamee, Thos., Wabash, Ind.; Mullen, T. R., Marcus, Iowa; Madden, John, Milwaukee, Wis.; Mathews, J. M., Louisville, Ky.; Mason, Wm. C., Bangor, Maine; Morton, D. A., New York, N. Y.

Pilcher, James E., Columbus, Ohio; Pettibone, P. F., & Co., Chicago;

Perry, Dane, Blenker, Wis.; Pegrum, E. C., Fort Lynn, Ark.; Parkinson, James H., Sacramento, Cal.; Procter & Collier Co., Cincinnati, Ohio.

Rigaud & Chapoteaut, New York, N. Y.; Richardson, S. A., Cleveland, Ohio; Rosse, Irving C., Washington, D. C.; Rook, Charles W., Quincy, Ill.

Sayre, Reginald H., New York, N. Y.; Saunders, W. B., Philadelphia, Pa.; Sixta, L. H., Chicago.

Thayer, C. C., Clifton Springs, N. Y.; Ten Broeck, W. H., Paris, Ill.

Watkins, W. J., Springwillow, Texas; Watkins, S. E., Washington, D. C.; Weaver, H. S., Philadelphia, Pa.

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No. 10.

ORIGINAL ARTICLES.

THE CARE OF THE INSANE IN PRIVATE PRACTICE.

Read before the Portland Medical Society, Portland, Ore., Dec. 15, 1896.

BY HENRY W. COE, M.D.

PORTLAND, ORE.

One needs but to examine the literature and to see who writes upon the topic, to ascertain beyond question that the subject of insanity receives but little attention from the general practitioner.

After looking over the reports of the last five sessions of the Oregon State Medical Society, and calling to mind the work of the Portland Medical Society during the same period, it seems safe to say that not a paper upon this subject has been presented by a physician of this State at any of these meetings during such time. Papers upon almost all medical topics have been presented before these societies by physicians of this State, but the great field of psychiatry has been during this period ignored. The history of medicine in Oregon in this particular is, to a great extent, the history of medicine everywhere, and it teaches us that the general practitioner is leaving the subject of insanity, to a very great degree, to those who make of it a specialty.

Personal replies to letters of inquiry addressed to the various medical superintendents, and the last annual reports which are accessible for the State insane institutions of this region, give us the following information of the work of the preceding year:

| Asylums. | Admitted. | Discharged. | Recovered. | Died. | On Hand. |
|----------------------------|-----------|-------------|------------|-------|----------|
| Agnews, Cal. 1. | 380 | 155 | 97 | 95 | 902 |
| Napa, Cal. 2. | 247 | 93 | 58 | 97 | 1,404 |
| Medicine, Cal. 3. | 230 | 93 | 80 | 48 | 385 |
| Southern, Cal. 4. | 269 | 136 | 127 | 32 | 454 |
| Stockton, Cal. 5. | 252 | 121 | 91 | 136 | 1,472 |
| Idaho 6. | 50 | 21 | | 10 | 117 |
| Montana 7. | 93 | 40 | 32 | 25 | 262 |
| Nevada 8. | 64 | 26 | 22 | 27 | 190 |
| Oregon 9. | 390 | 217 | 57 | 81 | 1,106 |
| Utah 10. | 65 | 28 | 25 | 19 | 236 |
| Fort Steilacoom, Wash. 11. | 216 | 107 | 54 | 61 | 585 |
| Medical Lake, Wash. 12. | 76 | 26 | 13 | 16 | 252 |
| Total | 2,312 | 1,063 | 656 | 647 | 7,325 |

In addition to those noted as "recovered," the reports also show that others have been "much improved," "improved," etc., and the Idaho report does not specify the number "recovered."

The reports above mentioned also show that there were 10 per cent. more patients confined in these asylums at the end of the fiscal year, than at its commencement.

Insanity is increasing. Dr. Forbes Winslow,¹² in his address at the Medico-Legal Congress in New York, September, 1895, said that the increase in England is now about 2,000 cases per year; the proportion being in 1895, 30 per 10,000 population, while it was but 28.12 in 1886.

In the United States in 1880, we had 50,155,783 inhabitants, and an insane population estimated at

56,205. The census nine years later gave a total population of 62,622,250, and the number of insane in private and public institutions was 97,535, indicating, as pointed out by Dr. John Punton,¹⁴ an enormous increase of our insane in this brief time of over 73 per cent.! This increase, however, was more apparent than actual, the statistics being much more reliable and complete at the latter date. The per cent. of increase is actually small, but that there is an increase is quite certain.

Dr. John Punton,¹⁴ in speaking of the relation of the profession to the great subject of insanity, also remarked: "It is surprising as well as humiliating to notice how many members of the profession admit both by their words and actions, that they have given this subject little or no study, and in this way excuse themselves from their lawful and responsible duties."

The foregoing statements showing the frequency of insanity, and the local dearth of literature upon the subject, are presented to this Society as an excuse for the present paper. Oregon has many physicians of large experience, and ample knowledge of the science of psychiatry, and in the absence of any recent medical paper from these gentlemen, I have thought it permissible to discuss one phase of this great and growing subject.

The disposition of the general practitioner to shift his own responsibility as to insane cases to the shoulders of a State officer, is in many cases entirely wrong, and this paper will attempt to show why he had in the interest of his patient, rather to employ private than public care, wherever the former course is possible.

The physician upon whose professional advice a human being is committed for the first time to a public institution for the insane, is not only treading upon solemn ground but, in participating in an act which takes the right of liberty from another, is in that act assuming a most responsible position. The judge who issues that mandate from which shall come the confinement of a fellow citizen in an insane asylum for the first time, and that will affix a stigma to the individual which can not thereafter as long as life shall last be removed, is performing an act most serious and solemn. "The matter of committing a patient to a hospital for the insane is one of grave importance. No man can safely say that he will never come under its scope. It affects all conditions of life."¹⁵—Semple.

Alienists tell us that a considerable proportion of the insane of our race comes from those known as defectives. Homeless, penniless and friendless, with a mind diseased and life's prospects a blank, we may readily make ourselves believe that the only hope for such an individual lies in the kindly hands of skilled officers of a State insane asylum. While this class of our insane may thus seem to be at their best when promptly handed over to the authorities of an insane

asylum, I am constrained to express the view, that in the initial outburst of insanity they, more than any other because more helpless and needful of aid, and more readily impressed by psychic influences, should be given the benefit of scientific, patient, careful, separate treatment.

Many of this class will either die early, or develop chronic insanity; but none the less, those who are passing through an initial and uncertain stage which might early give place to sanity, should have the right to go through life without the consciousness in self or the knowledge on the part of the public that they have been inmates of an insane asylum.

The man whose mental balance was but off the narrow line of sanity, but who in hurried haste was consigned to an asylum, will ever feel cause for harassing shame day and night, while he who may have been a frantic maniac, yet treated in a private home, when again clothed in his own mind will have an image of his former misfortune more shadowy from day to day, which will ultimately pass away. The largest proportion of our insane are poor, but the poverty of one of these is not a reason for a careless or hurried commitment. The cost for the public care of our insane almost exceeds that of any other branch of the government. Why should not the municipality or county divert a portion of its funds to the private care of the insane poor?

We have State penitentiaries and county jails. One is for the confinement of the confirmed or grosser criminal, and the other for the milder cases of crime. While the penitentiary and jail are for the vicious, and the insane asylum is for the unfortunate, and while in one sense comparison might appear harsh, yet in the matter of expense and benefit to these charges of the public, much may be learned in regard to one class, by studying the methods and results of the care of the other. We see that there is a disposition on the part of the commonwealth to show consideration for criminality in its initial state; a desire to save from the greater ignominy of a State penal institution those new in crime; a sympathy not given to that more unfortunate class, the insane.

I believe that these poorer classes of the insane deserve our deepest sympathy, and should, where there is a likelihood of recovery, have careful treatment in private or county hospitals before confinement and contact with other insane shall be made in a State asylum. Under our present system I recognize the fact that this is practically impossible. Proper treatment would necessitate a quiet, homelike place, a skilled nurse in constant attendance, and that more than ordinary thought and care should be given by the physician in charge.

Such cases at the present time would come under the regular county physician, and he is not expected, nor has he the facilities, or is he paid to look after these cases. They would in the larger cities require that a special physician should be detailed by the municipality to care for them. Until the public can better understand the subject and shall realize what is to be gained by the separate treatment method, the slightly increased expense necessary in private separate care, will not be readily undertaken by the public authorities.

If the method which I advocate is the best one, it will devolve upon the medical profession to first educate the public up to the facts, and to follow this by an effort for proper laws providing for the private

treatment of the insane poor. Under the present laws of this State, an insane case in private practice is restrained under the same liabilities to the physician having the same in charge, as are present in the restraint of a fever patient with delirium or any similar condition; such liability being therefore much more personal than that exacted of the authorities of a public insane asylum. It should be so, to guard against abuses in private treatment, but laws should be passed providing for the private care of the pauper poor. Private institutions for the insane should be subject to close inspection by State officials. The private treatment of the poor would not include the care of the incurable or chronic, but the conservation of the private interests of the individual, always of prime importance to the State, should make it desirable that every case in its initial stage should, in my opinion, have the benefit of private treatment.

Our public asylums are made as pleasant as circumstances will permit. They are always crowded with those unable to enjoy private treatment. They are officered by the choicest students of psychiatry in the profession, and ministered to by medical men with kind hearts and broad minds, yet there is, and always will be, a sense of dread and horror when contemplating the medley of mental wrecks under treatment at a public hospital for the insane; and if a case of insanity can recover outside of the atmosphere of such an institution, he can scarcely fail to have gained by such an advantage. To awaken to sanity and witness and live even for a brief time in a neighborhood of lunatics, with the feeling that the individual himself has just escaped such thralldom, will leave a never-ceasing impression upon the invalid which will not only cloud his life, but may affect generations yet unborn.

There is another phase to this subject, and that is the question of State expense. At present many persons of the families of the well-to-do accept the service of the State insane asylum. The poor of every class are entitled to public charity, but the insane rich should no more accept support from the State, than should the wealthy sane expect an appropriation from the poorhouse fund to relieve his daily wants.

In the language of Dr. H. C. Willison:¹⁶ "The pecuniary cost of maintaining so great a number of non-producers in our State asylums at the public expense, must necessarily engage the serious consideration of the statesman and political economist." We should therefore consider the private resources of the patient, and especially in the early stage of initial insanity, and decline to be a party to an act which will make a public charge of one otherwise readily and properly provided for.

"The average length of life in the chronic insane is estimated at twelve years. Of the number admitted, less than one in three recovers, making an average of eight years' treatment for each person admitted to the hospitals. At \$16 per month their cost of maintenance would be over \$1,500 each, and the per capita cost of buildings required for their shelter at least \$500 more."—Semple.¹⁷

Most States provide by law for the care at public expense of the poor only, but that local authorities and insane boards seem to be willing to make of all insane cases public charges, is illustrated by a statement made by the board of trustees of the Agnews Asylum of California.¹⁸ They say: "We believe that there would be more pay patients if the county courts or officers of the courts, would diligently investigate

every patient at the time of commitment, as to his ability to pay the cost of their maintenance."

"State asylums are supposed to be for the indigent, but they are not always so. Upon investigation we have obtained information to our satisfaction that there are a number of patients in the asylum committed as indigents, who, as a matter of fact, own property in their own right or are heirs to estates now being probated, or have relatives amply able to meet the expense of their care and maintenance, but we fail to find any provision of law by which we can do otherwise than maintain them as wards of the State."—Pike.¹⁹

Our asylums are also much crowded. The reports of the various superintendents, when discussing this subject are much in the same strain. Dr. Asa Clark²⁰ says: "The number of patients in the asylum has not lessened during the past eight years, although other State asylums have been opened, but still maintains its uncomfortable magnitude."

There is a large number of those who become insane that comes from the better walks in life. People of good birth, noble ancestry and taintless blood, whose families are fortunately situated so that they can meet whatever expense may be deemed necessary to restore to health or to give a chance for such restoration, the mental faculties of the invalid friend or relative. In this class are to be included many who are victims of injury, of poison, septic, intestinal and otherwise, of sickness, of grief or prolonged mental strain, or of other extraordinary influences. The friends of these patients shrink from the idea of public asylum treatment, and an association with the public insane of the criminal and lower classes, and desire that private care shall be employed. These are therefore the cases which today are amenable to private treatment. From the position which such patients occupy in the social, professional or mercantile world, there is still greater reason that the odium of asylum life shall not attach to them. From financial advantages possessed by these people there comes, as always to those financially strong, a certain special responsibility to the community. Their means should be made of advantage through wise action or proper laws to those less fortunate. A demonstration of the benefits to be derived from private treatment should be gained through the methods and results obtained in their cases.

The insane case will fare best when under the care of a practitioner who has pursued his studies among the insane in public and private institutions, and acquired such a groundwork of knowledge that when cases do present he shall have little difficulty in renewing his knowledge by a review of the literature on the subject. Yet, without such experience the average practitioner can usually handle these cases if he is willing to take time to study up the matter and possesses the facilities therefor.

The insane mind is of subtle composition, and by the early recognition of the initial aberrations, we may be able to put a stop to mental changes then going on, which, if unrestrained, might lead to the grosser mental states of unsoundness. We often require too much to convince us that the patient is beginning to show signs of mental change and needs mental treatment. It would be better to insist upon an early treatment of the malady under the name of nervousness, than to await acute symptoms which all may be able to denominate as insanity.

Williams²¹ says: "Those who are not acquainted with the progress or nature of insanity, seek to ignore its presence unless it is accompanied by positive evidence of material derangement. Regarding disease as an active agent whose exposition necessitates physical change, they demand further proofs of its existence than such as are derivable from actions admitting, as they assert, of conflicting explanations."

"That the insane are sick people who are entitled to the kindest consideration and management, and treatment by the best medical skill attainable, is a fundamental principle that should guide us as in all matters concerning them," says Dr. William Francis Dreary.²² What kind of treatment, what manner of consideration for a mentally sick person is it to crowd him into jail among criminals, to a court for examination, and from thence to hurry him off to a place of confinement along with hundreds of others like unfortunate?

There is a larger proportion of recoveries from acute insanity than from many other acute diseases, and many insane are not half so violent and troublesome as a typhoid fever patient. Why is not the unfortunate who is mentally sick entitled to as much consideration as the patient whose intestinal glands are in a state of specific fermentation? Dr. A. S. Watson, quoted by Dr. Mary B. Atwater,²³ has this to say: "Fully 80 per cent. of all insane cases may be cured if treated early and properly."

The association so often necessary in asylums of those who are pure-minded, yet demented, with the criminal insane, is a matter of no small consequence. Upon this subject Dr. G. H. Thomas²⁴ has this to say: "Eminent alienists depreciate the association of this class of patients (criminal insane) with those who are innocent of crime, but whose confinement through sickness or misfortune is made necessary. It is not only a question of association, but this class of insane are usually violent, and for safe keeping must be kept in restraint; the effect of this on the better class of inmates, who frequently realize the character of such violent associates, is not conducive to good order or to their recovery."

Many cases of insanity even of a rather violent type, will soon recover if tact and patience are employed in the care of such cases. I have in mind a patient which Dr. E. W. Tape of this city asked me to see with him on two occasions in February last, where the friends were somewhat determined to have the invalid, who was wildly delirious, sent to the State asylum. In view of the fact that this patient had formerly been insane, it was not unreasonable for the friends to believe a commitment advisable; but with the recovery from a concurrent malady, and after close and wearisome care upon the part of the physician, Dr. Tape had the satisfaction of seeing his patient within a short time fully recovered from his mental distress.

Not every case will recover, but if not, the family and friends can not fail to be much better satisfied after a course of private treatment has been entered into and thoroughly carried out; even should the case eventually become chronic and public care thereupon be invoked. Dr. H. C. Hoffman of this city asked me to see a case in April, 1896, which is in point. The greatest reluctance was felt by the friends to a public commitment and private treatment was instituted. Although this case passed out of the professional observation of Dr. Hoffman and myself many months

ago, yet I have learned that some degree of private care and treatment was administered up to the time of commitment, which was but a few days ago, and I feel certain that not only were the rights of the patient conserved by the opportunity for private treatment which was given, but that the friends are much more resigned to the results than they otherwise would have been.

The Oregon report²⁴ shows that there were sixteen patients committed to the asylum under 15 years of age during the year. It is a sad sight to see patients so young committed to an insane asylum. Dr. Sarah B. Welt, in a series of tables on this subject,²⁵ speaks of the rarity of insanity in the young, although admitting its presence and seriousness. The hospital reports indicate that it is frequent.

Sachs says:²⁶ "It is well to emphasize the fact that mental derangement in childhood is recovered from more frequently than is the case with insanity of later years. But a child that has ever been insane is a tender plant that needs special care." Forbes Winslow²⁷ points out that children are liable to transient mental disorders, which pass away without leading to after-results.

"Many young people who are just entering manhood and womanhood have been so raised that a special amount of moral perversion, bordering so close upon insanity, has ensued, that their parents in desperation are inclined to have them committed as cases of moral insanity. These cases are not insane but need restraint, and in firmer hands than formerly accustomed to at home, will often become useful citizens."—McCassy.²⁸

Dr. W. A. Hammond²⁹ emphasizes the fact that the insanity of children is most often marked by fixed delusions and a malignancy toward relatives, a special reason for separation of such cases from their own homes. A case came under my treatment last August from Dr. J. J. Leavitt of Mollalla, Oregon, which illustrates the youthfulness of some patients, also the brevity of the attack in many cases. This patient was a sufferer from melancholia with delusions of persecutions. She was but 16 years of age, of a good family, and had been in excellent health until attacked by a severe and prolonged course of inflammatory rheumatism in the course of which cerebral meningitis was present. After a tedious recovery melancholia had ensued. She was placed under treatment and at the end of six weeks returned to her home entirely recovered.

The mental state in this case, while pronounced, was of a mild and transient character. Within a year she will hardly remember her trip to Portland in connection with any mental difficulty, and her friends will scarcely take notice of that event, now or hereafter. If she had been sent to a lunatic asylum the associations of such an event would never have passed from her mind, and the odium of such confinement would have remained with her until the end of her life, no matter how remote that event may be.

We need but give a casual examination of the insane hospital's report to ascertain, if we did not know it before, that the largest proportion of "recoveries" occur shortly after admission into these institutions. From the Oregon Report²⁴ we learn that 163 patients were discharged as recovered: of these 118 were in the asylum less than six months, and one-half of these recoveries occurred in less than three months from the time of first confinement, while there were only 25 recoveries occurring over one year after reception at the asylum. The moral of this is that but a com-

paratively brief course of private treatment will be required to determine as to the question of recovery in most cases and, too, such figures emphasize the statement which has been made, that the asylum stigma should not be permitted, except after at least a few months of private treatment.

Another class of cases which should, where possible, be given the benefit of private treatment, are those individuals on the border line between the regions of sanity and insanity, who have become addicted to alcohol or other drugs to such an extent as to require that some restraint should be employed while the poison which has been taken is being withdrawn. These cases are often sent to asylums to their everlasting discomfort and chagrin, although the hospital officials may even decline to receive them. In fact, as pointed out by Dr. W. H. Anderson,³⁰ in some States, as in Washington, the law forbids the commitment of cases of "inebriety, harmless chronic mental unsoundness and acute mania potu."

"Alcoholic excesses are directly the cause of at least 10 or 12 per cent. of insanity, and probably a somewhat larger percentage."—Waughop.³¹

"It is now well established that the unrestricted use of narcotics and stimulants, or those agents which unduly and directly dull or excite the mind organs, are the most powerful exciting causes of insanity. These are well-established biologic facts, and it now remains for philanthropists, sociologists and legislators, in their respective spheres, as well as the individual, to take these facts and use them for the prevention of a great part of this awful affliction—insanity."—Givens.⁶

No one is more competent to discuss the subject of commitment than Dr. Landon Carter Gray,³² who says: "The question of committal of a case of melancholia, is often one that involves a great responsibility. My rule is, never to commit a patient who can be treated at home, for I am no believer in asylum treatment of curable cases of insanity. In melancholia, as well as in many other forms of mental disease, the preceptions and the memory are frequently unimpaired, or but slightly affected, and the patient either has a full realization of the fact that he or she is in an asylum, or will in time awaken to such realization.

"The nurses of a lunatic asylum are never as efficient as the trained nurses which we are now fortunate in possessing in such numbers, nor are they of as high a class in point of refinement and education.

"Beside the convalescence of patients in a lunatic asylum simply brings them face to face with what is generally regarded, whether justly or not, as one of the most distressing things in life, namely, a lunatic asylum. Then too, however slight their mental affections may have been, the fact that they have been committed to a lunatic asylum clings to them through life. Like Lady Macbeth's 'damned spot' that would not out, it too frequently blasts their career, while a severe attack of mental disease treated at home is lightly regarded by the laity under some soothing euphuism, as brain fever. Nor do I believe that the stage of convalescence can fail to be retarded by the constant contact with lunatics. For all these reasons I never commit a patient to an asylum, as I have said, if he or she can be treated at home. The question whether the latter can be done will be determined by the degree of insanity, the probable duration of it, the environment of the patient and his or her circumstances."

In a considerable number of drug habitués, including alcoholics, morphin and cocain users which have been under my care, several have been upon the borderland of sanity, and in at least two cases actual insanity was present. The relief from the drug habit has restored the normal mental condition, and the patients who were supposed to be under treatment for other complaints, have returned to their friends without the stigma of having been inmates of an insane asylum.

Regarding the confinement of the pauper drunkard, Dr. T. D. Crothers³³ says: "That he should be sent to the inebriate reforming hospital or workshop, for the institution should include both these features. We are dealing with a diseased person not a criminal, but as a pauper inebriate without friends, or if he has friends without means. For the wealthy inebriate there are abundant provisions, as private asylums are numerous and the appointments are very complete for his treatment, both here and abroad."

Dr. L. L. Rowland³⁴ in his report for the Salem asylum, refers to the number of alcohol, morphin and cocain habitués that are sent to that institution and points out the undesirability of the same from every point of view. Nothing, it seems to me, is worse for a drug-taker, than to be compelled to associate with the insane. I believe that alcoholism and other drug-habit conditions are largely diseases, and should be treated as such. That there is an insane phase to many of them seems probable, while actual insanity in many cases is prominent and unmistakable.

I might refer to a cocain-morphin-chloral patient, referred to me by Dr. H. D. Fenton of Portland some months ago. This habitué was and had been insane for some time before he came under my care. The treatment of the case included not only the treatment of the drug habit, but also the insanity from which he suffered, yet within two months his drug habit had been broken and his proper mental state recovered. Asylum treatment could not, I believe, have done as well for this patient. His friends and neighbors do not know he had a drug habit and they have already ceased to, if in fact, they ever did, comment upon his visit to Portland, whereas, if he had been sent to an insane asylum he would have secured notoriety which would have scarcely ever passed from him.

A paper of considerable length would be required to discuss the details of the treatment of the insane, which is not now attempted, and therefore only a glance can be cast at this phase of the subject. New methods are being adopted and the plans of treatment are changing, and while the general practitioner can scarcely be expected to remain fortified with knowledge upon this subject so that he may be ever ready for such occasional case as may come under his care, yet when it does appear he needs to thoroughly canvass the field of psychiatry in quest of the latest methods of treatment.

The insane should rarely ever be treated in their own homes. A patient is best environed when placed among strangers. The family should be excluded from the sick room. "Visitors to insane patients often do much harm unintentionally. Friends and relatives exert an irritating effect upon the insane in unexpected ways, and calmness has frequently been succeeded by weeks of disturbance after a visit of the well-meaning relative. There are times, which the physicians are prompt to recognize, when the patient is made better by seeing his friends, and they are usually notified at once upon such occasions."—Clevenger.³⁴

The returning mentality of the insane needs to be nurtured like the growing mind of a child. It must be led step by step. The benefit of the promises of reward and the good results experienced in exceptional cases is illustrated by a patient now convalescing under my care at Mindsease Sanitarium, which was referred to me by Dr. H. S. Pernot of Corvallis, Oregon. The mental discipline and the cheerfulness resulting from the promise of the visit of a loved relative kept prominently before the patient for many days, broke into a markedly melancholic state with gratifying results.

On the subject of environment, Dr. Panton³⁵ has this to say: "It seems beyond the comprehension of many persons that insanity deranges rather than destroys the mind in its incipient stage. Much therefore depends upon the selection of a responsible nurse to carry out the treatment. Another important step is the isolation of the patient, whether treated at home or elsewhere. It is often with difficulty that the friends and relatives can be made to realize the necessity and importance of this measure. But those of us who have devoted time and attention to this study, know too well that the probability of recovery is much increased when the patient is committed to the care of strangers."

"In many pronounced cases of melancholia in which the family relations are a source of worry and anxiety, I positively refuse to treat the patient unless isolation can be obtained."—Landon Carter Gray.³²

"In the beginning, at least, our object must often be to remove the patient from the action of those daily irritants which are often exercised upon him in his business in the care of self-support, in the irrational conduct of his relatives and often in violent reproaches. In recent cases it is then always better for a time to break off all communication with the family in order to avoid emotional excitement."—Kirchoff.³⁵

"In mental diseases, as in all other derangements of the organism, a duly regulated measure of repose and activity is among the most important means of treatment; for the most part this can only be obtained by entirely removing him from his usual neighborhood and by exposing him to the influence of new and perfectly different impressions."—Grisinger.³⁶ Even if taken but across the street, the patient is benefited by the removal from home and surroundings.

"Perhaps the most important factor of family care, so-called, is the nurse. Persons fitted to the care of the insane are born and not trained. Isolation, either in a well-equipped hospital or a private house other than his own, is imperative."—Riggs.³⁷

There is no more prolific source of insanity than auto-infection, and to meet this condition, Bonchard³⁸ calls attention to the necessity of a carefully selected diet and the free operation of all the emunctories. Salines he especially recommends, and I can testify as to their value. Intestinal antiseptics should be a feature in nearly every case, and the agent employed for this purpose should be such as shall not interfere with normal digestion and yet be powerful enough to destroy the microorganisms which are doing the mischief and to neutralize the ptomaines already present in the tract. My own experience accords with that of Dr. John Aulde³⁹ and Dr. G. M. Blech,⁴⁰ that hydrogen dioxid is a most satisfactory agent for intestinal disinfection. Dr. Aulde uses a 3 per cent. and Dr. Blech a 2 per cent. solution of hydrozone in water, from two to eight ounces of this mixture being employed a half

hour before meals. I have made use of this method with pleasant results, and in cases where there has been much gastric fermentation I have employed an additional ozonized solution, glycozone, a teaspoonful immediately following meals. The glycerin which is the menstruum in this latter solution, acts as a mild stimulant to the intestinal glands, thereby accelerating the excretory functions of the tract. I have wondered if a little of the good effects from the use of a powerful static machine, which I have noticed in several cases of mental trouble in my practice, has not been due to the general effect from the inhalation of liberal quantities of ozone from the atmosphere in which the patient has been enveloped during the use of the breeze. Dr. Riggs and many other writers are enthusiastic over the use of the static current in the treatment of insanity. Dr. Gray³² believes that the ozone from the static breeze accounts for much of its benefits in hysteria, and why not also in insanity?

Tonics are indicated and iron is often the best. Gray mentions ferratin, which I have myself employed with excellent results, and as it is easily assimilated and does not interfere with the stomach it is a favorite with me. Hypnotics should be employed with caution, although at times they are indispensable. A lengthy paper would be required to discuss them and we can only say in passing that they often do more harm than good. The sleep produced by a hypnotic is often followed by a more pronounced attack of excitation. Hypnotics should always be given cautiously, pushed vigorously if needed, but avoided when possible. Trional is one of the best hypnotics for the insane, although the large dose required, 20 to 40 grs., makes it rather expensive.

Surroundings should be such, so far as possible, as to produce quiet sleep. Sleep, that blessed restorer of faded mentality; sleep should be perfect, however. Macfarlane, speaking of the relation of wakefulness to insanity, and the states of restless sleep, says:⁴¹ "It is highly probable that the very portions of the brain which most need a state of rest are, even during sleeping quiescence of other portions, more wastefully engaged in the activity of their functions than they can be in a waking state." "Want of refreshing sleep we believe to be the frequent origin of insanity."—Buchnill and Tuke.⁴²

Gynecology has suffered much in the past by the methods of many of her operators, who have sought to cure nervous and mental diseases by operations upon the female pelvic organs, and the directness of the criticisms of the neuro-alienists during the past have been of much benefit to humanity and to the real science of gynecology, as well as of neurology. Fortunately at the present time this bitterness of the past has nearly passed away, and as a result the alienist is ready to ask that the pelvic disorders of his female patients shall receive medical or surgical relief from the gynecologist, and the gynecologist no longer assumes to cure diseases of the nervous system and brain by the removal of healthy ovaries, etc.

"The clinical fact is that⁴³ many women require both the conservative gynecologist and the most skilled of neuro-alienists to successfully conduct their cases. A rational gynecologist that recognizes women as being possessed of other than a uterine system to account for some of her ailments is henceforth to prevail."—*Alienist and Neurologist*.

"It is gratifying to know that at last gynecology and neurology are in accord, and that henceforth

women are to be treated in a rational way for their nervousness."—Macfarlane.⁴⁴

Many cases of mental diseases are induced or exaggerated by disorders of the pelvic organs, and a relief of such disorders by surgical or other means, will often be of material benefit in restoring the mental equilibrium. In evidence upon this point I might refer to two cases of insanity seen in consultation. One had been operated upon at the time I first saw her and was convalescing, but was sent to me for a short course of static electrical treatment to round out her recovery. In the other case I advised that an operation should be done with hopes for favorable results to the mental state, which, in fact, within a month and by the time she was up after the operation, had restored the patient to nearly a normal condition.

These two cases seen last summer with Dr. H. R. Holmes and Dr. E. F. Tucker of this city, had pelvic lesions of long standing, the constant nervous irritation of which had finally ended in functional disease of the brain, but which readily gave way when normal physiologic pelvic relations were reestablished, and appropriate general treatment had been employed.

Dr. Roswell Park⁴⁵ has said that cases of insanity which are otherwise appropriated for commitment to a lunatic asylum should have the benefits of an examination for gross surgical brain lesions such as tumors, etc., and that when deemed permissible the benefits of operative treatment should be sought.

Dr. M. Allen Starr⁴⁶ has said that a few insanity cases can be traced to traumatism, and in selected ones an operation should be done to relieve brain pressure or irritation.

In the private care of an insane patient, the responsibility is not light nor the work and worry small, but with patience, firmness, gentleness and tact, and with fair facilities for the care of such a case the result obtained is often very satisfactory.

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CHRONIC CATARRHAL GASTRITIS.

A Clinical lecture delivered in Rush Medical College.

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I desire to call your attention, this morning, to a number of patients who belong to a large class that will confront you during the whole of your active career as medical practitioners.

The first one is a young woman, 25 years of age, who had typhoid fever about a year ago. She had been employed as a shop girl for seven years previous to her illness, but had considered herself in good health till a month before the attack. She says that she was very ill for a period of five weeks and "took a lot of strong medicine." Instead of recovering her normal vigor she has remained thin and feeble. Her heart, lungs, kidneys, spleen, liver and reproductive organs appear to be healthy, but she complains of lack of appetite, epigastric distension, frequent eructation for several hours after eating and constipation of the bowels. She is listless, depressed in spirits, slightly dizzy when walking and easily put out of breath. There is anemia with a reduction of hemoglobin to 70 per cent. The pulse is small and rapid, 95 to 100 per minute. Pressure below the xiphoid cartilage is painful, and often there are transient pains between the ribs and under the left scapula. The contents of the stomach, removed with the gastric syphon about four hours after an ordinary meal, exhibit numerous traces of undigested flesh fiber; there is present a large quantity of glairy mucus, and the chemic examination indicates an excess of lactic and butyric acids, with scarcely a trace of free hydrochloric acid.

The next patient is a man, 36 years of age, thin and sharp featured. For years he has smoked and chewed excessively, but has not used alcoholic beverages. For several months he has been troubled with frequent eructations and sometimes with vomiting. The fluid that is thus evacuated is very copious in amount, and is as frothy as beer. Microscopic examination reveals the presence of *sarcina ventriculi* in large quantity, to say nothing of yeast fungi and numerous other microbes that are frequently present in the mouth and stomach.

The next patient is a veteran bartender. Fat and coarse-looking; his rubicund visage and blooming nose testify to the depth and vigor of his potations. His breath carries the offensive odor of chronic alcoholism; his tongue is thickly covered with a yellowish-brown coating; he is troubled with a frequent, dry, spasmodic cough. In the morning his head aches, he coughs and retches until he can expel a few mouthfuls of thick, ropy mucus mixed with saliva that was swallowed during the night. Appetite is gone; whatever is eaten becomes an excitant of pain in the epi-

gastrium; the liver is somewhat prominent below the short ribs and is tender on pressure. The intestines are distended with gas and are alternately affected with diarrhea and constipation; the urine is scanty, high-colored and loaded with urates. Examination of the gastric juice indicates serious reduction in all the special constituents of a healthy secretion, so that in this case it consists chiefly of mucus, saliva and water.

One more patient will suffice to illustrate the principal characteristics of the disease. He is a book-keeper, about 48 years of age; tall, thin and anxious-looking. He formerly smoked excessively and kept late hours, but for the last three years he has been the victim of painful digestion and hypochondriac depression. He suffers after eating with flushing of the face, throbbing in the temples and a sensation as if something were loose and rolling around within the cranium. He is frequently so dizzy that he can not walk without a great effort. He is confident that his case is not understood by the physicians to whom he has applied for relief and that he is the victim of an incurable disease of the brain. The heart beats irregularly and sometimes violently. Many of his worst symptoms are relieved temporarily by eructation of gas or by the passage of flatus from the bowels, which, by the way, are obstinately constipated. He is often somnolent after eating, but is correspondingly wakeful at night. In cold weather he suffers much with neuralgia in the abdominal and thoracic walls, and almost every spring and fall he is inconvenienced for several weeks by an attack of hemorrhoids. These are sometimes replaced or preceded by a severe outbreak of urticaria, covering the whole body. Latterly there have been patches of eczema in the flexures of the knees and upon the lateral surfaces of the fingers. Last summer he had a severe attack of bronchitis with asthma, which continued until October, when it disappeared during the course of a hemorrhoidal bleeding.

Such, then, are some of the cases about which you will be frequently consulted. They all possess the common characteristic of chronic gastric catarrh. This disease often follows as the sequel of an imperfectly cured acute inflammation of the stomach. It is a common consequence of the various infective diseases; it is excited by errors of diet, hearty eating, imperfect mastication, excessive indulgence in alcoholic drinks, consumption of coarse and indigestible food and the habitual use of iced water, strong tea and coffee. It accompanies local diseases of the stomach, such as round ulcer and carcinoma; it is necessarily produced by all the disorders of circulation that are occasioned by obstruction in the portal vein, liver, heart, lungs and pleural cavities.

Could we look into the stomachs of these patients we should discover a variety of pathologic changes. The pyloric extremity of the organ is the seat of the principal disorder. There the mucosa is of a gray or brownish color, which in very chronic cases is sometimes of a dark slate color. Hemorrhagic extravasations are not uncommon in the connective tissue between the glandular organs. The distinction between the different kinds of cells in the glands themselves is often destroyed and the secreting cells are swelled with cloudy contents, or have undergone atrophy from pressure and imperfect nutrition. In some of the older cases, where the patient is anemic, there is general glandular atrophy, accompanied by the development of the symptoms of pernicious ane-

nia. The deep brown or gray or slaty discoloration of the tissue is due to the accumulation of pigment deposited by the excessive extravasations and stagnations of blood in the capillary network that envelops the gastric glands. The submucous connective tissue and the muscular coat of the stomach also participate in the inflammatory process, so that their cellular elements multiply and increase the thickness of the gastric wall. The interstitial spaces are frequently loaded with small round cells and leucocytes, as if actual purulent formation were about to occur. By the increased thickening and swelling of the tissues thus produced, there is sometimes effected an actual stricture of the pylorus, leading finally to dilatation of the stomach. Occasionally, the external serous investment of the organ shares in the general disposition to inflammatory thickening, and sometimes the entire wall of the stomach becomes symmetrically hypertrophied, so as to reduce the cavity of the viscus, and to suggest the idea of a malignant change in the substance of the tissues, requiring the aid of the microscope to distinguish this chronic inflammatory hyperplasia from the growths of carcinoma. In many of the older cases of catarrh the mucous lining of the stomach presents a roughened, warty appearance that is caused by irregular development and contraction of the submucous connective tissue. In certain rare cases small cysts are formed by the occlusion of isolated glands, ducts and the accumulation of their imprisoned contents. By a sort of reversal of this process the interglandular elements occasionally multiply and protrude into the gastric cavity, forming mucous polypi, which are only important when large enough and sufficiently near to fall into the pyloric orifice of the stomach, more or less completely hindering the passage of food into the duodenum.

The recognition of a catarrhal inflammation of the stomach is seldom attended with difficulty, but it is not always easy to decide whether it is an uncomplicated affection or whether it is dependent upon some other grave disease in the thoracic viscera, in the kidneys or in the gastric wall itself. The discovery of cardiac, pulmonary, hepatic or renal disease will render it highly probable that the disorder is secondary to those causes of perverted circulation and nutrition. The existence of general hyperplastic thickening of the gastric wall may be suspected when the gastric tumor feels smooth, firm and devoid of irregularities in its shape. But in the absence of tumefaction and resistance to pressure in the epigastric region, the question will resolve itself into a threefold query: Are we dealing with a carcinoma, an ulcer, or merely a chronic catarrh of the stomach? If the patient be in early or middle life the probability of cancer is less than in advanced years. The absence of cachexia and discoloration of the skin, long duration of the malady and freedom from bloody vomit favor the diagnosis of chronic catarrh. Enlargement of the lymphatic glands in the left groin and supraclavicular space sometimes accompanies malignant disease of the stomach, but is not a constant symptom. The absence of free hydrochloric acid from the gastric juice is a very trustworthy, though not invariable, symptom in carcinoma. The presence of minute, coffee-ground particles of altered blood-clot in the gastric contents is a weighty indication in favor of cancer rather than atrophic catarrh of the stomach. In many instances it is impossible to

discover before death the presence of a gastric tumor, but, in such cases, the absence of free hydrochloric acid, the existence of cachexia, lymphatic enlargement in the left groin and supraclavicular space, and, in the later stages of the disease, the occurrence of edema in the extremities—all these symptoms concurring in an elderly person would suffice to warrant the diagnosis of a latent gastric cancer. In a large proportion of the deaths occurring among old people, without definite symptoms beyond gradual wasting and exhaustion, the cause will be discovered in a latent carcinoma developed within the abdominal cavity.

The existence of an ulcer in the stomach should be inferred when the pain is more severe and narrowly circumscribed than in simple catarrh, especially if it be aggravated by eating. The disease is usually encountered among chlorotic and anemic young people, and when vomiting of blood takes place the hemorrhage is considerable, and large clots are thrown up instead of the "coffee-ground" sediment that appears in cases of cancerous bleeding.

No disease demands for its treatment more careful adaptation of means to individual necessities than chronic gastric catarrh. The daily life of the patient must be studied and all errors of hygiene, clothing, occupation and diet must be corrected. If the teeth are defective the aid of a dentist must be invoked, and the patient should be taught how to chew his food, for without thorough mastication easy digestion of the food is impossible. The food itself must be selected with a view to ease of solution in the stomach. For this reason it should resemble the food that is provided for a newly weaned infant. It must, therefore, consist chiefly of articles derived from the animal kingdom. The nursing child is a carnivorous animal by nature, and the convalescent invalid is in these respects on a level with an infant. The principal article of food should be milk—not boiled, but heated to the temperature of 160 degrees F., and drank before it is cooled, so as to secure the stimulant effect of a hot liquid. In fact, no cold drinks should be allowed, because the muscular coat of the stomach is usually, in these cases, relaxed and atonic. This lack of tone is aggravated by the introduction of cold liquids, which must, therefore, be forbidden. Occasionally you will meet with patients who do not like milk or who think that it renders them constipated. You must reassure such people by telling them, what is true, that if they will begin with a tablespoonful of milk at each meal, and will gradually increase the quantity to a pint, or more, their constipation will be cured. Only once have I failed in this way to overcome the repugnance of the patient, and that was a case of peculiar intolerance, in which the use of milk was always followed by an eruption of erythema.

The prescription of a milk diet may be supplemented with broths and soups that have been strained, cooled, skimmed free of fat and then heated again.

Ordinary vegetable food and fruits should be forbidden until recovery is complete. Rice may be allowed as a substitute for vegetables, but it must be steamed or boiled in a water-bath, so as to avoid the necessity of stirring while being cooked. In this way it can be furnished with every grain whole, separate from its fellow, yet thoroughly soft and perfectly well done. It should be eaten with salt and hot milk.

The craving for bread that is usually experienced by persons who have been placed on a restricted diet,

should be satisfied with bread that has been sliced and dried in the oven before it is toasted. It should be eaten with a little butter, hot from the toasting-fork.

The animal food should be, at first, of the tenderest possible description. Calves' brains, sweetbreads, stewed tripe, tenderloin steak, lamb chops, chicken, game birds, the soft portion of the oyster, soft-boiled eggs, boiled ham, roast beef. These must be thoroughly masticated, or, if that be difficult, reduced to a pulp or mincemeat before they are taken into the mouth.

Many patients exhibit a desire for spices, mustard and vinegar, but this is a morbid craving which should not be gratified. Alcoholic beverages are forbidden because of the local irritation and the hindrance of digestion that follows the contact of alcohol with the inflamed mucosa.

Having thus regulated the diet of the patient, in many cases it is only necessary to await the favorable result. You must not be impatient at the delay which often attends recovery. Months and months of favorable conditions are frequently needful to effect a cure. Not infrequently, however, it will be desirable to have recourse to other methods beside hygiene and diet. You should then follow the indications derived from a chemical analysis of the gastric juice. I will not delay you with a review of the tests by which you may ascertain the presence, or the absence, of free acids in the stomach, for you have already become familiar with the use of the gastric syphon; and the significance of the change in color of congo paper dipped into the filtered liquid thus obtained from the stomach is something of which I need not remind you. You have often seen the behavior of the phloroglucin-vanillin reagent when heated with gastric juice; and you are well-informed regarding these simple qualitative tests. A quantitative analysis requires more time and labor; but, fortunately, it is seldom necessary outside of the laboratory of a professional chemist or physiologist. Few busy physicians can afford the time for such an examination, and in our large cities, whenever occasion requires, an exact analysis can be easily obtained from such sources. For all clinical purposes the character of the qualitative reactions is usually sufficient as a guide to treatment.

If, then, you find that the filtered juice turns red congo paper blue, you may know that it contains free acid. If now, on heating the same juice with a few drops of the phloroglucin-vanillin reagent upon a white dish, no carmin color appear, you will have learned that free hydrochloric acid is absent and that the acidity of the liquid is due to the presence of lactic, acetic, or butyric acids, for which the appropriate tests may be employed. With a little practice you will be able to draw tolerably accurate inference regarding the relative quantity of free hydrochloric acid; but if absolute accuracy is desired you must resort to the laboratory method of qualitative analysis, as described in your handbooks of physiologic chemistry.

In cases that are marked by the absence or deficiency of free hydrochloric acid, you may administer dilute hydrochloric acid. This should be given in doses of ten drops in half a glass of water with each meal. Many physicians prescribe it in larger doses, but a little reflection will show that it is not to be regarded as a substitute for the normal gastric acid. Were such the fact, it should be given in a dose of

one hundred drops, diluted with nearly a quart of water. Nor should the fact that it is often grateful to the patient betray one into the advocacy of large doses, for such patients generally experience a craving for acids and spices to an extent that is positively injurious. It is probably through its local antiseptic action, and by its diuretic effect upon the kidneys, that the medicinal acid is useful. Since the peptic ferments are usually reduced in quantity along with the free hydrochloric acid, it is well to add ten grains of pepsin to the acid draught.

When the patient complains of gaseous distention of the stomach, and of eructations indicative of fermentation, you should administer remedies to prevent such decomposition of the food. Half an hour before meals, when the organ is nearly, if not quite empty, give ten grains of salol, or the same quantity of pure salicylic acid, or a grain and a half of resorcin. The efficiency of these agents is somewhat increased by giving them in peppermint water, or in capsules with a drop or two of the oil of peppermint. When the eructations are acid from the presence of lactic, butyric or acetic acid, sodium bicarbonate in scruple doses may be associated with the other antiseptic remedies. If the bowels be constipated also, ten grains of calcined magnesia should be given with the sodium powder.

But if the stomach be dilated these measures will not suffice. It then becomes necessary to wash out the stomach every morning with the aid of the gastric syphon. Water of the temperature of 90 to 100 degrees F., to which has been added sodium bicarbonate (one or two drachms to the pint) should be run through the tube, in and out of the stomach, until it returns clear and sweet. The disinfectant remedies above mentioned may be then administered before the patient takes his first meal.

In such cases, and the majority of chronic sufferers fall into this class, there is considerable relaxation of the muscular tone of the gastric wall. The process of irrigation and disinfection of the stomach should be, therefore, followed by the administration of bitter tonics, which arouse the contractility of the muscular fibers. Sulphate of strychnia, in doses of one-twentieth of a grain, may be given after each meal. Ten drops of tincture of nux vomica, or a half drachm of tincture of gentian, a half drachm of the fluid extract of condurango, a wineglass of the infusion of quassia, a teacupful of the infusion of camomile flowers, or the same quantity of the infusion of eupatorium perfoliatum, are useful tonic bitters. The compound tincture of cinchona and the various elixirs of calisaya bark are often prescribed with good effect; but, as a general rule all preparations that contain alcohol should be avoided, on account of the narcotic effect of alcohol upon the secreting glands of the mucous membrane an effect that favors the occurrence and persistence of mucous inflammation.

For the invigoration of the general nervous apparatus of the body, electricity may be employed with great advantage. General electrization with the aid of the static machine for fifteen minutes every day is useful. Or the faradic current may be applied for the same length of time daily, with one electrode upon the back of the neck, while the other is moved slowly in every direction over the epigastrium and abdominal surface. Massage given daily is another useful method for patients who are confined to the house. Daily sponge baths with cold water are indispensable

for the confirmation of nervous vigor. You must carefully instruct your patients with regard to these methods, together with exercise in the open air, for without such aid it is useless to expect a cure in chronic cases of exhaustion arising from gastric catarrh. It is also very important to procure for the patient a complete change of scene and occupation, for such people are usually much depressed and hypochondriacal. Hence the great benefit that may be derived from travel or from almost any new and interesting mode of bodily exercise.

When pain in the epigastric region is an important symptom, it sometimes becomes necessary to have recourse to various narcotics. Of these the most popular is alcohol, but, though it gives temporary relief, it always aggravates the inflammatory condition of the mucous membrane. A similar objection lies against the use of nitrate of silver, compound tincture of iodine, salts of bismuth, etc.: they must be administered with great caution and in small doses, lest they do more harm than good. Cocain, in doses of one-tenth of a grain, often affords relief, but it is a dangerous drug and the cocain habit may be thus easily acquired. Sometimes it is actually necessary to prescribe an opiate, and in such cases it is well to exhibit small doses of Dover's powder, since the ipecacuanha which it contains is a valuable stimulant to the glands of the digestive mucosa, and does in some measure obviate the tendency to constipation that is occasioned by opiates alone. For the same reason small doses of belladonna are often useful, either alone or associated with opium or morphin, but if there is constipation codein should be given the preference, since it interferes less than other opiates with intestinal peristalsis. Chloral hydrate may be given with advantage, in doses of five to ten grains, whenever required by a recurrence of pain, if there be any objection to opiated anodynes. The bowels should never be permitted to remain constipated. As laxatives, may be recommended the popular pills containing aloin, belladonna and strychnin, or the compound liquorice powder of the German pharmacopeia, or calcined magnesia, or the elixir of rhubarb and magnesia, or cascara cordial. If the stools exhibit a deficiency of bile, podophyllin may be given in small doses (one-tenth to one-fourth gr.) after meals, in connection with the alkaline laxatives that neutralize gastric hyperacidity.

Arthritic patients are often benefited by laxatives that contain sulphur, such as Squair's Compound Sulphur Tablets, or Garrod's Tablets, or the old-fashioned mixture of sulphur and cream of tartar. So great is the number of elegant laxative preparations that everyone can have his own favorite, and it may suffice to point out the importance of giving the preference to those drugs which stimulate secretion and aid gastro-enteric peristalsis—in other words, the gently stimulating laxatives rather than the drastic purgatives. When constipation is chronic and the liver is engorged with blood and bile, a course of mineral waters is often beneficial. They should be drunk in quantity sufficient to produce gentle catharsis, and may be taken preferably from half an hour to an hour before breakfast. As a general rule, hot mineral waters are better than those that are cold. When the natural spring water is cold, or when bottled waters are used, the morning draught should be followed by a cup of hot water, to raise the temperature of the stomach before eating. It is always best to drink the waters at their native source, in order to experience

the good effects of rest, change of environment, etc., which are associated with a vacation at the springs; but when such advantages are impossible, much good can be obtained from the bottled waters that can be drunk at home. In cases of simple gastric catarrh, the waters that contain a predominating quantity of magnesian salts, or chlorid of sodium, or of carbonate of sodium, are sufficient. When the tongue is thickly coated and yellow, indicating hepatic disorder, the waters that are richly charged with sulphate of sodium are most efficacious. The waters of Saratoga, of the deep artesian wells in eastern Michigan, when largely diluted, and the hot saline springs in Colorado and the other mountainous regions of the continent are all valuable. Of the ordinary bottled waters the Saratoga, Hunyadi Janos, Friedrichshall, Racoczy and Rubinat waters are extensively used. For arthritic subjects the sulphurous waters may be recommended. Of these the springs at Richfield or among the Alleghany mountains and in Kentucky and Tennessee, are among the most noted. The hot springs of Arkansas possess little or no value beyond the quality of heat which they derive from the rocks through which they flow.

When prescribing the use of mineral waters or their artificial substitutes—solutions of magnesian and sodic salts—care should be taken to caution the patient against their too persistent use. Few can drink the stronger waters longer than five or six weeks without exciting an inflammation of the gastro-intestinal mucosa that may be very difficult to heal. It is better to use them for a month or six weeks at the springs and then to abstain for a number of weeks, or to have recourse, if needed, to the mild vegetable laxatives. It is always important in this, as in all other protracted courses of medication, to provide for occasional intermissions, in order to prevent both local irritation and the establishment of tolerance of the drug that is employed.

ANTITOXIN AND DIPHTHERIA.

Read before the Harrisburg Academy of Medicine, Dec. 29, 1896.

BY W. H. SEIBERT, M.D.

STEELTON, PA.

At a meeting held here about a year ago I read a paper entitled "Diphtheria," in which the subject was treated in its entirety and some reference was made to the use of antitoxin serum.

The paper which I present tonight deals chiefly with antitoxin and some reference is made to diphtheria as seems to be proper or relevant to the subject.

Careful observations were made during this year in the treatment of all cases occurring in my practice, and the results will be presented briefly, together with statistics of our town so far as applies to results in the treatment with and without the serum. In addition, there will be presented statistics of many of the largest cities of the United States relating to frequency of the disease, comparative mortality, mortality rates of the pre-antitoxin years as compared with the mortality of the present year.

In referring to the history of diphtheria it may be said that it comprises three main periods, the first of which dates from the earliest times of medical history to the sixteenth century. In this period various descriptions are given of the different epidemics of the disease by Hippocrates, Aretæus, Galen and various other writers. The second period extends from

the sixteenth century to the latter part of the present century, and in this is observed a more definite and scientific description as to details and results as well as a marked advancement in the clinical observations of the disease. An excellent description is given by Baillou, a noted French physician of the time, and after him Brettoneau distinguished himself by his studies and gave the disease a distinctive place in the nomenclature of diseases. Later Trousseau and numerous writers of various countries add to the researches and history of the disease, but little to the prophylaxis and treatment. In the latter part of this period it was believed by some writers that a particular germ was the cause of the disease and various theories were advanced to explain its action. This was the semi-scientific period and led up to the third or present period, which may aptly be called the scientific or bacteriologic period of diphtheria. Here we have after Pasteur's brilliant discoveries the magnificent researches and experiments of Koch and his followers, arriving at conclusions which definitely identify the cause of diphtheria. The bacillus being now discovered and identified, the field of discovery was further advanced by Behring, who, by long and patient investigation and experiment, finally reported his discovery of antitoxic serum about April, 1893. From this time on, various reports were made of its use and value, and within two years it was used in many places in this country, and several laboratories or manufactories produced a serum on the same principle and of the same value as that produced in Germany.

The method of manufacturing the serum is as follows: A colony of the bacilli derived from a virulent culture is transferred into bouillon which is placed in a favorable surrounding until numerous bacilli are grown or developed, by which a large quantity of toxin is produced, after which the bacilli are destroyed by the addition of a chemical. The bacilli are then removed by a process of filtration. This fluid or serum is of unknown strength, and in order to establish its strength or toxicity experiments are made by injections into guineapigs and in this manner is determined its relative strength to quantity, or the basis of antitoxin unit to cubic centimeter. The establishing of the unit is after Behring's method and I believe all manufacturers follow it. An antitoxin unit signifies one cubic centimeter of the quantity of the fluid or serum which is necessary to protect a guineapig from ten times the least lethal quantity on injection. A small quantity, about a cubic centimeter, of the above fluid is injected into the animal—the horse being preferred on account of tractability and capacity—and at repeated intervals increasing quantities are injected until the animal is thoroughly immunized, requiring about three months. The animal is now bled, the serum removed and properly preserved by the addition of a chemical, then tested to adapt its strength and finally bottled and labeled. The label explains the number of c.c. and the number of antitoxin units, and as the serum comes in different strengths, it is always preferable to speak of and designate it by the number of antitoxin units instead of the c.c. It is desirable to use the more concentrated preparations, as they are more readily injected, more quickly absorbed, cause less pain and likely contain less chemical as preservative. The serum is administered hypodermatically in a place where the skin is loose, as on the side of the chest, back, arm or leg. Antiseptic precautions must be observed

and the syringe must be thoroughly sterilized before and after every injection. The time to administer the serum in any given case is at the earliest possible time after the clinical diagnosis, and doubtful cases should also be injected, whether or not an epidemic exists. The quantity of serum to be used depends somewhat upon the age and weight of the patient and on the type or form and stage of the disease. In a mild case under 2 years of age, if seen within the twenty-fourth hour of the disease, 500 antitoxin units should be injected at once and the same should be repeated every twelve to twenty-four hours until improvement results. If the case is very severe or when seen late, or of the laryngeal type, urgency demands 1,000 to 1,500 units at once and to be repeated in twenty-four or even twelve hours, if no improvement is manifested. In children over 2 years of age, when the case is severe or advanced, 1,000 to 1,500 units should be injected at once and followed every twelve to twenty-four hours until the progress of the disease is arrested. I saw a child of 7 years in the seventy-second hour of the disease, being a most severe laryngeal case—one of membranous croup—in which there seemed absolutely no hope of recovery until 4,000 units were injected within thirty hours, after which the membrane of the larynx and bronchi became softened, loosened and came away in large sections, and recovery except for paralysis which was persistent, was uninterrupted. Experience and urgency demand that double the usual quantity be given in laryngeal cases. For immunizing or protecting against an attack of the disease from one-fourth to one-half the ordinary quantity is recommended. To avoid pain during injection a 5 per cent. solution of carbolic acid rubbed briskly on the skin is useful. I have found the chlorid of ethyl spray quite satisfactory and efficient. The pain, however, is usually slight and it is only in exceptional cases that a local anesthetic is required. In a few cases I observed a diffuse redness around and beyond the site of injection and also in one case an urticaria that might be attributed to the injection, but these disappeared within twenty-four hours without treatment. As to the danger from injections of the serum, I have seen no untoward or harmful effects, and when it is considered that now about a million injections have been made, with only a few fatal results, all of which are indefinitely accounted for, and in view of the good accomplished, it is scarcely worth while to hesitate on this account. As to the method of cure it may be said that the serum acts by arresting the growth of the bacilli, or that it counteracts the progress of the disease. As to its clinical effect, I observed that its immediate action was, in over 75 per cent. of my cases, to lower the temperature one to two degrees in twenty-four hours and the pulse rate in the same proportion, and the progress of the disease seemed arrested. In a few of the cases the temperature and pulse rose higher immediately after the injection but within the next twenty-four hours they gradually receded toward the normal. Now as to the practical value of the serum, there seem to be but few persons who have made a fair and thorough trial of it but what they are ready to testify in its favor. From all sections, in private practice, hospitals, cities all over the United States, Europe, Asia and Africa, comes the most favorable testimony. Indeed, it would seem but necessary to call our attention to the reluctance with which we formerly gave our hopeless opinions

in the laryngeal or so-called membranous croup cases, and yet today we approach these cases quite hopefully.

During the present year, 1896, Steelton, with a population of 10,000, was invaded by an epidemic of diphtheria, mainly confined to a section four squares wide and same length, this being drained by large sewers for surface drainage only. Statistics have been accurately kept by the board of health. During the year thirty-two cases came under my treatment. The local treatment of these cases consisted in using cleansing and antiseptic applications of hydrogen dioxid followed with a lotion of mercuric chlorid 0.2 to 0.1 per cent. in equal parts of tincture ferri chlorid and listerin, applied on cotton to the affected parts in the pharynx. Hydrogen dioxid and listerin were injected freely into the nasal passages and in some a one-fiftieth per cent. solution of mercuric chlorid in glycerin and water was injected thoroughly. Atomization and inhalation of same remedies were employed for nasal and laryngeal cases. These remedies were applied every two to four hours, and in addition, where possible, gargles were used frequently. The constitutional treatment consisted of tincture ferri chlorid, mercuric chlorid or both combined, calomel 1 to 2 centigrams hourly as to age, being preferred in the laryngeal cases, as it was deemed more stimulating to the local secretions. Quinin was given early and frequently throughout the attacks and later through convalescence strychnin was used. Proper attention was given to hygiene, and free ventilation was insisted on and persistent nourishment was enforced from the beginning of every case. Of these thirty-two cases twelve were treated without antitoxic serum and twenty were treated with the serum, and in all other respects they were treated alike, so that the antitoxin treatment was supplementary. Of these cases the former or those in which antitoxin was not used were deemed the milder and it was thought possible to cure them without its use. Of these twelve cases three died, two of extreme weakness and one suddenly of cardiac paralysis when it was presumably convalescent. The average active treatment of these cases lasted twelve days and the mortality was 25 per cent. Of the twenty cases treated with antitoxin, one died, and this within six hours of its use, being a hopeless case as it was also in the fortieth hour of the attack when first seen and toxemia was extreme. The average active treatment of the cases treated with the antitoxin was seven days. Of these twenty cases five were laryngeal and two of these as severe cases of laryngeal stenosis or so-called membranous croup as I ever encountered, all of which recovered. Albumin appeared less frequently in the serum cases than in those treated without it, and paralysis followed somewhat less also. Altogether there were 115 cases in Steelton in the year, being a proportion of 1,150 cases per 100,000 population, and the number of deaths was 16, being 160 per 100,000. Of these cases twenty-three were treated without serum, of which ten died, being a mortality of 43 per cent. Ninety-two cases were treated with the serum and six died, being a mortality of about 7 per cent. or a gain over the other series of over 80 per cent. In addition to the above I cite from the report of the American Pediatric Society, which has a report of 1,256 laryngeal or membranous croup cases treated with antitoxin. In over half of these recovery resulted without operation and of the 533 cases operated on the mortality was 26 per cent., or only about one-half of former mortality. I have also reports from many of

the largest cities in the United States arranged in tables showing: 1. The relative number of cases per 100,000 of population. 2. The relative mortality per 100,000. 3. The mortality rate for 1891 to 1896. 4. The mortality for 1896. The source of this information is from the local boards of health and it is gratifying that statistics are now so generally kept and available, though in a number of important cities the statistics are too incomplete to be fairly tabulated and for this reason had to be omitted. The method of calculation is by taking the populations of 1890 and end of 1896 and averaging by the number of years and the number of cases, and the results are obtained alike and fairly in all. The percentages are stated in whole numbers.

| Cities. | The average number of cases per 100,000 for the years 1891-1896. | The average number of deaths per 100,000 for the years 1891-1896. | Average mortality per cent. for the years 1891-1896. | Mortality per cent. for the year 1896. |
|---------------|--|---|--|--|
| New York | 414 | 96 | 25 | 15 |
| Philadelphia | 292 | 86 | 30 | 27 |
| Brooklyn | 306 | 96 | 34 | 22 |
| St. Louis | 231 | 54 | 26 | 15 |
| Cleveland | 174 | 49 | 29 | 25 |
| Buffalo | 205 | 57 | 29 | 22 |
| San Francisco | 108 | 24 | 24 | 16 |
| New Orleans | 121 | 33 | 28 | 14 |
| Pittsburgh | 267 | 70 | 27 | 20 |
| Detroit | 369 | 57 | 16 | 14 |
| Milwaukee | 407 | 120 | 31 | 22 |
| Washington | 161 | 52 | 34 | 23 |
| Newark | 395 | 98 | 30 | 18 |
| Jersey City | 374 | 92 | 25 | 23 |
| Louisville | 168 | 38 | 26 | 20 |
| Omaha | 153 | 56 | 39 | 20 |
| Rochester | 268 | 89 | 36 | 20 |
| Denver | 231 | 65 | 31 | 9 |
| Indianapolis | 298 | 71 | 24 | 19 |
| Albany | 142 | 74 | 58 | 28 |
| Columbus | 302 | 57 | 20 | 11 |
| Paterson | 385 | 112 | 30 | 23 |
| Toledo | 242 | 53 | 22 | 14 |
| Richmond | 79 | 27 | 36 | 16 |
| Scranton | 156 | 44 | 28 | 26 |
| Lowell | 105 | 45 | 42 | 42 |
| Fall River | 74 | 25 | 58 | 24 |
| Atlanta | 33 | 15 | 35 | 30 |
| Cambridge | 321 | 64 | 23 | 11 |
| Wilmington | 120 | 43 | 30 | 20 |
| Dayton | 370 | 80 | 22 | 18 |
| Grand Rapids | 249 | 52 | 20 | 15 |
| Reading | 140 | 42 | 30 | 30 |
| Camden | 432 | 106 | 25 | 22 |
| Trenton | 488 | 75 | 15 | 20 |
| Lynn | 273 | 59 | 27 | 14 |
| Los Angeles | 158 | 31 | 23 | 9 |
| Hoboken | 407 | 83 | 21 | 17 |
| Binghamton | 192 | 58 | 38 | 14 |
| Duluth | 208 | 35 | 18 | 11 |
| Davenport | 305 | 85 | 28 | 9 |
| Charleston | 25 | 6 | 25 | 25 |
| Harrisburg | 275 | 55 | 20 | 20 |

The average number of persons affected yearly per 100,000 in all these cities of ten million population for the years 1891-1896 is 242 and the average yearly number of deaths is 61. The average yearly case mortality for the years 1891-95 is 28 per cent., and for the year 1896 is 19 per cent., being a gain of 32 per cent over the average of the previous five years, and a gain representing nearly 2,000 lives. Now if the entire population of the United States were affected in the same ratio and the mortality the same, it would equal the saving of 14,000 lives annually. These comparisons could be extended, but so far, I think the main object is accomplished; that of demonstrating from widely extended, disinterested and impartial statistics—the local health boards—that during the present year in which the antitoxic serum has been pretty generally used, the mortality rate is 32 per cent. less than the yearly average of the preceding

five years. These results are fairly attributable to the improved treatment by the efficient and more general use of antitoxin. There are many useful statistics at hand by various authors, but I preferred this comparison by the larger cities of the United States, and if the cities from year to year will keep accurate statistics or complete records what a useful field would here exist for exact observation of the results of this or any other method of treatment.

In the use of antitoxin it should be remembered that it is not a panacea or a specific in the sense that no other remedies need be used, but that it is to be used with the usual other remedies or treatment. Beside, a number of the cases are mixed or multiple infections, that is, the streptococcus and staphylococcus germs are also present, and the diphtheria antitoxic serum has no effect on these germs. In addition to the serum and general treatment efficient local treatment no doubt limits the infecting or septic area and since we recognize that diphtheria is caused by a specific germ or bacillus which is lodged or implanted on the mucous membrane of the nose, pharynx or larynx and that it produces an erosion from which is absorbed its toxin, and even the bacilli are absorbed and enter the blood and the various organs of the body. Again, when we recall the quite large area of the nasal tract and also that in autopsies the bacilli have been found in the frontal, ethmoidal and sphenoidal sinuses as well as in the antrum, it seems but reasonable that local treatment is in most cases, if not in all, indispensable. So that the best results are to be expected by using the serum combined with local and constitutional treatment. It is confidently urged that the profession adopt its use universally and the mortality rate will be materially decreased from year to year, and as a result the yearly number of cases must decrease instead of increase as has been the case in most cities. Promptness in using the serum early is a very important factor and it is suggested that it is not necessary to wait on a bacteriologic diagnosis, but to act promptly in all cases on a clinical diagnosis and thus much valuable time is gained both in treatment and prophylaxis.

Much might be said of the utility of bacteriologic work and of the propriety of stations throughout the commonwealth from which rapid and free examinations should be made by the State. Such a system would be of incalculable benefit in the management of diphtheria and the various other germ diseases which are now so rapidly claiming our attention as to this new and apparently successful method of serum therapy. The utility of bacteriologic work seems to be greatest in determining the sporadic and doubtful cases which occur at the beginning of an epidemic and in isolated districts so as to prevent by quarantine and prompt treatment the spread of the disease, for it is apparent the more cases the more bacilli and hence the greater the danger of the spread of the disease. The prophylaxis of diphtheria and other contagious diseases could be materially advanced if communities were properly informed and protected by laws forbidding or limiting expectoration in public places or where people gather or come in contact as well as the disinfection of vessels used for expectoration. And if all cases of diphtheria were strictly isolated and treated with the serum it is reasonable to hope that diphtheria will be eradicated or at least limited to a small per cent. of the cases which now annually occur in all cities and in all countries.

THE USE OF ANTITOXIN IN THE TREATMENT OF DIPHTHERIA.

Read before the Detroit Academy of Medicine, Jan. 12, 1897.

BY GEORGE DUFFIELD, M.D.

ATTENDING PHYSICIAN AT HARPER HOSPITAL AND PROFESSOR OF CLINICAL MEDICINE IN THE DETROIT COLLEGE OF MEDICINE.

DETROIT, MICH.

The fear and misgiving which attended the administration of the anti-diphtheritic serum at the outset is no longer justified. From every part of the world come numerous clinical reports attesting the value of the new treatment. Its untoward symptoms have been promptly and carefully studied, so that with proper care it is a safe and efficient remedy for the treatment of diphtheria.

In September, 1894, I treated my first case of diphtheria with anti-diphtheritic serum, a bottle of which I had obtained from Aronson's laboratory in Berlin. The case had been a severe one; the serum was used after secondary infection had developed and the case seemed hopeless. The membrane had extended where it would and could not be checked. The temperature stood at 103 degrees and pulse at 120.

The serum was injected with all due precaution. The temperature continued to rise for several hours, showing that diphtheritic intoxication was not materially checked, but about six hours after the injection the fever began to fall; in twenty-four hours after the injection the temperature stood at 98.5 degrees, the membrane had grown white and the edges were loosening, and by thirty-six hours after the injection all of the membrane had been expectorated. The disease was not only controlled, but enough anti-diphtheritic serum had been introduced to counteract the toxic effects of the existing diphtheria, and the result seemed almost miraculous.

Since then, my faith in this new therapeutic agent has increased greatly. In the fall of 1895 I had from thirty-six to forty cases, and during the last three months of 1896, eighty cases were treated with only two deaths.

It should be the duty of every practitioner to place the antitoxin at the head of all therapeutic measures that he may know of for the cure of diphtheria, for it proves its efficacy whenever it is administered early, and in sufficient quantities to neutralize the poison which it is to antagonize.

An early diagnosis can not always be made from the clinical symptoms; frequently a tonsil may be covered with spots like a follicular tonsillitis, and one of the spots be true diphtheria and the case treated for an ordinary tonsillitis, when in reality a true case of diphtheria is developing in a medium that will prove a regular hot-bed for the development of the Klebs-Löffler bacilli.

All cases suffering from sore throat should receive the benefit of the doubt as to whether the case be one of simple or diphtheritic sore throat by a bacteriologic examination and the earlier such an examination is made, the greater the chance of saving our patient.

Our Detroit Board of Health has furnished test tubes for the making of cultures from suspected sore throats, and I believe that if they were used more often, the epidemics in our city would be reduced.

The dose to be administered at first is a question of importance. I think it is best to overdose at first, than to give a lesser curative serum. The bulk is the same, whether 500, 1000, 1500 or 2000 units are used,

and as the inserting of the needle is always painful, it is better to give a full dose early, rather than to have to repeat the injection.

The amount to be used depends upon the length of time the patient has been sick, the extent over which the membrane has spread and the thickness of the membrane.

As to the antitoxin to use, having tried five or six different makes in the past two years, I have found that which has been manufactured by Parke, Davis & Co., most efficacious. Apart from the potency of this brand, I must commend the ingenious manner in which it is marketed, viz., in hermetically sealed glass bulbs, which exclude the air and keep the serum strictly aseptic.

From the charts I exhibit, you will see that when a dose was given of sufficient strength, the action on the toxin producing the constitutional symptoms, namely, fever, high pulse and great prostration, was prompt and effective; the fever being reduced rapidly. Laryngeal cases recovered slowly, but showed marked improvement after each injection.

Strange as it may seem, the serum varies in strength, different manufacturers furnishing the same number of units in various bulks, and many brands containing a less number of curative units than claimed.¹ Such brands are to be avoided. The most concentrated serum is, I think, the best to use, as there are rarely any bad results from its injection. It has been noted in several cases that an erythema or urticaria develops around the point of injection. None of the severe symptoms as noted by some have been noticed by me, though several hundred injections have been given under my direction. Several have had rheumatic pains, but no other symptoms showed themselves, not even an abscess, and their absence was probably due to the great care used in the manufacture of the serum administered.

During the past year there have been 111 cases of diphtheria in Harper Hospital, five of which died. Three of these entered moribund, and one man had been sick six days before entering the hospital and the action of the toxins upon his heart centers was so great that he died from heart failure, the result of the diphtheritic poison. Some cases where large doses of antitoxin were used close together showed subnormal temperature for several days. There have been six tracheotomies and twelve intubations. There have been many laryngeal cases that were treated successfully with merely antitoxin and inhalations. The youngest case was a child of five weeks, bottle-fed. During the months of October, November and December there were over seventy cases in the hospital under my care, and six in private practice.

The nurses who were on duty were at first immunized with 250 units, later with 500 units, and still later with 1,000 units, as the prophylactic effect was better. The nurses were constantly, except when off duty, exposed in an atmosphere saturated with diphtheria. Two nurses took the disease after having been immunized, and one took diphtheria after nursing a man who started with a "follicular tonsillitis," but which later turned to a true diphtheria. All the nurses recovered. When the disease was taken by those who had been immunized the attacks were mild.

Too much praise can not be given to the corps of nurses who cared for the patients day and night, with promptness, cheerfulness and efficient vigilance.

Had it not been for their splendid work, many of the patients would have succumbed to the disease.

In all the hospital cases the patients had been sick from two to three days before entering, hence it was necessary to use the strongest antitoxin serum early and repeat the dose in six, twelve or twenty-four hours, if the growth of the membrane was not checked or stenosis promptly relieved.

We have several standing orders that patients receive as soon as they reach the hospital, for we believe in using some medicines that proved useful before the discovery of the antitoxin.

An examination of throat is made to see the extent and location of the membrane.

1. A hypodermic of antitoxin 1500 or 1000 units.
2. A liberal dose of calomel if tongue was coated and bowels constipated.
3. An ice collar, worn until all glandular enlargement disappears.
4. A gargle every two hours of

| | |
|----------------------------|----------|
| Hydrogen peroxid | 2 parts. |
| Euthymol | 2 parts. |
| Lime water | 4 parts. |

5. Membrane to be touched for 10 or 15 seconds with Loeffler solution, every three hours. This is composed of:

| | |
|----------------------------|----------|
| Menthol | 10 gm. |
| Toluene q. s. ad | 36 c.c. |
| Creolin | 2 c.c. |
| Iron chlorid sol | 4 c.c. |
| Alcohol q. s. ad | 100 c.c. |

This dissolves the membrane and destroys the Loeffler bacilli *in situ*.

Should the patient be needing a stimulant, the calomel was omitted and whisky or strychnin administered. Other symptoms were met by appropriate means as soon as they arose.

Cases of laryngeal diphtheria were treated with steam inhalations after being injected. Children with pneumonia complicating diphtheria were put in the oil silk jackets and kept in an atmosphere of comp. tr. benzoin and other non-irritant inhalations.

The frequency of dose of the antitoxin depends upon the spreading of the membrane and the condition of the temperature.

How soon is a patient to be discharged as cured?—I have had a culture taken from throats each day for three or four days until all Klebs-Loeffler bacilli disappear before I pronounce the cases well enough to mingle with others, for it has been known that the Klebs-Loeffler bacilli may be carried in the throat of a person without danger to himself, and yet be the source of great danger to others.

As a rule the cultures taken after all membrane has disappeared from diphtheritic throats prove negative after three or four days.

Just how dangerous the diphtheritic bacilli are after the use of the antitoxin, remains for the bacteriologist to determine. Where antitoxin has not been used, I have known reinfection to occur ten or fourteen days after primary attack.

Diphtheritic paralysis developed only slightly in two cases, but more severely in another case where all the vital centers had suffered from previous disease. Albuminuria was noted in a few cases, but as the disease predisposes to renal disease the antitoxin could not be held responsible; all these cases cleared up as soon as the poison was neutralized. No secondary infections occurred after the disease was once under control.

¹ Medical News Report.

ASTHENOPIA NOT DUE TO REFRACTIVE ERRORS.

Read at the Meeting of the Chicago Ophthalmological and Otological Society, Jan. 12, 1897.

BY HENRY GRADLE, M.D.

CHICAGO.

The inability to use apparently healthy eyes for near work, without increasing discomfort or pain, is usually caused by refractive errors, or insufficiency of accommodation. In a series of 500 patients with asthenopic complaints taken consecutively from my records, the symptoms were caused by hypermetropia, astigmatism or presbyopia in 75 to 80 per cent. In 20 to 25 per cent. the asthenopia could not be accounted for in this manner, for either the optic conditions were perfect or, if not, their correction gave no relief.

Some of the factors which lead to asthenopia, in the instances not dependent upon optic faults, are suggested by a study of the refractive cases, if we consider them as patients and not merely as the possessors of optically imperfect eyes.

The importance of refractive errors varies according to whether we study them either in the patients of our office practice or in the population at large, that is to say, in school and military examinations, or in people whom we treat for other than refractive anomalies. Instructive, too, is the study of presbyopes. From such material it can be learned that many people can pass through life up to middle age without being annoyed by an existing hypermetropia or astigmatism of 1, or perhaps even 1.5 dioptics, and that when the error exceeds this amount, or the accommodation begins to decline with age, the normal and typical annoyance upon using the eyes is a feeling of strain or fatigue bordering on pain. In office practice, on the other hand, we see patients annoyed by errors far below this limit and complaining often, not merely of fatigue, but of various forms of pain, headache and even distant nervous symptoms. In a previous discussion of this subject ("The Neurological Aspect of Asthenopia," *New York Medical Record*, Dec. 7, 1895) I have tried to emphasize these differences, by terming *normal* asthenopia that amount of fatigue and discomfort which is inevitably produced by a refractive error of sufficient degree, while I called *exaggerated* asthenopia the excessive eye annoyance which asthenopia leads to only in certain patients.

Observation shows that on the whole, those persons who complain only of normal asthenopia or who tolerate low errors without disturbance, represent the healthier part of the community. On the other hand, persons who suffer great annoyance in consequence of an unproportionately low degree of asthenopia, show often in many other ways that their nervous system is not in perfect condition. In some we get a decided history of inherited nervous instability. In others the past history, or perhaps only the subsequent observation, reveals other functional neuroses. Sometimes enfeebling infectious diseases have undermined the resisting power. Anemia or impaired digestion are also not uncommon precedents in exaggerated asthenopia. Finally faulty habits, improper hygiene, and especially insufficient muscular work, are very often factors which lead to an excessive reaction from eye-strain. The rôle of these various pernicious influences is all the more striking in those instances in which a moderate refractive error had been borne without inconvenience until a breakdown occurs on

account of such additional factors, while when these influences can be eliminated the patient may again be able to dispense with his correcting glasses. It is true there are cases, too, in which we can not elicit any other reason why a low error should cause such disproportionate discomfort, or why the eye strain should lead to other nervous symptoms. But is it not most logical to admit that there must be some reason why that patient's nervous system reacts so much more than that of average healthy persons, even if we can not detect it? In other words, I hold that normal asthenopia is the natural discomfort associated with a refractive anomaly, while the man with exaggerated asthenopia is indeed a patient who has, beside his optic defect, a deficient nervous system. It is, however, self-evident that no sharp line can be drawn between normal and exaggerated asthenopia.

The same reasoning holds good for asthenopia dependent upon other causes beside optic defects. In about 3 per cent. of asthenopic patients I find the ocular anomaly to be slight chronic inflammation of the conjunctiva or the edge of the lid. It is self-evident that a patient with pronounced conjunctivitis can not use his eyes without increasing discomfort, and it would be illogical and superfluous to describe his condition as asthenopia. If, however, decided asthenopic symptoms are complained of and we find merely a squamous blepharitis, or a minimal degree of chronic conjunctivitis so slight as to escape any but expert observation, and furthermore, if the annoyance ceases after the cure of the inflammatory condition, we can not but call it a case of exaggerated asthenopia. That is to say, the individual, on account of some peculiarity of his nervous system, reacts with asthenopia to an irritation which most persons can tolerate with scarcely any discomfort.

The symptoms of asthenopia dependent upon conjunctival irritation differ in many instances from the characteristic fatigue and ache due to ametropia. The annoyance is usually described as burning or watering, which may lead to headache in neurotic persons.

Occasionally asthenopia has a multiple origin. It may depend upon low ametropia in conjunction with blepharitis or chronic conjunctivitis and will in such instances require attention to both factors.

As another ocular lesion which bears some relation to asthenopia, I wish to refer to a certain anomaly of the retinal pigment epithelium. I do so with some reserve because I probably stand isolated in the interpretation and because the interpretation of such clinical facts is extremely difficult or uncertain. I refer now to certain slight changes in the appearance of the fundus which I have often met with in cases of exaggerated asthenopia. I can not give exact statistics because I have only paid attention to the subject in the last five years, while the statistics I quoted were partly from the time previously and partly from my records of last year. I should say, however, that I have observed this condition at least fifty to seventy-five times.

The normal fundus is, as you know, homogeneous in appearance. In some subjects, however, we find a condition which may be described as graining, or salt and pepper appearance. With it there may be in addition partial atrophy of the pigment epithelium exposing the choroidal vessels. The special lesion to which I refer seems to depend upon irregular distribution of the pigment epithelium, and we see an appearance which would be produced by the mixing

of fine black and white powders with grains so minute that the eye can not discern the separate grains. Sometimes a few of the grains are coarse and discernible and white and black specks may be recognized with the ophthalmoscope. This condition is clearly more than a structural peculiarity. I judge so for the reason that when I encountered it in adults it was in connection with actual lesions of the fundus as, for instance, in conjunction with localized foci of choroiditis and particularly during the retrogressive stage of neuritis. Otherwise I have hardly met with it in people over 25 years of age, but only in children and young people. This appearance is usually most pronounced in the lower nasal quadrant of the retina, but it may extend over the entire periphery and may even reach the macular area. I know of no reference to it in literature except the occasional use by writers of the term "woolly fundus," or "stripping." (*Archives of Ophthalmology*.) It is not identical with Gould's ametropic choroiditis.

With few exceptions the children in whom I found this appearance of the fundus were asthenopic. In some instances the asthenopia depended entirely upon refractive errors and was corrected definitely and permanently by glasses, but even in those cases it was always the exaggerated form of asthenopia. There was great complaint in proportion to the degree of error actually found. In other instances, however, there was no refractive error measurable, or if present its correction gave no benefit. These individuals were markedly neurotic and the neurasthenic condition might be taken to account as a predisposing cause for the asthenopia, but still the coincidence of this peculiar irregular distribution of the pigment epithelium in connection with such exaggerated asthenopic complaints is worthy of note and I would like to call the attention of the members to it. We can not influence the fundus condition directly by treatment, and hence can not prove absolutely its significance. It was generally accompanied in my cases by slightly lowered vision, about two-thirds or one-half, which could not be fully raised by glasses. It never led to any greater disturbance of vision, but it gave, in many cases, marked discomfort in the form of burning or smarting, often leading to headaches. There was commonly some sensitiveness to light, and the symptoms were most marked in the morning on rising. Although it was asthenopia in the sense that the discomfort increased on using the eyes, still the discomfort was ordinarily not quite absent and generally most pronounced on rising.

The only therapeutic measures that gave me any satisfaction whatsoever were absolute rest of the eyes and dark glasses. Personally, I have seen very little benefit from the dark glasses in other forms of asthenopia. But in this form the use of dark glasses has proven the most satisfactory of any of the measures employed.

This finishes all I can say about ocular causes of asthenopia, except that I might refer to the subject of muscular anomalies. That subject I trust, however, will be taken up by other members this evening who have had more experience than I have, for I have not seen much to convince me of the importance of muscular anomalies as a cause of asthenopia. My own impression has been that the number of cases in which muscular anomalies are associated with asthenopia is not large, if we analyze the cases properly, and that in the majority of instances the muscular anomalies

are not dependent upon anatomic peculiarities of the muscles, but are of neurotic origin, rather associated with the asthenopia than the cause of it. However, I do not wish to deny there are cases of muscular asthenopia, only I have never happened to see many of them in my own experience.

If we seek for other disturbances in the system which may provoke asthenopia I know of two organs which play a considerable role in its production. These are the mucous membrane of the upper respiratory organs and the stomach. Various German rhinologists (Gruenwald) have referred to the existence of asthenopia in connection with suppuration of the different accessory sinuses. Some of these observations are suggestive rather than convincing. Personally, I have not had any definite experience in this connection. The cases of suppuration of the accessory sinuses seen by me which had ocular symptoms, were more in the nature of a steady discomfort than a distinct asthenopic complaint. I have, however, seen quite a number of instances, and my records place them at about 3 per cent. of all my observations upon asthenopia in which the nose played a greater or lesser role in the production of ordinary asthenopic symptoms. Most of the cases were of the nature of a chronic catarrhal rhinitis, with secondary hypertrophies, or, with stenosis due to deviations of or excrescences upon the septum. In placing the figure at 3 per cent. I must admit that it is not based entirely upon my therapeutic records. Not all of my patients were willing to undergo the tedious treatment that nasal stenosis would require, while others were not observed long enough. But in accepting that figure for my statistics I did so on the basis of the therapeutic successes in a smaller number of cases in which the probability of relationship was raised to certainty by the results of the treatment. At any rate, I can refer to a reasonable number of instances where there was heaviness and discomfort in the eyes, burning or a dull feeling upon using the eyes, and where the removal of the spurs from the septum or the evulsion of mucous membrane of the turbinates led to permanent cessation of the symptoms. In some cases glasses had been prescribed either by myself or others. But in the convincing observations these glasses which had only been of moderate benefit could be discarded after the nasal treatment. In none did the glasses give entire satisfaction before the nasal treatment.

Another naso-pharyngeal condition to which I would attribute an occasional influence in the production of asthenopia is enlargement of the pharyngeal tonsil, the condition usually termed adenoid vegetations. I have seen at least twelve to fifteen cases in which children complained of decided asthenopia, where they could not use the eyes without discomfort, and where glasses given by myself or others did not prove wholly satisfactory, although the correction of the ametropia was not entirely useless. In these cases the removal of the adenoids gave definite results, namely, complete relief from the previous asthenopic symptoms. In all these instances, however, we can not exclude more or less instability of the nervous system. Indeed, I am not ready to admit that *exaggerated* asthenopia of any kind, or from any cause, can occur in a person whose nervous system is perfectly up to par. There are all possible degrees between normal asthenopia and the exaggerated form, because under the present conditions of our civiliza-

tion there are only relatively few persons whose nervous system is trained from youth and reared by proper inheritance to the strictly normal physiologic condition.

As regards the influence of the stomach upon asthenopia I can not quote any statistics. My records are not detailed enough in all instances. Moreover, I am not sure that stomach disturbances alone would ever account entirely for asthenopic complaints. But I have observed quite a fair number of instances in which asthenopia associated with refractive errors, or without any measurable error of refraction, could not be relieved by any means whatsoever until the patient's stomach was cured of the condition in which had been, presumably a chronic gastritis. These individuals showed a coated or furred tongue, complained decidedly of distress of the stomach, had gaseous eructations, bloating, or general discomfort after meals, or, at least, after any indiscretion of diet. It is in these cases, as a rule, that we can not get relief until we place the patient upon rational diet, and prescribe sufficient outdoor exercise. On the other hand, by advising such measures a fair number of dyspeptics can get rid entirely of their asthenopic symptoms and may be able to dispense with glasses, which previously had been a necessity, although without ever having obtained full satisfaction from the glasses alone. This perhaps is as much as I can say definitely upon the subject of asthenopia not dependent upon refractive errors from the basis of my own experience.

Unfortunately, our therapeutic influence upon the nervous system which is at fault in such cases, is at the best a slow and often imperfect one. We can not correct hereditary influences. The patients are not always able to change their faulty habits. The pernicious after-effects of infectious diseases, like typhoid fever or measles, as a rule, are not amenable to treatment, only to time. But the condition of anemia which underlies this trouble can quite often be benefited by the administration of iron, and iron is a valuable adjuvant in the treatment of asthenopia if anemia be present at the time.

I might add a few words about the relation of some of the vague forms of asthenopia to hysteria. I was led to these views by observing the relatively acute onset of asthenopia in some instances. We all know that, as a rule, asthenopic patients can not state exactly when their annoyance began. In a small minority of instances, however, a time can be fixed and it coincides with some pernicious influence active at the time, for instance, the sickness of a child necessitating long waking hours of the mother, or overwork in the preparation for examination by students. Again, in other cases a change of boarding house with poor diet may have led to dyspepsia, while in a few of my observations the occurrence of acute coryza preceded the ocular disturbance. In such cases of asthenopia not dependent upon refractive anomalies *with relatively acute onset* I have had good results, provided they had not lasted long, by removing these pernicious factors, insisting upon proper hygiene, proper muscular exercise and absolute rest, if possible, for the eyes. By strictly carrying out this treatment many of these patients were cured within a number of weeks. On the other hand, if we get these cases after they have persisted for months, if they have been insufficiently treated, or have not sought medical advice at the proper time, we all know how very

persistent such asthenopic complaints may be, even though the original cause has ceased to act. The persistence of the asthenopia when the starting cause is a matter of the past, might be logically attributed to hysteria. After all, perhaps, as good a definition as we can give of hysteria is "functional neuroses which are dependent upon psychic influence." Asthenopia in the cases mentioned does not start from cerebral influence in the first place. It may start from some tangible cause as coryza, dyspepsia, persistent overwork, etc. After these causes have ceased to act, the persistence of asthenopia in some cases is purely psychical. At least, we can find in some instances no somatic anomaly whatsoever which would account for the persistent asthenopic annoyance, and close analysis renders it probable that the patient retains the remembrance of his former suffering and suffers still when using his eyes, simply because he expects the discomfort.

About the only mode of therapeutic influence which I have found of benefit in these cases was to get the patient to forget the trouble gradually. If circumstances permitted I advised to drop work entirely. It is by change of surroundings in these slow cases, especially by a vacation and traveling; it is by oblivion of the annoyance attending previous eye work and by the suggestive influence of promised relief that I have attained moderately satisfactory results in these cases where no somatic condition remained to which the asthenopia could be attributed.

DISCUSSION.

Dr. CASEY A. WOOD.—There are two causes of asthenopia, unconnected with the refractive state, that are common enough and to which I would draw the attention of the Society. First of all are those minute choroidal changes which one, now and then, observes about the macular region. In Moorfield's we were accustomed to give certain phases of these the name of Tay's choroiditis. They occur, in my experience, mostly in young adults, and although they are confined entirely to the choroid, I have a suspicion that in many instances (and I believe that I have been able to show it) that there is a slight lowering of central vision, which corresponds to ill defined relative scotomata. Exactly what these changes are and what they are due to I do not know, but I am certain that in many instances they produce asthenopic symptoms, because after correcting all refractive errors and after disposing of the various muscular anomalies that commonly produce eye strain no relief is obtained.

The treatment of such cases has with me been extremely unsatisfactory. I have never succeeded in doing very much for these patients except to give them temporary relief under atropin for long periods and to prescribe tinted lenses. After the effects of the atropin had worn off I endeavored to keep them from tiring their eyes, especially by prohibiting all near work. I recall very distinctly a case which I had that had been examined and treated by quite a number of ophthalmologists, by most of whom these changes had been recognized. After this patient had been under my care for months, during which time I treated her *secundum artem*, I urged her to take about two years' holidays from the work she was trying to do, but at the end of that time I do not think she was able to do more than a quarter or a half hour's near work at a time. In other words, I have come to regard such cases as practically incurable, at least while the choroidal process is active. Central vision was excellent in this case, *i. e.*, distant vision was almost normal and very fine print could be made out.

A careful examination with the perimeter shows, in most instances, doubtful central scotomata for red and green, not

always confined to the fixation point, but sometimes a little to one side of it, and not so well defined as one sees in toxic amblyopia and in similar diseases.

I hesitate to speak about the other source of asthenopia, although I have referred to it in print before, because it is usually only a manifestation of the so-called neurasthenia. I refer to insomnia. In a scientific society like this it is hardly fair to speak of a mere symptom as productive of asthenopic symptoms, but, be that as it may, I think I am correct in asserting that in the presence of decided insomnia, not associated with organic disease, but which seems to be a part of a general neurosis, the treatment of cases of asthenopia is far from satisfactory. The correction of the refractive error, looking after the eye muscles, etc., do not produce the usual results. Whatever be the cause of the insomnia, I consider it my duty to tell the patient that unless it can be relieved in some way or other I shall not be able to do very much for him or her, as the case may be.

Dr. F. C. HOLTZ—I shall speak of only those local conditions which produce asthenopia, and among these I wish again to refer to what Dr. Gradle has already touched upon, to blepharitis as one of the common sources of asthenopic symptoms not referable to refractive errors, and I lay more stress on this condition than did Dr. Gradle, and I do not agree with him that in those cases where there is a slight or hardly perceptible blepharitis, the inflammation produces asthenopia only because the patient is in an abnormal nervous condition; for I find whether the blepharitis is slight or well marked the eyes show a particularly marked sensitiveness to any irritating cause, such as exposure to light, to wind, and consequently the exertion of the eyes in near work produces congestive conditions in the lids, and the result is a feeling of heaviness due to the congestion, and expressed by the patient as fatigue, burning, smarting and pain leading to headaches.

We know that some time ago errors of refraction were charged as causing blepharitis, and it has become a habit with many oculists to prescribe glasses and nothing else in cases of blepharitis. I still insist that the relief is more prompt by paying attention to the local treatment of the inflammatory condition of the lid than to the refraction, and I knew many cases in which glasses have been worn for years and no relief of the asthenopia was obtained, when under proper local treatment the patient was relieved and could use his eyes with perfect comfort, whether he had the glasses on or off.

We find a similar condition in the conjunctiva. Very often the inflammation is so slight that it is not shown over the tarsal portion of the conjunctiva, which on eversion of the lid looks perfectly well. There is often only a slight congestion of the retro-tarsal folds, a congestion which is aggravated by near work and leads to a succulent condition of the retro-tarsal folds, which causes a feeling of fatigue to the patient. These slightly succulent or congested folds are usually not exposed when we turn the lid in the ordinary way, but they can be very easily brought into view when the eyeball is pushed back into the orbit by slipping the lower lid over it and pressing upon the lower lid, pushing it back into the socket, while the everted upper lid is held against the supra-orbital margin. This makes the retro-tarsal fold spring forward and in many cases where the conjunctiva looks perfectly normal when the lid is everted in the usual way, you will be surprised to find a diseased condition of the fold which fully accounts for the complaints of the patient.

A third local condition has also been touched upon, viz., slight changes in the choroid. I would mention as quite frequent an excessively saturated redness of the fundus, a slight indistinctness, or blurring of the outlines of the papilla, and changes in the pigmentation. Very minute white dots scattered over the fundus have also been observed by me and I had reasonable grounds to regard them as the local condition for

the asthenopic complaints. In some of these cases I discovered little choroidal patches in the periphery of the fundus, so that I am inclined to think that in many cases which are considered as choroidal hyperemia there is an actual peripheric choroiditis which under the strain of near work produces painful eyes and the symptoms of asthenopia. Old people during the development of cataract often complain of a dull recurring pain in the eye, and Dr. Risley has called our attention to the fact that in a good many of these eyes there are changes in the periphery of the choroid.

Dr. CHAS. M. ROBERTSON, Davenport, Iowa—Not as much has been said about the nasal causes as I think there should be. Dr. Gradle hinted at the subject in saying that stenosis of the nasal cavity might be the cause, either from enchondroses, an excrescence, a deviated septum, or from chronic rhinitis. The only form of rhinitis that is exempt, according to American authorities, is the atrophic, although Schwartz, and some others than he in Europe, state that they have seen cases originating in atrophic rhinitis. My experience has taught me that we are more liable to have reflexes from vaso-motor paresis than from chronic rhinitis and true hypertrophic rhinitis, although the great majority of cases of hypertrophic rhinitis are the result of a paretic condition. Some authors believe that an enchondrosis on the septum acts by producing a vaso-motor paresis behind the occlusion thus formed and not from the enchondrosis *per se*. A spur may act primarily by producing pressure irritation to the turbinated body opposite.

I have had several cases in which the removal of the spur was followed by complete relief. A great many cases of conjunctival irritation or blepharitis may be due to obstruction by pressure of the inferior turbinated body on the lachrymal duct opening. I have had one case of such where cauterization of the inferior turbinate relieved the condition which produced the asthenopic symptoms.

Dr. W. F. COLEMAN—We all recognize the fact that probably 90 per cent. of all cases of asthenopia are due to refractive errors. Of the remaining 10 per cent. I agree with Dr. Gradle that perhaps only 3 to 5 per cent. are due to muscular condition; not that muscular insufficiencies are uncommon, because in non-asthenopic eyes they are extremely common, but that relieving these muscular conditions does not cure the symptoms in an asthenopic patient. Tenotomies in my limited experience have not been successful. Of those having satisfactory results the ones dealing with vertical insufficiencies have been most satisfactory.

Dr. Coleman then reported several cases showing that in spite of every effort to correct refraction and muscular insufficiency the symptoms remained.

Dr. WM. H. WILDER—Dr. Gradle has covered the subject very thoroughly. I would like to speak particularly of the peculiar "pepper and salt" appearance of the retina. In Moorfield's it was Mr. Nettleship's habit to call attention to this condition, especially in young adults and children. It may be that this peculiar arrangement of the pigment epithelium is sufficient to cause hypersensitiveness of the part.

Dr. HUGH T. PATRICK—There were one or two points brought out in the discussion that I might speak of. Dr. Wood spoke of asthenopia due to insomnia, and I wish most emphatically to dissent from any such way of stating the interrelation of symptoms. Insomnia is simply a symptom of disease, and I do not believe that any case of asthenopia can be cured by treating the insomnia *per se*, because it must in the nature of things be treated by treating the underlying nervous or other conditions. Many of these cases of asthenopia are nothing but excessively nervous subjects. It is to be expected that a person who is nervously exhausted, who is in the true sense of the word a neurasthenic, who is suffering from nervous prostration, should suffer from asthenopia. He gets tired if he walks too far, and gets tired if he follows a train of thought. Such a person

would not be expected to read as he ordinarily does. We should expect him to become weary and the print to blur.

There is another class of neurasthenics that suffer from asthenopia, and they are the neurotics *par excellence*; the patients who show the classical symptoms of neurasthenia from insufficient cause. Such is the laborer who, after overlifting, shows the typical symptoms of neurasthenia coming on one by one, and with them asthenopia. Or a woman who undergoes a trivial gynecologic operation, where there is no material loss of blood, no shock, no infection, but anxiety, apprehension, or other abnormal psychic condition, and who after the operation develops one after another, generally slowly, the typical symptoms of neurasthenia and asthenopia. The asthenopia of these cases arises not from overwork and nervous strain, but from psychic causes. To treat such cases by treating any anomaly of the eye alone is very short-sighted. It would also be short-sighted to treat only the nervous system without treating the ocular abnormality. In many of these cases the ocular symptoms may be the most pronounced, and so largely mask the other manifestations.

I wish to impress from the standpoint of the neurologist, that in these cases neither rest, over-feeding, or anything but psychic treatment will do any good, if any good can be done.

Dr. C. W. HAWLEY—I would like to state that I find more and more the influence of general conditions on asthenopic patients. I no longer confine myself in many cases to the exclusive treatment of the eyes, but often have cause to congratulate myself for treating general conditions, and in this way relieving the asthenopia.

SURGERY ONE HUNDRED YEARS AGO.

AN HISTORICAL STUDY

BY DR. GEORGE FISCHER.

DEDICATED TO THE GERMAN SURGICAL ASSOCIATION.

TRANSLATED FOR THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION
BY CARL H. VON KLEIN, A.M., M.D.

(Continued from page 413.)

CHAPTER II.—THE QUACK.

Family quackery, old women, shepherds and others; The charlatan at the annual fair; Secret remedies; Hernia curers, castrators; Cataract-couchers, Hilmer, John Taylor; Stone cutters; Frère Jacques, Rau; Hangmen, torture, guillotine; Quacks in foreign lands; Remedy against quackery; Our time.

Quackery is an evil innate in human nature, and enters the sick room with every old woman. Who is there that visits a patient and does not feel impelled to pass judgment on his ailment, to display wisdom as to diet and temperature, or to recommend with the utmost eloquence a remedy which has at some time helped this and that acquaintance? With this misguided condolence, which is not peculiar to the feminine sex, there sometimes lies behind the impulse to play the doctor, only indiscrete sympathy, but very often it is largely arrogance and self-conceit. The traditional blundering of mothers and aunts, even to this day, makes the life of the practising physician so bitter that he often leaves the sick room feeling that medicine is indeed a sublime science but a miserable business. This well meant quackery is only a little twig of that rankly luxuriant quackery of the 18th century which like a poisonous vine shot up out of the superstition and prejudice of the German people. However much custom, habits, laws and forms might change, the prejudices as to medicine remained fixed as they had been for centuries and were handed down from one generation to another. The stupidity of the public promised rich plunder.

The people were wholly ignorant in medical matters. They had no opportunity to instruct themselves

concerning life and health, and were incapable of distinguishing the true physician from the quack. Of public hygiene, the physicians themselves knew little and whenever they ventured to interfere were strenuously opposed by the lawyers, who had always claimed for themselves the management of state affairs. Various causes contributed to lead the public into the hands of the quack. The large number of ignorant physicians and surgeons, who belonged in the same class with the charlatan and decried scientific training as useless; their wrangling, the trivial character of the doctor's examinations, all undermined confidence in the medical profession. Other people, especially the clergy and the apothecaries, were very ready to grasp them by the hand. A man who every year prepared so many prescriptions for every possible ailment must necessarily become so wise as to be able to cure those ailments; no one for a moment doubted his skill, so they asked his advice and freely took his medicines. This class embraced, besides the barbers, bath-keepers and midwives, other wise people, apothecaries and old women, root-gatherers and alchemists, shepherds and blacksmiths, hunters, hangmen and other riff-raff (*Lumpenpack*). The army of pretenders was countless. They all enjoyed unquestioned confidence and, as the rabble believed, possessed a supernatural gift of healing. The peasant found conversation with a shepherd far more to his taste and to him more intelligible than with a physician. He feared he might not be treated with proper care by the physician, and moreover that he would be obliged to pay more for it. Furthermore there prevailed among the peasantry the idea that their diseases formed a distinct class which the physicians of the rich did not sufficiently understand. But quackery was also to be found in the better classes, among people of rank and education. With them blind faith had its roots in the taste for everything new and extraordinary, which indeed so despotically rules many people. They reproached the physicians because they uniformly clung to the old ideas and never sought out anything new. They vested great confidence in those who agreed with their own preconceived opinions, and ignored those whose treatment was in the least disagreeable. Human life was intrusted to the quack, but in all other things he was considered rude and ignorant. On the one side was the desire to become healthy, on the other the eagerness to make money; both of these conspired to unsettle the reason of the sick. People were imposed upon by anything and put faith in the most shameless promises, until at last the empty purse and disillusionment brought the victim to his senses. That the charlatan knew better how to gain confidence and was much oftener consulted than the scientifically trained physician, is a fact just as true today as it was one, two, or three centuries ago. In the sixteenth century all Europe swarmed with quacks, whose name (*Quacksalber*) arose at this time, when syphilis raged frightfully, and the medical pretender made an unwise and excessive use of mercury (*Quecksilber*). Bacon wrote of that time: "The rabble had in all times considered every old woman and every charlatan as a natural rival of the best physician and worthy to contest with him the preference at the sick-bed." In the seventeenth century the clamor over this nuisance was still unabated, and what Primrose then said of England might be written of Germany a hundred years later: "It is surprising that most people are so careful in the choice of their physician, that if a physician settles in

a place they venture to trust him only after a long time; on the other hand, they immediately trust a traveling mountebank, if he remains in one place only a few weeks, and people of the poorest class, who on the plea of their poverty do not employ physicians, sometimes waste large sums of money on these itinerants. And these quacks, devoid of all merit, who in no country would be considered competent to attain honor and dignity, enjoyed respect and great honor, and were sometimes accorded the same rank as physicians."

Besides those, who along with their trade occasionally dabbled in medicine, there was a class of men called mountebanks (*Marktschreier*, *Medicastri*) who made a special business of quackery. To this class belonged the dealer in nostrums, the itinerant truss-maker, cataract coucher and lithotomist.

The *mountebanks* went from city to city, from one village to another, hence the name "storks" (*Störcher*). At every fair (*Jahrmarkt*), the Tyrolese stood beside the coucher and from a dirty medicine-case in his booth sold at an enormous price to the gullible peasant the remedies secretly and very cheaply obtained from the apothecary shops. They paid the state a few kreuzers as a tax, just as the player, who was obliged to pay one guilder for each performance. A printed announcement, rich in Latin and Greek phrases and scriptural quotations, shamelessly promised to cure everything in the shortest time with the help of God. They even warned the public against other mountebanks, and as proofs of their own skill produced testimonials, written by themselves and false patients. Those who had already made money came in their own carriages with two beautiful horses, if dun-colored so much the better, and had themselves announced in the village as a court-physician, dentist, oculist and rupture specialist licensed by some German prince. Not satisfied with coachmen and servants to carry the proclamation throughout the whole town it was announced from the pulpit that everyone suffering from diseases of the teeth, ears or eyes, or with rupture, would be guaranteed a complete cure without having been previously seen or examined. One itinerant, John George Drenkler, called himself, in his prospectus, upon oath a burgomaster, operator, oculist, lithotomist, cataract coucher and truss-maker, born in the city of Hamm, in Bavaria, now a royal burgher, domiciled at Bischheim, who in various kingdoms and celebrated capitals, had cured many thousand men of different diseases. He said: "I cure all diseases of the eyes: a man whose sight has been lost for ten, twelve or fifteen years, who has gray and white cataract, I can relieve in a few minutes so that he can see the smallest bird on the roof." The peasants, in processions, journeyed to the mountebank. Painted, and clad in the ragged mantle of a theater prince, ornamented with strands of teeth about his neck, or dressed as a Turk, he prated to them that the Turks are the best surgeons. By hundreds the people stood with eyes and mouths agape, in front of his tumble-down booth, which was pasted over with advertisements, and false charters of serene highnesses and high and mighty rulers. The people were happy to be cheated out of their money by the wonderful man and obliged to pay twenty times too much for every remedy. No medicine there was too expensive for those who in life often suffered the greatest poverty. The nostrums were principally antidotes, wonder balsams, salves for burns and aromatic pellets. In the presence of the

people the mountebank swallowed his antidote and then if we assume that he did not lie, he ate ratsbane. But the poison did not harm him, because he had already filled his stomach with milk and fatty substances. Again he took his antidote, and placed vipers on his breast; and these did not hurt him because they were tame. He represented to the peasants that his marmot's grease, or his herb-salve would heal all fresh wounds in twenty-four hours; he then cut his arm with a sharp knife, bound it up with his salve, and on the following day showed the scar. The cut was however only a superficial scratch, which he had immediately drawn together with a bandage so that the healing was accomplished by that means alone. The people saw and wondered. No cure was undertaken without cash payment in advance. A deaf man being required to pay eight thalers in advance declined to do so, but offered to pay ten thalers if he should be cured, whereupon the mountebank refused the case because the man lacked confidence. Another quack cured all diseases with *aurum potabile*. The poor patient was given the strongest assurance that gold would help him, and out of pure love, he was furnished for fifty ducats, medicine which upon oath cost one hundred ducats. Old midwives sold pills for sterility which would be effective, even without coition. When after a few weeks in a village the charlatan, whose protruding paunch betrayed his prodigal life, received his bill, he left the place which had been levied upon for his support and blessed by his presence. The public was very willing to be deceived; it was indeed familiar enough with wonderful cures by means of plasters, oils and balsams. These were talked of much oftener than they were accomplished; the cures were followed with attention, but the mischief which quackery did was overlooked. Their fundamental principle was to condemn everything which had gone before, and to avoid every connection with physicians and surgeons. They removed all bandages and threw them away, and as they were not skilful enough to supply others, they used only a plaster or a salve. The healing of an ulcer or a wound they left to nature, and so occasionally accomplished a cure whereby other people were misled.

The Hamburg and Frankfort periodicals as well as other advertising mediums teemed with names of nostrums. Pills were extolled for gout, powder for goitre, blue water for murrain. The swindlers were blindly trusted. The more shamelessly they boasted, the better success they had. They were a plague upon the land and worked more devastation than diseases.

Only a powerful reason could induce a physician to renounce his science and become a charlatan, *par excellence*. There was such a reason, as an honest colleague in the year 1761 confessed, that is, hunger. As an upright man he had not been able to earn a living, although he despised all humbug and served his patients faithfully. Nevertheless the young swindlers were given the preference over him. For a long time he endured the ridicule and humiliation, until at last hunger overcame his pride. He went to another town and became a charlatan. He prepared worm cake, *aurum potabile*, heart powder and tooth powder. He took a clown along as a servant and together they took their place in a booth. The servant whom he represented as a doctor, extolled the wonderful remedies; he himself undertook the roll of harlequin, and said to the rabble: "That is a fakir whom misfortune has brought so low that he dupes the

people in this way." Nevertheless they crowded to the booth and bought. He soon became a rich man. Finally a harsh city physician had him arrested, put into prison on bread and water for six weeks, and his wares confiscated. He owed his freedom to a baroness who had read in his prospectus, that he possessed an infallible means of preserving the skin against wrinkles for a hundred and forty-five years. She bought him out of custody.

The *rupture surgeons* held a prominent place among the surgical mountebanks. Those suffering from hernia have always been exposed to the basest deceptions. No disease created more quacks than rupture. Most men looked upon this ailment as a defect in their organization, as a disease which drained their strength and their generative powers. This fear was so deeply rooted that they were made miserable by it. The impostors reaped their profit therefrom; they knew that a man was careful to keep this defect a secret, believing it to have a syphilitic origin, and that he desired most earnestly to be cured of it, cost what it would. A. Paré had indeed already recommended the truss, and had provided it with a larger opening, and had introduced a new method in place of the cruel operation. But the truss was very crudely made and very painful, so much so that one could not rightly lean his weight upon it. It is no wonder that the rupture surgeon found a large field, when even the physicians were so ignorant of the theory of rupture that a certain Dr. Lange in his *Surgery* (1776), recommended that a child suffering from a rupture be drawn through a cleft oak sapling, whose forks were held apart; this remedy, which was very general among the peasants, helped many children. The honorable surgeon could only recommend to the patient the permanent wearing of a truss. The charlatan made capital of this poor relief, and maintained that the surgeon understood nothing of the proper treatment, since the bandage could not cure the rupture and only an operation could completely remove the evil. The boastful promises corresponded with the wish of the patient to become well, so that consent to an operation was readily given. Many a mother dreaded the trouble of attending to the truss for her child year after year, and chose as a shorter way the operation, *i. e.* castration, the nature of which the rupture surgeon naturally kept to himself. It was better that the child should die, than to live with so horrible an affliction, and instead of buying a truss for two guilders, they gladly gave the rupture surgeon twenty to thirty thalers for an operation which a regular surgeon would have performed much better for five thalers. Money induced the charlatan to perform the operation, as one of them frankly informed Heister. For the truss he charged only one thaler, while on the other hand for the operation he received twenty thalers. In England ten guineas were often paid for the operation. When, upon the reappearance of the rupture, the deception was exposed, the people kept it quiet, because they were not willing to admit their delusion. By the side of the rupture surgeon stood the dreadful quack, who did not venture to use the knife, but advertised his specifics, rupture plasters and the like, in the newspapers, and in this way extracted the money from the pockets of the poor. If the surgeons complained of this imposture, they were accused by the public of professional envy. Among the peasants rupture was very common, often from three to six cases in one village, so that the opportunity for an operation

occurred often enough. In Breslau one rupture surgeon mutilated over two hundred children. Rupture was especially frequent in Switzerland, where athletic exercises, wrestling and jumping, were very popular, and after the battle of Vilmengen, there were found among the fallen Swiss an extraordinary number with hernia. This was a headquarters for the rupture surgeons, of whom not less than eighteen sojourned for a time in Lucerne alone, within three months.

Until in the second half of the eighteenth century, operation was preferred by most as a radical cure. The rupture surgeons, who styled themselves country operators (*Landopérateure*), and were allowed princely privileges, were traveling through Germany as late as the seventeenth year of the century. There was little or no talk of civil supervision. The operators, both men and women, had begun as horse or swine surgeons, and had gradually acquired a little anatomic and surgical knowledge, until finally they ventured to treat human beings. Like an heirloom, the calling was handed down in a family. Their operations consisted in tearing out and cutting out the testicle together with the seminal duct. They considered castration necessary because they believed that the intestines and the testicles were enclosed in the same sac; there followed, if the testicle was not removed, a relapse, and the healing of the ruptured peritoneum could not be accomplished. The castration practiced at that time was a principal reason why learned surgeons, in the earlier times, would not undertake operations for rupture, but left them entirely to the rupture surgeons. A knife, long nails on the fingers, and a single strand of strong pack-thread, were the only instruments. They laid the patient upon a table, the head lower than the abdomen, and bound him fast. The rupture surgeon pressed the intestines back into the abdomen and had them held there by the hand of an assistant, then an incision three or four fingers long was made in the scrotum through the skin and fat, extending back to the hernial bag, which was freed from its environment, drawn out, and a pack-thread wound twice around the hernial bag and the seminal duct, by which these vessels were laced together. Then the rupture surgeon, at the expense of fearful pain to the patient, tore out the testicles, but concealed them in his hand, like a juggler, and quickly made an incision, a finger breadth under the pack-thread. In case of double rupture, both testicles were removed, whereby the patient became impotent. The operation, accompanied by all kinds of benedictions and foolishness, lasted only a few minutes. They filled the wounds with lint, drew them together with plaster, and on the following day, bound them with oil of eggs, Johannes oil and other balsams. As a rule, the rupture surgeon, after he had been properly paid, left his cruelly martyred patient in two or three days, without troubling himself further about the after-treatment; only the better ones among them allowed the patient to lie in bed twelve or fourteen days, and attended him. A few were cured, and on the other hand, many look fever and died from inflammation and loss of blood, or in other cases, after a little time the rupture returned. The rupture surgeons operated in different ways. Those from Norcia in Italy, who enjoyed a special reputation, inasmuch that a certain Horaz performed about 200 operations a year, practising very commonly the barbarous method of castration. The Spanish rupture surgeons did not cut out the testicle, but pressed it back in the intestinal cavity, and usu-

ally wound a gold thread around the hernial sac; other Italians burned the seminal organs with a hot iron. The barbarity went so far that, as Dionis relates, one was accustomed to throw the severed testicles to his large dog, which always lay under the operating table and eagerly snapped at the booty.

The state allowed the rupture surgeons to practise under certain restrictions. In the year 1685 the Kurprince of Prussia had issued an edict "that the operators, oculists, lithotomists, rupture surgeons, dentists, etc., should not practice without previous examination at the collegia medica, and should not remain over four days at the yearly markets." The edict of 1725 also allowed the rupture surgeons, as well as the dentists and root dealers, to travel around to the fairs in Prussia, and to stand publicly in the cities, if they had previously obtained a license. One of the first who opposed the nuisance was Heister, who in the year 1728 wrote a special dissertation "*de kelotomiae abusu tollendo*," and demanded that the authorities prohibit entirely the methods of the rupture surgeons, in those cases where the patient could get along with the help of a truss. In general an upright surgeon dared not risk an operation at all, because they endangered life, were terribly painful, sacrificed the testicle, and after all did not insure against a relapse. Exactly one hundred years later the trade of truss- and bandage-making was conditioned upon an examination and a license. Louis XIV. commanded the surgeons to discover a method by which rupture could be operated for without destruction of the testicle. He himself dispensed for rupture a nostrum he had received from a Prior. Later, Haller turned his attention to his mutilated countrymen. In Germany the Margrave of Baden-Durlach, Charles Frederick, has the credit of forbidding (in 1766) the treatment of rupture by means of castration in his country. The French ministry discovered, when in 1779 the Royal Society of Parisian physicians was established, that a great number of the conscripts had lost one or both testicles. Several French bishops had observed that some mountebanks had advertised, with trumpet-flourishes, in their diocese, a preventive for rupture for thirty livres, which was nothing less than castration. The bishop of St. Papaul found in his district over 500 castrated children, from whom the shameless rupture surgeons had taken the elastic trusses which he himself had provided. As a warning, the Paris Medical Society published the names of those rupture surgeons whom they could discover. The previous century indeed recognized the barbarity of castration, but regarded it very leniently. So Dionis, who considered castration a transgression of divine and human law, did not disapprove of it in the case of priests, since they must be celibate, and would in this way have the double advantage of relief from the annoyance of those organs, and at the same time be cured of hernia. The Catholic church had laid its law upon the castration of boys; nevertheless, such boys sang everywhere in the masses, and they were well paid. Rome and the other great cities of Italy swarmed with these singing martyrs. There were special operators, boy-cutters (*Knabenschneider*), some of whom, in Naples, displayed publicly signs with the notice: "Here boys are cheaply castrated."

The cataract couchers were another kind of surgical quacks. In the sixteenth and seventeenth centuries ophthalmia, entirely neglected, lay in the hands of these mountebanks, who spread their confusion

over all Europe, and until the end of the eighteenth century overran Germany in all directions. Many of them were Italians and Frenchmen. In the larger cities, one oculist alternated with another, and the new-comer would berate the unskillfulness of his predecessors. Like the rupture surgeons, they conducted their handiwork with a peculiar shamelessness and crudity. In 1640 there came to Lübeck a cataract coucher by the name of Hilmer. He had the blind come to his room and operated on them in spite of coughing and snuffling. Without having the least knowledge of diseases of the eye, he thrust a round, somewhat dull needle in, moving it through the hyaloid to the anterior surface of the lens, detached this from above, then thrust the needle around the curve of the lens with great rapidity, so that it fell with the capsule upon the surface of the hyaloid. Then he stuck the needle again into the lens, and drawing this back into the opening thus made, it grew fast there and never again rose. In the case of soft running cataract, the needle was turned around in the lens five or six times. After the operation Hilmer was satisfied if the patient could see a snuff-box or a watch, troubled himself no further in the matter, but had the eye bandaged by his servant, who, possibly, later became a cataract coucher. The servant poured some of his master's volatile eye wash into his hand and let it evaporate into the eye, then some beaten white of egg with powdered alum and camphor was laid upon it, for which the servant received an extra thaler from the patient. Hilmer operated with reckless self-confidence, and was so rough that he gave a certain woman a sharp box on the ear, because she cried loudly when the needle was in her eye. After the bandaging the patients could go home at pleasure, either riding or walking. Almost all became incurably blind a few days later. But Herr Hilmer did not await this period; he put his money in his pocket and disappeared. Out of fifty who were operated upon for cataract, in the vicinity of Lübeck, not more than four retained their sight. After him came the cataract coucher Garing, who likewise understood nothing of anatomy, whose hand trembled badly, and who himself could not see ordinarily well.

The clever swindler, John Taylor, from England, made the greatest sensation since 1730. He had studied in Leyden, and traveled through all Europe and half Asia under the title of a papal, royal, imperial, princely, grand-ducal and ducal court oculist and knight. Like the mountebank, he exhibited on his journeys pictures, on glass and copper plates, of the diseases of the eye. Frederick the Great denied him entrance into Prussia, therefore the patients traveled to him. His reputation was so great that several princes, the Prince von Holstein, the Princess von Georgien, the Duke von Mecklenburg-Schwerin and others, sought his advice. The last mentioned had him come to Rostock, but out of caution, invited also E. F. Heister from Helmstadt, who together with Dr. Eschenbach should attend him. Dr. Eschenbach freely opposed Taylor and convinced himself, as well as his colleague, of the crudeness as of the frequent unsuccessful issue of the operations. Occasionally the knight made a great fiasco; in the opera house in Lübeck, he was publicly rebuked by an eminent gentleman, whose mother Taylor had unsuccessfully operated upon for cataract in Rostock, and had swindled her out of considerable money; on this account Taylor went away discouraged. He operated upon all cataracts indiscriminately; he made an

incision in the cornea with a lancet, one and one-half to two lines under the middle, opened the capsule with a needle, plano-convex at the point, and either pressed the lens down or drew it out. In ophthalmia he rubbed the conjunctiva with a bunch of barley-grains. In a large number of writings, whose prefaces were scattered here and there with verses from Ovid and Horace, he showed only a superficial knowledge of ophthalmology, although perhaps no oculist of that time had seen so many patients with diseases of the eye as he. Confused in his ideas, he created many new and useless names, and often contradicted his earlier assertions. In a letter to the Académie de Chirurgie, he repudiated David's method of extracting cataract (*Extractions Methode*). To generate the necessary humbug and self-glorification, he arranged for the publication of a collection of criticisms of the most eminent academies of Europe, in which were presented countless testimonials from faculties of medical colleges, especially in Spain and Portugal. He also caused one translation to follow another, insomuch that his account of the mechanism of the eye has been rendered into eight languages. A few new instruments invented by him were forgotten after his death, which occurred in a cloister in Prague in 1772.

(To be continued.)

PECULIARITIES OF THE SURGICAL DISEASES AND INJURIES OF THE NECK.

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(Continued from page 364.)

The diseases of the skin of the infra-hyoid region present nothing peculiar. The presence of the beard in the upper part of the region renders the part liable to the diseases of the beard described in the affections of the face.

Neuroses of the region present nothing peculiar.

Softening and induration also have no special features.

Congestion of the infra-hyoid region presents no peculiarities.

Inflammations of the region are not so frequent as those of the lateral supra-hyoid and of the sternomastoid regions; they may occupy the skin (erysipelas, furuncles, carbuncles); the connective tissue, the few small lymphatic glands situated along the anterior aspect of the larynx and trachea, or the thyroid body (the latter affection will be treated separately). Inflammations beginning in the prevascular or retro-visceral space are not frequent and are usually due to injuries.

Cellulitis and abscess of the antero-lateral superficial region present nothing special. Antero-lateral deep or subaponeurotic cellulitis when median or supra-hyoid or submental, occupies the space between the mylo-hyoid and the fascia; this form is not to be confounded with the cellulitis developed upon the mylo-hyoid and invading the floor of the mouth. Abscesses of the thyro-hyoid and epiglottic spaces originate in the fatty lobules and lymphatic glands between the epiglottis and the thyro-hyoid membrane; they may be due to lesions of the tongue, larynx or thyroid body. Laryngo-tracheal abscess causes much dyspnea and shows a tendency to extend down along the trachea.

Such lesions are often the starting points of the peculiar broad or diffuse cellulitis of Dupuytren; they are sometimes secondary to cellulitis of the substernomastoid connective tissue; they are at times produced by cold, by crying loud, so that the public criers and street vendors are more often affected; usually it is women in bad health that are most commonly thus afflicted; men very seldom. These diseases are usually connected with some general diathesis; they may extend from the ear to the clavicle and from the nucha to the larynx; they may involve also the other side. The pus is infiltrated into the muscular interstices and the connective tissue; gangrene is not infrequent. The pressure symptoms are very great. This description resembles that of the disease called diffused cellulitis of Gray, Coly and Hannon, which they say is mostly limited to the anterior region of the neck; it is due to cold and humidity and resembles erysipelas; it gives the sensation of hard edema without fluctuation. The inflammation of the infra-hyoid region gives rise to more risk of edema of the glottis and to fusing in the mediastinum.

Gangrene of the infra-hyoid region is rare and presents nothing special.

Ulcers are like those of other regions.

Fistulae due to congenital malformations have already been described. Those due to chronic inflammatory causes, to chronic adenitis, to bone lesions are very rare. Acquired laryngeal fistulae are the most frequent; they may be due to abscess, syphilitic ulceration, tuberculous ulcer, lesions of typhoid fever, foreign bodies, accidental and suicidal wounds, tracheotomy and other surgical operations. The symptoms are passage of air with mucus and pus, alteration of the voice; loss of speech unless the orifice is closed; all thoracic and abdominal efforts are impossible. These fistulae remain permanently. The treatment consists in closing the orifice by an autoplasmic operation; Beyer uses two rows of sutures, deep and superficial. The forms and varieties are the following: *Fistulae* following tracheotomy are oval in shape, the great diameter is vertical, the skin is drawn toward the mucous membrane, it is puckered by cicatricial contraction. *Fistula* due to large wounds of the neck in which a canula has been introduced, have the shape of a transverse fissure; the upper lip is turned in and is cutaneous; the lower is covered with granulations and is continuous by a long or short canal with the trachea. *Fistulae* with occlusion of the larynx occur in transverse wounds in which the skin of the upper lip has been adherent to the mucous membrane of the pharynx forming a septum directed backward and downward and closing the larynx completely. *Fistulae* following abscesses are usually small and funnel shaped. *Fistulae* due to tumors occupy the crico-thyroid membrane, which may be perforated. In fistulae with stricture the respiration is difficult. In fistulae below the vocal cords the patient talks after closing the fistula, the voice is changed in its timbre.

Vascular tumors of the infra-hyoid region are extremely rare, except traumatic emphysema and median laryngocoele or tracheocoele; they present no peculiarities.

Liquid tumors. Hematoma due to traumatism is not uncommon; the contents should be quickly aspirated if the pressure symptoms are serious. Angioma varix may penetrate down behind the sternum and prevent their total extirpation without the removal of the corresponding part of the sternum. Aneurysms

of this region mostly form a part of the group known as the aneurysms of the root of the neck, *i. e.*, arising from the arch, the innominate or the origin of the common carotid and the subclavian. They are diagnosed by the fact that the finger can not be introduced between them and the sternum. Their treatment is best conducted on medical lines. Distal ligations of the common carotids first, and later of the subclavian, on one side have been performed; also first the ligation of one common carotid and later of the other. Electro-puncture, Macewen's needling, etc., have all been employed with very few successes. Lymphangioma is very scarce in this region. Serous cysts, outside of those of the thyroid body, are very rare. They are specially represented by the congenital median cysts described above. Bursal cysts develop in the serous bursæ found in front of the hyoid bone, Adam's apple, the cricoid cartilage: they are usually called hygroma or hydrocele of the neck; they form the group of the thyro-hyoid cysts. Hydatid cysts have been observed.

Hemorrhagic cysts.—The cysts of this region, when punctured so as to be emptied will sometimes bleed dangerously and fill the cavity to great distension; but this applies specially or almost entirely to the thyroid cysts; if in these occurrences the sac is incised the bleeding is profuse and very hard to control without removing the sac, using freely double forceps and double ligatures and cutting between them.

Chronic abscess or abscess by congestion, is not uncommon over the sternal notch, on their way from the base of the skull and larynx to the mediastinum. The lymphatic glands of the region may also form chronic suppurative adenitis, scrofulous or tuberculous.

Solid tumors (i. e., those whose contents will not flow through an exploring needle).—Hematoma, semi-solid or solidified, present nothing peculiar, nor do sebaceous cysts. Dermoid cysts are not uncommon among the median cysts. The other tumors are all possible, but are all rare. All the tumors of this region present these peculiar features: First, they give rise to more grave pressure symptoms than anywhere else; second, they are usually in the way of tracheotomy, and relief can only be found by operating: they often penetrate behind the sternum, and in order to follow them it is necessary to remove the upper part of this bone. These retro-sternal tumors should be explored with the syringe first; when fluid they should be treated by incising and packing; when solid they should be explored by an incision, and, when possible, enucleated. Great care should be taken not to excise any of the deeper parts of the walls, because the large veins of the region are often adherent to them and are thus severed, and uncontrollable deadly hemorrhage supervenes: the walls should not be incised even between the two forceps, or ligatures, because if these large trunks are involved, the interruption to the circulation may be too serious. Most of these cases are operated upon for palliative purposes of a very temporary nature.

Surgical operations of the infra-hyoid region.—The surgical operations of the infra-hyoid region have been described with the diseases requiring them, but we will here again mention some points of special importance.

It must be well borne in mind that in all cases of injuries and inflammations about the neck the great danger is from suffocation due to the obstruc-

tion of the respiratory tract from swelling or edema of the glottis, or from displacements in cases of fractures or ruptures. These accidents often come on so suddenly that the surgeon has not always time to reach the patient and operate in time to save the life; therefore precautionary anticipatory tracheotomy should be performed upon the least evidence of serious suffocation; it can be well done under cocaine; it will relieve the existing symptoms of dyspnea, will prevent their aggravation or the death of the sufferer, and will not add to the risks if properly and regularly done; the tube should be long, because of the existing inflammation and the inflammation that will follow may lift the tube out of its proper position and render the procedure useless, deceptive and dangerous, since it will lead to the belief that the operation has been done with no benefit. When fractures or ruptures are strongly suspected, after the threatening suffocation has been removed by tracheotomy it is important to examine thoroughly and repeatedly with the laryngoscope to ascertain if there is any obstruction visible with the instrument: if none is seen and yet a fracture is strongly suspected, the surgeon must explore directly, cut down to the hyoid bone, the thyroid cartilage, the cricoid, the trachea and remedy all deviations causing obstruction, using catgut or silver stitches and small silver bands as splints or pins inserted through the fragments. It is of paramount importance that there should be no impediment left when the tracheotomy tube is removed; if all these efforts have not been made, the patient may have to wear a tracheotomy tube for life or submit to the above measures after the fractures or ruptures have united, *i. e.*, under the greatest disadvantages.

In cases of growing aneurysms at the root of the neck, in view of the distressingly painful condition of these patients and of the fact that they are doomed, the surgeon is justified in resecting the upper part of the sternum as an exploratory operation. When it is found that the aneurysm is one of the origin of the right subclavian, and that the innominate is not dilated beyond an inch and a half, it is advisable and justifiable to make the desperate attempt of tying the vessel by applying two or three strong catgut or kangaroo ligatures, with as much of a bloodless space as possible between, and tighten them as much as is deemed safe without rupturing the coats. The same remarks apply to the left carotid and subclavian if they are not dilated beyond one inch in diameter.

In cases of tumors of the infra-hyoid region penetrating down behind the manubrium, the same resection for exploring purposes is recommended, with a view to total removal of the tumor if it is found possible.

SURGICAL DISEASES OR INJURIES OF THE THYROID BODY.

The location of a disease in the thyroid body is recognized by the fact that the organ ascends and descends with the larynx during deglutition. Another way to determine if the tumor is of the thyroid body, is to seat the subject with the head stretched back and resting; then with the thumb communicate a slight but brisk movement from below upward; if the tumor moves, it is because it is not adherent or is little so. This is said here once for all. When the tumor is very large this is not very easy to ascertain and reliance must be placed upon the past history and information and upon some of the peculiar features of the affection described below.

CONGENITAL MALFORMATIONS.

Absence of the thyroid body has been observed occasionally, in whole or in part and congenital atrophy has been occasionally observed. Congenital hypertrophy is more common. We must bear in mind that the thyroid body grows after birth, whereas the thymus and supra-renal capsules rather diminish after birth. The hypertrophy may attain rapidly or slowly in a regular or irregular manner the large size seen in cases of goitre; it may affect the whole region or one side only, or even one part. There are also cases of aberrant thyroid due to the separate development of some of the lobules of the organ: these may be single, double or multiple, or unilateral, as low down as the sternum or even behind the manubrium.⁸

Acquired atrophic malformations are due to injuries, to diseases, and to surgical operations destroying or removing the gland in part or in whole. The total destruction or removal of the thyroid gland gives rise to a peculiar train of symptoms. The immediate sequels of total destruction of the whole gland by thyroidectomy are acute mania, tetany, hysteria, myxedema, cachexia strumipriva.⁹

Few who have been operated upon before full growth, escape; the signs begin to show on the third or fourth day; there is paleness, lassitude, weakness, anemia; swelling and coldness of the extremities; muscular tremor, swelling of fingers first, then of the rest of the body, mostly apparent in the face and neck; this swelling is not edema: it is hard and elastic without pitting; the face presents the characteristics of this swelling in the highest degree: there is also cephalalgia, vertigo; the pulse is small and filiform. In tetany there sometimes exists such swelling, but it is not infectious. The complication is prevented by not removing the whole gland, by leaving a piece, especially the one that is adherent to the trachea. The best treatment of this condition is the thyroid extract, or the transplantation of the thyroid gland of the sheep in the connective tissue of the abdomen. The changes are relative to the repartition of the mucin and other metabolic wastes. Pachydermic cachexia (or myxedema of English writers) resembles myxedema and results from the destruction of the gland by disease. Acquired hypertrophies are represented specially by the various conditions known as goitre, which will be described with the tumors of the thyroid body.

Swellings of the thyroid body are almost all due to the various kinds of goitre, more or less chronically inflamed.

Burns and freezing are only observed in cases of great and deep destruction of the neck.

Contusions are most common in all cases of much violence to the neck as have been described above, coexisting or not with fractures of the hyoid bone, larynx and trachea. The peculiar features they present are symptoms of cerebral congestion and also the fact that they may be followed by myxedema.

Wounds of the thyroid body are apt to be serious on account of the great vascularity of the organ and its friability; the bleeding is usually great, especially if breathing be obstructed or laborious.

Punctured wounds are rare in the normal thyroid body, but are comparatively frequent in the hypertrophied organ or goitre, and if deep give rise to

serious hemorrhages. Incised wounds are usually suicidal; those of the upper angles are the most frequent and the most serious because of the presence of the superior thyroid artery; in goitres they suppurate as a rule and they usually also run a benign course. Lacerated wounds are not ordinarily followed by primary hemorrhage but may present serious secondary hemorrhage. Gunshot wounds call for the same remarks: the thyroid gland has been carried away by a missile. Treatment of hemorrhage is difficult because of the friability, which will not allow a ligature to hold tight enough to arrest the bleeding with safety against secondary hemorrhage. The same remarks apply to the forceps left *in situ*. Deep suturing succeeds best, or a chain ligature or a purse-string ligature: a pin or needle suture such as is used for hare-lip sometimes succeeds; pressure is not borne; it is useless to ligate the nearest trunk because the other vessels will keep up the hemorrhage; when the bleeding is serious tracheotomy, if practicable, sometimes stops the hemorrhage by relieving its congestion; in spite of all, death is sometimes the result of hemorrhage. As regards foreign bodies in wounds, there is not a case on record where a bullet was found buried in the thyroid body in normal thyroid. Poisoned wounds, bites and stings are rare, except in conjunction with such in the infra-hyoid region.

Neuroses of the thyroid body are most rare and present nothing very peculiar.

Softenings and indurations are rare, except those connected with diseases of which they are but a symptom.

Congestion or hyperemia of the thyroid body is frequent on account of the great vascularity, *i. e.*, simple congestion independent of any forming or formed goitre. The causes are all internal: the physiologic ones are efforts of all kinds, menstruation, coition, pregnancy, accouchement; the most common pathologic causes are impediments to the venous circulation, the existence of infectious diseases, intermittent fever, endemic influences; repeated congestions cause goitre. The pathologic changes of structure are usually absent; sometimes apoplectic foci are found. The symptoms are usually bilateral; the tumor follows the movements of the larynx; when the patient makes an effort the facial and temporal arteries diminish in strength owing to the compression of the carotids, the cervical fascia in front preventing the gland from expanding in that direction. The prognosis is usually favorable, but when often repeated from pregnancy, attitude or professional occupation, it may give rise finally to a parenchymatous goitre. The treatment consists in removing the cause and in the treatment of congestion in general. When suffocation occurs, save during pregnancy, the trachea should be raised by a tenaculum; if this is insufficient perform tracheotomy; during pregnancy, if the above means do not afford relief, the uterus might be emptied through the vagina or by Cesarean section.

Thyroiditis, sometimes called inflammatory goitre, acute goitre, strumitis, is usually unilateral. The external causes are the various traumatism, infections of any ordinary wound, the influence of cold, etc. The internal causes are an effort causing a hematoma, the influence of rheumatism, a preëxisting infectious disease, especially pyemia, puerperal fever, diphtheria, measles, pneumonia, typhoid fever and malaria. The preëxistence of a congestion or tendency to a goitre is a great predisposing cause; if it discloses itself in

⁸ These are cases of supernumerary, double, triple and quadruple thyroid body.

⁹ Myxedema should be described in connection with the face. We will only recall here the most peculiar features.

a manifest goitre, small or large, it is not a true thyroiditis, but a strumitis. Suppurating thyroiditis is always of microbic origin. The pathologic peculiarities are that death may take place before suppuration has been established; when formed, the pus may burrow in the mediastinum, along the respiratory tract and the esophagus. The peculiar symptoms are: Great thirst, owing to difficulty in and aversion to drinking, on account of the pain in swallowing; raising at each pulsation of the carotid arteries; cephalic symptoms due to the pressure upon the veins; great congestion of the face and epistaxis due to the same causes; nausea and vomiting, due to pressure on the pneumogastric nerve. The course is continuous; the duration about fifteen or twenty days. The terminations are by persistent indurated spots or by suppuration, but it is very rare; sometimes abscesses are formed, fistulous openings, single or double, occur; the abscesses may open into the larynx, trachea, esophagus or may burrow in the mediastinum; gangrene of the gland sometimes takes place. The prognosis of thyroiditis is grave. The forms and varieties and their peculiarities are: In *thyroiditis a frigore* which has served as a type for the above description, the mortality is much less. Rheumatic thyroiditis usually recovers; but the thyroiditis due to and following a grave general disease presents the highest mortality. In thyroiditis due to an anterior condition of the gland, the pressure symptoms are worse; it almost always suppurates; if the patient survives, the incipient goitre is sometimes cured. The internal treatment consists in combating the cause; the local treatment, in locating the pus as soon as possible and evacuating it; the great vascularity of the organ necessitates the very cautious use of the knife; the evacuation by the method of dilating upon a guide is indicated here especially. Chronic thyroiditis of a normal thyroid body is as rare as it is frequent in goitres.

Gangrene sometimes follows serious injuries or inflammations of the gland.

Ulcers do not exist outside of goitre and tumors.

Fistulae are sometimes observed after the opening of abscesses or incised cysts and tumors.

(To be continued.)

SOCIETY PROCEEDINGS.

Associated Health Authorities of Pennsylvania.

Fourth Annual Meeting, held in the Supreme Court Room, Harrisburg, Jan. 25 and 26, 1897.

The Governor, Hon. DANIEL H. HASTINGS, presided, and opened the proceedings by some remarks on the importance of the Association.

"There is no subject in which I am more interested than this of the public health. Pennsylvania, instead of being at the head of the States and leading in sanitary matters, is really at the foot. The time has come when she should have laws enacted for the protection of the health of her people, for the collection of vital statistics, the protection of her water supplies and the furtherance of all sanitary work. At present the health laws do not cover the half of the State, and while large parts of the country districts are compelled to rely solely upon the State Board of Health for help, that body is denied the money and the authority needed to care properly for these places."

The first paper was by Dr. RANDOLPH FARIES, instructor in physical education in the University of Pennsylvania, on

THE NECESSITY OF PHYSICAL EDUCATION IN THE PUBLIC SCHOOLS.

Physical education has been made compulsory in a great

many universities, colleges and private schools, and in a few public schools in the United States. Boston, New York, Cincinnati and St. Louis were mentioned. They have directors at the head, well trained physicians, who have made a special study of physical culture. This is well, as this work should not be entrusted to an empiric; many injurious results are thus prevented. One of the first things a child should be taught is to care for its body; this will be a preventive of disease. The problems of life can be more successfully met by a man physically developed than one not so. Dr. Hitchcock of Amherst has proved that the average attendance has been better since physical education has been required of the students, and there has been less sickness. Again, children inherit from a parent a constitution weak, predisposed to illness, as consumption, etc.; then if we add want of physical training, bad air, bad food, insufficient clothing, poor ventilation, no bathing, these diseases are very soon liable to attack the child. In large cities hundreds are found with lack of hygienic care at home, and disease is invited. It should be called physical hygiene; it deals with the development of the body, and also such factors as bathing, sleep, food, clothing, diet, all of which preserve health and prevent disease. The ordinary games are not sufficient, as often taught, to keep the children well and healthy. While true in a measure, this kind of exercise may be the cause of deformity, one group of muscles being used too exclusively. Again, weak and diseased children are prevented from taking the usual exercise of healthy ones. These must be provided for. Compulsory physical education would save a doctor's bill to many a poor man. This need is seen more strongly when we reflect upon cases where parents have sacrificed the last dollar to keep a boy at school so as to pass at West Point or Annapolis, not dreaming of the rigid physical and medical examination that is required; should he fail to reach a certain standard in weight, height and physical measurements he is rejected, without regard to his mental powers. Government needs those who can endure fatigue as well as mental exertion; directors should see to this. If this were the only reason for making physical education compulsory it would be a most important one. A special time should be set apart by the director for examining pupils, and advice be given to strengthen the parts which are weak. Gymnastic apparatus is not absolutely needed for training, hence no school need complain of a lack in this direction for not adopting physical education. If a teacher be well posted he can use a series of free movements to answer all purposes, and as the pupils advance they can enter a high school properly equipped. From 15 to 30 minutes daily should suffice. All instructors under the director should be, whether men or women, properly educated in this important branch. A director must be a specialist, or he will soon realize that some of the instructors under him know more than he does of the practical part while painfully ignorant on the scientific side. Great harm results when he is incapable of recognizing the early symptoms of injury from misapplied exercise and which are the forerunners of disease. Were the men who apply for positions as directors of physical education, examined as to their knowledge as to hygiene, physical diagnosis, anthropometry, the physiology of bodily exercise, anatomy, orthopedic surgery, and required to execute some practical work before experts as Hitchcock, Sargent, Anderson and Seaver, fewer unqualified persons would apply. Often the methods are empiric because of the ignorance of instructors. There are many pupils who require special education or none at all. Exercise is one of the most important means for affecting the different bodily tissues. Think of a lawyer practising without having studied law, or a physician who had never studied medicine. Yet this is the same as these empirics in physical culture. People with lung troubles are prescribed exercise with chest weights; the danger of hemorrhage is imminent; or running with heart disease; or an exercise producing deformity of certain muscles, etc. The purpose is the production of a healthy strong symmetrical body. Hollow chests, contracted shoulders, pale countenance, poor digestion, etc., are the result of the want of proper muscular development. Yet these are the rule rather than the exception, and every pupil who develops his brain at the expense of his body is sure to be the sufferer. In the high schools every boy on entering should be carefully measured and also on graduating. Students should be graded according to these measurements. No athletics should be permitted without special training and an examination prior to the engagement. Graded education is as necessary here as in any studies. The director should understand the construction of a gymnasium.

At the conclusion of this paper the Governor favored it with a lengthy comment. He considered physical education as equally necessary for both boys and girls as mental develop-

ment. After alluding to several points in the paper he said he had in mind for townships high-schools, at central points, with large areas of play grounds and gymnasiums, teachers in athletics and with conveyances for carrying pupils to and fro so that none might be prevented from attending by reason of inclement weather, etc.

Prof. HENRY LEFFMANN read a paper on

UNFILTERED WATER ALWAYS UNSAFE FOR TOWN SUPPLY.

Perhaps this was an extreme statement. There is much yet to be learned on the subject of water supply. This subject evidently attracted a good deal of attention from early ages. He alluded to the works of the ancient Romans, the Imperial City supplied with water by hundreds of miles of aqueducts, of the same constructed in ancient Jerusalem; even beyond that Athens had a municipal officer, the superintendent of springs. Surface waters were employed in many ancient as well as modern systems; these may be safe when the territory is undisturbed, but in populated civilized countries it is far different. By surface water he meant all collections of water in free contact with the atmosphere, in motion or at rest, including the smallest pool to the largest lake and from the rivulet to the broadest river. The chemic changes in such are not marked, the gases are apt to escape until they reach a point corresponding to the pressure of the air and the waters are apt to be flat. Rarely do surface waters contain much mineral matter, but generally do contain a variety of living structures representing almost every variety of plant and animal. We usually overlook the larger kind, still they should not be ignored in the close sanitary study as they may contribute to the injurious effects. It is said that water will purify itself as it flows, but this is rather indefinite and not to be relied upon for every river and every season. The processes to which water is subjected in its ordinary condition are not purifying ordinarily. The only plan is filtration through the soil, which is imitated by systems of sand filtration, but the natural filtrations as found in springs and wells is far more satisfactory. It is well known to chemists that well water in districts where there is high soil pollution and the contaminating influences are almost alongside of the well, will show a complete transformation of all organic matter and a practical freedom from bacteria. Waters from such polluted sources may be used for a long time without seeming to cause disease. These may be designated as "dangerous to health" without saying they are disease producing. Practically we must use surface water. Hence we must consider the sources of danger and how they may be avoided. To this audience he did not deem it necessary to describe how the water is polluted. In civilized places there is little territory free from man or domestic animals. The latter have in common with man many diseases. We must therefore consider them as sources of pollution as well as human beings. Many sanitarians have a theoretic surface water. Thus citizens meet and propose to have an area of unpolluted territory as a gathering ground and derive the supply from that. New York city has such a system, yet the water is not perfect. The trouble is that it is almost impossible to maintain such a large area free from invasion, especially where every man has a say in the government. Again the engineering operations will not be perfect because of the cost. Most municipalities are short sighted, do not take sufficient territory, then when an extra amount is demanded water must be taken from places outside.

Apart from disease pollution, there are certain liabilities to deterioration from natural causes beyond human control. Typhoid fever is the principal disease conveyed by water; authorities say that it is due to a particular bacillus, but we also have equal authority that this germ is only a form of a well known species. There is much dispute upon this point. While Philadelphia has a water supply which is constantly propagating typhoid, both Drs. Meade Bolton and A. C. Abbott say they have never been able to detect a bacillus in the Schuylkill water which they could distinctly identify as a typhoid bacillus. Vaughan of Ann Arbor has had a similar experience; he failed to find a bacillus agreeing with his own culture or with the type culture from Germany. The point is that the typhoid bacillus may not be a fixed and specific germ and that typhoid fever propagation may not depend upon infection from previous disease. If we accept Vaughan that the so-called typhoid germ is an abnormal or "involution" form of the common water bacteria we can see how a water may distribute disease, although not directly polluted. It seems to me that surface water is the form in which such conditions may most probably arise. Various conditions disturbing the organic life are constantly occurring; miscellaneous pollution with organic matter from surface washings, and in this way we can at any time have aberrant or abnormal bacteria forms which may have disease producing character. Then it is impossible to keep analytic

supervision over surface waters which shall be of any value. When the mineral contents are very high, we may condemn them. It may appear when the ingredients are low the water would be fair to use, but we here encounter another difficulty, a very pure water attacks lead and thus acquires a dangerous quality. Thus a surface water pronounced unexceptionable may be the means of producing widespread disease.

Sheffield, Eng., is supplied with water from a clean moorland, but acquires lead through the supply pipes and causes serious trouble. Again, surface water receives the rain and surface washings, and even the atmosphere, particularly of large cities, contain much polluting material. Recently another danger from surface water is known. Manson finds the mosquito is the intermediate host of the malarial parasite, and points out the probable danger from surface water as a distributor of malarial poison. This germ enters the body of the mosquitoes, carried by it to the nearest pool, and the body decomposing, sets free the parasite to infect those who use the water. Even if the mosquito does not reach the water (and Manson states that the male always dies before reaching it) the germ has the power of remaining inactive for a long time, and the dead insect blown by the wind into the water will enable the germ to develop. It seems impossible to prevent contamination of surface waters and when we have the enormous areas to deal with as in American cities with their wasteful habits we have a problem beyond satisfactory solution by the engineering and administration method of the day. Few may take such extreme grounds as I have done, but observation and reading have led up to it, hence my opinion is that every city depending upon surface water should provide for thorough purification. Such means are now at hand, and we can take a highly polluted water and render it fit for use. When propositions for filtration are made, it is usual for some one to suggest the selection of a pure supply. "Innocence not repentance," has a catching sound, but I think it is little more. Surface water is so liable to pollution that the word "pure" in regard to it has only a comparative sense, and in establishing a water supply, we should establish systems of storage and filtration, no matter how excellent may be the district whence it is collected. So far as natural waters are concerned those only are perfectly purified that are filtered through the soil; and could we protect the territory of a city from direct soil pollution we would probably find no better supply than in wells sunk to the level of the subsoil currents. "The Monetary Loss to Cities from Typhoid Fever," by Dr. Thomas Turnbull of Pittsburgh gave details as to the value of life of classes of men, of loss by illness, etc. In no other civilized country is this mortality so frightful as in America. Pennsylvania stands well up in the van. The first item is the loss to the individual, second the cost of medical attendance, nursing, etc. An average of \$100 for each case. Hundreds of cases are not reported, hence we are unable to state positively the loss to the State. Taking the deaths which are reported to the number of cases reported, the fatality would appear very large. Perhaps the real rate is 10 per cent. For 1895, the loss to Pittsburgh, Philadelphia and Allegheny was \$804,700. Farr gives as the value of life to the State, the agricultural laborer \$25 at birth; \$280 at 5 years; \$585 at 10; \$960 at 15; up to \$1,230 at 25, then declining to \$5 at 70. This fever occurs most between the ages of 10 and 25. The maximum mortality is between 20 and 25. From the above we see every death from typhoid is a loss of \$1,000 to the community. Giving for the cities named a loss of \$905,000, 90 per cent. of which might have been prevented. After quoting many of the figures he concluded that this loss was enough to pay for a filtration plant, and the time is coming when negligence in sanitary matters will result in suits not only against water companies, but against the cities and towns themselves. One decided would bring up hosts of others. He drew a comparison between cities with and without pure water supply.

| Deaths. | | Deaths. | |
|---------------------------|---|---------------------|-----|
| Hamburg (sand filtration) | 9 | Allegheny (without) | 185 |
| Breslau " | 9 | Indianapolis " | 97 |
| Berlin " | 5 | Pittsburg " | 77 |
| Rotterdam " | 2 | Philadelphia " | 40 |

CAN WALLS AND WALL PAPER BE RENDERED IMPERVIOUS TO DISEASE GERMS?

was read by Dr. F. F. FRANTZ of Lancaster. We spend one-third of our lives in our bedrooms and most of that time in slumber when the system is most liable to absorb disease germs. The sides and ceilings are plastered or covered with paper, both porous, and absorb and retain disease germs as well as gases. We open windows and doors to purify the rooms, but that does not remove the foul air and germs remaining in the paper and walls. The glue and paste used in applying the

paper to the walls disintegrate under the damp atmosphere, and the noxious effluvia emerge and pervade the room. The sterilizing agents used are not practical as they only sterilize the surface. A permanently impervious covering on walls and wall paper is demanded. Paint or varnish are used: both give off unpleasant and unhealthy odors, and cease to be impervious after a time owing to the saponifying action of the lead upon the oil, which is a constituent of both paint and varnish. Varnished paper is liable to crack, such cracks providing places for the reception of bacteria. Whitewash is very porous, has deep cavernous recesses under the microscope. The essential requisites for cleanliness as well as prevention of germ lodgment are:

1. The walls or wall paper must be coated with an article which makes a smooth surface rendering them permanently impervious to moisture or gases.
2. Said surface should not be affected by proper sterilizing agents, and should bear washing with soap and water for cleanliness.
3. The surface must not be subject to chemie changes, so that the surface remains permanent and it must also be elastic so that it will not crack after it is applied. It should be so flexible that paper coated with it prior to being pasted on the wall could be readily handled without causing breaks in the surface.
4. It must be devoid of unpleasant or unhealthy odor under all atmospheric conditions.
5. It must be colorless and transparent so that it can be applied upon the richest wall decorations without marring their beauty, and should protect the gildings on paper from the bleaching action of sulphur fumes either from furnaces or when sulphur is used for disinfectant purposes. The entire residence of persons afflicted with tubercular consumption should frequently be fumigated.
6. It should be ready of application and inexpensive so as to bring it within the power of all classes to use it. The discovery which he claimed to have made and which he presented for investigation is a liquid which he believes to fill all the requirements and which from the nature of its qualities is aptly named the *Paradox Sanitary Wall Paper Finish*.

All who have tested it, including the official bacteriologist of the State Board of Health, report that it is fully able to do all that is needed as above.

Dr. BENJAMIN LEE, the secretary of the State Board, remarked that he had submitted the preparation to the bacteriologist for test in the most thorough manner. The wall was washed with 1-1000 solution of bichlorid of mercury and was rendered sterile. A 2 per cent. solution of formaldehyde also was applied with the same result. The color was not washed off either by the bichlorid or by the formaldehyde solution. It may be recommended as a reliable sanitary paper capable of being cleansed perfectly and antiseptically. The second test was regarding the wood-filler wall paper; he found it may be deluged with antiseptic solutions and in no wise is either its color or texture injured. It may be scrubbed with water, soda solution, bichlorid solution, and any bacteria finding lodgment there are thoroughly killed. It is smooth and presents a minimum amount of rough surface for the lodgment of dust. Diphtheria bacilli placed on it were effectually killed. The paper was not loosened from the board to which it was pasted after applying soda solution and other solutions. Dr. Lee did not desire by presenting this statement of the bacteriologist to commit the State Board of Health or the Associated Health Authorities to an endorsement of this sanitary wall paper. He had himself experimented on a portion of this paper which had been applied to a wall for a period of two months, and found that it could be washed with hot water and soap without injury. It must be observed however, that in each trial the paper was comparatively new. In order to entitle it to entire confidence it will be necessary for it to stand the test of time. If it proves equal to this test, it will certainly be a boon to the public.

At the evening session, Dr. W. CAMPBELL POSEY of Philadelphia read a paper on

THE PREVENTION OF CERTAIN DISEASES OF THE EYES IN CERTAIN CLASSES OF SCHOOL CHILDREN.

He explained the structure of the eye in language suitable to those who were not learned in anatomy, the factors in distinct vision, and the effect of a lower vitality in causing diseases of the eye. A frequent cause of certain diseases was scrofula due to poverty, and insanitary surroundings. These resulted in corneal troubles, ulceration, often continuing to the total loss of sight. Such cases with the best skill fail to get well until removed to better sanitary influences. Especially is this the case during the summer months, but remove them to the country or, better, the seashore, and the result is magical. A few weeks at the seaside produces wonderful improvement.

Dr. J. G. SHOEMAKER of Phoenixville read a paper on

SOME OF THE TROUBLES OF A COUNTRY BOARD OF HEALTH.

SOME boards have proven themselves very efficient, while others are but moderately so, and others have been thoroughly inactive. The board with which he was connected now for five years had operated vigorously; still difficulties are met which hamper its work and test the temper of the members. Each year brings some innovation and the opposition increases in proportion. His board had adopted the plan of being sure from a legal view, then pushing to a termination. In a small town like Phoenixville (8500 inhabitants) personal friendships and business interests claim consideration, when an ordinance is about to be enforced. A board must be sweeping, regardless of all but the right. Physicians as a rule are jealous of the work, hence no board should be composed entirely of physicians. Otherwise the health laws can not be rigidly enforced. His board had been accused of interfering with the business of the doctors. This was a compliment. Measles appeared, early in 1896. Isolation was practiced, affected families were kept from access to the schools, at once a furor was raised that measles are so simple that quarantine was needless. The epidemic went on to 200 cases, why? Many did not have any medical attendance, but in many cases certificates of health were furnished by physicians long ere it was safe for the return to school, and thus others were affected. Measles is one of the most contagious diseases, often the most fatal from bad management, and many cases of eye or nose or throat disease result. The restrictions in this disease are rarely enforced. Otherwise we think there would be fewer deaths from pneumonia, which frequently carries off the little patient. If statistics could be correctly obtained, we believe the deaths from measles would equal those from scarlet fever. Statistics are a great source of trouble to the borough boards. The vaccination act produced a great deal of trouble. Friends and enemies on all sides protested against it. The school board cooperating received its share of the odium. The homeopathic physicians openly preached against vaccination, circulated literature against it and finally adopted the plan of giving a course of treatment and vaccinating the patients in the stomach with virus much diluted in medicine, after which they gave certificates of successful vaccination. These were accepted by our board as better than exciting too much opposition at first. From our view compulsory vaccination has been a success. All but six pupils of the public schools have presented certificates and these six were excluded from attendance. In the parochial school all were vaccinated. In the private school all save two complied with the law. These are attending in direct opposition to the law and a test will be made in the near future. In the Sabbath schools poorer results have been found. The Act of 1893 requires "that it shall be the duty of the president of lower council or burgess to appoint one member annually, to serve for five years," etc. This is well when this officer is a man of broad and liberal views, but where he is of the foggy type and represents obstruction to the advancement of new ideas it is wrong. Our president is of this class, so when the term of Mr. Lippert expired, in the face of a petition signed by all the prominent professional and business men of the town, asking for his return, he refused to make the appointment, and offered in his place a man who would be of no use. This simply to impair the efficiency of the board which he denounced as a "humbug." The members of the lower council refuse to confirm the appointment, and as the term of the president is out and he has not been renominated, there is hope of a better state in the future. The local board should always remember that it is a legal body, and should make a determined stand when it makes a decision and generally the council will finally agree. Still these bodies are jealous of the health board and obstinately fight against paying bills. Thus our council refused to pay the bill for vaccination; and to avoid trouble all physicians were appointed, supplied with virus, and offered the sum of 25 cents for each successful vaccination. Forms were supplied each to make returns with affidavits. This with advertisements of the Act made a bill which the councils objected to, but finally paid. We were free from contagious diseases. At the same time diphtheria raged without our borders. Our death rate for the year 1894 was 17 per thousand, 1895, 15, and for 1896, 17. The milk inspection inaugurated in 1893 was very gratifying, better milk was secured, and the dealers in watered milk were driven away. The difficulty is to prove that dealers "knowingly" sell adulterated milk. With a better law more can be accomplished. The work of the board is becoming easier. We are gaining the respect of the better classes and with more money could secure sanitary plumbing, a filtering plant and garbage crematory.

At the session on Tuesday, Dr. BENJAMIN LEE, Secretary of the State Board of Health, read a paper on

THE NEW DISINFECTANT, FORMALDEHYDE.

For a number of years, physicians and curators of medical museums have been using a preparation known as a solution of formic aldehyde, or formaldehyde, for the purpose of preserving anatomic specimens. For this purpose it is superior to alcohol. A solution has been placed upon the market under the name of formalin, and other proprietary names. It usually contains about 1 per cent. of the pure substance. All health officers are familiar with the evils resulting from sulphur fumigation, in its injurious effects upon articles of furniture and clothing, the tarnishing of all metallic surfaces, the changing of color and even actually bleaching the tissues. So serious have been these objections that many health boards have given up its use, depending entirely upon solutions of bichlorid of mercury, carbolic acid and other liquid disinfectants, which can be supplied either as a spray or wash. When, therefore, it was suggested that the substance just named was not only a preservative of animal tissue, that is to say, an antiseptic, but also a powerful germicide, and that it possessed in addition a remarkable power of destruction, sanitarians had their hopes raised that a gaseous disinfectant had now been found which was entirely free from the objections just named. It is true that like sulphurous acid, it is irritating to the lungs, but by no means to the same extent, and that while, after the use of sulphur, it is impossible to inhabit the room for one or more days, after the use of formaldehyde, the atmosphere quite rapidly returns to its normal breathable condition. At the Denver meeting of the American Public Health Association, in 1895, Dr. Kinyoun of the Marine-Hospital Service made remarks indicating the strong probability of the usefulness of this material, in the manner indicated. As the word is a new one to any but chemists, it may not be amiss to indicate the manner in which this name was formed, as this will assist in impressing upon the mind the character of the material and its generation. An aldehyde is an alcohol from which a portion of its hydrogen has been removed; that is to say, a dehydrogenated alcohol. Now, by taking the first syllable of alcohol and the first two of dehydrogenated, it will be observed that we form the name aldehyde. The aldehydes are very easily changed into acids, and the different aldehydes are named from the acids into which they change. That is to say, an aldehyde which results from the formation of formic acid is called formic aldehyde. We drop the last syllable of formic and have the word formaldehyde. The alcohol from which it is made is known to chemists as methyl alcohol, and is made from the dry distillation of wood. In the arts it is known as wood or spirit of wood alcohol, and is a very cheap form of alcohol. It is quickly changed into the vapor formaldehyde by heating in contact with platinum over the wick of an ordinary spirit lamp. If the lamp be lighted and quickly extinguished the platinum, having been heated to a cherry redness, will continue to glow as long as there is any alcohol to be evaporated. In this process the formaldehyde will be constantly generated. Many lamps have been invented for the purpose of generating formaldehyde in quantities for disinfection. At the last meeting of the American Public Health Association, 1896, two generators were described. One by Dr. F. C. Robinson, Professor of Chemistry at Bowdoin College, whose experiments were made at the instance of the State Board of Health of Maine. The lamp or generator was made with the object of generating the gases with the greatest rapidity as owing to the fact that it is when hot about the same specific gravity of air. It readily escapes from cracks or crevices, and must be obtained in a comparatively dry condition. The lamp consists in a disk of moderately thin asbestos board perforated by small holes and platinized by the use of a strong solution of platinic chlorid. This disk is placed over a shallow dish partly filled with wood alcohol. The disk is wet with wood alcohol, held in a pair of forceps or small tongs, removed from the dish and quickly lighted. By the time the alcohol burns away, the disk will be so heated that when placed over the dish it will continue heated and change the alcohol into formaldehyde. The dish being of proper depth and sufficiently loose for the admission of air, the disk keeps at the necessary heat to produce the evaporation required. The experiments of Dr. Robinson were made in a room containing about 3,000 cubic feet of air space and having three large windows with very loose sash. In about three hours and a half the evaporation of from two to two and one-half quarts of alcohol resulted in complete sterilization of diphtheria and typhoid cultures. All parts of clothing, including seams, insides of pockets, etc., were sterilized in every part of the room. The typhoid bacillus was destroyed even when buried half an inch deep in sand. The cultures of diphtheria and typhoid were embedded in bed clothing, pillows and mattresses, and were killed by the use of two quarts of alcohol, in seven hours. It is desirable in its use that each room should

be treated separately, rather than that a number of rooms or a whole house be disinfected at once. Any ordinary living room would require at least a quart of alcohol. With three lamps such as Professor Robinson exhibited, he disinfected a house of sixteen rooms, using ten gallons of alcohol.

The other method was presented by E. A. de Schweinitz, Ph.D., M.D., Chief of the Bio-Chemical Laboratory, Department of Agriculture, Washington, D. C. His experiments were rather with reference to the destruction of animal parasites, and for this purpose he found it admirably suited. The amount generated in a given time by this method is not as great. An ordinary lamp wick is used, which may be round or flat, and to the top is attached by a wire a piece of sheet asbestos about 1 $\frac{1}{2}$ inches long. The asbestos is impregnated with platinum and copper, or with one of these alone. This wick is placed in any ordinary lamp it will fit. The lamp is filled with wood alcohol and the capillary attraction of the wick draws up sufficient alcohol to generate the gas. A lamp with a central draught gives by far the best results. The lamp is lighted, allowed to burn a minute until the asbestos begins to glow with a cherry-red heat; the flame is extinguished, the asbestos maintains its heat while the alcohol remains. Dr. de Schweinitz said: "The fact that this gas and its solutions are practically without injurious effect upon metal, wood or clothing, and most colors, and the minute amount required to secure the destruction of bacteria, make formaldehyde practically the best gas known for disinfecting purposes." But the most perfect form of generator has not yet been devised. A convenient portable apparatus for this purpose, is offered by a New York house, who claim for it a capacity for disinfecting a room of one thousand cubic feet capacity. The 40 per cent. solution already referred to may be used for washing walls or furniture and may be also applied as a spray. It is very volatile and if allowed to evaporate in a room will unquestionably sterilize the atmosphere, but it is doubtful if a sufficient quantity of the formaldehyde will be generated with sufficient rapidity to deeply penetrate the clothing and furniture. A 1 per cent. solution has been demonstrated to be sufficient to destroy the germs of anthrax in fifteen minutes, the material of course being submerged in the solution. One hundred parts of the 40 per cent. solution added to 3,900 parts of water gives a solution of this strength. Undoubtedly at an early date we shall be able to avail ourselves of this very valuable and unquestionable disinfectant.

The subject was freely discussed by many of those present.

A. M. SLOAN, Esq., President of the Board of Health of Greensburg, read a paper on

SHOULD THE ERECTION OF SCHOOL BUILDINGS BE REGULATED BY ACT OF ASSEMBLY?

The matter was so exhaustively treated that but little could be said in debate. He believed there were breakers ahead of our educational ship, and as a faithful pilot he sounded the warning of dangers inside our beautiful intellectual structures. To turn out of the school on graduation day an intellectual giant with a diseased body and call such a man or woman was an absurdity. If there be anything in our school management that tends to produce disease of the body our first duty is its extirpation. Some of his deductions were: The percentage of near-sighted children when they enter school is less than 7 per cent., the number thus afflicted increases yearly until colleges and universities number among their pupils over 50 per cent. thus troubled. Evils existing in school buildings are to be remedied by legislation, not education, because school boards constantly changing are not usually judges of sanitary science. County superintendents have no knowledge of this subject and architects as a rule are ignorant of the laws of health.

The whole matter was referred to the Committee on Legislation, with instructions to prepare for presentation to this session of the Legislature the draft of an Act appropriate.

Prof. G. G. GROFF of Lewisburg, a member of the State Board of Health, presented an able report on

THE TEACHING OF HYGIENE IN THE PUBLIC SCHOOLS.

There is increased interest in this matter, but as yet no improvement. The text-books are absolutely worthless. Every year there are at least 20,000 deaths among children by preventable diseases, yet not a word is taught the children as to what constitutes prevention. In the discussion it was asserted that no proper American book existed, and the books now in use were not only useless, but a curse to the schools. Some even urged that the teaching of hygiene be dropped from the curriculum. It was unanimously resolved that the subject be referred to the appropriate committee.

Among the reports of the several committees, that on legislation offered the draft of an Act to urge the Legislature to provide for the appropriation of money to pay the expenses of

the delegates from the borough boards of health in attendance at these sessions, and the cost of publication of the proceedings. This and several other drafts of Acts were referred to the incoming committee to prepare and present.

The subject of milk inspection was thoroughly discussed and Acts to that effect were also prepared and referred.

Allusion was made to the approaching meeting of the American Public Health Association in Philadelphia, in September, and an appropriation of the sum of \$1000 was asked of the Legislature to aid in the extending of hospitalities to that body.

The officers elected for the new year were: President, Daniel H. Hastings, Governor, ex officio; first Vice-President, Crosby Gray of Pittsburg; second Vice-President, A. M. Sloan, Esq. of Greensburg; third Vice-President, Moritz G. Lippert, C.E., of Phoenixville; Treasurer, Jesse C. Green, D.D.S., of West Chester; Secretary, William B. Atkinson, M.D., of Philadelphia; Executive Committee, Benjamin Lee, M.D., C. P. Weaver, Norristown; A. H. Halberstadt, M.D., Pottsville; J. G. Shoemaker, M.D., Phoenixville; J. A. McLaughlin, Allegheny; W. B. Atkinson, M.D., Philadelphia.

This was perhaps the most important session of this Association yet held, and it is much to be regretted that so many of the local boards of health are prevented from being in attendance. This is due to the fact that many boards are not granted funds with which to pay the ordinary expenses of their boroughs and hence do not feel like paying an additional amount from their pockets in order to attend the sessions.

Chicago Ophthalmological and Otological Society.

Annual meeting held at the Chicago Athletic Association Rooms, January 12, 1897.

Dr. HENRY GRADLE in the Chair.

The Treasurer's report was read and adopted.

Dr. WM. T. MONTGOMERY was elected president; Dr. W. F. COLEMAN, vice-president, Dr. C. P. PINKARD, secretary, and Drs. BROWN, HOTZ and COLEMAN, committee on membership. Minutes of the last meeting were read and approved.

Drs. J. W. Heustis of Dubuque, Ia., and Will Walter of Marquette, Mich., were elected members.

The secretary read a letter from Dr. Casey A. Wood in which he stated that the article in the *Chicago Times-Herald* of January 3 on the "Effect of Veils on the Eye-sight" had been published without his knowledge or consent, and was evidently a garbled copy of an article in the *Boston Medical and Surgical Journal*.

Dr. HENRY GRADLE demonstrated a patient with the rare combination of one-sided paralysis of the motor oculi nerve in all its branches with typical Argyll-Robertson pupil of both eyes.

The rest of the meeting was devoted to a discussion of "Asthenopia not due to Refractive Errors." (See page 447).

C. P. PINKARD, Secretary.

Department of Public Health.

Senator Gallinger has introduced in the Senate the Bill proposed by the Second Pan-American Medical Congress. The Bill is Senate Bill No. 3652, and is accompanied by the official report of the United States Committee of the Medical Congress, as read in Mexico November last.

REPORT OF COMMITTEE OF THE FIRST PAN-AMERICAN MEDICAL CONGRESS ON DEPARTMENT OF PUBLIC HEALTH FOR THE UNITED STATES.

Mr. President and Fellow-Members of the Second Pan-American Medical Congress:

I have the honor to make the following report from the Committee on Department of Public Health for the United States:

The First Pan-American Medical Congress, in general session at Washington, D. C., Sept. 8, 1893, unanimously adopted the report of the International Executive Committee, which embraced the following, viz.:

Resolved, That in conformity to general regulation 5, the International Executive Committee hereby authorizes the appointment of the following international American committees, viz., . . . under which resolution, among others, a Committee on Department of Public Health was appointed, whose duties were defined as follows:

Committee on Department of Public Health.—A committee consisting of one member from each constituent county or colony, whose duty it shall be to coöperate with the object of placing the care of the public health in charge of experienced and educated medical men, and to secure the establishment in

each of the several Governments of a Department of Public Health, with parity of voice and influence in national and colonial councils and with independent executive authority under limitations common to other Departments in the same Government. Each member of this committee may, at his discernment, appoint such coadjutors resident in his respective county or colony as may be required to carry out the purpose of this committee."

The International Executive Committee under the following resolution,

Resolved, That the ex-officio President of the International Executive Committee shall appoint the president of each of the foregoing committees from among those appointed as members of the same, and that the president of each committee shall appoint the secretary of his respective committee from among either the members or the coadjutors of the same, appointed Dr. Henry L. E. Johnson of Washington, D. C., president of this committee, and he, with authority duly invested, appointed Dr. William Pepper of Philadelphia, Pa., and Dr. Charles A. L. Reed of Cincinnati, Ohio, coadjutors to the said committee, and Dr. H. L. E. Johnson of Washington, D. C., secretary *pro tempore*.

In conformity with the fifth resolution covering the special committees, which says, "The president of each committee shall prepare a final report of the detailed work of his respective committee and submit the same to the Second Pan-American Medical Congress," the President, on behalf of the Committee, makes the following report:

We recommend the adoption of the following draft of a bill to be made a law by the Congress of the United States, to-wit:

A BILL TO ESTABLISH A DEPARTMENT OF PUBLIC HEALTH.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, There shall be established a Department of Public Health. There shall be appointed by the President from the medical profession, by and with the advice and consent of the Senate, a Secretary of Public Health, who shall be intrusted with the management of the Department herein established. He shall be paid an annual salary of \$8,000. There shall be appointed by the President, with the approval of the Senate, an Assistant Secretary of Public Health, at an annual salary of \$5,000. The Secretary of Public Health shall, with the approval of the President, provide suitable offices for the Department, and shall employ such assistants and clerks as may be necessary.

SEC. 2. That it shall be the duty of the Secretary of Public Health to obtain through all accessible sources, including State boards of health, municipal authorities, and the Surgeons-General of the Army, Navy, and Marine-Hospital Service of the United States, weekly reports of the sanitary condition of all ports and places within their territories and departments, and he shall publish weekly abstracts of the information thus obtained and other pertinent matters received by his department. The said department also shall, as far as possible, by means of the voluntary coöperation of State and municipal authorities, of various general and special hospitals, sanitariums, public associations and private persons, procure and tabulate statistics of marriage, births (noting those that are illegitimate), stillbirths, with cause thereof, and period of utero-gestation, and deaths from epidemic, endemic and all other diseases, specifying those of a degenerative character, such as malignant growths and affections of the nervous, circulatory, respiratory, secretory, digestive and reproductive organs, and from violence, accident, suicide, murder, and data concerning the fruit of consanguineous marriages and the transmissibility of insane, alcoholic, syphilitic, nervous and malignant types of constitution to offspring, and to evils of race miscegenations. He shall also procure information relating to climatic and other conditions beneficial to health, and especially in reference to the most favorable regions in the United States for the cure or relief of chronic diseases, particularly consumption. He shall also procure information as to the prevalence and ruinous effects upon the body and mind of intemperance and prostitution. He shall endeavor to ascertain the extent, the origin and classification of insanity in the several States and Territories of the country. He shall investigate the state of comfort of the laboring classes in respect to their lodgment, their trades, occupations, the healthfulness of their workshops and the contents of the atmosphere they habitually breathe, and the prevalence of premature degeneration of the nervous and muscular system by the exactions of piecework employment. He shall obtain information in regard to the soundness

of their food and purity of water supply. He shall ascertain the ages at which the children of the poor are put to work and its hindrance to their physical development, and their lack of common-school education. He shall seek, through the State boards of health, information of the hygienic state of public school buildings respecting their illumination, ventilation and presence of noxious elements in the circumambient air. He shall seek information in regard to the pollution of streams and navigable waters and public and private wells. He shall attempt, through the coöperation of the authorized medical schools in all States, to promote the most extended and thorough training of students in order to fit them for the responsible duties that devolve upon practitioners of medicine. He shall, whenever an epidemic disease is spreading abroad, or in any country which by commercial or other relation may endanger the health of the inhabitants of the United States, have power to call a conference of the Surgeons General of the Army, Navy, and Marine-Hospital Service and the executive officer or officers of the various State boards of health throughout the country to consider and advise with him in regard to the best methods to pursue to protect the country against the invasion of any such epidemic disease, and the results of such conference shall be, by the secretary of public health, communicated to the President and his Cabinet for such action as they may deem wise and expedient. Besides the reports of the state of the public health which he shall make from time to time, the secretary shall make an annual report to Congress, with such recommendations as he may deem important to the public welfare, and the report if ordered printed by Congress, shall be done under direction of the department. The necessary printing of the department shall be done at the Government Printing Office, upon the requisition of the secretary, and in the same manner, and subject to the same provisions as that of other printing for the several Departments of the Government.

SEC. 3. That the President is authorized, when requested by the secretary of public health, and when the same can be done without prejudice to the public service, to detail officers from the several Departments of the Government for temporary duty, to act under the department of public health to carry out the provisions of this act, and such officers shall receive no additional compensation except for actual necessary expenses incurred in the performance of such duties. When a detail of such officers can not be made, the secretary, approved by the President, may employ such experts, and for such time and in such manner as the funds at the disposal of the department may warrant.

SEC. 4. That to defray the expenses in carrying out the provisions of this act, the sum of fifty thousand dollars, or so much thereof as may be necessary, is hereby appropriated, to be disbursed, with the approval of the President, under the secretary of said department.

SEC. 5. That this act shall take effect sixty days after its passage, within which time the secretary and assistant secretary may be appointed.

We further recommend—

The passage of uniform national and State laws regulating the importation, exportation, sale, inspection, and standard of meats, fruits, and food stuffs, water supply, ice, milk, and beverages, prohibiting adulteration and providing adequate penalty for violation.

The passage of uniform laws, national and State, regulating the manufacture, importation, exportation, and sale of drugs and chemicals, with provision for their inspection, and penalties for their adulteration. And a further provision requiring the labeling with exact formula all proprietary medicines and compounds, and providing penalties for violation.

The passage of uniform laws, national and State, regulating the sanitation of railroad cars, both steam and street, barges and ships, steam and sail, public vehicles, ambulances, laundries, slaughterhouses, morgues, hospitals, and dispensaries, jails and reformatory institutions, with penalties for violation.

The passage of uniform laws, national and State, regulating the hygienic management of contagious diseases, personal and house quarantine, vaccination, hygiene of dentistry, barber shops, public baths and gymnasiums, amusement halls, migration of tramps and profligate persons, disposal of dead bodies, garbage and sewage, draining of land and removal of weeds and decaying vegetation, and providing penalties for violation.

The passage of uniform laws, national and State, providing for and regulating disinfecting plants, steam, dry heat and chemical, for mails, foreign and domestic, clothing, bedding, money, persons, etc. Bacteriologic laboratories, animal industry and inspection plants, State and national hospitals, and retreats or sanitariums for the treatment of habitués, inebriates, venereal, tubercular and insane persons, with special laws

for commitment to and discharge from the same. District nursing for the poor, sick, obstetrical, contagious diseases, etc.

The passage of uniform laws, national and State, providing for the appointment of State and national medical experts and the punishment of medical crimes.

The passage of uniform laws, national and State, regulating State and interstate medical, surgical and dental practice, which will protect the same as a science and not as a trade.

We further recommend adequate appropriation of money by the several States and the General Government for the scientific investigation of public health matters in this and foreign countries, and the suppression of diseases, endemic and epidemic.

We further recommend that appointment to and the tenure of medical offices shall depend upon professional ability and efficiency, and not upon political influence.

Respectfully submitted.

HENRY L. E. JOHNSON, M.D., Washington, D.C.
President Committee on Department of Public Health.

WILLIAM PEPPER, M.D.,

CHARLES A. L. REED, M.D.

Coadjutors.

Report accepted by the second Pan-American Medical Congress in general session, Nov. 19, 1896, at Mexico City, Mexico.

NOTE.—The Committee of the AMERICAN MEDICAL ASSOCIATION, of which Dr. U. O. B. Wingate is chairman, is also engaged in the preparation of a bill for a Department of Public Health, which will be introduced at the Special Session of Congress.

PRACTICAL NOTES.

The Tuning Fork as a Therapeutic Appliance.—E. N. Malouine of Moscow announces that the tuning fork, struck and applied to the vertex, transmits its vibrations to the vocal chords, and causes them to vibrate in unison. He cured in this way, with vocal exercises, a case of hysteric aphonia that had resisted all other treatment, including suggestion. He adds that the process might be found effective in training and improving the voice of singers.—*Semaine Méd.*, January 20.

Jacksonian Epilepsy Cured by Suggestion.—An interesting case is described in the *Semaine Méd.* of January 20, the complete cure of severe cephalalgia with frequent epileptic attacks resulting from the fall of a flower pot on the head of a young man five years before. Professor Spehl (Brussels) suppressed the bromid treatment that had been used previously, and suggested to the patient that his attacks were diminishing and the cephalalgia less, following this in a few days by the command not to let them occur again, uttered in severe tones. There has been no attack since and the headache has also disappeared. It is too early yet to state whether the cure is permanent.

Success of Antipyrin in the Treatment of Nephritis.—Modinos of Alexandria, Egypt, describes in the *Gaz. d. Osp. e d. Clin.* of December 20, several cases of nephritis successfully treated with one gram of antipyrin each twenty-four hours (0.75 to 1.25). He considers himself justified in emphasizing the value of antipyrin in nephritis. Administered in small quantities, it causes the decrease and final disappearance of the albumin from the urine. The general health improves as the albumin disappears, showing improvement in the renal infection. He ascribes the improvement to the neutralization of the toxic constituents of the urine, owing to some special affinity of the alkaloid.

Effect of the Thyroid Products on the Female Pelvic and Thoracic Organs.—Hertoghe of Antwerp has found that the continued administration of the thyroid extracts exerts a depressing effect upon the functions of the pelvic organs and a stimulating effect upon the lacteal glands. In every case menorrhagia was cured by them and menstruation became normal, while the lacteal secretions were remarkably increased. He confirmed his observations experimentally by administering to a milch cow eighteen to thirty six thyroid tablets a day, and noting the amount of milk secreted. For fourteen days before the

experiment, the cow yielded an average of 11.50 liters; for the first ten days after the thyroid tablets were given her, the average rose to 12.55 liters, and from the tenth to the twentieth day, the average was 13.80 liters. He also found it effective in arresting hemorrhage of the pelvic organs. He recommends it for all congestive disturbances in the pelvis. He gives one B. W. tablet a day, increasing to three.—*Cbl. f. Chir.* January 9, from *Bull. de l'Acad. de Méd. de Belgique*.

Surgical Treatment of Hypertrophied Prostate.—Herhold in the *Deutsche med. Woch.*, January 14, adds three new cases to the forty-one on record (resection or ligature of the vas deferens) to date. Thirty were entirely relieved of their troubles, a proportion of 75 per cent. The operation is simple and is followed by no serious after-effects, except in the rarest cases, when there have been unfavorable complications present. Dréznigé reports in the *Bull. Méd.* of January 3, twenty-two cases on which he performed resection of the vas deferens with notable improvement in each case. The effect seems to be the same whether the vas is resected or merely cut. No effect is produced by operating one side alone.

Incomplete Tamponing of the Nasal Cavities.—The Gottstein method of treating ozena with a tampon of cotton fitted into the nasal cavities, proves very beneficial as it prevents the formation of crusts and their fetid decomposition. But owing to the interference with the breathing, the tampons have to be frequently removed so that much of the benefit is lost. P. Bruck now suggests that tarlatan instead of cotton be used; the patient can easily breathe through it and replace it with another piece when soiled, while it keeps the mucous surfaces moist and answers the same purpose as the cotton tampon. In severe cases it might supplement the Gottstein method.—*Semaine Méd.*, January 20.

Phosphorus as Stomachic in Chloro-Anemia.—A. Casati has derived great benefit from phosphorus in the anorexia that so frequently and seriously interferes with the success of the different hygienic and medical measures employed to fight chlorosis and anemia. He administers it in capsules of phosphorated oil, each capsule containing 0.001 milligram phosphorus. The patient takes one capsule a day, adding a capsule every second day, until the maximum of five capsules a day is reached, when they are discontinued in the same gradual way, and the appetite is usually found completely restored. If not, the treatment is resumed after a ten days' rest. He also recommends the following formula for iron and arsenic treatment: Ferrico-potassic tartrate and Fowler's solution, each 4 grams; aq. dist. 12 grams. Five to ten drops of this mixture are to be taken in a little wine immediately before each meal.—*Gaz. degli Osp. e delle Clin.*, January 10.

"Modifying" Catheterization.—In an article in the *Presse Méd.* of January 13, Professor Guyon emphasizes the dangers that may and usually do follow the use of catheters introduced with force or even friction. There should be no friction, as the mere contact of the instrument with the walls of the urethra produces a vascularization sufficient in itself to modify powerfully the condition of the membranes and dilate strictures. He prefers the "bayonet" bougies with their eccentric curved ends, as they can be gently brought in contact with every part of the passage; and always uses a bougie several sizes too small, according to the usual acceptance. Friction and pressure are worse than useless, as they substitute a pathologic phenomenon for a regular physiologic action. The failures that result in practice are chiefly due to neglect or ignorance of this principle. If these means fail, then there is no resort but division or urethrotomy, with preference for the latter.

Resection of the Trachea. In the session of the Medical Society of Vienna, held Nov. 13, 1896, Föderl presented a 6 year old boy upon whom he had performed resection of the trachea with circular suture. The child's trachea had been cut entirely

through just below the cricoid cartilage. The posterior wall had been sutured immediately and five days later the rest of its circumference was sutured except where a canula was kept in place. There was so much contraction in the scar that phonation was completely lost and symptoms of stenosis developed. Föderl performed tracheotomy low down, resected the scar tissue to the extent of 2½ cm., and brought the ends together by a circular suture. The result was perfect.—*Medical News*, January 2.

Effects of the Bromids in Continuous and Large Doses.—Dr. J. A. Hodges, in the *Maryland Medical Journal*, writes that it is difficult to determine what is a safe dose and that some effects of the bromids produce symptoms which are attributed to the disease and not to the remedy. The following is the summary: Increased irritability of temperament; depressed spirits with a tendency to moderate melancholia; impairment of memory and also of contractility of muscles; an irritant to the gastric mucous membrane; an aphrodisiac action; disturbed circulation; extraordinary susceptibility to toxic effects in cerebral lesions, etc.; a tendency to homicidal and suicidal impulses as well as a weakening of the nervous system. To all of these our own testimony may be added of an encrusted deposit upon the anterior tibial regions, brown and dense, which promptly disappeared with a clean detachment upon a suspension of the chemical. In the instance given the patient was a young girl, who continued for years the repetition on her own account of a prescription given when the bromid of potash was a somewhat fashionable remedy for epilepsy.

Injections of Artificial Serum in the Treatment of Dermatoses.—Prof. P. Tommasoli reports encouraging success in the treatment of chronic eczema, etc., with injections of artificial serum (sodium chlorid and bicarbonate) to stimulate the secretions and excretions and increase the vital energy of the organism. The injections (30 to 200 c.c.) were always well received and several cases of long standing promptly yielded to them. Among these was a case of senile genito-anal pruritus, dating from thirty years past cured with forty-four injections (8 liters of serum in all); a case of lichen planus, extremely pruriginous, yielded in thirty-six days to thirty-three injections, equal to 3 liters in all. Two cases of diffuse, symmetrical chronic eczema, were cured with twenty-two and twenty-seven injections respectively, and a case of generalized folliculitis was cured with twelve injections (scarcely more than a liter of serum). He tested the treatment in twenty cases, but it was ineffectual with fungoid mycosis, diathetic pruritus, pemphigus vegetans, lupus, syphilis and a few additional cases of eczema.—*Semaine Méd.*, January 20.

The Roentgen and Other New Rays.—The *Academy* thinks that a full list of rays should include seven items, which may be arranged chronologically as follows: 1. Kathode rays, existing inside an exhausted bulb placed in the path of an electric discharge, and demonstrated long ago by Crookes and others. 2. Lenard's rays, which are the kathode rays brought outside the bulb by means of an aluminum window. These rays are sensitive to magnetic action, and can be deflected by a magnet. They will also act on a photographic plate through many opaque substances. 3. Roentgen's rays, existing in combination with Lenard's rays, but not deflectable by a magnet, and possessing more pronounced powers of photographing the invisible. 4. Uranium rays, or the phosphorescent rays discovered by Becquerel to be given off by uranium and its salts, which are capable of acting on a photographic plate. They differ from Roentgen rays in the circumstance that they can be both refracted and polarized, and there is no doubt that these are transverse rays of a high ultra-violet order. 5. The glowworm's rays, which have recently been shown to have a faint photographic action through aluminum and through copper. 6. The rays emitted by phosphorus, which will penetrate black paper, but

not aluminum. 7. There are still possibilities of other undifferentiated rays existing within the compass of the Crookes' tube, for in an interesting experiment performed before the Royal Society, Professor Thompson showed that, during the course of exhausting a bulb, before the Roentgen rays made their appearance, some other rays appeared which were different from the others in this list.

Case of Poisoning from External Application of Ext. Belladonnae.

Eichenberger describes the following case in the *Corr.-Bl. f. Schw. Aerzte*, No. 22. He prescribed for a woman of 64, after he had instilled 3 drops of a 3 per cent. solution of atropin into her left eye, ungt. ciner. 15.0 and ext. belladonnae 1.0, to be rubbed into her forehead, about as much as a bean, morning and evening. Two days later she developed a typical case of acute atropin poisoning; pupils enormously dilated, violent mania, modified sensorium, palpitation of the heart, frequently imperceptible pulse, extreme thirst, difficulty in swallowing and burning in the throat. With repeated injections of morphin and the use of excitants such as injections of camphor and ether, strong coffee, etc., the patient gradually recovered. There were still 13.0 grams of the salve in the box, consequently in the five times that it had been used, 3 grams of the mixture, or 0.19 of the belladonna extract, had been applied in the course of the two days and a half, or 0.08 ext. bell. a day. This amount is not only far below the allowable dose for external application, but is below the maximal dose for internal administration. The three drops of the atropin solution first instilled must also be taken into account. The case can only be explained by a peculiar capacity of absorption on the part of the skin, combined with an individual intolerance of the drug. —*Therap. Woch.*, January 10.

Indications for Venesection.—Recent articles by Kroenig and Albu state that the indications for venesection according to their experience, and with the exception of chlorosis, they are agreed on all points. Kroenig has found small repeated venesections very beneficial in chlorosis. The medicines administered hitherto in vain assert their affect, and recovery is prompt. It is always indicated in cases of acute intoxication of the blood, either by the natural toxic products; carbonic acid, and uremia, or by poisons from without, which affect the circulation, such as carbonic oxid, illuminating gas and potassium chlorate. In apoplexy it is especially indicated, and if practised in the early stages often produces marvelous effect. In severe pneumonia also, it relieves and assists recovery to an astonishing degree. The cyanosis, dyspnea, etc., vanish as the blood flows. The overworked and insufficiently aided heart is relieved of part of its burden, and the medicines begin to take effect. Kroenig advocates venesection when all other means have failed, but Albu goes farther and prefers it to all other means for treating young, vigorous, sanguine persons in severe pneumonia with extremely elevated temperature, delirium, cyanosis, and feeble pulse. They also advocate this measure in diffuse capillary bronchitis, and in pneumonia with considerable displacement of the heart and secondary venous stasis. —*Presse Méd.* January 13, from *Berl. klin. Woch.* Nos. 42-43, 1896.

Twin Bearing and Prolificacy.—Before the Edinburgh Obstetrical Society, at the December meeting, the above subject was under discussion. Dr. J. W. Ballantyne read a paper on the "Causation of Twins as Illustrated by Some Clinical Histories." After giving the history of several cases he mentioned that of a woman who was one of a family of seventeen, no twins; one of her sisters had had triplets and another twins; she herself had had twenty-two children in eighteen confinements, viz., four times twins and fourteen single births. In all the cases referred to there was good evidence to show that the twins were of the binovular or dichorionic kind. He mentioned the association of twin bearing and prolificacy and deduced that

the daughters of a woman who has borne twins are usually highly prolific, and conversely the mothers of twins are usually the daughters of specially prolific women. He mentioned the theory that the ovaries of the twin bearer resemble those of the fetus in the great number of Graafian follicles they contain. Pleural pregnancies result from the simultaneous rupture of several ovisacs and that this is a consequence of the existence of a relatively or absolutely large number of ova in the ovaries. Dr. Haig Ferguson mentioned the case of a woman who had seven children in three years, twice twins and once triplets. Dr. James Ritchie referred to a mother who had borne thirty-two children; it had been mentioned in an application for life insurance and he had verified the statement.—*British Medical Journal*, December 5.

Traumatism of the Liver.—Terrier and Auvray contribute an important article to the *Revue de Chir.* No. 10, reviewing the various forms of traumatism that can happen to the liver and the surgical cases on record. These show a mortality of fourteen in forty-five cases (stabs and cuts, twenty with five deaths; gunshot wounds, fourteen with four deaths; contusions, eleven with five deaths). They remark that earlier operating might have saved some of the cases, by combatting hemorrhage and preventing local and general infection. In regard to the operation they recommend a large median incision with resection of ribs if necessary, combined with a transpleural opening if there is reason to suspect injury to the diaphragm. This allows the liver to be completely inspected, especially on its convex side, and the hilus, as well as the other abdominal organs. To arrest the flow of blood the results of the operations already reported and of the writer's experimental research proclaim the advantages of a deep, wide-embracing suture of the liver parenchyma with unpointed needles and thick silk, with ligature of the vessels, of course, when possible. If this is impossible on account of the depth of the wound or friability of the tissues, gauze tampons for two to four days with thermo-cauterization. Projectiles and foreign bodies should only be removed when this can be accomplished without further injury to the organ. Gauze tampons with drainage also seems the best treatment in cases where portions of the liver have been crushed. The abdomen and pleural cavity must be carefully cleansed of all blood, bile and secretions with gauze pads.

Ambulant Treatment of Fractures.—M. Haudek recently exhibited a child to the K. K. Medical Association of Vienna, who had fractured the middle third of the femur three weeks before, and had been treated by the application of a Hessian fracture splint apparatus the ninth day, a combination of splints, pelvic band and foot piece, made over a plaster cast of the limb in extension, applied over a tricot stocking, and a bandage wound from the toes up to prevent edema of the extremity. This apparatus allowed him the use of his limb so that he had not been confined to his room or bed at all. The time of recovery from a fracture is much shortened by this ambulant method of treatment. The callus formation and consolidation of the bone is much more rapidly accomplished, owing to better circulation, and any slight atrophy of the muscles is easily counteracted by massage. The ability to be up and about in the open air instead of remaining in bed, favors recovery; the appetite, digestion, etc., continue normal, while there is none of the depressing effect on the spirits of a long confinement. Any one who has ever treated a fractured limb in this way is soon convinced of its many advantages over the usual methods. The child could stand and walk, if led by the hand, without pain, immediately after the light apparatus was applied, and in a day or two could walk alone and even go up and down stairs. In sixteen days he could walk without the apparatus, and it was removed to allow this several times a day, with daily massage of the limbs. The joints were left free from the first. —*Wien. klin. Rundschau*, January 17.

Eucaln.—One of the latest drugs which is now attracting attention is eucaln, and although several American and German periodicals have recently contained notes upon its uses, no English investigations have been published until the *British Medical Journal* recently printed a very instructive and useful paper upon its use as a local anesthetic in the surgery of the throat, nose and ear. This article (which, by-the-by, is only a "preliminary communication," based upon an experience of thirty-two cases) is the result of the joint investigations of Dr. Jobson Horne and Mr. Macleod Yearsley in their clinic at the Farringdon General Dispensary and Lying-in Charity. Their communication first deals with the history of the drug, giving a short summary of the work done up to date, both as to chemistry, pharmacology and therapeutics. Their own experiences are then detailed, and unlike many modern investigators, they very wisely insist that, although they have so far formed a favorable opinion as to the merits of eucaln, it is but tentative, and they withhold their final verdict until they have still further examined into the uses of the drug. The points to which they appear to have specially directed attention are: 1, strength of solution required; 2, rapidity, intensity and extent of anesthesia; 3, general and local action upon the circulatory system; 4, after-effects. Out of thirty-two cases they only met with three in which there were any ill effects, and these seem to have had ample cause for not blaming the drug. Some of their results appear to be somewhat at variance with those of other observers; they have, for instance, noted slight ischemia rather than hyperemia of the turbinated bodies after its use. They also direct attention to a point which does not seem to have hitherto attracted attention, namely, the occurrence of salivation after its use. If the value of eucaln as a substitute for cocaine for local anesthesia be established, general practitioners will hail with delight the advent of a drug which, so far as the general result of present experience goes, is credited with all the advantages of cocaine without its disadvantages.—*London Medical Times*, January 23.

A Case of Addison's Disease Treated with Suprarenal Extract; Death.—Dr. Osler, in the December *Bulletin of the Johns Hopkins Hospital*, records a case of Addison's disease fatal during treatment with suprarenal extract. The patient, a female, aged 21, had been sick with her present ailment about a year. She often became suddenly dizzy, everything became black before her and she would have to catch hold of the nearest object to prevent falling. She states that these sudden weak feelings would come on also when she was sitting still. She had lost in weight in two years from 115 to 96 pounds. A symptom, too, of which she complained a good deal was itching of the skin. She was a bright, intelligent looking girl, not much emaciated. She had no fever, and for the eleven days she was in hospital the temperature did not rise above 99.5 degrees, and the early morning temperature was often 97 degrees. There was anemia. The blood count on admission was 4,500,000 red per cubic millimeter, and on the 25th it was above 5,000,000. There was no leucocytosis, and the differential count gave polynuclear leucocytes, 33 per cent.; small mononuclear, 45 per cent.; large mononuclear, 12 per cent.; transitional, 2 per cent.; eosinophiles, 4 per cent. The condition of the skin was as follows: The scalp had a shining yellow color, the hair was dry and very coarse. The face had a yellow, dark color, with blackish brown splotches situated just above both eyebrows, across middle half of nose and involving the whole of upper lip. The eyelids and the inner canthi of the eyes were also very dark. The face showed from fifteen to twenty very small, almost black pigmented areas, some of which resembled moles. The abdomen, chest, back, legs and arms had a similar dark yellow-brown color. The areolae of the nipples were large and deeply pigmented. Below and to the left of the umbilicus there was a bean-sized brown-black area. Both flanks were almost black in color. The backs of both

hands were deeply colored, especially the joints and about the roots of the nails. No large leucodermic patches were present. There were a few patches of pigmentation on the buccal mucous membrane. The lungs were negative; she had no cough and no expectoration. The heart sounds were rather weak and not well heard. There was a venous hum in the right side of the neck. The pulse ranged from 76 to 96 and was regular. There was no enlargement of the liver or spleen, and there was no dilatation of the stomach. The examination of the lower abdomen was negative. There was no enlargement of the external glands. The urine was acid, amber colored, specific gravity 1015. On June 22 the adrenal glycerin extract was begun. It was made in the following manner: Fifty-four perfectly fresh pig's adrenals were finely chopped up and thoroughly mashed with pestle and mortar. They weighed 114 grams. To this 114 c.c. of pure glycerin was added and 114 c.c. of aqua chloroformi. This was allowed to macerate after thorough mixing for twenty-four hours. It was then strained several times through towels and twice through filter paper, the latter in a refrigerator. The last filtrate was a rather cloudy, reddish, thick fluid with a meat-like odor. About 200 c.c. remained after filtering, so that 3.7 c.c. represented one gland. The patient was started on 3 ss t. i. d.—2 c.c., or one-half a gland. On the day following the administration she complained of cramps in the lower part of the abdomen and slight headache, symptoms which she said she had frequently had on previous occasions. July 1, at 2:45 this morning she became very noisy, screaming and calling out, and the pulse was very weak. The temperature was 97.5 degrees. She became quiet again, but did not seem quite rational. At 8 o'clock she lay with her eyes half closed, breathing rapidly and noisily. The pulse at the wrist could not be felt. She would not protrude her tongue, and when aroused she became very restless and tossed herself about, throwing off the clothes. The pupils were of medium size and reacted to light. The heart impulse could not be felt; the sounds were very feeble, and the pulse was 128 to the minute. At times the respiration became extremely weak, almost sighing. A few minutes after this note was made the patient died suddenly. The autopsy showed both suprarenal glands were the seat of extensive caseous disease, chiefly in the form of nodules, which were partially calcified. There was no trace of normal gland tissue remaining. The caseous process extended beyond the limits of the gland into the adjacent lymph glands, which, though little enlarged, were also involved. Peyer's patches in the ileum were a little swollen, and the solitary follicles in the large intestine were somewhat enlarged. The left lung showed a thin, wedge-shaped, triangular area near the base with caseous nodules, some as large as a pea. At the right apex there was some thickening and retraction of the pleura covering an old caseous, partially calcified nodule and the pleura on this side was obliterated. There were no other tuberculous foci in the body. The heart looked normal. The first question which suggests itself is whether the toxic symptoms, of which this patient died, were due to the suprarenal extract. Addison's disease may prove fatal either by gradual asthenia, the result of the vomiting and diarrhea; by sudden syncope, which may occur at any stage of the disease; by extension, local or general, of the tuberculous process, and lastly by a sort of toxemia, in which the patient for several days may have nervous symptoms, such as this patient presented. In the *International Medical Magazine* for February, in which Dr. Osler has reported six cases of the disease, a patient of Dr. Mullins, at Hamilton, for forty eight hours before death had the following group of symptoms: a slight convulsion, which was followed by a dazed condition in which he did not seem to appreciate what was said, great feebleness and rapidity of the pulse, sighing respirations, cold hands and feet, and subsequently much restlessness, pulling at the bed clothes and tossing about from side to side. The symptoms were much the same as those of Dr. Osler's patient, and the extract should not be held to be responsible for them. The dosage was not excessive.

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SATURDAY, MARCH 6, 1897.

THE MATERIA MEDICA COLLECTION OF THE
SMITHSONIAN INSTITUTION.

A former French minister to the United States, is reported to have said that Washington, with one exception, has more essentials for a good dinner than any other place in the world, and that exception is the absence of good cooks. This Gallic remark, the truth of which all familiar with the National Capitol will admit, applies not only to gastronomy but to other things as well; for with all its fine collections, libraries, museums, and the like, there is in Washington a lamentable absence of some one to give concise, crystallized information, and the stranger in search of the same will find no one to give it, unless it be a few ignorant guides with purely mercenary motives. To be sure the functionaries of the various departments are, as a rule, civil and obliging; but it is most discouraging to be turned over to a small boy, as the writer was a short time since at the Patent Office, when looking for certain information regarding water motors. All the models were shown and the specifications, which it would take at least two weeks to read, were placed at disposal, but life being too short to get information this way, a letter addressed to a practical mechanic in New York brought by return mail what two hours' search in the Patent Office had failed to accomplish. Again, it is far from satisfactory to visit such a place, in quest of the latest information on any special subject, to be obliged to stop in a hot stuffy reading room occupied mostly by negroes who make it a kind of loafing place, and to

be met by an ignorant clerk whose indifference, as a human machine, is the result of years of official discipline inimical to the requirements of civil life.

Perhaps the most notable exception to this state of affairs in the Capitol City is Professor OTIS T. MASON, the curator of the National Museum. No one in search of scientific information ever quits the Professor empty-handed or dissatisfied.

Medical visitors to the Museum, especially those interested in pharmacology, may observe and study the materia medica collection to their heart's content. Here an effort is made to expose all substances brought into relation with the diseased organism, having for their end or property the modification of this organism in the sense of healing. Specimens of medical forms and crude drugs in all varieties, commercial and botanical, represent the article as samples found in the markets, and these are supplemented by rare samples having notable peculiarities. Each specimen has its label giving special and condensed information, such as scientific and vernacular name, source, commercial variety, and other brief facts, and each group of specimens, arranged under one head, has a similar descriptive card. A colored plate of the plant from which it is derived is displayed with each crude drug, also a pressed and dried specimen of the flowering plant. Sections and magnified drawings, with a view to assist in identification and show physical characters, add to the completeness and accuracy of the exhibits; while official drugs and preparations and those not official nor found in any pharmacopeia, but which are or have been used as medicaments, help to complete the display.

The classification and grouping of the collection follows the order of fundamental elementary constituents, the primary divisions being that of inorganic and organic materia medica. With each elementary substance are arranged the chemie compounds of that element used in medicine and pharmacy, and the preparations of which that element, or any of its compounds, constitutes the fundamental ingredient. These preparations include the official ones of the United States Pharmacopeia; unofficial preparations not worth a place in the collection, and poisonous salts liable to be mistaken, on account of similarity of appearance, for those less active.

The vegetable products are classed according to the botanical affinities of the plant from which it is derived; the products of fermentation and distillation include the products of acetous and vinous fermentations, and the derivatives as well as distillates; while medicines of animal origin follow the zoölogic classification of the animal from which the crude drug is obtained.

To be thoroughly appreciated, the collection should be seen, since no amount of writing can convey correct notions of a display that each man sees through his own spectacles and from an individual vantage point.

It does not detract from the practical merits of this admirable collection to say that it represents much that is antiquated, obsolete, curious and unused in medicine at the present time. The therapist studying medicaments can hardly be expected to know all about ichthyology, because cod-liver oil is obtained from the *gaddus morrhua*, nor is the surgeon to be up in metallurgy, or be a master of cutlery, because his instruments are made of steel.

In this time of improved medical education, when laboratory, clinical and dead-house teachings, with improved hygienes, tend daily to make the administration of drugs the opprobrium of medicine, and much of the study of our own profession a mere meditation upon death. The mellowing influence of time only impresses us anew with the remark of the late Dr. LOOMIS, of New York, who was accustomed to say to his classes in his native and unaffected way: "You young men prescribe the drugs, but we old fellows don't believe in them."

SUBSTANTIAL GAINS FROM THE TWENTY YEARS' SANITATION OF BERLIN.

It is said of the city of Berlin that, in 1875, there were only fifty-seven houses connected with sewers, and the general mortality of Berlin was equal to 32.9 per 1,000 of the population. Ten years later the drainage of the town had been pushed forward with considerable energy. The teachings of Professor VIRCHOW had taken root in the minds of the people. The labor party gave energetic support, and as their voting power was daily increasing the sanitary regeneration of Berlin soon became an accomplished fact. In 1885 no less than 15,895 houses were connected with the sewers, and the death rate was down to 24.4 per 1,000, inhabitants. Finally, in 1895 the work of connecting houses with sewers and abolishing the ancient cesspools and pails had been pretty well completed. There were then over 22,000 houses connected with the sewers, and the death rate was only 19.4 (even lower than that of London for the same year, viz., 19.8 per 1,000). Thus in twenty years the death rate has been reduced by considerably more than one-third. Of course this is not due exclusively to the improved drainage, but it is quite safe to say that it is the principal cause of the great progress achieved. There are now but very few houses in and about Berlin not connected with the drainage system. Perhaps there may still be some houses in this condition, but they are rapidly disappearing, and it is calculated that soon they will have ceased to exist, and that about 23,000 houses will then drain directly into the sewers.

Berlin is situated upon a sandy plain, affording a deficient fall to the sewers. These are, therefore, not self-cleansing and imperfectly ventilated; in some districts they at times become water-logged so that

there is great risk of the sewer gas escaping into dwelling houses, particularly as the closets are often placed away from the outer wall, and that effective trapping is not very scrupulously and strictly controlled. Nor is proper care taken that the number of closets shall be in proportion to the number of inhabitants. This grievance becomes especially flagrant when, as is so often the case in large centers, what was formally a private dwelling-house is converted into a factory or workshop. Under the presidency of Dr. CZADICK the Berlin workmen organized a Sanitary Commission. It was formed almost exclusively of workmen and had no official power whatsoever, but the reports resulting from the inspections made by this Commission show how much there is still to be done to improve the domestic hygiene of Berlin. As many as 200 people have been found working in a house where there are only two closets. To this must be added all those grave defects that are to be found in all large towns where poverty leads to overcrowding and where vice and drunkenness engender carelessness, dirty habits and general recklessness. Though Berlin suffers from all this, it must be recognized that very little of it is to be seen on the surface.

Next to the complete system of drainage the greatest sanitary advantage is the new broad streets which almost exclusively compose the great town. Considering the important position Berlin occupies in the politics of Europe, it is difficult to realize how modern a town it is. In ancient times Berlin was a very insignificant place, and even so recently as the Thirty Years' War its population, which had comprised 12,000 inhabitants, was reduced to 6,000. Under FREDERICK the Great (1740-86), the population rose to 145,000. After the peace of 1815 the population was a little over 200,000. With the development of railways the population naturally increased, and amounted to 496,000 in 1860. Then came the great historic period which resulted in the creation of the German Empire with Berlin for its capital. The population of the capital increased in due ratio to the increased power, first of Prussia then of all Germany. After the Austrian war there were 702,000 and after the French war more than a million inhabitants. Now there are a million and a half persons living in Berlin, so that the population has more than doubled in twenty years. Of course this gives to Berlin an enormous advantage over other towns. The great difficulty is always with ancient property—property which has acquired considerable vested interests, but which was constructed long before the laws of public health were known or enacted. Berlin, on the contrary, was built after the principal laws of health had been demonstrated and proved. It was therefore possible to prevent the repetition of the errors of the past, and this in some measure has been done. On all sides there are broad straight streets. The fronts

of the houses are swept by the passing winds and are bathed in direct rays of sunshine. This in itself suffices to mitigate a number of minor shortcomings. Then, so that the fullest possible advantage should be derived from these broad streets, they are kept marvelously clean. The army of scavengers is set to work with the method and the spirit of discipline and organization which make the strength of the German people. The general aspect of Berlin is therefore very impressive. As an English writer observes, "there is poverty always with them, but it does not show itself in public. In large English towns we see adult men and women going about in filthy, torn rags, looking very pictures of misery and degradation, who nevertheless probably obtain in the course of the year and in one way or the other, more money than the trim, well-brushed and well-clothed poor of Berlin. The German woman is a much better housewife than the British workman's wife, and she knows how to mend and patch clothes, so that, however old and poor the material, it always looks neat and clean. The man, thanks to his severe military training, brushes himself carefully and has always a trim look about him. The clean people in the clean broad streets give at once a healthy appearance to the town. At the same time there is a reverse side to the question. The Germans, if clean and neat in their clothes, are not so clean and neat in their persons. Even among the upper classes and in the best houses the English visitor is surprised to find that a bath room is quite an exceptional luxury."

Berlin being, as already stated, situated in the midst of a sandy plain, it has been easy to find, in the immediate neighborhood, soil suitable for the creation of sewage farms. More than this, sewer farms could be established not in one or two directions, but all around the town. Thus there are a series of farms both north and south of Berlin which receive the sewage water of the town. Corresponding with these farms there are nine pumping-stations, so placed that the difficulties due to the want of fall are reduced to a minimum. In the year 1892-93 at these pumping stations a total of 61,207,240 cubic meters of sewage, coming from 22,107 houses, was raised and sent on to the farms. This was equal to an average of 7.59 cubic meters per day per house. The total population served by this system of drainage was 1,550,038 persons, which is equal to 0.108 cubic meters each day per head. The cost of pumping was 655,481.06 marks, or 0.423 mark per head. The sewage arrives by gravitation to a very large well at the station, from which it is pumped up into the closed mains and sent on to the sewage farms. The highest point on the sewage farms is 24 meters above the pumping station, and the surface of the sewage in the well at the station is $3\frac{1}{2}$ meters below the engine-room. The farthest point of the system of sewers that converge

to this pumping station is at a distance of 5,300 meters and it is calculated that the sewage does not take more than two hours to reach the pumps from this the furthest distance. In some cases the sewers are made of German hardware pipes; in other instances they are of cemented masonry, and large enough to admit a man to clean. In both instances the sewers are not self-cleansing. This is but natural, as the fall is in the majority of cases absolutely insufficient.

There are, under the ground, drains to carry away the water after it has been purified by filtering through the soil. This water goes to the neighboring water courses. At first there was an outcry raised that the rivers would be polluted and the fish killed. To meet this the authorities dug out a big pond, let the purified sewage water fill this pond, and stocked it with fish. Gold fish, carp and even trout lived and prospered here. This convinced the population of Berlin that there was nothing to fear from the purified sewage. So great was the success of the experiment that other ponds were constructed and now the municipality has added pisciculture to its many other productive enterprises. Near Weissensee there are several large ponds where fish are bred for stocking streams and for sale. The week previous to the writer's visit no less than 7,000 carp were taken from these waters and sold; some of them weighed nine pounds.

The question as to how far these farms are a nuisance and a danger to public health is still the subject of much controversy. Though there were but few cases of cholera in Berlin, itself, there were 22 suspicious cases on the sewage farms to the south of Berlin during the summer and autumn. Twenty of the patients were adults, and the disease was described as cholera nostras. A physician who lives on the spot, has written various reports in which he maintains that workers on the sewage farms drink the water from the drains and suffer from typhoid fever. Careful investigations have been made, and a full official report gives the very definite impression that there is no sufficient evidence to justify the assertion that the patients suffered from drinking the water from the drains in the sewer farms. Both in the north and south districts numerous bacteriologic examinations have been made. Not only was the water in the drains, that is, the purified water, free from the bacteria of typhoid fever, but so also was the raw sewage, when examined at its arrival at the farms. Nevertheless, it is recognized that the condition of the wells is far from good, and orders have been given to protect them more carefully from contamination by surface water. Orders have also been given to the workers on the farms not to drink the water from the drains. Apart from the question of contaminated water, it must be confessed that there are numerous pungent and very unpleasant odors. Of course, when raw sewage is thrown on the soil and comes

out of the pipe with great force, there is a general stirring up of its foul contents, which naturally causes very unpleasant odors.

Nevertheless, and though it is easy to criticise details, and though undoubtedly many defects exist, the broad fact remains that Berlin is drained throughout. There is a method of disposing of all the sewage. The death rate on the sewage farms is low in spite of occasional accidents, such as cases of typhoid fever and cholera nostras; but, above and before all, there is the great, grand result already mentioned, and which can not be repeated too often, that concurrently with the draining of Berlin the death rate has fallen from 32.9 to 19.4 per 1,000 of the population, a rate that indicates that Berlin of all the million-souled cities of the civilized world, in 1895 touched low-water mark in respect of a sanitarily depleted mortality. (London in 1894, however, touched an even lower point, namely 17.4 per 1,000.) Roughly computed this same low rate implies a gain in life-saving of between eight and nine thousand lives; or, in other words, had the rate of twenty years ago prevailed in 1895 a sacrifice of not less than 8,500 lives would have resulted, over and above the actual death-toll. Or, again, if a human life be appraised as worth to the state the average sum of \$700, as the computation of some authorities is, Berlin was the gainer by not far from six millions of dollars in the year 1895. A handsome return that is, in part at least, to be claimed as flowing from the great public works carried out in the cause of sanitation and by sanitarians.

Continuing this train of illustration a step further, let us, *à la* PETTENKOFER, assume that there is a loss of 36 cents for each day's sickness, for medicines, nursing, etc. We will still further assume that each registered death means thirty-four cases of illness, averaging twenty days, *i.e.*, 680 sickness-days, whose cost will be \$245, for each death. Applying this valuation to the deaths that did not occur, in 1895, as above computed at 8,500, there were 289,000 of Berlin's citizens spared from illness, and a saving in money-worth amounting to \$2,082,500.

MUSIC AS A THERAPEUTIC RESOURCE.

"Sweet Music! Sacred tongue of God."

CHAS. G. LELAND—"The Music Lesson of Confucius."

One of the daily papers of Chicago gave an account in its issue of last Sunday of the trial on a large scale of music at the Eastern Illinois Hospital, to witness the effect if any on the insane.

The paper with a childlike simplicity says that to the musical director and the superintendent "belong the honor of making the first scientific experiment of this character in the history of medicine and music."

It is indeed quite probable that the experiment on so large a scale has not before been tried, as there were about 2,000 present according to the account, but the utility of music as a therapeutic measure has been

known ever since DAVID played the harp to soothe the madness of SAUL, and ASCLEPIADES of Bithynia, at the height of his Roman popularity recommended declamation, laughter, chants and music in the treatment of disease in that early day—

"When music, heavenly maid was young
While yet in early Greece she sung."

The first systematic writer on legal medicine, PAUL ZACCHIAS (1620), recommended music in the management of insane, believing with CONGREVE that

"Music hath charms to soothe the savage breast,
To soften rocks, or bend a knotted oak."

NICOLAI, of the University of Halle, a disciple of HOFFMANN and of the iatro-mathematical school, sought to prove that the vibratory movements of the tympanum produced oscillatory movements of the nerves, which thus soothed the fiery brain.

HENRY WARD BEECHER, who, if not a physician, was yet learned in psychology, said that "music cleanses the understanding, inspires it and lifts it into a realm which it would not reach if left to itself." If we turn to that most wonderful of all collections on the subject of insanity, BURTON's "Anatomy of Melancholy," we shall find that music is recognized as one of the potent means at the command of the alienist. "RHASIS, ALTOMARUS, ÆLIANUS, MONTALTUS, FICINUS FAVENTINUS," says BURTON, "are almost immoderate in the commendation of it; 'a most forcible medicine,' JACCHINUS calls it; JASON PRATENSIS, 'a most admirable thing and worthy of consideration that can so mollify the mind, and stay those tempestuous affections of it.'

Musica est mentis medicina mæsta, a roaring-meg against melancholy, to rear and revive the languishing soul; 'affecting not only the ears, but the very arteries, the vital and animal spirits, it erects the mind and makes it nimble, (Lemnius). This it will effect in the most dull, severe and sorrowful souls, 'expel grief with mirth, and if there be any clouds, dust, or dregs of cares yet lurking in our thoughts, most powerfully it wipes them all away.'" Numerous quotations with the quaint commentaries of BURTON follow, and he says, "besides that excellent power it hath to expel many other diseases, it is a sovereign remedy against despair and melancholy and will drive away the devil himself."

The writer of this article twenty-four years ago¹ reported a case of cerebro-spinal fever where the restlessness of the patient, who finally recovered, was controlled by the playing of a violin, and the patient slept sweetly under its power, soothed by the influence of music which

"Waves eternal wands
Enchantress of the soul of mortals."

The voice of antiquity while thus commending it, seems insensibly to have yielded much to the general power of music in making these concessions, but some of the ancients counseled caution; PLUTARCH affirm-

¹ New York Medical Journal, "Cerebro-spinal Fever," by J. B. Ham-
ilton, XXI, 1875, pp. 113-126.

ing that music made more men insane than wine, and "THEOPHRASTUS prophesied," says BURTON, "that diseases were either procured by music or mitigated."

Educators have always recognized the value of music as a controlling influence in building up the mental strength of children.²

We can only add that in Illinois, the superintendent of the Institution for the Feeble Minded at Lincoln, Dr. MILLER, has long considered musical organizations the strong arms of the Institution, a senior band, an orchestra, a juvenile band, and a general chorus, have been organized from among the children with fairly satisfactory results.

But to be useful as an educational aid or as a therapeutic resource, the music must be carefully selected and adapted to the particular mental condition of the individual. The dancing mania of the middle ages was accompanied by a tune which, if anything may be inferred by a glance at the music as printed in Hecker, would make a lunatic of almost anybody.

SOME POINTS OF INTEREST TO THE MEDICAL PROFESSION IN THE REPORT OF THE COMMISSIONER OF EDUCATION FOR THE YEAR 1894-95.

In comparing the number of medical colleges and their attendance with the number of institutions and students in other professions; we find, as is expected, that medicine is far in the lead. There are 151 schools of medicine with 22,887 students, an increase of 1,085 students over the preceding year. There are 149 schools of theology with 8,050 students, an increase of 392; 72 law schools with 8,950 students an increase of 1,639; 45 dental schools with 5,347 students, an increase of 1,195.

A review of the preceding figures shows that the number of medical students is as great as that of all the other professions combined, but there is a marked disparity between the proportionate increase in the attendance of medical colleges and colleges of other professions. With far fewer institutions and students, both the law and dental colleges have gained more in attendance than the medical schools, showing that there is an inclination to leave the over-crowded profession of medicine to enter other fields.

Another point of interest is the gradual change in the center of medical education that is taking place. Comparing the statistics of 1888-89 with those of 1894-95, we find that the Chicago medical institutions have increased in attendance from 1,338 to 2,294, while the New York medical colleges show a decrease in the attendance, which has fallen from 2,081 to 1,893. Baltimore has almost doubled its attendance and now has 1,293 students. St. Louis now takes fourth place, having passed Baltimore, Cincinnati and Louisville; and it now stands fourth with an

attendance of 1,399, while Louisville is sixth with 947 students, a decrease of 43. Philadelphia, which was over 500 behind New York in the first period, is now over 300 ahead with an attendance of 2,201, a gain of 686 over the figures of 1888-89.

There seems to be no special reason that will answer for the change in all these cases. Better clinical advantages, increased scientific advantages together with the westward trend of population will account for such progress as is seen in Chicago and St. Louis.

BRITISH MEDICAL PEERS.

The *British Medical Journal*, with that philistinism which makes it occasionally unreliable on the history of the English-speaking medical profession, remarks that Sir JOSEPH LISTER was the first medical man to be made a peer. Had the *British Medical Journal* added, "for medical reasons," it would have been correct, but as the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION pointed out (Vol. XXVIII), when urging the creation of medical peers, SMITHSON, the present family, which succeeded the proud PERCYS in the Dukedom of Northumberland, was founded by a medical man marrying the heiress of the PERCYS. Nor was SMITHSON the only medical man who became a peer. As JEFFERSON remarks (Book about Doctors): "More than once a physician has won admission into the noblesse, but the battle resulting in such success has been fought in the arena of politics or the bustle of the law courts." SYLVESTER DOUGLAS deserted the profession in which he commenced life, and after a prolonged servitude to political cliques of the House of Commons was rewarded with an Irish peerage and a patrician wife. On his elevation he was, of course, taunted with the humility of his origin and by none with greater bitterness than by a brother *parvenu* and brother poet.

"What is this title to be," asked SHERIDAN, as he was playing a game at cards, "what's SYLVESTER DOUGLAS to be called?" "Lord GLENBERVIE," was the reply. "Good Lord," replied SHERIDAN, and then he proceeded with an impromptu that morning industriously prepared in bed.

Glenbervie, Glenbervie,
What's good for the scurvy?
But why is the doctor forgot?
In his arms he should quarter
A pestle and mortar,
For his crest an immense gallipot.

HENRY BICKERTETH, Lord LANGDALE, was the luckiest of physicians and lawyers. He used the medical profession as a stepping-stone and the legal profession as a ladder, and had the fortune to win two of the brightest prizes of life, wealth and a peerage, without the humiliation of serving a political party. The second son of a provincial surgeon, he was apprenticed to his father and educated for the paternal calling. On being qualified, he became medical attend-

² "That she trained all to music, that real moonlight in every gloomy night of life; 'without poesy and art,' she added, 'the spirit grows weary and wooden in this earthly cline.'"—(Jean Paul F. Richter).

ant to an Earl of Oxford during that nobleman's travels on the Continent. Returning to his native town, he for a while assisted his father in his practice, but resolved on a different career from that of a country doctor, and became a member of Caius College, Cambridge, and studied mathematics with great success. As late as 1807, however, he was still consulted medically by his father. In 1811 he was called to the bar by the Inner Temple; from that time to his elevation to the Mastership of the Rolls, he was the most hard working and hard worked of the lawyers in the Equity Courts, to which his practice was confined. In 1827 he became a Benchler. In 1835, although a staunch, zealous liberal and strenuous advocate of JEREMY BENTHAM'S opinions, he was offered a judgeship by Sir ROBERT PEEL. This he declined, though he fully appreciated the compliment paid him by the Tory chieftain. In 1836 he was made, by the Liberals, Master of the Rolls and created a peer of the realm, with the additional honor of being a Privy Councillor. He died at Tunbridge Wells in 1851, in his 68th year. It would be difficult to point to a more enviable career in legal annals than that of this medical lawyer, who won the most desirable honors of his profession without ever sitting in the House of Commons, or acting as legal adviser of the Crown, when he had not been called quite twenty-five years. A romantic element in the picture is that Lord LANGDALE after rising to eminence married a daughter of that Earl of Oxford to whom he had formerly been traveling medical attendant. The Lord PLAYFAIR, to whom the *Medical Record* lately referred, is not a medical man. Lord KINNEAR is therefore the first medical man made a peer for professional eminence.

CORRESPONDENCE.

Monopolistic Control of Medical Literature.¹

PHILADELPHIA, Feb. 20, 1897.

To the Editor of the *Medical Record*:—In your editorial columns (issue of Feb. 13, 1897, pp. 234-5) you permit a letter to be published as your own ("Both editors and publishers") which is so diametrically opposite in view to that you personally gave myself (in company with Dr. Pyle) when calling upon you that I must beg for a word of explanation in reply. Where is now your "dead line" across which you repeatedly said your publishers could not go in control of your editorial utterance? Moreover, who are the "editors" of the *Medical Record*? Your announcement cites yourself as the single editor. If there are others they should certainly be named, as the profession should know its members who take this attitude to professional interests.

And now, sir, of what use is it for you to allow such statements to appear in your columns as the following: That you would be "the last to countenance any action which might interfere in the slightest degree with the fullest and freest dissemination of medical knowledge." "The *Medical Record* has always allowed the free use of the original matter contributed to it for all reputable purposes, provided that due credit is always given to the original source of publication," etc., etc.

¹ This journal, believing in giving all sides a fair chance, publishes Dr. Gould's letter because, as he states, the *Record* refused to print it.

Now, my dear doctor, you know this is all untrue, and that it is easily proved untrue.

Let me first attend to the insult conveyed in the words, "reputable purposes." Of course you were fully aware of the intended inference and insult. Since your employer's refusal to allow the American Year-Book to use articles from your columns in its digests which you say is never refused for "reputable purposes," it follows plainly enough that all the editors of the American Year-Book are, in your opinion, engaged in a disreputable or non-reputable undertaking. We thank you for your high opinion of us, but can hardly agree with you. Neither does the medical profession, judging from appearances.

Let me make another quotation from your editorial: "The letter above referred to, while plausible on its face, is misleading in its intent, inasmuch as it implies that our course in this one instance might be considered as characteristic of our general policy, than which nothing is more untrue." This aspect of the affair is evidently worrying your publisher a great deal, and so he makes the most sweeping denials possible that he is not guilty of trying to prevent the dissemination of medical knowledge. The denial will avail nothing. American physicians have already decided that the American Year-Book is not disreputable and so long as you and your publisher keep your reasons absolutely hidden, you will be credited with a very evident and very sordid motive. Your contributors must smile derisively when they hear you say that you "would be the last to countenance any action, etc.," and yet in the same editorial you confess that they can not have their articles noticed in the Year-Book. Something more than stentorian proclamations of self-righteousness is necessary to deafen them to such wonderful logic.

What then will they say when they learn that this one instance is by no means single and that these same "publishers and editors" have for eight years persistently refused the same privileges to Dr. Sajous and his sixty-six editors of the Annual, a publication that has had to go on as best it could all these years, with the same denial on the part of the *Medical Record* publishers. Of course the Annual again by necessary inference is "disreputable," but, again also, the profession disagree.

Now, sir, as a physician you well know the wondrous service to the science, the art and the practice of medicine, rendered in Europe by the epitomes of the world's medical knowledge, Jahrbücher, Handbücher, etc. Their use is simply incalculable. Your publisher (and also you, since you pronounce his cause just) must yet settle with an outraged profession for refusing to allow the use of the gratuitously given literature over which the profession has unwittingly given you a legal control, and in the only two "reputable" and thorough-going attempts to supply this want to English and American medical men.

And I can not see that our just indignation is softened any by the claim that this outrageous action is motivated now on "personal," now on "sound business" reasons. It seems to me that such a claim makes your case all the worse before a professional jury, and that in making such a sorry excuse you confess that you are willing to harm the profession to any degree so that you satisfy some private grudge or financial aim. This is all the more noteworthy coming from a firm that has for many years in similar handbooks made most sweeping and wholesale use of all serial medical literature, not only that given gratuitously to lay publishers by the profession, but whole books and by the dozens. (See Dr. Murrell's letter in *British Medical Journal*, Oct. 11, 1890.)

I had intended not noticing the personal insult leveled at me. Despite your publisher's and your own great solicitude to reduce this controversy to "personalities," "peculiarities," and "sound business reasons" neither of these things has any-

thing whatever to do with the whole matter. If your reasons are honorable, for Heaven's sake out with them! "If not a settled policy" we may be able to find more than nine years of history and two competing publications to prove it. I by no means intend that the principles at issue shall be allowed to be made confused by any such alarms to distract the enemy's attention. In the present instance your contemptible charge that I have no higher motive in this whole matter than to advertise a book of which I am one of 28 editors, and that I allow my publisher to use my editorial utterances purely as his advertising medium, is—well! What may a gentleman say to such an insult? I am perfectly willing to leave such impertinence to be answered by the three publishers with whom I have had close business relations and with the readers of the *Medical News*. Some men, my dear sir, are very prone to ascribe low motives to others, but the reason is proverbially known. Oh, no, the instances are too few, but they exist, of editors who are not the jumping-jacks of their publishers. No publisher could have forced into my editorial columns such an editorial as this of yours under discussion. Mr. Saunders had no hand in the writing of that circular, was not consulted about it, knew nothing about when, or where it was mimeographed, mailed, etc. It was solely and wholly my own work. He has no more knowledge concerning this letter. Instead of all this shameless trying to turn the issue and of all these blank denials, it would be far more to the point if you would explain to your contributors how it is not against their interests to refuse to allow their gratuitously given articles to be abstracted and illustrated in the only two (not in only *one* as you say) earnest attempts that have been made to get up in English something comparable to the immensely serviceable and necessary German Jahrbücher and epitomes of medical progress. Also please explain how it is your action does not prevent the dissemination of medical literature. If it does not do so the necessary inference is that your two journals in your own estimation contain nothing worthy of being thus used in a résumé of medical science and progress! Lastly will you not explain to the sixty-six departmental editors of Dr. Sajous' Annual, and to the twenty-seven gentlemen connected with the American Year-Book in what way these two publications are disreputable, or non-reputable? Are they not quite as reputable as your publisher's similar Handbook, etc., and his pirated whole books of our English colleagues republished without their consent, and sometimes against their command and to their financial loss, as in those instances when other American publishers would have paid them for the right to reprint had it been possible to guard against the American pirate?

I reserve a little clarifying discussion of your publisher's position until a later date. Cordially yours,

GEO. M. GOULD.

119 S. 17th Street.

Medical Ethics.

WICHITA, KAN., Feb. 10, 1897.

To the Editor:—I am informed, I think creditably, that one or more specialists in the west are offering as inducement to the profession for their patronage, to divide fees. In one instance there is a verbal agreement to give 25 per cent. I would like the JOURNAL's opinion of the practice. To me it savors much of bribery, both parties sharing in the guilt, the specialists in large cities, like Chicago for instance offering the profession such inducements.

I might be tempted to do likewise if it was a case of bread and butter, but it seems to me my financial condition must be much straitened before I would even listen to the tempter. Perhaps I am wrong! Perhaps in the struggle for fame and fortune my patronage ought to go to the highest bidder but it seems to me I ought to be influenced entirely in dispensing

patronage by fitness and merit. I do not care to have my name used in print in this connection. I should of course lay myself liable to the charge that I am influenced by jealous motives which is not the case. Should you decide to answer privately or through the medium of the JOURNAL, which I highly prize, I shall be pleased. I am fraternally yours, M.D.

ANSWER: The offering or giving any portion of a fee to one who procures cases for another is the worst possible means of obtaining practice. Both parties are equally guilty of a breach of honorable dealing. Such conduct is on a par with the acceptance by a physician of a percentage from an apothecary to whom he directs his prescriptions to be taken. So patent did this appear to those who framed the Code of Ethics that they did not deem it necessary to insert any clause in regard to it.

W. B. ATKINSON, M.D.

PHILADELPHIA, Feb. 15, 1897.

PUBLIC HEALTH.

Invidious Discrimination Against the Profession in the Proposed Charter of the Greater New York.—Dr. Z. T. Emery, in his capacity of Commissioner of Health of Brooklyn, has addressed a communication to the charter commission regarding an undesirable discrimination proposed to be made against medical men by making it impossible for any one of them, however competent he may be, from becoming the head of the department of health. The text of the section of the now pending charter relating to the organization of the department of health reads as follows:

SECTION 1.—There shall be a health department whereof the head shall be the board of health. Said board shall consist of the president of the board of police, the health officer of the port and two officers to be called commissioners of health, one of whom shall have been a practicing physician for not less than ten years preceding his appointment. The commissioner of health who is not a physician shall be the president of the board and shall be so designated in his appointment. The commissioners of health shall, unless sooner removed, respectively hold their offices for four years, and until their successors shall be respectively appointed and have qualified, except the first commissioners, of whom the president of the board of health shall be appointed for two years, and the other commissioner for four years, and until their successors are respectively appointed and have qualified.

The remarks of Dr. Emery are, in part, as follow: "The first section provides that the head of the health department shall be a board, to consist of the president of the board of police and the health officer of the port and two officers to be called commissioners of health, one of whom shall have been a practicing physician for not less than ten years preceding his appointment. The commissioner of health who is not a physician shall be the president of the board and shall be so designated in his appointment. I desire to make emphatic protest; first, against making the head of the department of health a board composed of four members: and second, against the discrimination which is here made against the members of the medical profession by the provision that under no circumstances shall a physician become the president of such board. It is respectfully submitted to the commission that the head of the department of health should consist of one member, for the reason that in addition to the ordinary routine work of obtaining compliance with the laws and ordinances relating to public health, the duties of the health department consist largely in dealing with the emergencies which continually arise, affecting the welfare and lives of considerable portions of the community, and it is my observation that more prompt and efficient action can be obtained by a health department having a single head. Such emergencies demand immediate decision and action and do not admit of divided opinion and judgment, nor can they wait for a meeting of the board and an adjustment of differences of opinion. Further, I believe that

the head of the health department, being a single head and a commissioner, should be a practicing physician of not less than ten years' standing and should have had experience in sanitary matters. It is the experience of the health department of the city of Brooklyn, which has been presided over for the last sixteen years by a single head, that in legislative matters all of the advantages, to be derived from a multiple headed commission, have been obtained by a single head, having properly chosen advisers and aids, and at the same time, the disadvantages and often discordant opinions of a multiple head have been avoided. If, however, it shall be determined in the wisdom of the commission to advise the establishment of a health department having more than one head, I respectfully suggest that these heads shall consist of men of acknowledged ability and experience in sanitary matters, and I believe the smaller the board the better, and in any case, it should consist of an odd number of commissioners instead of an even number, and one member of this board of three or more should be the health officer of the port. I consider it prejudicial to the best interests of the public health to inject into the constitution of the board of health, as ex-officio members thereof, persons who because of lack of training, knowledge and experience are not sanitarians. Inasmuch as medical men, as a class, by reason of their education and instruction and the necessities which arise in the practice of their profession, are especially trained in sanitary and hygienic matters, and further, because the best known sanitarians in the country belong to the profession, I respectfully urge upon your attention the injustice and unwisdom of discriminating against them as a class by making it a charter provision that the president of the board of health shall not be a member of this profession. With as much propriety a provision might be made that the presiding justice of the court of appeals should not be a lawyer."

The Bacteriologic Aspects of the Oyster Trade.—The Local Government Board of England has issued an important report upon the relations of oyster culture to disease in man. Dr. Klein was detailed to the bacteriologic branch of the research, and has shown that the typhoid bacillus and the cholera vibrio retain their vitality in sea-water and has found the bacillus coli in oysters from dangerous ground, while they were absent from those taken from places free from risk of sewage contamination. Further, he has recovered the typhoid bacillus from the mingled body and liquor of oysters from a sewage-laden dock at Great Grimsby. Dr. Klein's study has not been concluded, and Dr. Thorne, in his presentation of the data already obtained, remarks that bacteriology can be trusted to indicate danger, but not safety nor purity; and that beside bacteriology, we must have in regard to the oyster trade information as to the conditions surrounding and affecting the culture and storage of oysters along our coasts. He indicates that the conditions necessary to the inception of disease by an individual arising from the consumption of oysters are numerous, and that they have all to operate in their several places and times to produce the result in man, hence the relative infrequency of disease attributed to molluscs. Again, the oyster seems to have the ability to free itself from its contained organisms in a short time when placed in waters free from contamination. Further, the assimilation of different microbes within the living oyster is rapid, while the typhoid bacillus does not multiply, and Koch's vibrio even tends soon to lose its physiologic properties. As to the local dangerous circumstances attending oyster culture and storage, these admit of remedy. There should be some supervision of beds, ponds and the like, but, on the other hand, storage prior to despatch to market of oysters, in water of unquestioned freedom from sewage pollution, seems to be necessary. Summing up the results so far ascertained, Dr. Thorne says the results of Dr. Klein's investigations which bear more immediately on the culture of oysters would appear to be as follows: 1. The cholera vibrio, and

still more the typhoid bacillus, are difficult of demonstration in sewage known to have received them. 2. Both these organisms may persist in sea-water tanks for two or more weeks, the typhoid bacillus retaining its characteristics unimpaired, whilst the cholera vibrio tends to lose them. 3. Oysters from sources which appeared to be free from risk of sewage contamination exhibited none of the bacteria, specific or otherwise, which are commonly regarded as being concerned with sewage. 4. Oysters from a few out of numerous batches derived from sources where they did appear to be exposed to risk of sewage contamination were found to exhibit colon bacilli, a circumstance which, notwithstanding the comparative universality of this intestinal organism, may be regarded as having some significance by reason of the absence of this bacillus from oysters which appeared to have been exposed to no such risk. 5. In one case where the circumstances were especially suspicious, Eberth's typhoid bacillus was found in the mingled body and liquor of the oyster.

Notice of the Board of Health of the Village of Saranac Lake, N. Y.—

WHEREAS, The expectorated matter discharged by persons having any disease of the air passages (lungs, throat, mouth and nose) usually contains germs capable of communicating the same disease to other persons; therefore be it

Resolved, That the Board of Health of the Village of Saranac Lake does expressly declare that the indiscriminate discharge of such expectorated matter in any place where it may be the means of communicating disease to other persons is a nuisance dangerous to public health, and that this board does hereby adopt the following ordinance concerning expectoration:

Section 1.—All persons who expectorate in consequence of any disease of the air passages (lungs, throat, mouth and nose) are positively forbidden to spit or discharge such expectorated matter upon the floor of any house, store, church, schoolhouse, hall or upon any sidewalk or in any dooryard or other place where such matter may be the means of communicating disease to other persons.

Sec. 2.—Any person who shall violate the first section of this ordinance shall be liable to a penalty not exceeding \$5 for the first offence, nor more than \$25 for a subsequent offence, which penalty shall be imposed by and at the discretion of the board of health.

[I hereby certify that the above is a true copy of a preamble, resolution and ordinance adopted at a regular meeting of the Board of Health of the Village of Saranac Lake, N. Y., held Dec. 12, 1896. F. P. CALKINS, Secretary.]

Public Health Notes.—Owing to an epidemic of measles the schools of Donsman, Wis., have been closed.—An epidemic of measles has broken out in the Deaf, Dumb and Blind Association of Berkley, Cal.—Measles are epidemic in Toledo, Ohio, and certain portions of Chicago.

ASSOCIATION NEWS.

Fiftieth Anniversary of the American Medical Association.

ANNUAL ANNOUNCEMENT.

OFFICE OF THE PERMANENT SECRETARY,
1400 PINE ST., PHILADELPHIA.

The Forty-eighth Annual Session will be held in Philadelphia, Pa., on Tuesday, Wednesday, Thursday and Friday, June 1, 2, 3 and 4, commencing on Tuesday, at 10 A.M.

The delegates shall receive their appointment from permanently organized State medical societies, and such county and district medical societies as are recognized by representation in their respective State societies, and from the medical departments of the Army and Navy and the Marine-Hospital Service of the United States.

Each State, county and district medical society entitled to representation shall have the privilege of sending to the Association one delegate for every ten of its regular resident members, and one for every additional fraction of more than half that number: *Provided*, however, that the number of dele-

¹ There were no meetings held by the Association during the years 1861 and 1862.

gates for any particular State, Territory, county, city or town shall not exceed the ratio of one in ten of the resident physicians who may have signed the Code of Ethics of the Association."

Members by Application.—Members by application shall consist of such members of the State, county and district medical societies entitled to representation in this Association as shall make application in writing to the Treasurer, and accompany said application with a certificate of good standing, signed by the president and secretary of the society of which they are members, and the amount of the annual subscription fee, \$5. They shall have their names upon the roll, and have all the rights and privileges accorded to permanent members, and shall retain their membership upon the same terms.

The following resolution was adopted at the Session of 1888: That in future each delegate or permanent member shall, when he registers, also record the name of the Section, if any, that he will attend, and in which he will cast his vote for Section officers.

Secretaries of medical societies, as above designated, are earnestly requested to forward, at once, lists of their delegates.

Addresses: The Presidential Address, Nicholas Senn, Chicago; Address in Surgery, Wm. W. Keen, Philadelphia; Address in Medicine, Austin Flint, New York; Address in State Medicine, John B. Hamilton, Chicago.

Committee of Arrangements.—H. A. Hare, 222 S. 15th Street, Philadelphia.

AMENDMENTS TO THE CONSTITUTION AND BY-LAWS.

Offered by I. N. LOVE:

Art. IV.—Officers. Amend to read "Each officer shall hold his appointment for one year, and until another is elected to succeed him."

Offered by the EXECUTIVE COMMITTEE:

That there be made an Executive Council of five consisting of the three officers of the Executive Committee and two officers chosen by election. Of this Council of five, one must belong to the Section on Practice of Medicine and one to the Section on Surgery and Anatomy. To this Executive Council shall be delegated all the duties of the Executive Committee during the interval between its meetings.

Offered by H. B. ELLIS:

Art. IX.—Conditions for further representation. "Any State or local medical society, or other organized institution whose rules, regulations and code of ethics agree in principle with those of this Association may be entitled to representation on the advice or agreement of the Judicial Council."

Offered by L. D. BULKLEY:

To change the name of the Section on Dermatology and Syphilography to that of "Cutaneous Medicine and Surgery."

EXTRACTS FROM BY-LAWS.

"The Chairman of each Section shall prepare an address on the recent advancements in the branches belonging to his Section, including suggestions in regard to improvements in methods of work, and present the same to the Section over which he presides, on the first day of the annual meeting. The reading of such address not to occupy more than forty minutes."—By-Laws.

"It shall be the duty of every member of the Association who proposes to present a paper or report to any one of the Sections, to forward either the paper or a title indicative of its contents and length (not to exceed twenty minutes in reading) to the Secretary of said Section, at least one month before the annual meeting at which the paper or report is to be read."—By-Laws.

4.—The Publication of Papers and Reports. "Every paper received by this Association and ordered to be published, and all plates or other means of illustration, shall be considered the exclusive property of the Association, and shall be published and sold for the exclusive benefit of the Association."—By-Laws.

OFFICERS OF SECTIONS.

Practice of Medicine. J. H. Musser, Philadelphia, Chairman; J. T. Priestley, Des Moines, Iowa, Secretary.

Obstetrics and Diseases of Women.—Milo B. Ward, Topeka, Kan., Chairman; Geo. H. Noble, Atlanta, Ga., Secretary.

Surgery and Anatomy. Reginald H. Sayre, New York, Chairman; Bayard Holmes, Chicago, Secretary.

State Medicine.—Elmer Lee, Chicago, Chairman; Louis Faugères Bishop, New York, Secretary.

Ophthalmology.—G. E. de Schweinitz, Philadelphia, Chairman; H. M. Starkey, Chicago, Secretary.

Diseases of Children.—Jas. A. Larrabee, Louisville, Ky., Chairman; H. E. Tuley, Louisville, Ky., Secretary.

Dental and Oral Surgery. R. R. Andrews, Cambridge, Mass., Chairman; Eugene S. Talbot, Chicago, Secretary.

Neurology and Medical Jurisprudence. W. J. Herdman, Ann Arbor, Mich., Chairman; Chas. H. Hughes, St. Louis, Mo., Secretary.

Dermatology and Syphilography.—A. Ravogli, Cincinnati, Ohio, Chairman; T. C. Gilchrist, Baltimore, Md., Secretary.

Laryngology and Otology.—Wm. E. Casselberry, Chicago, Chairman; D. Braden Kyle, Philadelphia, Secretary.

Materia Medica, Pharmacy and Therapeutics.—W. B. Hill, Milwaukee, Wis., Chairman; F. Woodbury, Philadelphia, Secretary.

Physiology and Dietetics.—A. P. Clarke, Cambridge, Mass., Chairman; Ephraim Cutter, New York, Secretary.

Section on Obstetrics and Diseases of Women.—The program for this Section is now being made up, and members are requested to send in the titles of their papers without delay.

GEO. H. NOBLE, Secretary.

Section on Physiology and Dietetics.—Papers for the Section of Physiology and Dietetics, are wanted as follows:

1. Physiology of Air—Ear Hairs as Ultimate Organs of Hearing, with demonstration.
2. Comparative Physiology of Deglutition, specially of Whales.
3. Effects of Odors upon Blood Circulation.
4. Autonomy of Organs, specially of Epithelia.
5. Are there Nerves in Teeth?

Address A. P. CLARKE, Chairman,
825 Massachusetts Ave., Cambridgeport, Mass.

E. CUTTER, Sec., 120 Broadway, New York.

Section on Surgery and Anatomy.—On the evening of the first day of the meeting of the Association in Philadelphia, Tuesday, June 1, the Section on Surgery and Anatomy will have a dinner. The price of tickets has been fixed at Three Dollars (\$3.00) a plate, without wine.

Members of the Association who desire to attend the dinner of this Section will please cut out the accompanying slip, fill it out and mail it to the chairman of the Section, Dr. Reginald H. Sayre, 285 5th Ave., New York. This should be done at once in order that proper arrangements can be made in accordance with the number who will be present.

1897.

Dr. REGINALD H. SAYRE, 285 5th Ave., New York, N. Y.

Dear Sir: I will take . . . ticket for the dinner of the Section on Surgery and Anatomy of the AMERICAN MEDICAL Association in Philadelphia, on Tuesday, June 1, 1897, at Three Dollars each (\$3.00) without wine.

Name

Address

The JOURNAL train will run special from Chicago to Philadelphia.

SOCIETY NEWS.

The New York Neurological Society. The Neurological Society of New York has a committee on legislation consisting of Drs. C. L. Dana, N. Allen Starr, G. W. Jacoby, Joseph Collins and G. M. Hammond, whose duty it will be to secure amendments to the Lunacy Law, that took effect last July. The new law wiped out the old provision for the care of the patient pending the initial inquest after two qualified physicians had given their certificate. The amount of difficulties that have been thrown in the way of certifying medical men the new process being both more expensive and tedious has been such that not a few physicians have found it advisable to commit insane patients to institutions outside of that State, so far as has been possible. In regard to the pauper insane, the new procedure is *ultra*

vires in many cases; they have neither friend nor relative to pray the judge that examination be had, so that that stipulation has been a dead letter, or the task has been thrown upon the city examiners, whose duties do not normally include that work. The New York Society of Medical Jurisprudence has also taken up the subject, in like spirit, and a committee of conference has been ordered to use all proper efforts toward amelioration of the troublesome features of the Act in question. It is expected that the New York county associations will also take part in the movement.

Iowa State Medical Society.—The forty-sixth annual meeting will be held in Marshalltown, May 19 to 21, 1897, one month later than last year, and you are earnestly requested to be present and bring your medical friends.

Chairmen of Sections: Surgery, Dr. R. W. Hill, Davenport. Nervous and Mental Diseases, Dr. E. R. Smith, Toledo. Theory and Practice, Dr. Geo. A. Smith, Clinton. State Medicine, Dr. F. S. Thomas, Council Bluffs. Obstetrics and Gynecology, Dr. J. R. Guthrie, Dubuque. Ophthalmology and Otology, Dr. F. E. Sampson, Creston. Materia Medica and Therapeutics, Dr. H. A. Leipziger, Burlington.

Chairmen of Committees: Finance, Dr. C. S. Chase, Waterloo. Trustees, Dr. Calvin Snook, Fairfield. Arrangements, Dr. H. L. Getz, Marshalltown. Publication, Dr. H. B. Young, Burlington. Ethics, Dr. D. S. Fairchild, Clinton. Legislation, Dr. D. C. Brockman, Ottumwa.

All personal communications, pertaining to Sections or Committees, should be addressed to its chairman.

J. C. SCHRADER, M.D., Pres., Iowa City.
JAMES W. COKEOWER, Sec'y, Des Moines.

Tri-State Medical Society.—The fifth annual meeting of the Tri-State Medical Society of Iowa, Illinois and Missouri, will meet in St. Louis, April 6 to 8, 1897. A large number of valuable papers will be read. Dr. Joseph Price of Philadelphia will hold the surgical clinic, Dr. James T. Whittaker of Cincinnati the medical clinic, and Dr. Dudley Reynolds, ophthalmic clinic. Dr. G. Frank Lydston of Chicago will entertain the members with an original story during one of the evening sessions. The officers are: President, A. H. Cordier, M.D., Rialto Bldg., Kansas City. First Vice-President, Hugh T. Patrick, M.D., Chicago. Second Vice-President, H. C. Eschbach, M.D., Albia, Iowa. Secretary, G. W. Cale, M.D., 4403 Washington Boul., St. Louis. Treasurer, C. S. Chase, M.D., Waterloo, Iowa.

Western Ophthalmological, Otological, Laryngological and Rhinological Association.—The second annual meeting of this Association will be held at St. Louis, Mo., April 8 and 9, 1897. A cordial invitation is extended to the profession. President, Adolf Alt. Vice-Presidents, B. E. Fryer, J. H. Martindale. Treasurer, W. L. Dayton. Secretary, Hal Foster.

The railroads have promised one and one-half fare. When buying tickets ask for a certificate, on reaching St. Louis have it signed by Dr. Alt.

Medical Society of the Missouri Valley.—The next meeting of this Society will be held at Lincoln, Neb., Thursday, March 18, 1897.

DONALD MACRAE, JR., M.D., Sec'y.

Will County (Ill.) Medical Society.—At a regular meeting of this Society held February 11, the following officers were elected: President, F. W. Werener; vice-president, W. B. Stewart; secretary and treasurer, L. J. Frederick.

The Grand Rapids Academy of Medicine has elected officers for the ensuing year as follows: President, Ralph H. Spencer; vice-president, H. W. Catlin; secretary, J. B. Whinnery; treasurer, Earl Bingham.

NECROLOGY.

WILLOUGHBY I. WOOD, M.D., Bellevue Hospital Medical College, 1890, died February 20, in Guilford, N. Y., where he had gone four months ago for his health. He was born in Brooklyn, N. Y., and was mainly educated there, becoming in time the responsible surgeon of the Norwegian Hospital as well as a gynecologist with a promising future. His age was 28 years.

JOHN HAMILTON, M.D., of Allegheny, Pa., died at Pitts' Island, Lake Worth, Florida, February 12. He was born in Ohio in 1827, and had practiced in Allegheny for several years.

WILLIAM J. BLAND, M.D., of Clarksburg, W. Va., February 20. He was born in Kingwood, Va., in 1816, living the most of his life in Weston, and since 1892 in Clarksburg. He was graduated from Jefferson Medical College and the Louisville Medical College and for many years a member of the State

Board of Health. For eight years commencing in 1881, he was superintendent of the West Virginia Hospital for the Insane at Weston. He was surgeon in the Thirty-first West Virginia Infantry and was afterward Chief Surgeon of Wm. L. Jackson's Cavalry Brigade. He at one time represented Lewis County in the Legislature.

DAVID BOYD, M.D., New York, died at his country home in Red Bank, N. J., February 17, aged 74.

EUGENE K. MOTT, M.D., of Chester, Pa., February 22. He was born in Scranton, Pa., in 1842 and was graduated from the Jefferson Medical College in 1868. In 1874 he removed to Chester.

NEW INSTRUMENTS.

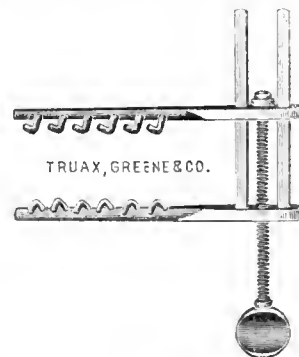
A NEW MASTOID RETRACTOR.

BY FRANK ALLPORT, M.D.

Professor of Clinical Ophthalmology and Otology in the Minnesota State University; ex-President of the Minnesota State Medical Society; ex-Secretary of the Ophthalmological Section of the American Medical Association, etc.

MINNEAPOLIS, MINN.

For some years I have been using my old retractors in mastoid and similar operations, and have been well pleased with them. The only objection noticed has been the fact that, as the incision and bone opening has been growing larger, owing to our improved knowledge and operations, the retractor has at times seemed to me rather small. This difficulty has been obviated by myself and others by using two retractors, one in each extremity of the wound, being careful they do not overlap each other. This arrangement has proven eminently satisfactory, opening as it does a large and bloodless field of operation, and I still feel that in its thorough usefulness it is as good a method as can be adopted. Some operators, however, dislike to use



two retractors; others have repeatedly expressed the opinion that the blades of the retractors should be always parallel to each other, both when closed and open: others have felt that the retractors were not strong enough. To obviate the objections raised by such surgeons, I have devised and had manufactured for me, by Chas. Truax, Green & Co., of Chicago, a retractor, of which a cut is here given. It is very strongly made, nearly three inches in length, and with an expansive limit of two inches, which is large enough for any operation of this nature. It will be noticed that the blades always lie parallel to each other, and that the instrument is small, compactly built and difficult to get out of order.

BOOK NOTICES.

Telepathy and the Subliminal Self. An Account of Recent Investigations Regarding Hypnotism, Automatism, Dreams, Fanaticisms and Related Phenomena. By R. OSCOOD MASON, A.M., M.D. Pages 343. New York: Henry Holden Co., 1897.

Dr. Mason takes very broad ground; we might even say advanced ground in this work, but that it is interesting to all persons interested in psychology goes without saying. Some of the stories told are as interesting as veritable ghost stories usually are, and some of them almost as intangible. He asserts, however, that the following may be considered as established facts (p. 72). "The reality of the hypnotic condition, the increased and unusual power of the hypnotic condition and unusual power of suggestion over the hypnotized subject; (3) the usefulness of hypnotism as a therapeutic agent; (4) the perfect

reality of natural as contrasted with supernatural character of many wonderful phenomena, both physical and psychical, accepted in the hypnotic state. On these subjects" says the author, "much remains for future study. (1) The exact nature of the influence which produced the hypnotic condition is not known. (2) Neither is the nature of the report or peculiar relationship which exists between the hypnotizer and the hypnotized subject; the relationship is sometimes so close that the subject hears no voice but that of his hypnotizer, perceives and experiences the same sensations of taste, touch and feeling generally as are experienced by him and can be awakened only by him. (3) Nor is it known by what peculiar process suggestion is rendered so potent, turning for the time being, at least, water into wine, vulgar weeds into the choicest flowers, a lady's drawing room into a fish pond, clear skies and quiet waters into latent storm clouds and tempest tossed waves, turning laughter into sadness and tears into mirth" (page 26). The author insists on the reality of thought transference to a limited degree, and like Charcot he accepts certain of the claims made by those who deeply investigated this branch of science, but he admits that there is yet very much to learn in the domain of psychology. While few in our profession are at present prepared to accept all of the theories of Dr. Mason and his school in regard to these matters, or even to accept as conclusively established the fundamental principles of "thought transference" and "suggestion," all must admit as Shakespeare long ago pointed out and aptly quoted by Charcot: "There are more things in heaven and earth, Horatio, than are dreamt of in your philosophy."

Dr. Mason tells some curious stories which are almost past belief. One in particular about a young woman, who "although she had never seen that kind of work done, and had not the slightest idea how to mix colors to produce the desired tints, nor how to apply them to produce desired effects, yet at a single sitting in a darkened room, she produced a head of singular strength and character, possessing at least some artistic merit." The reproduction which appears as a frontispiece to Dr. Mason's volume gives an idea of its character. The author concludes by saying that, "in gathering up the results of these investigations it must be said that in showing the relations of science there is no thought of any detractor from the nobility and greatness of the scientific achievement in the material world. That is grand almost beyond estimation. The attitude of science is conservative and it is right, but sooner or later it must awake to the fact that here is a new field for investigation which comes strikingly within the limits of its labors and even within its methods. Many individual members of the great body of scientific workers see and know this; gradually the majority will see it."

Genito-Urinary Diseases and Venereal Diseases. By J. Wm. WHITE, M.D., and EDWARD MARTIN, M.D. Illustrated. Philadelphia: J. B. Lippincott Co., 1897.

This work of 1,061 beautifully printed pages, and profusely illustrated, brings the subject of genito-urinary diseases down to date, even to the intangible shadowgraph of renal calculus *in situ*. Nothing is omitted which is necessary for a proper understanding of the subject. The practitioner and student will find their wants intelligently understood and a faithful attempt made to supply them. The Chapters on Tumors of the Bladder, Diseases and Injuries of the Ureters, and Injuries and Diseases of the Kidneys will be found especially entertaining and instructive. The general surgeon, as a rule, will not agree with the author when in speaking of the treatment of enlarged prostate, page 991, he says, "Castration for prostatic hypertrophy, first advocated (White) in 1893, has since been performed in hundreds of cases and with results which establishes it as the safest and most radical curative operation yet proposed." We do not believe that this operation will ever become popular for surgeons, as the public at least have some rights in

the premises. Moreover, it is liable to such abuses as almost to prohibit the operation. The medico-legal standpoint alone affords a strong obstacle. Furthermore, the operation is not harmless, as cases are on record where the operation has been performed while the patient was suffering from septicemia, and had lost the power of resistance to shock, causing a fatal result and mistakes in diagnosis are not so infrequent as to make it a matter of indifference. An instance is known to the writer where a patient, sent into a hospital for the performance of this operation, for supposed enlarged prostate, was found to have stone in the bladder, and it must be remembered that castration is not here proposed for experts in diagnosis alone, but for all practitioners. Inconceivable and numberless would be the damage suitably to follow the indiscriminate application of White's remedy. Moreover, castration has not yet been shown to have any advantage over section of the vas deferens with ligature of the spermatic artery, as it must be obvious that natural atrophy of the testicle has less constitutional effect on the patient than its entire removal. The book is, however, a very valuable addition to the subject of genito-urinary and venereal diseases.

Annual of the Universal Medical Sciences and Analytical Index. A Yearly Report of the Progress of the General Sanitary Sciences throughout the World. Edited by CHARLES E. SAJOTS, M.D., Paris, and seventy associate editors, assisted by over two hundred corresponding editors and correspondents. Illustrated, five volumes. 1896. The F. A. Davis Co., publishers, Philadelphia and New York and Chicago (Lakeside Building).

In the elaboration of the 1896 Annual the aim of the editor, he says, "has been to add to the practical value possessed by former issues." The value of a book of this kind lies largely in the index, and the extra care with which its analytical index has been prepared makes it of very much more value. The illustrations are more copious than ever and we doubt not the Annual will be correspondingly more popular. It certainly deserves to be. The publishers have spared no pains or expense to make the work what it should be.

Pictorial Atlas of Skin Diseases and Syphilitic Affections. Photo-lithochromes from Models in the Museum, St. Louis Hospital, Paris. With explanatory woodcuts. By ERNEST BERNIER, A. FOURNIER, TENNESON, HALLOPEAU, DUCASTEL, FEULARD, JACQUET. Edited and annotated by J. J. PRINGLE. London: Rebman Publishing Co. Philadelphia: W. B. Saunders. 1896. Part I.

The illustrations and text in this number relate to the lesions in the habitual cocain-morphin consumer, by Gaston; Ringworm of the body; syphilitic hyperkeratosis; psoriasis figurata. The plates in this number have been executed with the same care and skill that made its predecessors such accurate and truthful representatives of the great St. Louis Hospital. Fortunate, indeed, will be the general practitioner and dermatologist who has in his possession a copy of this magnificent series, for it brings to his library a faithful reproduction of the typical models of the great hospital.

A System of Medicine. Edited by THOMAS CLIFFORD ALLBUTT and W. S. PLAYFAIR. Volume II, Gynecology. Pages, 973. New York and London: Macmillan Co., 1896. Price of the book singular, \$6; that of system, \$5, cloth; leather \$7 and \$8 respectively.

The editor of this System of Medicine has returned to the plan adopted in the earlier treatises, including the treatment of diseases of women in this system, and as this department of medicine has grown so large it is found to occupy an entire volume. The contributors to the volume are eminent English gynecologists and include, J. Wm. Ballantyne, A. H. Freeland Barbour, John Halliday Croom, Alban Doran, W. S. A. Griffith, F. W. N. Haultin, Handfield Jones, Henry Morris, John Phillips, Wm. O. Priestly, Alexander R. Simpson, J. Grieg Smith, John B. Sutton, W. Balls-Headly, Robert Boxall, Chas. J. Cullingworth, Henry Gervis, D. Berry Hart, George E. Herman, Edward Malins, Robert Milne Murray, W. S.

Playfair, Amand Routh, W. J. Sinclair, Wm. J. Smyly, J. Knowsley Thornton.

The volume opens with an interesting historical chapter on the Development of Modern Gynecology by Handfield Jones, and it is followed systematically by anatomy, malformations and diseases of the female generative organs; then follow chapters on sterility, gynecologic therapeutics, pelvic diseases and diseases of the uterus proper, and concludes with a chapter on diseases of the bladder and urethra. The work is well written, quite up to date, and will be found a useful and safe guide to the practice of this branch of the art.

Deutsch's Letters. A practical Method for easy and thorough Self-instruction in the German Language. By SOLOMON DEUTSCH, Ph.D. Second and revised edition, New York, 1896. Price \$2. (We are informed by personal letter that the publisher is now J. H. Vail & Co. instead of Brentano, which appears on the title page.)

The second edition differs from the first edition in having appended to it the key to the German exercises, and it is believed that this edition will enable the sincere learner to fairly accomplish a translating knowledge of the language without a teacher from the mere study of the book, although there is no question but anyone who wishes to speak any language with accuracy and precision must in addition use a colloquial method. We commend the book as being one of the best of its kind.

MISCELLANY.

Tests of Crede's Silver Gauze and Salts as Antiseptics.—The *Cbl. f. Chir.* of January 23 contains the reports of three scientists who have been experimenting with silver to determine its value in antiseptics. The results fail to confirm Crede's experiences. Zajontschowsky states that the gauze is not sterile; that it does prevent the development of bacteria to a limited extent, but is not bactericidal at all, and that much of the effect Crede ascribes to it is due to the absorptive power of the gauze, whether impregnated with silver or not. Iodoform gauze kept in sublimate solution, 1 to 2,000, as is used in his service, is more effective than the silver gauze. Meyer of Zurich also states that in his numerous and careful tests the staph. pyog. aur. were destroyed in an iodoform solution (1 to 4,000) only after forty-five minutes, and in an actol solution (1 to 2,000) after thirty minutes. Albumin in the silver salt solution retards the bactericidal effect. Anthrax spores were still growing after five to seven days in a saturated iodoform solution and after three days in an actol solution (1 to 1,000). Silver salts added to the bouillon prevented the development of staph. and pyoc., but anthrax spores continued to grow in serum to which actol had been added (1 to 10,000). In regard to their effect in preventing the development of bacteria in albuminous media, silver salts approach very closely to sublimate, but in aqueous solutions, sublimate is a far more powerful antiseptic than the former. Other tests by Brunner show that the effect of the silver is more decided and rapid as the bacteria are less virulent.

Remarkable Case of Foreign Bodies in the Stomach; Gastrotomy and Prompt Recovery.—The *Deutsche med. Woch.* of January 21 contains an illustrated description of thirty-seven articles removed by Fricker of Odessa from the stomach of a young woman who had swallowed them in an attempt to commit suicide in an attack of nervous melancholia. They weighed in all 261.85 grams, and included a door key, a silver teaspoon, a plated spoon, a fork (20.5 cm. long), two pieces of wire, two hairpins, twelve pieces of window-pane glass, one window hook, one steel pin, nine sewing needles, one crochet needle, which had perforated the wall of the stomach, beside some buttons, etc. The patient had complained of pains and vomited, but as palpation did not disclose the presence of the foreign bodies that she asserted she had swallowed, her statements were not credited at first. Fricker tabulates the most remarkable cases of the kind on record, including one from the *JOURNAL*. One article was found alone in all but three of the fifty-three cases. In six cases a set of false teeth had been swallowed, a fork in fourteen, a knife in ten, a spoon in seven. Most of the larger

articles were taken from "professional swallowers." In one case three closed pocket-knives were removed and the man afterward swallowed two more, which passed out *per anum*. The fatal cases were those in which a Japanese tooth brush, a razor, an instrument and a set of teeth had been swallowed, also the case of an insane man who had swallowed nearly two pounds of nails. A 10-year-old child recovered after having swallowed forty-two nails, ninety-three brass and tin pegs, twelve large nails, one safety pin, one needle and three shirt buttons. The proportion of recoveries in the fifty-three cases is 81.4 per cent. and deaths 18.6 per cent.

Taxing Private Clinics in Germany.—The *Deutsche med. Woch.* in its issue of January 21, protests vigorously against the new regulations which impose a tax on the private hospitals conducted by physicians. It is not ambition nor the hope of pecuniary rewards that causes physicians to start a private establishment for their patients, but pure love of science and the desire to perfect their knowledge and skill in their special branch. To class such establishments with ordinary boarding houses and hotels, is manifestly unjust. The physician will be inclined to relinquish the management and responsibility of his clinic to non-professionals, to escape the tax, which creates an invidious distinction between him and his colleagues, and the establishment will suffer, while science and the healing art will retrograde. The increase in the private hospitals in Berlin in the last few years has been remarkable:

| Year | Public Hospitals. | Beds. | Patients. | Private Hospitals. | Beds. | Patients. |
|----------------|-------------------|-------|-----------|--------------------|-------|-----------|
| 1879 | 13 | 4,100 | 39,800 | 2 ¹ | 36 | 159 |
| 1885 | 14 | 5,130 | 49,000 | 5 ¹ | 124 | 1,260 |
| 1888 | 15 | 5,500 | 53,000 | 19 | 360 | 2,529 |
| 1891 | 18 | 6,700 | 62,000 | 29 ¹ | 623 | 5,907 |
| 1894 | 18 | 6,570 | 68,000 | 40 ¹ | 808 | 7,983 |
| 1895 | | | 86,000 | | | 10,000 |

THE PUBLIC SERVICES.

Army Changes. Official List of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from Feb. 20 to Feb. 26, 1897.

First Lieut. Robert S. Woodson, Asst. Surgeon (Jackson Bks., La.), is granted leave of absence for two months, to take effect on or about March 5, 1897.

Navy Changes. Changes in the Medical Corps of the U. S. Navy for the week ending Feb. 27, 1897.

P. A. Surgeon G. T. Smith, detached from the "Adams" on reporting of his relief about March 2, ordered home and granted two months' leave.

P. A. Surgeon L. H. Stone, detached from the naval hospital, New York, March 15, and ordered to the "Adams."

Surgeon G. P. Bradley, detached from the "Indiana" March 3, ordered home and placed on waiting orders.

Surgeon N. McP. Ferebee, ordered to the "Indiana" March 3.

P. A. Surgeon W. F. Arnold, ordered as a member of the medical examining board, League Island navy yard.

P. A. Surgeon L. W. Atlee, detached as member of the medical examining board, League Island navy yard.

Change of Address.

Bailhache, P. H., from Stapleton, N. Y. to 1819 to M Street, N. W. Washington, D. C.; Billig, A., from 4914 S. Ashland Ave., to 360 E 42d Street, Chicago, Ill.; Bourns, F. S., from Grand Opera House to 78 Marietta Street, Atlanta, Ga.

Forrester, Jos., from Butler to 512 W. 4th Street, Erie, Pa.

Johnson, E. F., from 523 Locust to 504 Walnut Street, Chicago, Ill.

Kilbride T. F., from Ayshire, Iowa, to Emmetsburg, Iowa.

Stoner, Geo. W., U. S. M.-H. S., from Baltimore, Md., to Stapleton, L. I., N. Y.

LETTERS RECEIVED.

Alexander, L. C., (Miss) (2) Philadelphia, Pa.

Beavis, Arthur, Denver, Colo.; Bailey W. G., Pekin, Ill.; Benedict, A. L., Buffalo, N. Y.

Clarke, Augustus P., Cambridge, Mass.

Dolber-Goodale Co., Boston, Mass.

Furay, C. E., Chadron, Neb.; Fuller & Wheeler, Albany, N. Y.

Garber, J. B., Dunkirk, Ind.; Goble, E. P., Woodstock, Vt.

Hulzinga, A. G., Chicago, Ill.

Johnson, J. V., Sheboygan, Wis.

Kellogg, C. S., New Orleans, La.

Long Island Bottling Co., Brooklyn, N. Y.; Leszynsky, W. M., New York, N. Y.; Lutz, J. C., St. Louis, Mo.; Levin, W., New York, N. Y.

Milbury, F. S., Brooklyn, N. Y.; Mills, Harry B., Philadelphia, Pa.; Montgomery, E. E., Philadelphia, Pa.; McKie, Thos. J., Woodlawn, S. C.

Newman, Henry P., Chicago, Ill.

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¹ Not in the hands of a physician.

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ADDRESS.

THE SOCIAL EVIL—SHOULD IT BE REGULATED? CAN IT BE EXTERMINATED?

Read before the Contemporary Club, Davenport, Iowa, Dec. 17, 1896.

BY W. L. ALLEN, M.D.

DAVENPORT, IOWA.

The subject for this evening's discussion is one entered into with considerable hesitation. The more the subject is studied the greater and more difficult does the question become. Philanthropists and moralists are in favor of an aggressive war of extermination. City and government officials favor, as a rule, some sort of regulation; physicians are found on both sides of the controversy. That the subject is one of most vital importance, one which threatens our very existence as a healthy race, is evidenced by the fact that it has stamped nearly three millions of the people of these United States with syphilis. That the subject is of enough economic importance for the best thought of our legislative bodies is evidenced by the statement that the men in our cities pay to prostitutes \$300,000,000 annually. This statement alone would seem of almost enough importance to cause the mathematic American to stop and call for an investigation; but there are other results far more disastrous. In order to present the different points of view of those who have opinions on this evil, it will be necessary to subdivide the matter into the following: 1. Causes; 2. Effects, *a*, destruction of morals; *b*, production of disease; *c*, production of degenerates; *d*, financial waste. 3. Remedies, *a*, regulation and taxation; *b*, prohibition.

CAUSES.

Fortunately, or perhaps unfortunately, there is little difference of opinion as to the causes of prostitution; the natural passion and inherent depravity of men and jealousy and love of dress and display, or poverty and desertion of women. Dr. Sanger in his work on prostitution, from which I shall quote quite extensively, says: "No nation has ever held its women generally in common. Still there appears to have been in every age men who did not avail themselves of the marriage covenant or who could not be bound by its stipulations, and their appetite created a demand for illegitimate pleasure which female weakness supplied." This vice which has existed and even flourished for 3,700 years or more has so fastened itself upon our own race that it might not be far out of the way to say that we have inherited it. A short sketch of its history will substantiate this. In the eighteenth century, B. C., we find the first authentic record of prostitution, when Judah, finding his daughter-in-law, Tamar, sitting in an open place with her face covered, mistook her for a harlot; for his pleasure she demanded a kid, which he promised,

leaving his ring and bracelet as pledges (Gen. xxxviii). For several centuries prostitutes were allowed outside of Jerusalem and other cities, but were excluded from the cities themselves until the reign of Solomon, who was the first to open the gates of Jerusalem to them, after which time they multiplied so fast as almost to overrun the city. The Jews, while placing the severest penalties to prevent prostitutes among their race, did not attempt to prohibit the use of foreign prostitutes. I quote: "The city of Nancratis owed its wealth and fame to the beauty of its courtesans, whose reputation spread throughout Europe, and was much celebrated in Greece. Rhadopis led the life of a courtesan in Egypt with such success that she (if the stories of the Egyptians are to be believed) built a pyramid with her savings." "In Chaldaea, religion first connived at and then commanded prostitution. Every Babylonian female was obliged by law to prostitute herself once in her life in the temple of the Chaldaean Venus, whose name was Mylitta. Herodotus claims to have seen the park and grounds in which this singular sacrifice was made. They were constantly filled with women, with strings bound round their hair. Once inside the place no woman could leave it until she had paid her debt and deposited on the altar of the goddess the fee received from her lover. Some who were plain remained there as long as three years, but the young, the beautiful, the high-born seldom needed to remain over a few minutes." Among the Greeks this class of women seemed to be less degraded, and were often held in high esteem personally by the great poets and orators. "The Hetairæ were by far the most important class of women in Greece. They filled so large a place in society that the virtuous females were entirely thrown in the shade and it must have been quite possible for a chaste Athenian girl endowed with ambition, to look up to them and covet their splendid infamy. An Athenian matron was expected to live at home, she was not allowed to be present at the games or the theater. A Milesian prostitute named Thargelia accompanied Xerxes on his invasion of Greece. Some idea may be formed of the position in society occupied by prostitutes from the fact that Xerxes employed this woman as negotiator with the court of Thessaly. Fired by her success, another Milesian girl named Aspasia established herself at Athens. She set up a house of prostitution and peopled it with the most lovely girls of the Ionic cities. But wherein she differed from rivals and predecessors was the prominence she gave to intellect in her establishment. She lectured publicly among her girls and their visitors, on rhetoric and philosophy and with such marked ability that she counted among her patrons and lovers the first men of Greece, including Socrates, Alcibiades and Pericles."

At Corinth the first-class hetairæ charged as high as a talent (\$1,000) for a single night, while in the

temple of Venus a thousand young women (slaves) were kept, who were obliged to prostitute themselves for a single obolus (3 cents).

In Rome prostitution was licensed and taxed, and for a few centuries, by the will of the people, kept in check; but among the emperors themselves were almost the worst examples of debauchery found in history. "Caligula, who made some changes in the tax levied on prostitutes and established a brothel in the palace, commenced life by debauching his sister and ended it by giving grand dinners during which he would remove from the room any lady he pleased, and after spending a few minutes with her in private, return and give an account of the interview for the amusement of the company. Nero surpassed his predecessor in recklessness. He was a habitual frequenter of houses of prostitution. He dined in public at the great circus among a crowd of prostitutes. He founded, on the shore of the Gulf of Naples, houses of prostitution and filled them with females. Commodus converted the palace into a brothel. He kept in his pay 300 girls of great beauty and as many youths, and revived his dull senses by the sights of pleasures he could no longer share. Like Nero, he violated his own sister." Thus did the Roman emperors, with scarcely an exception, set examples of depravity which were, although perhaps to a lesser degree, followed by the rulers of Europe and England down to the present century. Henry VIII. and Francis I. were quite as bad as any monarchs in history. History for the past 1,500 years has enough of just such examples to show the extent to which this vice prevailed. With such examples among the rulers, what improvement could be expected among the lower classes?

Actual want seems to be responsible for a large increase in prostitution. Thousands of poor women work in large cities for less than \$2 a week, on which they must live, feed, clothe, house and warm themselves and support others. The wages received by 2,000 women in New York prior to becoming prostitutes were as follows:

| | |
|---------------------------------|---------|
| 534 received, per week. | \$ 1.00 |
| 336 received, per week. | 2.00 |
| 230 received, per week. | 3.00 |
| 127 received, per week. | 4.00 |
| 68 received, per week. | 5.00 |
| 8 received, per week. | 7.00 |
| 5 received, per week. | 8.00 |
| 1 received, per week. | 20.00 |
| 1 received, per week. | 50.00 |
| 663 unknown. | |

Five thousand one hundred and eighty-three prostitutes in Paris gave as the cause of their becoming such the following reasons.

| | |
|--|-------|
| Expulsion from home or desertion by parents . . . | 1,255 |
| Desire to support old or infirm parents . . . | 37 |
| Desire to support younger brother and sisters . . | 29 |
| Widows with children to support. | 23 |
| Girls from the country to support themselves. . . | 280 |
| Girls from the country brought by soldiers and students. | 404 |
| Servants seduced by master and abandoned. . . | 289 |
| Concubines abandoned by their lovers. | 1,425 |

In New York 2,000 women gave as the cause of their fall:

| | |
|--|-----|
| Inclination | 513 |
| Destitution. | 525 |
| Seduced and abandoned. | 258 |
| Drink. | 181 |
| Ill treatment by parents or husbands | 164 |
| As an easy life. | 124 |
| Bad company | 84 |

| | |
|---|----|
| Persuaded by prostitutes. | 71 |
| Laziness. | 29 |
| Violated. | 27 |
| Seduced on emigrant ship. | 16 |
| Seduced in emigrant boarding house. | 8 |

Two thousand of these women in New York give as their former occupation:

Artist, 1; school teacher, 3; boxmaker, 5; nurse, 1; fruit vender, 4; tobacco packer, 7; music store clerk, 8; shoe binder, 16; milliner, 59; attending school, 8; vest maker, 21; tailoress, 105; embroidery worker, 8; cap maker, 24; dress maker, 121; fur sewer, 8; book folder, 27; servants, 933; hat trimmer, 8; factory girls, 37; lived with parents or friends, 499; umbrella maker, 8; housekeeper, 39; flower maker, 9.

Thus over one-fourth were poor girls working at sewing or in shops where wages were a mere pittance. One-half were servants or housekeepers, employments of peculiar temptation either through the masters or boarders and guests. It was stated that in Rome in the early days nearly all servants were available for purposes of prostitution, and at the present time many large cities are reported to be little better. The large tenement houses where numbers of both sexes sleep in the same room is another frequent cause of prostitution. The report of the 2,000 girls in regard to education is another important item: 714 could read and write well, 546 could read and write imperfectly, 219 could read only, 521 totally uneducated. Of 3,103 prostitutes in London 1,773 could neither read nor write, 93 could read and write well, 1,237 could read and write imperfectly.

"M. M., a widow with one child, earned \$1.50 a week as a tailoress. S. F., a widow with three children, earned \$2 weekly at cap-making, but could not get steady employment even at those prices. M. F., a shirt-maker, earned \$1 a week. M. G. struggled hard with the world before she became a prostitute, sleeping at station houses at night and living on bread and water during the day. The chief of police in that district said he had known of fifty cases similar to her's and who are now prostitutes." Nine-tenths of the children sent out from workhouses (in England) to do day work are eventually seduced and become prostitutes. Employment of young children in factories is another cause of great evil. Three hospitals in London reported that in eight years they had received 2,700 cases of venereal diseases in young children between the ages of 11 and 16. Obscene literature is another means by which the young are corrupted. One society in London destroyed in less than three years 13,000 books and prints.

EFFECTS.

a. Destruction of morals.—Young men once accustomed to indulgence in prostitution become morally dull; adultery seems an unimportant matter to them either as single or as married men; these liberal views later in life often affect their wives and adultery increases enormously. This latter evil has increased to such an extent in this country that it has been recently stated that there are 250,000 adulterous people in New York city, exclusive of the 40,000 prostitutes and their customers. On the continent poverty is a bar to the marriage contract, and as a result prostitution has been made easily obtainable and illegitimate children fill the lying-in-hospitals and foundling asylums. In France the decreased birth rate is calling forth the most serious legislative consideration.

This country has been praised as the land of small homes, and these small homes and home life must be made the means for most of the moral training and

education. What then is to become of us if nearly half of our population, while avoiding prostitution, practice adultery? Early marriages are not as common as formerly and abortion and infanticide are increasing to an alarming extent. The corrupt life of the Romans was largely responsible for the fall of the Roman empire!

b. A production of disease.—Syphilis was for many years wrongfully charged to our American Indians, who, it was claimed, infected the sailors of Columbus and the explorers. For many years it was the custom in France to whip patients with venereal disease, although prostitution was at the same time fostered in many ways. Today we have to deal with the fact that there are between 2,500,000 and 3,500,000 syphilitic people in this country. Specialists claim that 80 per cent. of the men in our large cities have venereal disease. That much of this is spread by clandestine prostitution and not wholly by regular prostitutes is a point of much importance. A girl of 14 years of age infected eleven men and boys living under the same roof in one of the crowded tenements of the poor.

The reports of the British army show a startling state of affairs: In 1866 what is known as the "Contagious Disease Act" was passed. Under this and subsequent acts "réglementation" was adopted for the entire army. In the army stationed in China there were 445 cases of venereal diseases for every 1,000 men. In other divisions the amount of disease varied from 49 to 500 per 1,000 men. The commanding officer was ordered in 1886 to "see that sufficiently numerous and sufficiently attractive prostitutes were provided for every cantonment in India, and that the quarters in which the women were lodged were sufficiently comfortable and attractive to satisfy the demands of both the women and the men." The increase of disease proportionate to the number of women allowed is of especial importance, as will be shown in the following report:

| | | Number of men to one prostitute. | Number cases of diseases per 1,000 men. |
|------------------------|---|-------------------------------------|---|
| Number of stations . . | 4 | 16.5 | 170 |
| Number of stations . . | 3 | 9.9 | 263 |
| Number of stations . . | 4 | 7.25 | 402 |
| Number of stations . . | 3 | 3.9 | 546 |

From this it appears that the more women the greater the indulgence and the more opportunity for the spread of disease.

c. Production of degeneration.—Tarnowsky, in a recent work, claimed that there are deformities and anomalies of the head, face and ears in 42 per cent. and defective teeth in 54 per cent. of the prostitutes. In addition to this physical degeneration their psychic degeneration is shown in feebleness of intellect, depraved taste and absence of moral sense. Their life is extremely short, the average life of a courtesan being placed at five years. In Paris 17½ per cent. of the prostitutes had lived as such ten years, and only 6¾ per cent. of the prostitutes had lived as such seventeen years; in New York, 3¾ per cent. of the prostitutes had lived as such ten years, and only 2¾ per cent. of the prostitutes had lived as such seventeen years.

d. Financial waste.—The extravagance of Americans is notorious. Mr. Powell estimates that there are more than 40,000 prostitutes in New York city, whose average earnings are more than \$20 a week; in addition to this 62 per cent. more is expended for

liquor in the brothels. This would make the modest sum of \$65,000,000 the annual expenditure of the men in New York city on this vice; and if a similar proportion of expenditure be carried out in the cities of the United States the total would be about three hundred million dollars.

REMEDIES.

a. Regulation and taxation (license).—Prostitution has been licensed in the older countries for many centuries. In Rome the licensed prostitutes were compelled to wear a certain uniform and to dye their hair blue or yellow; they were allowed to charge a certain fee, which they could collect by process of law. The unregistered women, however, although under severe legal penalties, continued to exist and multiply in the same walks of life as in the present generation. For example, "the delicate, corresponding to the kept woman, whose charms enabled them to exact large sums from their visitors; the famous, who belonged to respectable families and took to evil courses through lust or avarice; alicariae, or bakers' girls, who sold small cakes for sacrifice to Venus or Priapus in the form of the male or female organ of generation; the copae, servant girls at inns and taverns, who were invariably prostitutes.

"The woman desirous of becoming a prostitute (licensed) presented herself before the public officer, giving her age, place of birth and real name together with the one she assumed: if she was young and apparently respectable the officer did his best to combat her resolution. Failing in this, he issued her a license, ascertaining the sum she was to demand from her customers, and entered her name on his roll." It was the duty of the "aedile" to arrest and drive out of the city all the loose prostitutes, but this regulation was practically unenforced.

In France, during the sixteenth century, many cities legalized and taxed prostitution to an extensive degree. The public house of Toulouse, for example, "was established by royal charter, which declared that the profits of the enterprise should be shared equally by the city and the university. The building appropriated for the purpose was large and commodious, bearing the name of the 'Grand Abbaye.' In it were lodged not only the resident prostitutes of the city, but any loose women who traveled that way and desired to exercise their impure calling. It would appear that they received a salary from the city and that the fees exacted from the customer were divided between the two public bodies to which the enterprise was granted. They were obliged to wear white scarfs and white ribbons or cords on one of their arms as a badge of their calling. When the unfortunate Charles VI. visited Toulouse the prostitutes of the Abbaye met him in a body and presented an address. The king received them graciously and promised to grant them whatever largess they should request. They begged to be released from the duty of wearing the white badges, and the king, faithful to his promise, granted the boon. A royal declaration specially exempted them from the old rule. But the people of Toulouse, no doubt irritated by the want of some distinguishing mark between their wives and daughters and the 'foolish women,' by common consent mobbed the prostitutes who availed themselves of the king's ordinance. None of them could venture to appear in public without being liable to insult, and even bodily injury. Resolutely bent on carrying their point, the women shut themselves up in the Abbaye and did

their best to keep customers at a distance. Their calculation was just; the city and the university soon felt the effects of the diminution of visitors at the Abbaye. The corporation appealed to the king and when Charles VII. visited Toulouse, a formal petition was presented to him by the capitones, praying that he would take such steps as to his wisdom might seem fit, to mediate between the prostitutes and the people and restore to the Abbaye its former prosperity. The king acted with energy; he denounced the assailants of the prostitutes and planted his own royal *fleur de lis* over the door of the Abbaye as a protection to the occupants. This was without effect, for the assaults on the Abbaye became more numerous than ever. The civic authorities proving incompetent to check the disorder, the prostitutes found themselves compelled to seek refuge in a new part of the city. For many years they inhabited their new domicile in peace and quiet. The university then dislodging them in order to occupy the spot, the city built them a new Abbaye beyond the precincts of the respectable wards. It was called the 'Château Vert,' and its fame and profits equaled that of the old Abbaye. About the middle of the sixteenth century the city yielded to the scruples of the moralists and ceded the revenues of the Château Vert to the hospitals, but the grant being made on condition that the hospitals should receive and cure all females attacked by venereal disease, it was found after six years' trial, that it cost more than it yielded. The hospital surrendered the Château to the city." After discussions lasting several years, the city adopted the policy of suppressing prostitution altogether and closed the "Château Vert." (Sanger's Report.)

During the present century the plans for regulation and license have attempted to accomplish the following objects:

1. Registration, in order to discover and control the graduated prostitutes and prevent such novices as can be saved from becoming prostitutes.
2. Inspection and examination once or twice a week, to prevent, if possible, the spread of venereal disease.
3. Police regulation to prevent liquor and gambling being indulged in about the resorts and to maintain order.
4. Taxation or fines to defray city expenditures and to pay hospitals for a part of the cost of treating the prostitutes suffering with venereal disease.
5. To prevent the use of houses of assignation unless registered or controlled by means of resident prostitutes, who may aid the police in detecting clandestine or unregistered prostitutes.

Such systems have been very thoroughly carried on in Belgium, Germany and France, with favorable results so far as the licensed prostitutes are concerned, but with an increase in illegitimacy and with uncertain results as to the total amount of venereal disease. Réglementation as adopted by the continental armies and the British army, has been the cause of much discussion, leading to its abolishment by the English in 1886. In the valuable report of Dr. Nevin, made in September of this year, it is stated and proven that syphilis has decreased since the abolition of the C. D. Acts, and Dr. Nevin claims "that réglementation has failed to prove that it has either prevented or diminished venereal diseases." Professor Mounier of Utrecht, an authority of high standing, after a careful analysis of the Dutch statistics, says: "The study of

the propagation of venereal and syphilitic diseases in the garrison of the Low Countries from 1850 to 1886 inclusive, made by the purely statistical method, does not permit me to put forward a conclusion either for or against the réglementation of prostitution."

In Hamburg the regulations are similar to those of Paris, with several additional restrictions; for example: 1, female servants or relatives of the keeper, if under 25 years of age, are excluded from the brothels; 2, no prostitute is allowed to retain children either her own or otherwise, over 10 years of age; 3, young people under 20 years of age are not allowed to enter a brothel; 4, no gaming nor liquor selling allowed in brothels; 5, no assignation houses allowed unless inscribed and having as a resident an inscribed prostitute; and only registered girls are allowed to use such houses.

Under the regulation system and medical care venereal diseases were found in less than 4 per cent. of the registered women, and furthermore such cases of syphilis as occurred were light and more easily eradicated than is usually the case. On the other hand Hamburg seems to have been one of the few cities in which procuresses were recognized and in a measure authorized by the police authorities.

Vienna has, during the last three years, adopted a system which, while including the best features of the former regulation, excludes all brothels and compels these women to live in private apartments. This change has been highly spoken of. It is absurd for us to attack the immorality of the old world while we permit the spectacular exhibits, such as are to be seen in the prostitute alleys in San Francisco, Denver and New York and which are permitted as a part of the regulations.

In St. Louis, Cleveland, New York, Omaha and Davenport a system of police toleration on the payment of specific fines, and after submitting the women to medical examination, has been adopted. In St. Louis license was tried for five years, the State legislature having amended that city's charter for that purpose. Syphilis is said to have increased among the licensed women from 3.75 per cent. before adoption to 6 per cent. at the end of the five years. Such results are misleading unless it is shown what care was taken in the medical examination and in the subsequent quarantine procedures.

In this city there have been between forty-two and sixty-four prostitutes inscribed for toleration. The medical examiners report an improvement in personal cleanliness and in general sanitary regulations, and a slight decrease in venereal diseases, although the reports will still show about 6 per cent. of syphilis and 12 per cent. of gonorrheal infection among the inscribed. These examiners deplore the fact that, 1, infected women are not quarantined and sent to hospitals; 2, that no measures are taken to prevent young men and boys from visiting these places; 3, that there seems to be no way to prevent clandestine prostitution, which is on the increase.

In March of this year (1896) the people of Geneva, Switzerland, declared by a vote of 8,300 against 4,068 that the government continue the license system then in force in that city. A writer in the *Philanthropist* states that the license party, called the *Lampe rouge* (the sign required by the authorities to be hung at the door of licensed brothels) marched through the streets of Geneva in ratification parade and marched into the cathedral, singing a hymn in which the Holy

Spirit was supplanted by the *Lampe rouge*, and the banner which they bore with the name *Bon Dieu* supported a red lamp above the name. Such an outrage of decency could only find adequate punishment in the dark ages.

b. Prohibition.—1. Immoral measures can only produce immoral results. 2. Legalizing prostitution causes a great increase in promiscuous intercourse and results in a great increase in both disease and immorality. 3. A large proportion of the prostitutes are, as degenerates or paupers, in all justice wards of the State, and should be protected and cared for by the State.

The great question still remains, *how* best to prohibit and suppress. Stockholm is cited against prohibition; no brothels were allowed there, and yet 2 per cent. of the adult population were in the hospitals each year for the treatment of syphilis and 42 per cent. of the births were illegitimate. A writer affirms that "every house of entertainment was a brothel and every servant a loose woman." In contradistinction to Stockholm there are many small cities, both in the United States and in Europe, where, owing to the character of the population and the decided public opinion, no prostitution is allowed. In such places the authorities, influenced and supported by such strong public opinion that no subterfuges can avail, are enabled to suppress the vice.

A COMPROMISE.

It must be apparent to all that the underlying causes of the social evil are so difficult of removal that all attempts to eradicate them by any process of law have in the large cities been unsuccessful. When poverty can be prevented, when the masses of the people become well educated both intellectually and morally, then, and not until then, will the greatest obstacle have been removed. As a compromise, therefore, the following propositions are offered:

1. Regulation and taxation in *large* cities, such taxation being made the basis of a fund for the protection and support of young or destitute or deserted women who will otherwise become prostitutes.
2. Prohibition in small cities and villages.
3. Prophylaxis.

REGULATION IN LARGE CITIES.

1. Inscription and taxation of all non-convertible prostitutes.
2. Medical examination by city physicians twice a week with power to inspect at will, the services of physicians to be paid by the city.
3. All diseased women to be quarantined by compelling removal to hospital, their expense to be borne by the city or country (as such cases are just as much entitled to be quarantined as smallpox cases).
4. All prostitutes compelled to live alone and no brothels allowed to exist.
5. No men under 25 years of age permitted to indulge in prostitution.
6. No man allowed to visit prostitutes without a certificate of health showing freedom from venereal disease (if the regulations can compel the examination of these women they can also compel them to refuse men without certificates of health). (In Europe all venereal cases in public employes, servants, waiters, etc., are compelled to enter the hospitals.)
7. The inscription of all landlords of the houses of residence of these women and of assignation houses, with additional rules as to the latter class of houses.

8. Police regulation as to maintenance of order, hours, liquor, gambling, etc.

9. All violation by women, or their customers or landlords, punishable by imprisonment or heavy fines.

10. All taxes received from the prostitutes to be devoted to the benefit of young girls or women who through poverty, desertion or any cause, are in danger of beginning a life of prostitution.

PROHIBITION IN SMALL CITIES AND VILLAGES.

Small towns do not, as a rule, contain many victims of destitution, and the people in these towns will average better morally than in the large cities, consequently the police can the more easily render prohibition more effective in such places. Those women who are confirmed prostitutes will not carry on a fight in such a place and will remove to the more congenial atmosphere of some larger city. Men also who are addicted to the habit of prostitution, will generally find it convenient to take frequent trips to the larger towns where their wants can be supplied.

PROPHYLAXIS.

This part of the question is unfortunately so little studied, and the entire question so gingerly handled, except behind closed doors, that the proper education of the public and the proper shaping of public opinion, in which rests the only power of cure, is rendered almost impossible. Public authorities and city administrations are blamed for not enforcing laws plainly placed on the statutes. Juries are condemned for not convicting abortionists. Who compose our officials and our juries, and who uphold them in their conduct and their decisions? An occasional spasmodic outburst by the press or in the pulpit, and the people are quieted. Abortion is upheld by a large percentage of the women of this country, no matter how moral they may be in all other matters. Then also, the majority of the men fail to realize the danger of prostitution, and they support those officials who are known to exercise the best judgment, in not enforcing the law. Physicians and teachers, as well as parents, are to blame in not convincing young men that personal chastity is perfectly consistent with good health.

The law is even slower in behalf of women, and the protection of young girls from seduction is very slight; in some States the age of consent still remains at 13 years. Finally, the education of the masses, the study of sociology and efforts for the prevention of poverty, and the open and frequent discussion of all these questions, may in time bring public opinion to a wise decision and some fixed policy, without which prophylaxis will remain an impossibility and the law a dead letter.

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ORIGINAL ARTICLES.

SEPTICEMIA.

Read at meeting of the Winona County (Minn.) Medical Society.
 Jan. 5, 1897.

BY CHARLES PERN ROBBINS, M.D.

WINONA, MINN.

LATE ASSISTANT SURGEON, P.B., N.H.D.V.S.

A few years past no one would have listened to the assertion that a relation exists between lower organisms and certain forms of disease. The secretions

were admitted to contain some elements of a physico-chemic character, irritative in nature and capable of producing pathologic processes. A large class of miasmatic and contagious diseases are not only admitted by the most eminent pathologists and bacteriologists of today, but are referred by them direct to the animal and vegetable parasites. Evidence is positive proof that septicemia should be mentioned in this connection. What can be clearer since Saunderson's and Bert's investigations in 1873 of the relation between intensity of septicemia and pyemia depends upon microorganisms? I desire to present to you an original research of septicemia on guinea pigs, rabbits, mice, dogs and sparrows which were carried out in the private laboratory of DaCosta and Kyle, Philadelphia, later on continued in the Laboratory of the National Military Hospital, Los Angeles County, Cal. Since then I have added some notes which have a practical bearing. I have reviewed the journalistic literature as well as considered the standard authors. Permit me to present septicemia as to history, etiology, pathology, semiology, differential diagnosis and treatment.

Definition.—Septicemia is derived from two Greek words *σηπτικός* and *αἷμα*, literally meaning septic blood. This partakes of an adynamic typhoid fever, or according to Piorry's definition, an alteration of blood by putrid matter.

History.—There is little to be learned from existing literature of the views which were manifested by the ancients. Prior to the birth of Christ, in regard to the morbid conditions, nothing was designated as septicemia.

In the words of Hippocrates, the Father of Medicine, it is certain it was recognized. He reports a well marked case of puerperal fever on the twentieth day of the disease, also a case in which death was unquestionably caused by septic poisoning. Here is his literal translation.¹ "Criton, in Thasno, while still on foot and going about, was seized with a violent pain in the great toe, he took to his bed, the same day had rigor, nausea, recovered his heat slightly and at night was delirious. On the second, swelling of the whole foot and about the ankle there was erythema with distension and small bullæ (phlyctenæ) and acute fever. He became furious, deranged, alvin discharge, bilious, unmixed and rather frequent; he died on the second day from the commencement." Additional information may be had by referring to his illustrious description on empyema and fever.

Prof. C. Henter says under the head of "septic fever." Hippocrates and Celsus observed fever in cases of injuries that proved so dangerous that this danger could not have originated from the inflammation or from the wound alone."

Tacoutis, a consultator of Hippocrates, has even mentioned putrid fever the same as Adrianeus Spigelius, who spoke of fevers which arise from putrefaction. Both authors as well as their followers did not discriminate between septicemia arising from putrescence of wounds and pyemia. In the meantime both varieties were regarded as intermittent fever.

Arctæus lived during the Christian era. In his remarks on pneumonia he spoke of metastatis in certain cases, also of the kidney and liver. He ascribes suppuration of the liver to intemperance and protracted disease, especially dysentery and colliquative wasting.

Galen and some other ancient physicians recognized the existence of septic poisoning as is shown by the opinion expressed on the subject of putrid fevers.

Ætius states, that it arises from constriction of the skin or visciduity of the humors, whereby the perspiration is stopped and the quantity of vital heat so altered as to give rise to putrefaction, first of the fluids and afterward of the fat and solid parts. Syneus and Constantus Africanus gave a similar account. Alexander gives an interesting and ingenious disquisition on the origin and nature of putrid fevers.

Palladus describes two kinds of synochus fevers, one occasioned by effervescence and the other by putrefaction of the blood; of these the latter is the more dangerous.

A new era in the literature of this subject dawned during the sixteenth century. Ambrose Paré and Bartholomew Maggi each published a work in which they pointed out the old error and announced new truths. Paré's "Treatise on Gunshot Wounds" appeared in 1551, while Maggi's appeared a year later. He states his experience at the fortress Villani near Susa, and showed clearly that those whom he had treated with turpentine and an ointment did well, while those who had the heroic measures of boiling oil without exception had fever, great pain and swelling.

Nicholas Massa, in 1553, mentions a case of abscess of the lung following injury of the head. So at this time, even in the early history of medicine, there were forced conclusions that there was supposed to be some relation between wounds of the head and multiple abscesses.

Valsava, in 1707, was induced by his own observations to say, that the viscera of the thorax were sometimes affected in wounds of the head. Desault, in 1794, considered abscesses of the liver to be a sequence of head injuries. Morgagni, 1740, somewhat obscurely limited the doctrine of reabsorption of pus; afterward it was elaborately discussed by Quesnay in 1819.

John Hunter, in 1793, and afterward Velpeau demonstrated the existence of pus in the blood.

Gaspard, in 1822, published a complete work, based on experimental research, on the action of putrefying substances on living organisms. He was quickly followed by Erns and R. Virchow who repeated the experiment and discriminated with greater precision between the surgical diseases; on the one hand septicemia with its sharply defined symptoms and on the other hand, the opposite pyemia.

Pamem, in 1855, conducted a series of experiments to separate infected substances and determine its real nature.

Hemmer was awarded the prize of 1867 on the best essay on the putrefying substances in the animal organisms.

Lister, in 1867, began his antiseptic treatment for compound fracture. Feltz and Cozz, in 1872, showed that by injecting putrid liquids into the jugular vein and subcutaneous tissue, the blood of the animal thus destroyed contained infusoria. It was however left to Pasteur in 1877-1880 to demonstrate two principal vibriones, the pyogenic or producers of pus, and the septic or the producers of the properly called septicemia. From this time on a number of observers have given accurate descriptions on this subject, yet since the dawn bacteriology views have changed.

Etiology.—Septicemia, septicemic pyemia, traumatic sepsis, traumatic infection, putrid ichorrhemia, are one and the same thing. Septicemia may have its

¹ Works of Hippocrates, Adams Trans., Vol. 1, p. 377.

causes divided into predisposing and exciting. There are severe wounds causing necrobiosed tissue. And what are the wounds causing this mortification? We have wounds of soft parts and bones, generally with, sometimes without, breaking or tearing the skin, wounds of every kind of affection of various descriptions, in consequence of which there is a decomposition of the extravasated blood and stagnant pus, if death of the part is brought about. As predisposing causes of the malady may be added different affections of the bones, especially periostitis, osteo-myelitis, wounds of the head, puerperal diseases, cold abscesses, decubitus, scorbutic mortification, mortification caused by fecal and urinary infiltration, wounds of the dissecting table, also the so-called pseudo-erysipelas of the subcutaneous and of the intermuscular and other deep tissue, some inflammation of connective tissue and in the vicinity of the salivary glands, and the so-called diphtheritic inflammation of the fauces and large intestines.

Professor Wagner of Leipsic has mentioned in this connection the ordinary wound fever and surgical after-wound fever. Halbertsma of Berlin has considered the secondary or pus fever in the suppuration or maturation stage of variola as a cause. Also some hectic fever, and we may add some constitutional causes. Atmosphere (Allen) plays a most important rôle. Infusoria, one minor cause, based on the principle that decaying tissue excretion and exhalation from the body tend rapidly to increase their number; and either one is always present in septicemia.

We have studied the predisposing influences: what is, or are the exciting causes? The bacilli of septicemia observed by Klein in 1835, are rods, single or in chain; 1 to 2.5 μ . long, 3 to 5 μ . wide. These were observed in blood vessels of the smaller lymphatic glands, and are identical with the bacillus of gangrenous septicemia. Bacilli of septicemia in mice are said to be extremely minute. They are said by Koch to be .8 to 1 μ . long and .1 to .2 μ . wide. Spores have been found, which are probably immotile. They are seldom in chains but lie in pairs, and on cultivation do not appear to make threads, but lie together in masses. In mice they are found chiefly in the white corpuscles. In these they increase their number and in case of a white cell are only represented by a mass of bacilli. The bacilli or rather the spores occur in putrid liquids. Six mice are taken and inoculated with a minim amount of the putrid liquid and two die. They rapidly sicken, their eyes become inflamed, the eyelids stick together, they become soporitic, and in about two days or more, accurately 37½ hours, die. On autopsy there is a slight edema at the seat of inoculation and enlarged spleen. The bacilli are found free, and lodged in the white corpuscles, in edematous tissue, and abundant in the blood capillaries.

It is said a minim out of the putrid fluid causes death in a sparrow. Field-mice have an immunity. Rabbits and guinea pigs, when inoculated in the nose, suffered from a local erythema, which entirely disappeared in seven days, and likewise rendered them immune for some time. If inoculated into the cornea of a dog he will suffer from inflamed eyes, but no constitutional symptoms. The bacilli are easily cultivated outside the body in an aqueous humor and gelatin rendered neutral by the alkaline sodium phosphate. On plate culture of neutral gelatin specks of a faint cloud-like nature appears, but in a test-tube of the same media

they produce a delicate cloudy film along the needle track. A small quantity, after being carried through three generations, produces the disease in mice. The organs of an autopsy may be hardened in alcohol, and stained by Gram's method. Bacilli of septicemia in rabbits are short rods, slightly pointed at both ends, .6 to .7 μ . wide and .1 to .4 μ . long. They stain deeply at the ends, having an uncolored interval in the middle. Two or more may be linked together. They grow well on nearly all culture media. In nutrient gelatin plates they produce dot-like colonies. On test-tubes, little masses in the needle track, and a layer on a free surface. A smaller quantity produces rise of temperature and labored breathing in about twelve hours, and death in twenty hours. Spleen and lymphatics are enlarged and lungs congested. Mice and birds are very susceptible. The disease can be produced by contaminated water and putrid meat infusion; culture of the microbe can be made.

We have studied the various bacilli that help to produce this disease, now for the coccus. The micrococcus of Pasteur occurs singly, or in pairs, lanceolate and encapsulated. They grow best in the temperature of 30 to 35 degrees C. On a solid medium, they form a superficial, nearly transparent deposit of a gelatin-like consistency. They are pathogenic in rabbits, producing sputum-septicemia. Fowls and dogs have an immunity, and guinea pigs are less susceptible than rabbits. The blood, in the animal just dead, is more potent than a liquid culture, or than the saliva containing the coccus. The pathogene is modified by cultivation in a temperature of 39.5 to 40.5 degrees C. This organism has been supposed to cause pneumonia. The streptococcus and staphylococcus of septicemia grow well on all culture media, producing a white delicate film in agar-agar. It stains well with Gram's method, also methyl violet. But can we say any one of these produce septicemia in man? Streptococci have been found, staphylococci, also the various bacilli. Therefore as a general conclusion, we may say no one, but two or more play the most important rôle. Those two which abound most, are the streptococcus and staphylococci.

These are adopted by the best writers and investigators as the principal cause. And now the question comes, do these microbes bring about the changes of this malady by their presence by causing a change in the surrounding tissue or blood, or their toxins? Investigation on man or animals prove both.

If one should reason on the doctrine of some of the other infectious diseases, evidence would be positive proof that toxins play by far the most important part.

But how is it that in taking the solution of septic blood from a case of septicemia, and inoculating it into an animal, it produces the former disease? Yet if said septic fluid of blood be filtered, the filtered fluid has no effect, while the filtrate produces septicemia. The question remains where it was before. However, first, the microorganism must be present to produce the infection, and secondly, they must eliminate a poison toxin to develop said infection. Hence, microbes of strepto- and staphylococci are among the chief factors in causing septicemia, and bring it about chiefly by the presence of their toxins.

As septicemia is only a branch of the great tree of all septic infection, we ask ourselves in what manner does the septic virus enter into the general system. 1, manufactured by patient himself; 2, inoculation; 3, infection.

1. This is illustrated by puerperal peritonitis that springs up sporadically at a great distance from hospitals, and when the patient is surrounded by every condition antagonistic to its development. It is almost always traced to portions of placenta blood clots, or retained or infected lochia.

2. That of inoculation is known in dissecting wounds and postmortem wounds; also in secondary operations, where the finger of the physician or midwife causes gangrene and mortification to exist, or erysipelas to women in childbed.

3. By infection, mostly found in hospitals. It generally takes place through the medium of the atmosphere. It may occur in private practice if patients are in close proximation.

To come a little nearer, Bert and Saunderson have demonstrated that if septic fluid, capable of producing toxemia when injected into the veins of a living animal, be strained through a porcelain filter, this liquor so filtered may now be injected with immunity; whereas the solid residue on the filter may now be injected and retain full force of septic qualities of the original fluid. The residue contains bacteria but whether the bacteria were poisonous itself, or merely conveyers, is yet an open question. Again septic materials are not in solution. Lister based his antiseptic treatment upon these facts:

1, there are germs, both in air and upon matter, which coming in contact, under favorable circumstances induce putrefaction in fluids or solids, capable of that change, as fruit juice. 2, this putrefaction is not produced by chemic action or oxygen gas on those organisms. 3, the vitality of these germs may be destroyed by certain chemic agents, which we call in surgery, antiseptics.

What conditions now favor the development of these organisms? 1, generally an unhealthy state of the body which predisposes to decay. 2, retention of putrid products as in a wound imperfectly drained. 3, entrance of matter which sets up putrefactive processes. 4, any condition which favor absorption.

This development is hindered: 1, by a vigorous, healthy state of the body. 2, by removal of putrid products; as by cutting out tissue, or drainage, which is so suitable a feature of modern surgery. 3, by preventing the entrance of matter which sets up putrefaction; as by very scrupulous cleanliness and antiseptic methods of surgery, which represent cleanliness carried to the precision of a chemical experiment. 4, by conditions which hinder absorption; such as limiting inflammations of gangrene and healthy granulations.

As to morbid anatomy.—The pathologico-anatomic condition of septicemia occurred in my experience in guinea pigs; edematous infiltration of the skin with a brownish discoloration that is observed during life. In a long course of five to ten days' infiltration with blood, and in one case of two to four weeks, there is serous fluid. Then there is extensive suppuration of the cellular tissue with more or less extensive gangrene of the skin. The blood is dark, feebly clotted, a few petechiae beneath the peri- and endo-cardium and pleura, intense staining of the endo-cardium and lining membranes of the vessels, and often a little bloody tinge in serous cavity. Some destruction of blood corpuscles, intense congestion, and ecchymosis with some shedding of epithelium of mucous membrane of the gastro-intestinal tract. The spleen is swollen and soft, the liver likewise, but more con-

gested. The blood of animals which died after injecting 10 minims of putrid blood, generally contained a varying number of cocci bacteria and bacilli, but after inoculation it contained small bacilli. These were present in large numbers, mostly white corpuscles containing one or more of them.

Observation in man.—In man the occurrence of analogous forms is a priori likely, and cases might be quoted in which the existence of pure septic intoxication or septic infection was very probable, but the subject has not been at all fully worked out. Clinically it is usually impossible to diagnosticate between them, and the postmortem signs are very similar. Pathologic changes of a gastro-enteritis are marked. A jaundiced tint of the skin is not uncommon and petechial spots occur. Albuminuria is frequent. The red corpuscles in the blood drawn during life, run into clumps instead of rouleaux. Wide-spread stasis occur. The postmortem signs are feeble rigor mortis and early decomposition. The blood is dark and fluid, but is more often clotted. Soon after death there is deep staining of the endo-cardium and lining membrane of the great vessels, and any serous fluid in the pleura or pericardium will be blood tinged. This is owing to rapid disintegration of red corpuscles, which begins even during life.

Petechiae begin beneath serous membranes, chiefly on the back of the heart and under the pleura. Hypostatic congestion of the lungs and congestion of the abdominal viscera occur. The spleen is markedly swollen and often pulpy; lastly, the mucous membrane of the alimentary canal may be congested or much more rarely inflamed. Organisms have been found, especially the cocci, in various parts and organs in septicemia. Even when found no characteristic form has been shown to be present.

Marcus Beck states, from his experiments on dogs, 1 to 2 ounces of putrid pus or serum would be required to kill an adult man of septic intoxication. Septic infection may occur from the smallest amount of the poison. Hence we draw the conclusion that large cavities which are imperfectly drained, *e. g.*, badly fractured wounds of joints of pleura, abd. sect. and the uterus post-partum, give septic intoxication. The smallest wound, if there is evidence of inoculation, may give rise to septic infection.

As to semiology.—Septicemia may be divided as regards its symptoms into three varieties: Sapremia, or septic intoxication; septicemia proper, or septic infection; constitutional or insidious septicemia.

The symptoms of septicemia supervene after three or four days, when the wound has been received in non-surgical cases at different intervals after the beginning of the disease. They are less characteristic and intense, though somewhat resembling those of pyemia. We at first perceive that the wound refuses to suppurate, but discharges instead a thin bloody or putrid secretion, which not infrequently contains air bubbles.

Around the wound we first notice an inflammation, which becomes edematous. This edema is very rapid in developing, a day or even a few hours may suffice to produce it, and hurry the patient to his end. It contains an acute purulent edema with its destruction of tissue in such a manner, termed by the French, gangrene *foudroyante*. The skin in this form has a peculiar reddish-brown color. Ordinary septicemia most frequently begins suddenly; generally without, sometimes with, a chill. The fever at first generally

continued, but soon begins to be remittent. As soon as infection begins fever rapidly rises to 101, then from 101 to 104 and assumes a remittent character.

Exacerbation of fever high, slightly lower during remission. Pulse increases from 130 to 160 per minute. It becomes frequent but feeble. Respiration is increased, sometimes going as high as 30 to 50 per minute. The expression is anxious, color darkish icteric hue. No pain but a feeling of uneasiness before the end of twenty-four hours. If the person has a violent chill all the symptoms are increased in severity. There is perspiration after twenty-four hours, and diarrhea is not uncommon.

The discharge is dark and offensive. The tongue is coated with a dark yellowish fur, which is thrown off and the organ becomes dry and cracked. Great thirst supervenes. Anorexia is a general rule and the sensibilities are deadened, this causing no pain. The liver is somewhat swollen and enlarged, likewise the same condition is found in the splenic region. The kidney is congested. Exhalations from the body have a characteristic odor. This tissue waste is great in amount. Near the end the fever becomes higher.

The mania usually accompanying is, as a rule, quiet; seldom do we observe intense delirium with restlessness, jactitation not uncommon. Occasionally a slight icterus comes with or without an icteric consistency of the urine. If diarrhea continues, it may be accompanied with all the symptoms of Asiatic cholera. Late in the disease the skin changes from profuse perspiration to dryness. In some cases the sweats continue until death, especially if the course is rapid. The urine is scanty and dark, occasionally albumin is present. All movements are without power and general lassitude prevails.

Death arises often during an agony of long duration, sometimes after the expiration of a few days, usually at the end of a week. Mental faculties become more obtuse. The patient deepens into stupor, from stupor to coma, coma deepens and the scene is closed by death. The toxic form of septicemia or sapremia is frequently seen in obstetric cases, in which putrefaction of retained clots or placenta has taken place within the uterus, or sometimes in large wounds other than the uterus. The poison, in regard to the uterus, is absorbed through the mucous membrane of vagina or uterus or through the uterine sinuses. The disease is ushered in with a sharp rise of temperature, the chill usually being absent. The temperature continues high and is accompanied later with delirium. The pulse is rapid and running, the tongue is dry, and the thirst, as a rule, predominates. Headache with great restlessness also prevails. Some gastric irritation may be present, as nausea, or perhaps vomiting with slight diarrhea. Great prostration supervenes. Three conditions must be present in this form of sepsis, dead tissue, infection of this dead tissue with putrefactive bacteria, and a sufficient time to have enabled putrefactive bacteria to produce a toxic quantity of ptomaines.

The outlook in sapremia depends upon the dose of the poison which has been absorbed, and the possibility of rinsing and cleansing the infected focus. A prompt removal of all decomposing substances from the interior of the uterus will be followed in a few hours by a disappearance of all alarming symptoms. Conditions favorable for such a type of poisoning are rare in general surgery, although a large ill-drained wound or decomposition occurring in the contents of

a psoas or other abscess is not an uncommon cause. These conditions also may be found in abdominal wounds, where extensive injury of the peritoneum has favored oozing and accumulation of blood-clot in the peritoneal cavity.

In insidious septicemia the symptoms are so much at variance with those generally accepted as characteristic of the disease that our present methods of diagnosis must fail, and this so unfortunately that these are almost always fatal cases. If the progress is insidious the diagnosis is impossible, the prognosis favorable for something else, and the result invariably fatal.

Intuition, not medical skill, must guide us in the absence of symptoms. But whence is it that we derive these intuitive ideas that guide us in diagnosing a case in such a vague manner? The very prominent symptoms of fever and pain are the ones most usually wanting, the degree of danger being inverse to the intensity of the symptoms. The absence of symptoms and fatal results characterize this form of septic poisoning. It may be both with auto- or hetero-infection, also may begin with chill or not. We always find a state of perfect contentment and well-being. The patient is satisfied with his condition although being in bed. Another symptom is slight looseness of the bowels; not diarrhea, but a soft, natural stool, perhaps not more than twice a day, wanting in all the characteristics of septic diarrhea, without foul odor which occupies the latter. The disease begins with a chilly sensation, a feeling of discomfort with slight fever, 99.5 to 100 degrees F. These soon pass away and leave the patient without ambition. In this state he remains without desire for nourishment, but it seems from a natural want of appetite; always feeling well, but gradually sinking until he passes away, more commonly comatose than in convulsions.

As to diagnosis.—The diagnosis of septicemia* is clear, the fever steadily increases and lowers in the morning until near the end, when the temperature falls even to below the normal. At times the skin is moist, the pulse is rapid, a slight icteric hue, the facies expression; also a lethargic condition from the beginning with the various cerebral, abdominal and pulmonary symptoms, and in septicemia of a wound makes it easy. The differential diagnoses are but few, and the only one of importance is that of pyemia. This may be considered from an etiologic, pathologic and semiologic standpoint.

ETIOLOGY.

PYEMIA.

1. Pyemia commences with putrefaction in an open wound, of these secondary wound fluids, pus, etc., in which there is developed globular bacteria, which enter the blood and certain tissues of the body, when they multiply and produce constitutional disturbances.

2. Pyemia is commonly preceded by some local inflammation, wound complication, such as suppuration, osteomyelitis, periostitis, etc., and rarely developed before the second week of the injury.

PATHOLOGY.

1. Increased coagulation of blood.

SEPTICEMIA.

1. Septicemia generally commences with the putrefaction of an open wound, of primary wound fluid, in which there develops rod bacteria, streptococcus and staphylococcus, which enter the blood and certain tissues of the body, where they multiply and produce constitutional disturbances.

2. Septicemia is a primary wound complication, which is generally developed within forty-eight hours after the receipt of the injury.

PATHOLOGY.

1. Diminished coagulation of blood.

PYEMIA.

2. Metastatic abscesses in various parts of the body, especially lung, liver, kidney. Serous cavities frequently contain purulent deposits. Similar deposits are those found in joints. Abscesses in cellular tissue. During life abundant evidence of a pyemic endo- and peri-carditis.

PYEMIA.

1. Pyemia commonly commences with a chill.

2. Fever variable but rarely entirely intermittent.

3. Sudden and great change in temperature followed by profuse perspiration.

4. Pulse variable, toward the fatal end rapid, feeble and irregular.

5. Facies at the beginning flushed or pallid, toward the fatal end careworn.

6. Tongue smooth, dry and red, later brown-coated and even the teeth may be covered with sordes.

7. Diarrhea until stools are of a pappy consistency.

8. Epistaxis.

9. Mild delirium toward the end.

10. Aphthæ in mouth and throat, sudamina, vesicles, pustules and purpuric patches.

As to treatment.—Sapremia is treated by the liberal use of stimulants and the prompt removal of the cause. If a wound with a bad drainage reopens, irrigate with corrosive sublimate, 1-1000, followed by sterilized water. Also remove any dead tissue. The small pocket of a wound should be thoroughly washed and drained. All this is especially true in retained clot or portion of placenta or membrane in uterus after childbirth.

Alcohol in any form should be given for effect and not by amount; strychnia hypodermatically with morphia to stimulate the heart and respiration. Food should be given in the way of egg-nogg, milk punch, to derive the effect of nutrition and stimulation. Many methods have been laid down to treat this most dreaded disease. In insidious septicemia or constitutional septicemia, as I have classed it, little or no treatment is used, for the disease is rarely recognized as such, and if so, the patient is in the last stages of death. Heroic measures are necessary. Stimulants should be given by every avenue of entrance into the system. Prepare for the worst and hope for the best. The treatment of septic infection was as varied in times past as the remedies for rheumatism. For the most part, however, we may lay down some rules to follow, which have some practical bearing:

1. Absolute cleanliness, that is to say, daily changing of bed linen and linen of the patient; seeing after the discharges of the patient and prompt removal from the room.

2. Purity of the atmosphere. The room should be well ventilated daily. Not alone this, but a constant ventilation which does not make draft on the patient, should be looked after. A large room, which should have a sunny exposure.

SEPTICEMIA.

2. Complete absence of purulent or ichorous pus in all cases of mixed septicemia. Postmortem shows no alteration except blood with some edema of lungs.

SEPTICEMIA.

1. Septicemia commonly commences without a chill.

2. Fever steadily increases but is lower in the morning.

3. Temperature is high at the beginning of the disease, increases until near the fatal termination, when it falls below the normal. Skin is moist but without profuse sweating.

4. Pulse rapid and gradually increase in frequency toward the fatal end.

5. Facies dull, listlessness throughout the whole course of disease.

6. Tongue, lips and throat dry at beginning, toward end marked thirst.

7. Rice water evacuation, very offensive, obstinate sweating.

8. Epistaxis rare.

9. A lethargic condition from the beginning, increasing toward the end.

10. Icteric hue of conjunctiva, singultus often present. (Pepper.)

3. A moderate and equable temperature containing a proper amount of moisture.

4. Proper quantities of nutritious and easily digested diet with suitable drinks.

5. Cheerful and pleasant surroundings, especially companions, nurses and attendants.

6. The avoidance of all putrefaction in contact with the wound, especially prior to the development of sufficient granulation to completely cover its surface. This object is to be accomplished by the removal of all necrotic tissue, the avoidance of putrescent fluid by cleanliness and antiseptics.

7. Therapeutics of the case.

a. Temperature may be relieved by drugs or hydrotherapy.

b. The free use of the alkaline sulphates and hypsulphites.

c. The use of stimulants at times when needed.

d. Restlessness and pain should be quieted by morphia.

8. Antitoxin or serum treatment. I believe the day has come when septicemia like other infectious diseases can be treated by antitoxin. Since Behring has found one for diphtheria, Tizzoni one for tetanus, Richon on serum therapy of syphilis; the serum therapy of erysipelas, and Koch on anti-tubercle serum in tuberculosis of the skin. Septicemia with other diseases of like character and causes, due to microorganisms, will have similar treatment. Balance and Abbot have already reported cases. One, a physician who pricked his finger in making a post-mortem. Cellulitis and lymphangitis followed within twenty-four hours and the whole body was covered with a scarlet septic erythema. One dram anti-streptococci serum was injected and repeated every four hours and upon the third day doubled. Convalescence was established.

The most distressing symptom of fever, headache; coated tongue, rapid pulse, rapid respiration soon disappeared. The wound incised to relieve tension healed without suppuration. McKerron (*ibid.*) describes three cases of puerperal septic infection in which injection of anti-streptococci serum was made. Serum was used in doses of 10 c.c. The first received three injections, the second four injections, and the third three injections. And with but these few injections each recovered rapidly.

Callie, in his lecture of Feb. 5, 1896, at the Post-Graduate Hospital, gave a more liberal use of the antitoxin of diphtheria than for diphtheria alone in the following:

The antitoxin of diphtheria.—He used 500 units in tonsillitis with fever; 1,000 units in naso-pharyngeal diphtheria; 1,000 units in croup; 500 units in scarlet fever; 100 units in measles; 100 units in pertussis; 100 units in exposed children. These he gave from practical experience. And so with septicemia and sapremia with its varying grades of intensity, one may begin with 10 c.m. of anti-streptococci serum and given in doses depending upon the case. I have here a bottle of anti-streptococci serum of P. D. & Co., which is a splendid sample.² The serum must be given hypodermically and care is necessary in the proceeding to avoid mixed infection from the skin or from a dirty syringe or needle. A safe method is as follows: Wash out the syringe and needle repeatedly with a 5 per cent. solution of carbolic acid or satu-

² Not that I wish to praise any special manufacture, but that I have found their antitoxins and serums always up to the standard.

rated solution of boracic acid. Place the needle in a small dish of the same solution until ready for use. Now wash out the syringe with recently boiled water. The places best suited for injection are the thigh, abdomen or side of breast when there is considerable subcutaneous connective tissue. The skin at the point of injection should be scrubbed with soap and water and then rubbed with a 5 per cent. carbolic acid solution, this disinfectant acting at the same time as a local anesthetic, diminishing the pain of injection. Inject the anti-streptococci serum fairly deep into the subcutaneous tissue.

Upon the treatment of this I have endeavored to give a general conclusion from the various treatments which have been used. In fact, a paper far more lengthy than this I could have written upon the many things that have been tried. In face of these facts he is an unwise, if not an unfaithful, practitioner who does not throw around the patient every possible protection against the entrance of septic germs through the gateways open by the necessary traumatizations.

Withstand the beginnings, the remedy is applied too late, When the evil has grown strong through delay.—Ovid.

ROUND ULCER OF THE STOMACH.

A Clinical lecture delivered in Rush Medical College.

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The patient whom I shall exhibit to you this morning is a young woman, 23 years of age, unmarried, and by occupation a cook. She is of good figure, plump and apparently well nourished. But her countenance is abnormally pallid; the naso-labial lines are deeply chiseled around the corners of her mouth, and there is about her face an expression of painful anxiety that is unnatural in one so young. She tells us that for three years she suffered with uneasy, gnawing sensations behind the tip of the ensiform cartilage, and that these were aggravated by food or drink, or by the accumulation of gas in the stomach. Sometimes she felt a similar pain between the shoulder blades, usually near or under the tip of the right scapula. Still, she was able to work, and made very little complaint until one day, six weeks ago, she experienced a feeling as if something had given way in her stomach. This was soon followed by intense prostration, nausea and vomiting of blood. She thinks she must have thrown up fully a quart of dark, clotted blood. This hemorrhage continued in diminishing quantity for nearly twenty-four hours, and was followed by several stools composed of black, tarry matter—blood that had passed from the stomach through the small intestines. She was much blanched by this loss, and was so enfeebled that she was compelled to enter a hospital, where she remained for a month.

Examination of the thoracic viscera indicates no disease in those organs. The same thing is true of the pelvic viscera, the spleen and the kidneys. But the epigastrium is still sensitive to pressure. The liver appears to be slightly prominent below the ribs, though not painful on percussion or manipulation. Since the acute attack of hemorrhage there has been no recurrence of vomiting, nor any blackening of the stools. The patient, however, recalls the fact that once before, about six months ago, just before the menstrual period, she vomited a quantity of slimy matter in which were streaks of blood, and a small quantity of coffee-ground sediment.

With this array of symptoms you are warranted in the diagnosis of ulceration of the stomach. It is also certain that we have before us an example, not of the superficial ulcers which are often found in catarrhal inflammation of the gastric mucosa, but of the deep and grave form of disease known as round ulcer of the stomach. This disease is not very rare, since it is said to be found in about 5 per cent. of all cases upon the postmortem table. This figure is subject to considerable variation in different countries and among different races, being, no doubt, considerably influenced by the diet and mode of life of the people. Occasionally, more than one ulcer may be discovered, but usually the lesion is single. Sometimes, a similar ulceration exists in the esophagus or in the duodenum. In nearly half the cases, the ulcer is situated on the posterior wall of the stomach. In a little more than one-quarter of the patients, it occupies the lesser curvature of the organ, and in about 16 per cent., it will be discovered in the pyloric region, so that it is not a common event to find ulceration of the anterior wall, greater curvature or cardiac portion of the viscus.

The size of the ulcer is usually quite moderate—frequently it occupies less than a square inch of the gastric surface; but in some cases much larger areas have been involved.

The form of the ulcer is so characteristic that it has given its name to the lesion. Seldom do we discover any considerable variation from the round or oval shape, unless two or more neighboring points of ulceration have encroached upon each other's territory, producing a large and irregular loss of substance by coalescence of their margins.

The initial seat of the ulcer is always in the mucous membrane of the stomach, where it presents itself with a sharply defined border, as if it had been punched out of the mucosa. Seldom does it exhibit any surrounding zone of inflammation and exudation. Sometimes it penetrates no deeper than the muscular coat, which may then appear as if cleanly dissected out upon the floor of the ulcer; but it may perforate the different layers of the gastric wall, one after another, until it bursts through the serous covering of the organ. The form of the ulcer is funnel-shaped, with the point of the funnel directed toward the outer surface of the stomach. The apical point is not in the center of the crater, but is displaced to one side or the other, according to the direction of the arterial twig around which the original solution of continuity took place. When the ulcerative process approaches the serous covering of the stomach, an adhesive peritonitis is sometimes set up, and the gastric wall at that point becomes adherent to some neighboring organ. In this way is prevented the passage of the gastric contents into the peritoneal cavity; but it may happen that the ulcer may continue to eat its way into the adherent organ, and may thus finally open a communication between the stomach and the intestines, or the gall bladder, or the pleural cavities, or even the external world through the abdominal wall. In certain cases, the adhesive inflammation may be sufficiently extensive to produce an encapsulated peritonitis, forming outside of the stomach an abscess cavity into which the ulcer opens. This cavity may in its turn become connected by an ulcerative opening with other organs and cavities of the body, so that a long, fistulous track will be found between the cavity of the original gastric ulcer and its distal opening. In this way a subphrenic abscess, or even a pyo-pneumothorax may be formed.

In this connection it is worthy of note that these remote connections are more liable to occur when the ulcer is situated in the posterior wall of the stomach. When placed in the anterior wall, or in the cardiac portion of the organ, direct opening into the peritoneal cavity usually occurs, because the great mobility of the anterior surface of the stomach and of the abdominal wall prevents the formation of protective adhesions.

The healing process after ulceration is sometimes so perfect, that the presence of cicatricial tissue may be easily overlooked by an inexperienced observer. But in many cases the process of cicatrization leads to the formation of thick bands of connective tissue, which contract and lead to considerable deformity of the stomach. When adhesive peritonitis has also existed, the resulting connections may additionally hamper and deform the organ, and may become the cause of internal hernia and other fatal accidents.

Let us now consider the causes of these peculiar ulcers. It is worthy of note that by far the greater number are encountered in the female sex. Rarely do they occur before the age of puberty, but during the period between 15 and 30 years of age, they are most common—that is, during the life-period when women are most liable to chlorosis. The patient before you illustrates these facts, for she has told you that since her seventeenth year she has always been pale. Enumeration of her red blood corpuscles shows the presence of 5,450,000 in the cubic millimeter, but the ratio of hemoglobin is only 65 per cent. Another favoring cause of gastric ulceration is to be found in the chronic infectious diseases, such as syphilis, tuberculosis and chronic malarial poisoning. It is probable that it sometimes is dependent upon those forms of auto-infection that produce disease of the arterial walls.

Among the exciting causes of the disease are local injuries of the gastric wall, either by blows or pressure from without, or by swallowing corrosive or overheated substances. Fragments of bones, nuts, shells and other insoluble articles introduced with the food, or otherwise, have been responsible for the occurrence of ulceration; but it is probable that these agents do not ordinarily suffice to excite anything more serious than erosion of the mucous membrane, such as is often discovered in catarrhal inflammation of the mucosa, unless there be also a morbid condition of the walls of the blood vessels that lie in the coat of the stomach. It has been shown by numerous experiments that interference with the normal circulation of blood in the gastric vessels will cause ulceration in the territory of the obstructed artery. When blood ceases to flow through the capillary network, it can no longer maintain the alkalinity of the tissues which appears to be the natural opponent to the corrosive action of the acid gastric juice. Consequently, injuries sufficient to arrest the circulation in a given portion of the gastric wall may occasion the formation of an ulcer. Chlorosis, tuberculosis, syphilization, etc., produce fatty or amyloid degeneration of the arterial coats, so that a local injury of the mucous membrane, in such cases, is followed by circumscribed blood stasis that would not have occurred in a healthy individual. This concurrence of various predisposing causes with a local traumatism is, in the majority of cases, the means of originating a process of ulceration that differs from the ordinary simple ulcer of catarrhal gastritis in the fact that it is, in its location and evolution, closely associated with arterial distribution

and vascular conditions, instead of being placed at random wherever a local injury may chance to occur.

The duration of a gastric ulcer is exceedingly variable. Sometimes perforation speedily follows, but in certain instances the symptoms of ulceration persist for almost a lifetime. In such chronic cases, as old age comes on, there is reason to fear the development of cancer in the margin of the ulcer, or upon its scar if cicatrization has already occurred. The effect upon the general health is also variable; in many cases there is no loss of appetite or strength, and the patient, like the one before you, loses little in weight. Frequently, however, there is emaciation, loss of strength, and the sufferer becomes haggard and worn in appearance from loss of sleep and continual suffering. The temperature of the body rarely indicates any disturbance, and the urine remains without notable change. The bowels are frequently constipated.

The occurrence of perforation of the gastric wall is immediately followed by symptoms of the gravest possible character. Peritonitis is speedily established; the patient suffers intense pain; the belly is distended and painful on pressure. As exudation progresses, dullness increases; but the liver and spleen seem smaller because they are crowded upward and backward by the accumulation of gas in the intestines. It is worthy of note that, unlike what is observed in ordinary peritonitis, there is no vomiting, because the gastric contents are expressed through the opening into the peritoneal cavity, instead of finding their way up the esophagus. Consciousness persists till the last moment, and death results either from exhaustion, or from interference with respiration and circulation through excessive upward displacement of the diaphragm.

When adhesive peritonitis precedes the occurrence of perforation, the symptoms are less severe, and are circumscribed by the boundaries of the adhesion. If the pleural cavity, or the pericardium are entered, the phenomena of pleurisy or pneumo-thorax, or hydro-pneumo-thorax, pericarditis, pneumo-pericarditis or hydro-pneumo-pericarditis will be manifested. Occasionally the ulceration makes its way into the mediastinal space, and then the symptoms of mediastinal emphysema will be developed, just as perforation of the abdominal wall may lead to subcutaneous emphysema through the passage of gas from the stomach into the subcutaneous areolar tissue. Sometimes a communication is set up between the cavity of the stomach and the air passages in the lungs, so that food and gastric juice may be detected in the sputa. If the liver and the portal vein be invaded, thrombosis of the portal vein may occur, and this may lead to the formation of metastatic abscesses in distant organs, with the establishment of universal pyemia, and death as its consequence.

The occurrence of healing and cicatrization of the ulcer is not always devoid of danger. Pain is often persistent for a long time after cure of the ulceration. Sometimes the symptoms of acute disease subside, but the evidences of chronic catarrhal inflammation become prominent and persist indefinitely. When the pyloric orifice was the seat of disease, cicatricial contraction may lead to stenosis of the pylorus and consequent dilatation of the stomach. If the muscular layer has been destroyed the opposite condition will exist, and the stomach will be unable to retain its contents because of destruction of the pyloric sphincter.

The possibility of gastric carcinoma developing in the scar of an old ulcer is always to be kept in mind. This is by no means an uncommon sequel of the disease.

Sometimes death occurs in consequence of a concealed hemorrhage from a gastric ulcer. In such cases the phenomena are those of collapse, terminating speedily in death. Sometimes, however, there is a discharge of blood through the bowels, which after the decease of the patient can be traced to an open vessel in the floor of a previously unsuspected ulcer. I was once called to the bedside of a woman who had been employing the methods of the "faith cure." I found her blanched and dead. The members of the family stated that for about twenty hours she had been troubled with a looseness of the bowels, which she attributed to some error of diet, and for which she would take no medicine. When, finally, she began to groan with pain her friends sent for a physician, but it was too late, and she died before my arrival. On examination of the body the intestines were filled with black blood which could be traced to its source in a gaping arterial twig at the base of an ulcer, no larger than a five-cent piece, in the posterior wall of the stomach. In this case there had never been any suspicion of the existence of the disease before its demonstration at the autopsy.

This indicates the fact that a round ulcer of the stomach is not always easily recognized. In ordinary cases, when a chlorotic young woman complains of severe, persistent and narrowly circumscribed pain in the epigastric region, and when this pain is accompanied by vomiting of highly acid substances and by hemorrhage from the stomach, the diagnosis is comparatively easy. But when these symptoms are not all present it is often difficult to exclude the possibility of other diseases, such as gastralgia, chronic catarrhal gastritis, gastric carcinoma and biliary colic. In cases of simple gastralgia there is no increase of pain after eating; pressure over the stomach gives relief rather than aggravation of pain; there is no vomiting nor discharge of blood from the stomach, and neuralgia is frequently experienced in other regions. Sometimes the passage of an electric current through the body, placing the anode over the stomach, will give immediate relief to pain. Enthusiastic electricians often introduce the electrode into the stomach itself, but one should be very sure of the loyalty of his patient before trying this experiment.

In cases of chronic catarrhal gastritis the location of the pain is less circumscribed and the intensity of the suffering is less than in gastric ulceration. The disease is usually dependent upon errors of diet, and is more amenable to treatment than is an ulcer.

Gastric carcinoma occurs in advanced age; it quickly leads to cachexia, impoverishment of the blood and enlargement of the left supra-clavicular and inguinal lymphatic glands. The presence of a tumor in the gastric region argues in favor of cancer, though it must not be forgotten that a large scar may feel very much like a tumor under the abdominal wall. The absence of free hydrochloric acid from the gastric juice, when associated with the other symptoms is almost diagnostic of carcinoma.

In biliary colic the pain is concentrated in the region of the gall bladder and common bile duct; the paroxysms are often accompanied by vomiting and chills without fever, and are usually followed by jaundice that soon subsides with the correction of suffering.

The treatment of round ulcer of the stomach must be both dietetic and medicinal. When there is severe pain, vomiting of blood, etc., the patient must be kept in bed with a large poultice or piece of spongio-piline over the stomach. Solid food should be forbidden, and, if possible, a milk diet should be enjoined. The milk should be heated to 160 or 180 degrees F., but not boiled, before it is used. When there is hemorrhage it should be taken cold. If it sours in the stomach the acid may be neutralized with sodium bicarbonate or with lime-water, or, if the bowel be constipated, with the milk of magnesia. Patients who can not tolerate milk may sometimes take koumyss, or buttermilk or malted milk, or Fairchild's peptonized milk or other preparations that are recommended for nursing children. For more than thirty years I have found much benefit from the administration of cod-liver oil or olive oil, in tablespoonful doses as often as it can be tolerated. This acts mechanically as a protective covering for the ulcer and dietetically as an article of food.

Whenever there is intolerance of milk and oil it is necessary to give them broths and soups, out of which all solid particles have been strained. The various extracts of beef, bovine, white of egg stirred into water, etc., may be recommended. Sometimes it becomes needful to withdraw all food from the stomach and to depend wholly upon nutrient enemata. These should consist of soluble beef extracts, egg-albumin and other liquids that will not solidify in the colon. They must be slowly introduced through a long rectal tube, after the bowel has been washed out by irrigation. The addition of twenty drops of tincture of opium may be required to prevent the premature expulsion of the enema. In this way it is possible to nourish a patient for three or four weeks. When gastric feeding is resumed it should be introduced by giving small quantities of food every two hours. At first the food should be liquid; then you may give calves' brains, tripe that is stewed to a pulp, the soft part of a raw oyster, raw or soft-boiled eggs, sweet-breads, and, finally, minced meat and the tenderest of beefsteak. Bread, in the form of dry toast, may be cautiously given, if slowly and thoroughly chewed before it is swallowed. Fruits and vegetables can not be allowed until a cure has been effected.

The occurrence of hemorrhage should be treated with an ice-bag over the epigastrium. The bag should be wrapped in a soft towel before it is applied to the skin, so as to absorb the moisture that condenses upon its surface. Small pieces of ice may be frequently swallowed and a hypodermic injection of ergotole or the fluid extract of ergot should be given in doses of half a drachm every two to four hours. The internal administration of ordinary styptics by the mouth is contra-indicated by reason of the vomiting which they usually aggravate. When such vomiting occurs it should be opposed by the hypodermic injection of morphin and atropin (morph. gr. $\frac{1}{4}$, atrop. gr. 1-150). Sometimes it yields to drop doses of creosote well diluted and repeated every fifteen minutes. After the subsidence of vomiting, the tendency to hemorrhage may be met by giving ten drops of aromatic sulphuric acid in four ounces of water every two or four hours. Liquor of the persulphate of iron, or of the perchlorid of iron, may also be given in the same way.

For a local antiseptic effect upon the ulcer, benefit may be derived from the use of large doses of bis-

mith salicylate or bismuth subgallate. These salts may be given in doses of 10 to 60 grains every two to six hours. Nitrate of silver and acetate of lead have been often used, but their utility is doubtful in comparison with that of bismuth. After the subsidence of acute symptoms, compound tincture of iodine is very useful. It should be given in doses of one drop in four ounces of water, half an hour before the three principal meals. The dose should be gradually increased to 4 or 5 drops, but it should be never carried so far as to cause irritation of the stomach. These small doses may be continued throughout the period of convalescence.

Constipation, which is an indication of chronic catarrhal gastro-enteritis, should be obviated by the use of saline laxatives. The waters of Saratoga, Rubinat, Hunyadi János, Friedrichshall and Carlsbad are especially valuable for this purpose. They should be taken half an hour or an hour before breakfast, in quantity sufficient to produce a gentle evacuation of the bowels each day. In this way the territory of the portal circulation is efficiently drained and the healing process is expedited. But these waters should not be taken longer than four or five weeks, for fear of exciting a particular inflammation on their own account. Used with occasional intermissions, they may be given for a long time. Many patients are much benefited by an annual course at the springs. Even the bottled waters taken at home are also very beneficial.

The occurrence of perforation and general peritonitis calls for the administration of opium and the external application of poultices. Laparotomy has been performed with the hope of suturing the wound and cleansing the peritoneum from the contents of the stomach, but the results have not been so far encouraging. And yet, it is the only thing to be advised outside of the routine treatment for peritonitis. Probably with larger experience a greater degree of success will be reached.

THE TREATMENT OF HEMOPHILIA WITH CHLORID OF CALCIUM, WITH REPORT OF A CASE.

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The treatment of hemophilia with the usual agents recommended for this disease, has been so ineffective that much difficulty has been experienced in arresting the hemorrhage from the slightest wounds, and many patients have died from the excessive loss of blood after the most trivial injuries.

The only advance in the therapy of this disease, has been made by Dr. E. A. Wright,¹ who taking as a basis for his investigations the physiologic fact that a certain per cent. of calcium salts is necessary for the coagulation of the blood, made a series of experiments with calcium chlorid, and demonstrated its efficacy in increasing the coagulability of the blood.

In a later article the author reports the results of his examination of the blood of a case of hemophilia, and the coagulability of the blood before and after the administration of chlorid of calcium. He found that the blood contained a smaller number than normal of white corpuscles (8,400-6,500 in 1 c.mm.), and that the degree of coagulability was subnormal, being from nine to ten minutes, instead of two and one-half

to five minutes, as in normal blood. After the use of the calcium salts in one gram doses three times a day, the coagulation time was reduced from ten to five and one-fourth minutes. In another article he describes three other cases, in all of which the chlorid had a marked beneficial effect. He also demonstrated that if this agent was used in large doses for a long time, that it is not effectual in keeping up a permanent increased coagulability.

He reports the following interesting case of hemophilia: A child four years of age received a fall, and in doing so injured the frenum of the upper lip. The bleeding was so profuse that the child's life was endangered, and as the blood showed no signs of coagulating, a dose of calcium chlorid was administered, and in three hours the blood commenced to clot. A firm coagulum formed, and the hemorrhage was arrested. As the bleeding recurred several times, the action of the calcium salt was supplemented by the inhalation of carbonic acid with a beneficial result.

Another case showing the efficiency of this drug is reported by Bryant. A child four and one-half years of age, received a punctured wound in the supra-orbital region from a fall. The hemorrhage was so profuse that the patient became almost pulseless. After pressure, styptics, and all the usual means of arresting bleeding had failed, and still the blood showed no signs of clotting, chlorid of calcium was given, and in a few hours the blood commenced to coagulate, the hemorrhage gradually ceased and did not recur.

The following case that came under my care some time ago, will furnish additional proof of the value of this "physiologic styptic."

A. L., male; aged 20 years; nativity, Russia, came to my office April 2, 1895. He was suffering with an alveolar abscess, resulting from irritation produced by a carious tooth. A small incision one-eighth of an inch long was made through the mucous membrane, and a small quantity of pus evacuated. I was surprised that so small a wound should bleed so profusely, but thought that it would soon subside, consequently, a wash containing tannic acid was given and he was instructed to wait until the hemorrhage ceased. At this time I was called away from the office, and upon returning I was surprised when my assistant informed me that the bleeding still continued, and that the patient had lost a considerable quantity of blood. I then used a solution of perchlorid of iron and other styptics, but without success, and as pressure was of no avail, packing was tried, but it rapidly became soaked, and the blood showed no signs of coagulating. By this time the patient was on the verge of fainting. Finally after four hours energetic work, the hemorrhage was temporarily checked by packing the whole space between the alveolar process and the cheek with gauze saturated with a strong iron solution.

A careful inquiry into the patient's past history revealed the fact that he was one of a family of "bleeders." Two brothers had died in infancy from hemorrhage, resulting from trivial injuries. He himself had on several occasions bled until he had fainted, from mere scratches of the skin, and accidentally cutting his fingers had on two occasions nearly resulted in death from profuse hemorrhage. He was pale, anemic and showed evidences of his diathesis.

Expecting further trouble from the slight wound I had innocently made, the patient was sent to the hos-

¹ British Medical Journal, 1891, ii, 1306.

pital for observation. A few hours after his admission, Dr. Maisch, the interne, was called to see him for severe nose bleed, the epistaxis was profuse, and as the ordinary means failed to arrest it, it was necessary to plug the nares. Twelve hours later the hemorrhage from the wound recurred, the blood showed no signs of coagulating, and the bleeding only ceased when the patient was on the verge of collapse. The respite, however, was brief, and six hours later another alarming hemorrhage occurred, and after all the ordinary means had been used without success, Dr. Maisch suggested that we try the internal administration of chlorid of calcium. This was given in 1.30 gram doses, and in a few hours the effect was magical; the blood, which had showed no signs of clotting, began to coagulate, a firm clot formed, and the hemorrhage was completely arrested. The calcium salt was given in 1.30 gram doses every four hours during the first day, every six hours during the second day, and three times a day on the third, when its use was discontinued. The hemorrhage did not recur, and after the expiration of a few days the patient was discharged from the hospital, and passed from my observation. The effect of the salt in this case was certainly prompt and efficacious, and was the only agent whose use was followed by beneficial results.

The points I wish to emphasize in concluding the description of this case are:

1. The alarming hemorrhage that may result in these cases from the most trivial injuries.
2. The futility of using local styptics and the ordinary means of arresting bleeding in cases of hemophilia.
3. To impress the fact that in the use of the physiologic styptic, chlorid of calcium, we have a prompt and reliable agent, one that will render valuable results in trying moments, and will rescue apparently hopeless cases.

CONGENITAL TEETH.

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On reading Dr. McKee's article in the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, page 253, Feb. 6, 1897, I was so impressed with its statements in regard to the etiology, treatment and non-frequency of the cases of congenital teeth, that it seemed to be my duty to register my personal experience in these cases. Dr. McKee says, "this freak of nature has been noticed at wide intervals and with great rarity for a long time." Also "these cases serve as a curiosity for doctors and students, and are a sight many do not see in a lifetime." I had not supposed these cases so rare or so much of a curiosity, for in a practice of thirty years, with a fair obstetrical clientele, I have attended three cases when there were two lower central incisor teeth at birth; and I never failed at these cases, or soon after, while it was the talk of the neighborhood to find several old ladies who had *seen* or *heard* of several such cases. My wife who is now fifty years old (don't let her know that I am telling her age, for she looks to be only forty) informs me that she had two central inferior incisors at birth and that they remained the usual length of time, when they were replaced by permanent teeth, which she still has in a perfect state of preservation. Her family and personal history is perfect. My first case was at my wife's third confinement, resulting in twins, male

and female; born at full term, both strong and healthy, with nothing out of the usual line except the girl, had two central inferior incisor teeth, firmly set in gums and well developed, but a little smaller than ordinary milk teeth developed at the natural time. The teeth were in healthy condition when she died of cholera infantum at the age of four months. My second case was at my wife's fifth and last confinement, when a strong and healthy daughter was born with two central inferior incisor teeth; one firm in the gums and the other loose and attached only to the outer gum. I removed it with my fingers without producing any hemorrhage or soreness. It has never been replaced. The other is firm and in a good state of preservation but smaller than to correspond with the other teeth. She is seven years old, and a well developed, strong healthy child. I am somewhat anxious to see if a permanent tooth will be developed where the one was extracted. My third case was a fine healthy boy, fifth child of Mr. and Mrs. J. E. B., both parents healthy and with good family history. This child was born at full term with same teeth as other cases, being as large as ordinary milk teeth and firmly set in gums. At the age of three weeks the teeth had made an intractable ulcer under the child's tongue, rendering nursing impossible. I extracted them. No hemorrhage or other trouble followed. The family soon moved from the city and I have lost track of them. My cases would indicate that no milk teeth would come to fill the vacancy caused by the exfoliation or extraction of congenital teeth; also that rickets or improper nutrition was not a causative factor in their development. It seems to me to be a more rational conclusion to assign the appearance of congenital teeth to a precocious or premature occurrence of the normal processes in the development and cutting of the milk teeth. We certainly have this precocity in the development and physiologic action of other parts of the human economy.

SURGERY ONE HUNDRED YEARS AGO.

AN HISTORICAL STUDY

BY DR. GEORGE FISCHER.

DEDICATED TO THE GERMAN SURGICAL ASSOCIATION.

TRANSLATED FOR THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION
BY CARL H. VON KLEIN, A.M., M.D.

CHAPTER II.—THE QUACK.

(Continued from page 455.)

Beside the rupture and cataract operations there was also lithotomy, which was practiced almost exclusively by itinerant operators, the lithotomists (Steinschneider). It is wonderful that the very most difficult operations have always been abandoned to the mountebanks. The learned men were too proud to class themselves with those, by performing the same kind of operations. Therefore it happened that there were too few surgeons who possessed any comprehensive skill. This class of crude empirics, who like other mountebanks, advertised themselves, and as a rule collected a great number of lithotomic patients about them in the spring and fall, arose out of gray antiquity. Hippocrates would not submit to this operation, and subjected himself to others, probably because in his time they regarded the operation as too cruel. So the physicians in Alexandria were obliged to take the so-called Hippocratic oath, which recites: "I will operate upon no stone-patient, but will turn over this part of my practice to the mercenaries following

that business." In Arabia, also, those who operated for stone were subjected to public scorn; there, indeed, the sight of a woman was never permitted to a man. Nevertheless there have always been people who devoted themselves principally to this operation, but practiced their art secretly, and it had descended from father to son or to some relative. In the middle ages the lithotomists traveled through all Europe; Fabricius von Hilden (born 1560) complained sorely that so few surgeons performed this operation, but abandoned it to the surgical frauds (Schnittärzte). In his time they visited the houses, offered their services, and were ready enough to perform the same upon wholly indefinite symptoms. When one of these vagrants in Cologne found no stone in the bladder and let one fall out of his coat sleeve he was seized, sentenced to be flogged and driven out. Some plied their trade so disgustingly that as a relief, especially in the case of children, he had the organ sucked, milked as it were, to draw out the stone. They did not concern themselves as to preliminary treatment, adapting diet or proper after-treatment. They surrounded the operation with such a nimbus that if a nobleman was to be operated upon his vassals must assemble in the church in prayer to implore the assistance of God. Certain lithotomists distinguished themselves particularly; thus, one Merk in Ulm had performed up to the year 1626 over two thousand stone and rupture operations. In Italy the people of Norcia, who were also famous as rupture operators, attained a great reputation. But in the fifteenth century the art of lithotomy was transplanted from their midst to France, as one from Norcia confessed to a certain Germain Colot.

The home of the lithotomist moved to Germany until in the first half of the eighteenth century. At that time the most famous itinerant lithotomist in the Fatherland was the Frenchman, Frère Jacques. Jacob Beaulieu was born in 1651, of poor parents, in the Franche Comté, and as a 16 year old boy, enlisted as a soldier, where he became acquainted with a quack, who operated for stone in the country. After he received his discharge he accompanied a Venetian lithotomist for five years, and then attempted the operations himself. He changed his citizen's clothing for the monastic habit, in which now as Brother Jacques he traveled around and operated with success in many French cities. He lived very frugally, ate only bread, soup and vegetables, and took no money for his operations except a few pfennig for the mending of his shoes and instruments. Manliness and a steady hand, in like degree, distinguished him in his operations as well as coarseness and cruelty. After the incision he was accustomed to say: "Your operation is done. God heal you." Thereupon others put on the bandages. In 1697 he came to Paris and was introduced to the body-physicians of Louis XIV., Fagon and Felix. They saw him operate and admired his skill. He secured the interest of the king, received a free residence with the chamberlain, and was regarded by the common people as a man sent from God. At every operation great crowds of the curious gathered to look on, such that they were finally obliged to place guards at the doors of the hospital to keep back the throngs. Nevertheless an evil star rose over his operations; out of sixty-five who were operated upon in the Hôtel Dieu and the Charité twenty-five died and only thirteen completely recovered, and therefore he was forbidden

to operate here. Hitherto he had used an ordinary round catheter, when Fagon induced him to use a pumping probe and furnished him bodies for experiments in operating. Henceforth the results were more fortunate, and in Versailles hospital thirty-eight incisions for stone were all successful. Fagon himself, suffering from this affliction, wished to be operated upon by Frère Jacques, but his friends restrained him and he was cured by that very skilful operator, Maréchal, whom Garengot saw perform eight successful lithotomies in a half hour. In 1703 the Marshal of Lorgues intrusted himself to the monk after he had twenty-two stone patients taken into his palace and operated upon before his eyes. They all survived, except the Marshal, who died on the following day. Through this Jacob lost his prestige in Paris, went away and would never return. After various tours in the French provinces and Holland he arrived in Amsterdam, where medals were struck in his honor. There he gave instruction in his art to Rau, then professor in Leyden. Frère Jacques then visited Antwerp, where also a medal of the value of sixty thalers, with the legend *Pro servatis civibus*, was struck. After going back to Amsterdam his popularity waned, as they had come to consider Herr Rau a more skilful man than he. Then he went to Germany. In Vienna the king had him summoned; in Rome the pope did likewise. Soon after, in 1714, he died in Besançon; he had already melted down the golden medals. His good reputation was attacked by his rivals, Mery and Saviard; Verdue also asserted that out of sixty patients operated upon, only thirteen had been cured, inasmuch that in his own defense he had published in 1702 on eight-page work upon the operations. It was stated in this that he had taken a solemn oath to renounce every reward, to devote his life to helping sufferers from calculi and rupture, to accept from rich people only his traveling expenses, and to show to other surgeons his instruments without charge. In his thirty years he is said to have treated at least 4,500 stone patients, to have deceived no one and to have performed no operation without the presence of physicians and surgeons. Mery's accusation that he castrated in cases of groin rupture, he met with the declaration that he had operated upon 2,000 people without injuring the testicles, the people being the poor, who could not pay for a truss. Various testimonials from body-physicians and others concerning his skill were appended. Frère Jacques introduced the side incision. He made the incision on the left side of the peritoneum, but with no regular method, for he sometimes made it two thumb-breadths higher, and for lack of a lithotomic knife he would operate with an ordinary bread knife. In his first years, when he operated without the use of the grooved sound, he frequently came in contact with the body of the bladder, cut it through and injured the rectum and the vagina; later, with the help of the grooved sound, the operations became safer. He differed from his contemporaries in that he neither prepared his patients for the operation by bleeding and purging, nor did he bind them, but only had them held by strong men.

Rau improved upon his methods. He was also very famous as a lithotomist, and was appointed by the council of Amsterdam to the high office of city operator. In the year 1713 he asserted that he had performed 1,547 lithotomies; they even lied so much as to say that of 1,700 patients he had not lost a sin-

gle one. He kept silent as to the way in which he operated and also of the unsuccessful cases; yet they knew very well in Amsterdam that four patients out of twenty-two had died. When Heister lived there, he often saw Rau operate, but complained that the latter from jealousy and avarice, in the operation courses, for which he received considerable money, openly declared at the operation that he would give no information about it, because he must live, and when Heister also entered the profession, he would keep secret the best points. Heister followed Rau's method in Germany.

Quackery was not confined to these mountebanks, but that most approved class of men, the executioners, competed with the surgeons. They enjoyed the reputation of being able to cure those diseases which had their origin in witchcraft, and, since they heard the confessions of the witches upon the rack, they must have knowledge of the black art. They also had the privilege of treating surgical cases. They set the limbs which had been fractured by the machines of torture, and applied to the healing of the wounds made by the rack, certain salves which they prepared out of animal fats. The skill thus acquired by them was used as a means of coming in contact with people of other callings, hoping by this means to redeem their despised position. So it happened that frequently they supplanted the surgeons in the treatment of wounds, fractures and luxations, and did a great deal of mischief. The Leipzig faculty (in 1730) was called upon to attend a boy with a broken arm which had been bound so tightly by a torturer, and compressed with splints, that having become inflamed it could not be raised from the shoulder without pain and loss of blood. Dog-fat was their universal balsam. The drinking of the foaming warm blood of beheaded persons would cure epilepsy: for this purpose they sold the blood of a young woman or a young man at the highest price, while the blood of a Jew was the cheapest. They were mostly consulted by the lower classes, but the better conditioned also had resort to the hangman. C. C. von Siebold relates that even His Reverence the Abbot, who in his old age was afflicted with an ossification of the parotid, betook himself to the executioner, with whom, in a healthy condition, he would never have associated, much less allowed himself to be touched by him.

There could be no greater affront to the medical profession, than that given when King Frederick I. of Prussia, ignoring his duty to give the highest satisfaction to all, appointed the executioner, Coblenz in Berlin as court and body physician. The whole collegium medicum protested but without result. For a long time afterward, in the royal armory in Berlin the sword was exhibited with which Herr Coblenz had severed 103 heads, his father 19, and his grandfather 68. In Prussia in 1725, the executioners were forbidden to attempt cures, but this did not last long, for again in 1744 Frederick the Great allowed them after having passed a certain examination to treat fractures, wounds and sores. As the Berlin physicians strenuously opposed this, the monarch issued an order from Potsdam, which must bring the blush of shame to the faces of all German surgeons: "Since His Royal Majesty has not licensed the executioners indiscriminately, but only such as are competent to cure, he will let the matter rest there, as the public will be able to discriminate in the necessary cases; and when the surgeons have become as skilful as they

have professed in their published representations, then everyone will sooner trust them than resort to an executioner for a cure; but in any event since there are ignorant surgeons, the public must not suffer thereby, but that class must acquiesce if a man would rather be treated and cured by an executioner than please them and remain lame and a cripple. And further, let the surgeons first become properly competent and skilful, and then the cures of the executioners will cease of themselves, and without any forbidding." In Saxony also, as in Prussia, the treatment of fracture, humps and boils, was permitted to the executioners; and in the principality of Salem, in Baden, they were allowed to practice medicine as well as surgery, so late as 1807. On the other hand in Austria, as early as 1753, they were forbidden to treat both internal and external diseases.

Among the people the calling remained despicable, so that the government found it necessary to break up the prejudice. In 1731 no Austrian was considered more dishonored who ate, drank, or traveled with an executioner, or handled a carcass, or removed it from a stall; on the other hand, from this time on, it was considered no disgrace in Saxony and Brunswick for the bath-keepers, surgeons and barbers to take in charge the criminals who had been under torture. In Prussia the executioners' curing ceased of itself later, when the practice of every physician was made dependent upon prescribed examinations and the approval of the magistrates; but later in 1819 the honor of bearing arms (*Waffenehre*) was extended to them and in 1827 they received all the rights of burghers.

The business of the executioners placed the courts of justice in a position to resort to the advice of the surgeon. This was the case in the torture chamber, and necessitated the appointment of so-called rack-physicians. The Malefiz Courts still existed everywhere; as late as 1749 the last witch was burned in the German Kingdom, a 70 year old nun, in Wurzburg, while the last law against witchcraft on German soil appeared in 1782 at Glarus in Switzerland. Torture, which at the beginning of the century was still very general, was abolished in Austria in 1776. It was a professor of surgery in Vienna, Ferdinand Leber, who, by continued agitation, and written reports worked untiringly for the final abolishment of this order of penal courts. With the help of the professor of law, Baron von Sonnenfeld, he prevailed upon the empress, Maria Theresa, after long continued efforts, to carry out this reform, against which the criminal courts protested in the most vigorous manner. Leber administered for nineteen years the melancholy office of a rack-physician, and as he says, "had only too often seen that an actual criminal with strong, apathetic nerves, endured the torture with martyr-like courage, and lied as to his guilt, while the innocent, overcome by the cruelty of the pain, acknowledged crimes which they never had committed." The principal means of torture consisted of the thumbserews, the so-called ladder (*Leiter*), which were still provided for in the *constitutio criminalis Theresiana* published in 1768, so also the boot and the bowstring (*Schnüre*). The torture was refined in a marked degree in the kingdom of Bohemia, where a torch made of twelve tallow candles was burned under the shoulders of the victim while he was stretched out upon the ladder. The cord torture gave occasion to the noble council of the resi-

dence city of Hanover in 1754, to ask of the surgeon L. Heister, his opinion as to whether it was possible for a judge, sitting some distance from the victim of the cord torture, to discern whether the cords with which the limbs were mutilated, cut to the bone. Heister answered that this was not possible, "Indeed, I will say further that a whole corps of surgeons sitting down by the victim could not be certain whether the constriction cut as deep as the bones of the arm without bending close down over the arm and feeling of it carefully." When during the French Revolution the *guillotine* was submitted to the National Convention on Executions, surgery was obliged to come to the help of justice. The guillotine was a machine which had long been in use in Persia and its forerunner may be said to be the falling ax (Fallbeil), by means of which, according to Botalli's plan, the Amsterdam surgeon John Van Horn, amputated limbs in a cruel manner. The convention considered that beheading was more fitting to a free people than the noose, and they called the Parisian executioner before them, to hear his judgment of the instrument. As he, on account of his lack of anatomic knowledge, had some doubts as to the position of the joints of the neck, the National Convention referred him to the Académie de Chirurgie. Louis, the secrétaire perpétuel of that body, gave it as his opinion (1792) that the blade of the instrument should not be square and horizontal as that which physician Guillotin had made, but should be convex and run obliquely from above downward, so as not to work as an ax but as a knife; and the back of the blade should be heavy and strong enough. He suggested that it be investigated whether it might not be necessary to sever the head of the poor victim by means of a crescent blade, which spanned the neck close to the base of the skull. On the strength of this opinion the National Convention decreed that the instrument should be made in this way and authorized the administration then in power to provide guillotines for the whole kingdom for which an appropriation of from six to seven million livres was required. The Paris Reign of Terror did not concern itself with the outcry of the English physician Kentish, who declared that death by guillotine was the most painful of all the methods of execution in war. Indeed he admitted that the beheading took place quickly, but asserted that death did not follow soon enough, since life continued for a little time. A hen whose head has been cut off runs around the room, and he argued that the sensations corresponded to the movements, and that pain followed the decapitation was proven by almost every section of a mutilated eel or angleworm. To the Englishman it was not unthinkable that the unhappy king Louis XVI., when after decapitation, his head was shown to the people by the executioner, still retained consciousness and a spectator of his own tragedy. The same ideas gained admission to the Prussian cabinet, for in the year 1804 they forbade the making of galvanic experiments with severed heads, because by that means sensation and consciousness might be re-awakened, if only for a moment.

The nuisance of the mountebanks was by no means confined to Germany, but *foreign countries* enjoyed it in a high degree. The way it appeared in France can be seen clearly from a speech of the deputy Fourcroy in the legislative assembly. He said therein: "Since the decree of the 18th of August 1792, which over-
turned the universities, faculties and learned societies

in France, there is no regular order of physicians and surgeons. The completest anarchy reigns in place of the former order. Those who have mastered their profession find themselves mingled with those who have not the slightest idea of it. Almost everywhere patents are granted to one, the same as to another, without distinction. The life of the citizen is in the hands of avaricious as well as ignorant men. The most dangerous empiricism, the most shameless quackery everywhere abuse confidence and credulity. Not a single proof of science and skill is demanded. Those who have studied since they were seven years old, in the three medical schools established by the law of 14 Frimaire, year 3, are scarcely in a position to prove their acquired knowledge, or to differentiate themselves from the impostors who were everywhere to be found. City and country were in like measure corrupted by mountebanks, who dispensed poison and death with a recklessness which the old laws were unable to check. The most murderous procedure had been substituted for the first principles of obstetrics. Hangmen and shameless blacksmiths usurped the title of officers of health, in order to cover their ignorance and avarice. Never has the increase of dangerous proprietary medicines been so marked as since the time of the overthrow of the medical faculties." Even in the beginning of this century the oculists in France practiced charlatanry on an enormous scale; everywhere were to be found the advertisements of medical oculists and on every street corner were displayed their powders, anti-ophthalmics, collyriums etc. In Italy there were many quacks, although perhaps the nuisance was less general there than in Germany, and old women did not enjoy so much credit among the lower classes. The real physician and surgeon was more respected and oftener employed by the average man. There also, medicine and surgery were sharply separated from one another so much so, that the Italian physician almost never practiced surgery. Shaving fell entirely to the lot of the hair-dresser, and by the end of the century he no longer gave baths as a part of his business. In Italy as in Austria clysterizing belonged to the business of the apothecary in most districts; the surgeon would have considered it a great affront to have this function ascribed to him. In wealthy Italian families, all of which had their own house physician and house-surgeon, consultations were so well regarded that seldom did a rich Italian die under the treatment of a single physician. But in no country did one come upon so many mountebanks' advertisements as in England. London swarmed with charlatans who extolled their drops and tinctures in the *London Chronicle*, and their gonorrhea specifics on every street corner where they could be most opportunely read. The quacks were numerous because the great physicians were too expensive, never charging less than a guinea for a visit. The majority resorted to the apothecary, who made his visits gratuitously and charged only for the medicine. The English apothecary whose place of business was never visited by physicians, was frequently, physician, surgeon and obstetrician, and was allowed to practice after paying the fees of one of the colleges. "The setting of limbs" was considered by the average man as a matter which required no special science and which the most ignorant blacksmith or veterinary surgeon could learn quickly and perfectly—simply the teaching of the grandfather to the father, from him to his son. The rupture surgeon preyed upon the pub-

lic, stating in his advertisements that his father and his grandfather had both suffered from rupture; the coucher sought to prove his skill by asserting that he had lost an eye in the service of the emperor and he showed his patients a large document according to which he had served among the soldiers of His Majesty the Emperor. How was it possible through such absurdities to be able to deceive the people! The epidemic of quackery spread even among the better classes, to that in the middle of the century an English judge said to the jury that he believed that a limb-setter in the country understood as much if not more about the treatment of fractures than any of the most eminent surgeons in the whole kingdom. The English government quietly allowed the nostrum swindle to increase; indeed, when a formula of a certain Bowles for the radical cure of rupture made a great sensation in the year 1725, and was bought by Thomas Renton for the state, they paid for it £5000 and £500 yearly royalty. But in spite of all swindles there was no country where there existed relatively a greater number of scientific surgeons, physicians and obstetricians, or where they stood in higher respect than in England. In Russia surgical quackery stood under the highest protection. In one village, near Moscow there dwelt in 1781, a peasant, who was consulted by the high and the low, principally in cases of fractures and luxations; he was often driven into the city with six horses. His reputation even reached the throne of the Empress Catherine. She issued an order providing that the pupils of the great war hospital in Moscow, should study with this peasant, two at a time, for two months each.

The German government tolerated the mountebanks and licensed them to practice on condition that they and their medicines should be examined by the collegium medicum. Only in the second half of the century did the light begin to break; it was seen first how general and great was the misery which these people spread over Germany, and a remedy was sought. Austria led the way, and in 1753 and at repeated intervals later, forbade all mountebanks and itinerant operators for all time to treat any kind of disease or to stand in public booths. Saxony followed in 1781. Who could expect that all the German states had advanced in like measure? As late as 1789 the oculists and rupture-surgeons operating in the principality of Lippe after passing a required examination went at it again. Supervision of quackery by the small states was elusive, for if the charlatan were called to account in any place, he quickly went into the neighboring dominions of another ruler where he was well received. The law alone was not able to remedy the evil, only a healthy common sense could eradicate this plague. It was just the same with the beggars. The state would not find it necessary to take action against mendicancy if nobody gave to beggars; so the quacks would have ceased to exist if there were not always people who placed confidence in them. The credulous had only to withhold payment, which was generally demanded in advance, and to wait until the quack had fulfilled his promises; the deception would then soon have been at an end. In order to enlighten the people: First, a physician of Lausanne published a treatise for the common people in 1761. The work created an enormous sensation, was translated into many languages, and in the following seven years, appeared in not less than sixty editions. In this book, and also in a medical weekly called *Der*

Arzt (the physician), which Dr. Unger published (12 volumes 1759-64), public attention was directed in easy, intelligible style to the great dangers which attended the methods of the mountebanks, and the people were warned not to be blinded by their gaudy equipages, and not to trust their titles and testimonials, which were false and forged. The remedies which were recommended for the nuisance of quackery were various. The most radical was a sound flogging. In Montpellier the magistrates were given the right to take every charlatan whom they caught and set him upon a lean jackass, with his face toward the tail. In this position he was led through the whole city, amid the jeering laughter of the people, was beaten by them, covered with mud, worried and railed at from all sides. It was proposed in order to check the superstition of the people to strike from the calendars all the astrological rules concerning medicine.

Some believed that it would be a check to impostures, if the clergy were instructed in medicine as they had been earlier, when the care of the sick fell to them. Up to this time they were forbidden to practice medicine in Austria, the penalty being a hundred ducats (1770), and medical practice was permitted only to the Brothers of Mercy in their cloisters and hospital after a prescribed examination, and they were allowed an apothecary for their own use. On the other hand, in the year 1773 the practice of medicine was permitted to the clergy by the parliament of Rouen, and Napoleon restored the act of the assembly, which gave them physician's privileges. In Germany there followed a decree of the Landgrave Louis of Hesse-Darmstadt, that in future no student should become a clergyman unless in the last year of his academic studies, in Giessen, he had one course. (Tissats Anleitung für das Landvolk.) The Universities of Würzburg and Landshut required that their divinity teachers should study anthropology. This German regulation was copied in Sweden, where, at the examination, a candidate in theology was required to have heard one course of lectures in pathology. Even Hufeland, so late as 1809, declared in favor of the medical practice of the country clergy, excepting in surgery and obstetrics, in order to limit quackery.

Has quackery died out in Germany in the last hundred years? Dare our age of progress venture to rebuke the preceding century for inaction? Not in the least. Charlatany flourishes in our day just as rankly as then, and their lies are just as brazen. The number of the nostrums advertised daily would fill whole volumes; the newspapers teem with indecent advertisements of treatment of syphilis and sexual diseases. Old women as healers have no more died out than have blacksmiths and shepherds; it was scarcely twelve years ago, that in my home a shoemaker enjoyed the confidence of the regnant royal family. In quantity and specialization the advertisements have multiplied in a manner never before known and they enslave the people in superstition and cruelty. If at present in Germany no mountebanks stand openly in their booths in glaring raiment and sell death and misery with their pills and essences to the blinded people, and no executioner obtains permission to treat fractures, yet it is only the form which has changed, the facts remain about the same. The little principality of Schwarzburg-Rudolstadt furnishes a picture of the conditions amid which the nostrum swindle is carried on under protected privileges. Year in and year out hundreds of drug dealers, emerge from the Thuringian

gian forests and disseminate their murderous wares throughout Germany, Austria and Switzerland. In this little corner of the earth is sold more opium, aloes, rhubarb, etc., than all the physicians of Germany prescribe, or all the apothecaries of Germany sell. In the district of Königsee, there are about 1300 inhabitants, some twenty poisoners, called chemists, and 350 dealers in poisons, called balsam-traders. The majority of the specifics handled are in the form of pills. A single chemist prepares every year from four to five thousand of such pills, and uses annually from ten to twelve pounds of opium for the so-called children's pills, with which children are lulled, sometimes into a temporary, sometimes into an eternal sleep. This traffic in poisons made the dealer in a few years a rich and locally influential man, and was handed down from father to son, and to grandson. The princely authorities of Schwarzburg do nothing whatever to oppose this abomination; in fact they encourage it, because it brings a large amount of money into the country. (*Spener'sche Zeitung*, January 1874). In the year 1874 the number of quacks, officially obtained in the kingdom of Bavaria, amounted to 1156, consisting of 911 men and 245 women!

(To be continued.)

PECULIARITIES OF THE SURGICAL DISEASES AND INJURIES OF THE NECK.

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(Continued from page 458.)

Tumors of the thyroid body.—Gaseous tumors do not exist in the thyroid body. Aerial goitres are really tracheoceles. Cystic tumors are represented especially by hematoma following an injury or due to a hemorrhage in a preëxisting cyst either from a traumatism or from a puncture with a too large needle and removal of all the liquid or enough to destroy the equilibrium of the pressure. The cyst originally called a hydrocele is then called a hematocele or a form of angioma. Pulsation in thyroid tumors is not uncommon, owing to the pressure on the great vessels. Lymphangioma represents a form of goitre. Congenital serous cysts of the thyroid are very rare. They must not be confounded any longer with the serous cysts of the neck; the gland is usually atrophied by the cyst, like salivary glands when cysts are located in them. Congenital mixed cysts are the most common: they contain thyroid vesicles, pavement epithelium, cartilage and muscular fibers. A peculiarity of the thyroid cysts is that, whether small or large, they may form sudden congestion or rupture, cause sudden great dyspnea, which may be rapidly fatal. Cystic growths of the thyroid should be enucleated, as this avoids any possible injury to the recurrent laryngeal nerve, and also avoids the possibility of cachexia strumipriva by leaving all the gland that is not diseased.

Solid tumors are represented mostly and almost entirely by goitres; although they sometimes contain cavities or cysts, yet their walls are usually so thick they are considered as solid tumors and are described with such. The great majority are simple hypertrophies.

Goitre is an enlargement or hypertrophy of the

thyroid body without structural changes; it may involve the whole region or be unilateral or bilateral; it is more frequent on the right side.

The causes of goitre in general are not yet known. Women are more liable; children are seldom affected before ten years old. The alterations as regards size and shape are variable. The microscopic alterations consist in cavities, channels and compartments lined by a pavement or cylindrical epithelium. This form of goitre is the primordial form; it is epithelial or follicular; the other forms of goitre are only modifications of it.

The symptoms are those of a hypertrophied gland in general; the peculiar symptoms are the shape of a horseshoe; the movements follow the larynx; the veins developed on the surface, the peculiar deformity of the region, the pressure symptoms on the cerebral and facial circulations. The course is usually very slow and sometimes irregular. The duration is ordinarily very long.

The prognosis becomes serious with the degree of pressure symptoms and the complications. The true treatment of goitre consists in extirpation; especially if it grows and if the pressure symptoms are serious. We must bear in mind that an apparently innocent goitre may suddenly enlarge and cause suffocation or even immediate death.

The internal treatment consists in long continued thyroid feeding, which will diminish the size of a goitre and even bring on a condition of atrophy, so that the danger lies in abolishing the functions of the thyroid. Sodium phosphate has the same effect and consequences. We should be careful in using anesthesia if there are already signs of pressure; the use of morphin or cocain is preferable. Operation with cocain is often possible; the pain does not seem to be beyond endurance; the dangers of the operation are much lessened without anesthesia; there is much less turgescence of the veins than when an anesthetic is used and the dangers of complications from coughing and vomiting are thus diminished.

The incision should extend from one side of the neck to the other in a very sharp and long curve with convexity downward toward the sternum. The upper part of the tumor had better be attacked first, and the upper vessels tied, then the middle or the inferior; the hemorrhage is reduced to a minimum by careful hemostasis by means of forceps and double ligature of the larger vessels before incising between the ligatures. When the inferior thyroid artery is being dissected and tied, by engaging the patient in a conversation for a few minutes the possibility of including the recurrent laryngeal nerve in the ligation is avoided, as the altered voice immediately warns the surgeon of the danger. In the lower right angle is the part which often penetrates into the mediastinum behind the sternum; there exist usually at that point large veins. When possible lift the gland from its bed and encircle the pedicle with an elastic tubing before enucleating, as recommended by Rose and Poppert. The dangers are hemorrhage and asphyxia by blood flowing into the trachea when it is torn; to avoid these perform preventive tracheotomy when possible. In the hypertrophied thyroid the arteries are larger than in the normal, but they are in their usual situations. Be careful not to tear the trachea again; if this happen, introduce at once a tracheotomy canula, a very long one. In exophthalmic goitre Kocher resorts to ligatures and ties only three arteries. In one case,

when four arteries were ligated, tetany set in immediately. Intracapsular enucleation is the safest, but is not always feasible. When the difficulty of tracheotomy is due to pressure, division of the isthmus may afford relief.

The forms, varieties and complications are the following, according to their number and extent: Unilateral goitres, bilateral goitres, whole or entire goitres, aberrant or ganglionic goitres; plunging or retro-sternal, retro-tracheal, retro-esophageal, peri- and retro-vascular goitres; supra-clavicular goitres, colloid goitres. According to the etiology: Primordial goitre, sporadic goitre, endemic goitre, epidemic goitre, congenital goitre, menstrual goitre, pregnancy goitre, old age goitre, metastatic goitre. According to the symptoms: Goitre voice, cystic goitre, pulsating or external or aneurysmal goitre, venous or varicose goitre, cavernous goitre, solid goitre, fibrinous goitre, fibrous goitre, calcified goitre, osseous, cartilaginous goitre, hydatid goitre, aerial goitre, constricting goitre, diffuse goitre, goitre with a broad base, goitre adherent to trachea, sclerotic goitre. According to course: Acute, sub-acute, chronic. According to prognosis: Benign, malignant. According to complications: Hemorrhagic (in a cyst or interstitial) or suppurating goitre, congestive goitre, exophthalmic goitre, goitre with emphysema of lung, due to impeded respiration, goitre with chronic bronchitis or tracheo-bronchial catarrh, with pulmonary edema, goitre with dilatation of right heart, goitre with cerebral anemia due to compression of the carotids, goitre with weak pulse, inflamed goitre or strumitis. The foregoing designations indicate the meaning of the form or varieties and the peculiarities attached thereto. However, some of them need additional explanation.

Aberrant goitres are those found in the supernumerary thyroid bodies, *i. e.*, those in the lobules developed independently and which failed to unite with the body of the gland; they are sometimes called ganglionic goitres because they resemble hypertrophied lymph nodes. Peri- and retro-vascular goitres are those which send processes around and behind the large vessels of the neck. Colloid goitre is one that attains the largest proportions; it may be congenital; it begins to grow when the child attains 7 or 8 years; after 40 there is no more risk of having it; females are much more often affected (only 26 men in 551 cases); this is due to the influence of menstruation, pregnancies, accouchements; runners are much more affected by goitre, as also all professions where the neck is stretched or efforts are made; malaria, by causing internal congestion, favors the development; heredity is not as well established as for endemic goitre. Endemic goitre is peculiar on account of its connection with cretinism; in all countries, in all climates and in all races, there are regions where cretinism prevails endemically and it is associated with endemic goitre. This goitre is the initial basis of a degeneration of which complete cretinism is the last stage of culmination; the influence of heredity is undeniable; 80 per cent. of cretins are born of goitrous parents. The action of water is also undeniable, as goitre may develop or stop, according to the changes in the water, and it was thought that the absence of iodine in the water was the cause; it is now believed by some that goitre is an infectious disease whose parasite is in the water. Epidemic goitre is met with where there is an agglomeration of people,

prisons, boarding schools, barracks, but is only observed in goitre countries. Goitre in old people, after 50, gives bad results when operated upon. Cystic goitre is characterized by cystic cavities in the goitre; these may be unilocular or multilocular; they must not be confounded with the simple serous cysts of the thyroid above described; although their origin is the same yet the cysts are amenable to a different treatment as described also above, and are a separate disease clinically. Aerial goitres are simply cases of tracheocele. Sclerotic goitre is one which has undergone fibrous degeneration. Acute goitre is characterized by a sudden growth due to congestion, inflammation and hemorrhage. Hemorrhagic goitre is due to hemorrhages occurring either in the cystic cavities as in cases of cysts of the thyroid, or in the walls, or interstitial hemorrhages.

Exophthalmic goitre, or Basedow's or Graves' disease, is accompanied by protrusion of the eyeball and tachycardia with irregular, frequent, loud sounds; the heart is dilated; there is also alteration of the normal sounds; the arteries of the wrist and head throb. These symptoms are due to changes in the middle and lower ganglions of the sympathetic. Suppuration is very rare. There is a surgical exophthalmic goitre, due to the pressure upon the nerves, purely mechanical and very distinct from Graves' disease. In goitre with a feeble heart and a weak pulse great care should be exercised in operating. Inflammation of a goitre is called strumitis; it is much more frequent than thyroiditis or inflammation of a normal thyroid; it is serious because of the enlarged condition of the organ. Tracheotomy may be performed for relief until the pus is located and evacuated by incisions or by dilatation upon a guide. The diseases or complications of goitre are wounds, contusions, congestions, inflammations, hemorrhages, cancerous degenerations.

All the other solid tumors of the thyroid body are rare, sebaceous cysts, dermoid cysts, fibrinous hematoma, lipoma, adenoma, tuberculoma, syphiloma, fibroma, myxoma, neuroma, chondroma; encephaloid, melanotic, colloid, epithelioma, carcinoma, sarcoma, scirrhus.

Tuberculoma and diffuse tuberculosis are rare; they have never been observed primarily; they existed secondarily seven times out of one hundred consumptives, especially in the acute form; sometimes fistulous openings remain. Syphiloma is represented by gummata which have been found in children affected also with visceral syphilis. Fibroma of the thyroid body is barely known. A case of osteoid chondroma is reported; also a case of osteoma, but this case is doubtful. Sarcoma is more frequent, and has been observed in all its varieties; the difference between hypertrophy and sarcoma is that usually the hypertrophy has the same shape as the gland, whereas the sarcoma has not. Carcinoma is also among the frequent tumors of the thyroid outside of goitre. It is sometime connected with the esophagus or larynx; it may be metastatic from the cancer of some other part. The primitive cancer is the one here considered; it is rare, and is met especially in goitrous countries; its malignancy is great; generalization is the rule and the secondary tumors are found especially in the lungs, the mediastinum, and the bones. Such cancers are transformations of goitre; they are at first movable like all thyroid tumors but soon become adherent and immobilized; the limits soon become diffused and it is impossible to isolate them with the fingers behind

and feel the carotids pulsate; this is an important diagnostic sign. The palliative treatment consists as for the other tumors, in tracheotomy and feeding by esophageal tube.

Surgical operations on the thyroid body.—The following remark covers the peculiar features in operating on tumors of the thyroid other than goitres, that there are usually no large vessels and enucleation is possible because in growing, the tumor compresses the tissue of the gland and the vessels peripherally.

SURGICAL DISEASES AND INJURIES OF THE SUPRAHYOID OR SUBMENTAL REGION.

The *congenital malformations* of this region present no peculiarities worthy of notice. The *acquired malformations* of peculiar interest consist in the double chin produced by an accumulation of fat in the region.

The *swellings* of the region have nothing characteristic.

Burns are of peculiar importance because the resulting cicatrices may draw the skin of the chin and of the lower lip causing eversion of the lips and its consequences.

Contusions here are rare because of the protection of the chin. In hanging, the compression may often bear on the base of the tongue; the vessels, nerves and larynx are uninjured.

Wounds of the suprahyoid region are very seldom homicidal but almost always suicidal. Penetrating wounds only are of importance; punctured wounds are very rare; they are only observed in the cases of "hooking" of the chin. Incised wounds when transverse usually gape a great deal, but very little when longitudinal; usually the suicide, throwing his head back, cuts higher than he intends, in the suprahyoid region, so that the borders of the stretched sternomastoid protects the vessels. The penetrating wounds open the cavity of the mouth, injure the tongue and epiglottis; there may be suffocation due to the blood or other foreign substances, or to the tongue or epiglottis falling back and occluding the larynx; there is usually much hemorrhage from the wounding of the lingual artery. More than in all injuries of the neck we meet here with swelling and edema of the aryteno-epiglottic folds, which are directly injured. The gaping is especially great when the head is thrown back; the saliva and food pass out of it during deglutition. Wounds of the epiglottis cause much suffocation, difficulty of speech, of deglutition, coughing; thirst is a common symptom. Lacerated wounds have been observed in several cases of "hooking" of the chin. Gun-shot wounds seldom penetrate posteriorly because the head being usually thrown back the revolver is naturally directed upward and rests under the chin, which is usually carried away by the shot. Poisoned wounds, bites and stings present nothing peculiar here. Foreign bodies in the wound are here represented by alimentary matter. The shock is as great here as in all injuries to the air passages on account of the dyspnea and aphonia and dysphagia.

Neuroses are of no special interest nor are softening and indurations. *Congestion* or hyperemia presents nothing peculiar. *Inflammations* of the skin are the same as those which affect the beard of the chin; they are of no peculiar interest.

Superficial cellulitis, *i. e.*, developed between the fascia and the skin, is of no peculiar consequence.

Deep cellulitis develops between the fascia and the mylo-hyoid muscles and is more serious; it must not

be confounded with the cellulitis developed above the mylo-hyoid and invading the floor of the mouth. Adenitis of the submental or digastric glands is the usual starting point of the inflammation of the region; it extends to the surrounding connective tissue and becomes an adeno-cellulitis and phlegmon; it is accompanied by great swelling increased by mastication and deglutition.

The inflammation of the excretory, salivary ducts is rare; it is a propagation from and through the mouth; there is retention of saliva, sometimes of pus; the needle and probe strike no calculi; in some cases the gland itself is swollen. Chronic inflammations of the region are most rare.

Gangrene presents here no peculiarities, nor do *ulcers* or *fistulae*. *Gaseous tumors* are almost unknown in this locality.

Liquid tumors are most commonly cysts. Congenital branchiogenic cysts of the region of the hyoid bone extend sometimes into the mouth and resemble ranulae, but they are independent of the submaxillary and sublingual glands. Simple serous or suprahyoid grenouillettes have been studied only recently; they are usually seated underneath the cervical fascia; they are very often an extension of sublingual cysts or grenouillettes through the muscles of the floor of the mouth. Dermoid cysts sometimes remain dormant for a while and then become apparent; if by the history the cyst may be traced to infancy it is a dermoid cyst.

The *solid tumors* of this region which are the most common and peculiar are the secondary involvement of the digastric or submental lymphatic glands in cases of erosion of the middle of the lower lip; they are comparatively seldom involved and when thus involved the whole lip is diseased; still they must be looked for, because if overlooked and neglected they may be the starting point of a new growth which will require another operation later.

Foreign bodies in salivary glands are more frequent in Wharton's duct; they may be a bristle, fishbone, straw, hair of a tooth brush. There is pain, swelling of gland, abscess, fistula. They may give rise to salivary colic. The treatment is that of all similar cases. All the other tumors are rare and present no peculiarities.

Surgical operations of the supra-hyoid region.—The deep surgical operations of the supra-hyoid region opening into the mouth are serious for all the reasons explained above in connection with the wounds of the region. These are still more so if there is loss of substance and the edges can not be united; the result is a fistula with its possible consequences.

SURGICAL DISEASES AND INJURIES OF THE SUBMAXILLARY REGION, *i. e.*, LATERAL SUPRA-HYOID OR DIGASTRIC TRIANGLE.

The *congenital malformations* present no peculiarities except that at times the orifice of a branchial fistula is observed there. *Acquired malformations* present no peculiar interest, neither do swellings.

The *diseases of the skin* most frequently observed here are morphea, sycosis, acne, sarcoma of the skin.

The *injuries* present some peculiar interest because they may injure the facial or the lingual artery, or the hypoglossal nerve and also because they may penetrate into the mouth. In regard to the diseases of the deep parts it is well to state here at the outset and

to bear in mind that the overlying lymphatic glands are more often affected than the tissue of the submaxillary salivary gland itself and that practically it is immaterial which is involved.

Neuroses present no peculiarities, nor do *softenings* and *indurations*.

Hyperemia is represented here by the *submaxillary mumps*, seated in the salivary glands, very rarely existing independently, and usually associated with parotid mumps.

Inflammation under the form of phlegmon is very common in this region. It is usually due to lesions of the face, mouth, tonsils, and especially dental caries, with periodontitis. It usually begins in a lymphatic gland as an adenitis, then invades the connective tissue around or becomes an adeno-cellulitis; this adeno-cellulitis seldom invades the neighboring regions, especially the infra-hyoid. Inflammation and abscess of the salivary gland itself is extremely rare. Osteo-periostitis from diseased teeth is often confounded with cellulitis; in the former the swelling corresponds to the body and to the border of the maxilla; its tendency is toward the face and the masseter portion of the cheek; the vestibule is painful and sometimes fluctuating. In adeno-cellulitis the swelling exists below the maxilla and has a tendency toward the neck. Chassaignac's subangulo-maxillary adeno-cellulitis is fixed under the angle of the jaw, and is due to the difficult eruption of the wisdom tooth.

Ludwig's acquired or infectious submaxillary angina is characterized by excessive swelling and pain; the tongue is swollen and immovable; the mouth is distended in front; there is difficulty of swallowing; it may terminate in gangrene; it often ends in death. The treatment of these abscesses consists in evacuating the pus as soon as possible; incisions should be made under and parallel with the inferior border of the maxilla, so that the cicatrices will not show; by using the method of dilatation on a guide the evacuation takes place when the exploring needle has located the pus, and there is no cicatrix of any consequence remaining.

Retropharyngeal abscesses often point toward this region, although they may burrow down into the mediastinum; in the former case the large vessels are between the pus and the surgeon's knife. It is best to try and evacuate through the mouth, to avoid the course of the large vessels and nerves. An incision on the middle line of the pharynx, if it will accomplish the object, is preferable as safer: it is well then to place the patient in Rose's position to prevent the entrance of pus into the larynx.

Gangrene is sometimes met with in this region as a termination of violent infectious inflammations. Scrofulous *ulcers* are not rare in children as a result of suppuration of the lymphatic glands of the region. *Fistulae* are rather common; usually they are due to diseased teeth and to the tuberculous lymphatic glands, to salivary calculi developed in the gland itself.

Gaseous tumors are sometimes seen under the form of pharyngocoele.

The liquid tumors most common are various cysts. The most frequent are the salivary cysts due to retention of the saliva resulting from a more or less complete obstruction of the intra-buccal portion of Wharton's duct. Hydatid cysts have been observed. Cysts from cancerous degenerations are not rare.

The most common solid tumors are strumous, tuberculous, syphilitic adenoma. Cancerous adenoma is comparatively frequent; it is usually secondary to cancerous lesions of the face, mouth or tongue. All the other tumors have been observed but are very rare. It is very seldom that the salivary gland itself is the seat of the growth; if the saliva flows through the apex of Wharton's duct it is not the gland that is affected. Practically it is immaterial.

Salivary calculi are peculiar to this region; they give rise to pain and swelling; sometimes abscesses are followed by fistulous openings, temporary or permanent: the calculi sometimes occupy the center of the gland or the deep surface and the most important symptoms, as also the fistulous openings are in the mouth. They are diagnosed by searching carefully for the opening of the fistula and probing it, when the peculiar click will be felt; if necessary, a needle thrust deeply through the gland in several directions will strike the calculus if it be present.

Surgical operations of the submaxillary region. Tumors should be removed through the mouth whenever possible, to avoid outside cicatrices and disfigurement. The removal of cancerous glands should be undertaken early, because they soon become adherent to the maxilla and to the deep structures with all the following evil consequences. The structures liable to be injured in an operation in this region are the facial artery, the lingual artery, the hypoglossal nerve; the mouth may be opened.

(To be continued.)

SELECTIONS.

Dr. S. Weir Mitchell's Experiments with the Mescal Button.—The *British Medical Journal* for December 5, contains an entertaining account of his personal trial of the anhelonium lewinii or "mescal button." He begins by saying:

At 12 noon of a busy morning I took fully 1½ drachm of an extract of which each drachm represented one mescal button. I had in a half hour a sense of great gastric discomfort and later of distension. At 1 p. m. I took a little over a drachm. Between 2 and 3 p. m. I noticed my face was flushed, the pupils were dilated midway, the pulse 80 and strong. I had a light sense of exhilaration, a tendency to talk, and now and then I misplaced a word. The knee-jerk and station were normal. Between 2 and 4 o'clock I had outside of my house two consultations and saw several patients. I observed that with a pleasing sense of languor there was an unusual amount of physical endurance. I went rather quietly, taking two steps at a time and without pause, to the fourth story of an hotel, and did not feel oppressed or short of breath. This is akin to the experience, as I learn, of the mescal-eating Indians and to that of many white men.

Meanwhile my stomach was more uncomfortable and I saw the first evidence of any change in my color records. On closing my eyes (while in my carriage) I held longer than usual any bright object just seen. As to this, however, I am not as sure as I am concerning the later phenomena. About 4:10 p. m. I drove home and after taking half an ounce of extract in three doses I lay on a lounge and read, becoming steadily more conscious, at first of a left frontal pain (not severe) and soon after of a dull occipital ache on both sides and at or about the occipital bosses. Yawning at times, sleepy, deliciously at languid ease, I was clearly in "the land where it is always afternoon." At 4:30 p. m., rising to make notes, I became aware that a transparent, violet haze was about my pen point, a tint so delicate as at times to seem doubtfully existent.

At this stage of the mescal intoxication I had a certain sense of things about me as having a more positive existence than usual. It is not easy to define what I mean and at the time I searched my vocabulary for phrase or word which should fitly state my feeling. It was vain.

At this time, also, I had a decisive impression that I was more competent in mind than in my every-day moods. I seemed to be sure of victoriously dealing with problems. This

state of mind may be easily matched in the condition of some men when pretty far gone in alcohol intoxication. My own mood was gently flattering, a mere consciousness of power, with meanwhile absolute control of every faculty. I wrote a long letter of advice dealing with a rather doubtful diagnosis, and on reading it over was able to see that it was neither better nor worse than my average letter. Yet the sense of increased ability was so notable that, liking to test it, and with common-sense disbelief in its flattery, I took up a certain paper on psychology, which a week before I had laid down in despair. I grieve to say that it was less to be comprehended than ever. My ignorance would have remained bliss had I not made the experiment. I next tried to do a complicated sum, but soon discovered that my ordinary inefficiency as to figures was not really increased.

A mood is like a climate and can not be reasoned with. I continued to have for some two hours this elated sense of superiority. I was for this while in that condition in which some people permanently abide.

The further test of writing a few lines of verse was tried. I found there was much effort needed. I lay down again about 5:20, observing that the outer space field seemed to be smoky. Just at this time, my eyes being closed, I began to see tiny points of light, like stars or fire flies, which came and went in a moment. My palms were now tingling, my face a little flushed. About 5:40 the star points became many, and then I began to observe something like fragments of stained glass windows. The glass was not very brilliant, but the setting, which was irregular in form, seemed to be made of incessantly flowing sparkles of pale silver, now going here, now there, to and fro, like, as I thought, the inexplicable rush and stay and reflux of the circulation seen through a lens. These window patterns were like fragments coming into view and fading.

Hoping for still better things in the way of color, I went upstairs, lay down in a darkened room and waited. In a few minutes the silver stars were seen again, and later I found that these always preceded any other remarkable visions.

The display which for an enchanted two hours followed was such as I find it hopeless to describe in language which shall convey to others the beauty and splendor of what I saw. I shall limit myself to a statement of a certain number of the more definite visions thus projected on the screen of consciousness.

During these two hours I was generally wide awake. I was comfortable, save as to certain gastric conditions, which were not so severe as to attract attention. Time passed with little sense for me of its passage. I was critically attentive, watchful, interested and curious, making all the time mental notes for future use.

Especially at the close of my experience I must, I think, have been for a while in the peculiar interval between the waking state and that of sleep—the “*prædormitum*”—the time when we are apt to dream half-controlled stories; but as to this I am not very sure. As a rule, I was on guard with every power of observation and reflection in full activity.

My first vivid show of mesal color effects came quickly. I saw the stars, and then, of a sudden, here and there delicate floating films of color—usually delightful neutral purples and pinks. These came and went—now here, now there. Then an abrupt rush of countless points of white light swept across the field of view, as if the unseen millions of the Milky Way were to flow, a sparkling river before the eye. In a minute this was over and the field was dark. Then I began to see zigzag lines of very bright colors, like those seen in some megrims. I tried to fix the place and relation of these tints, but the changes were such as to baffle me. One was an arch of angled lines of red and green, but of what else I could not determine. It was in rapid, what I may call minute, motion.

The tints of intense green and red shifted and altered, and soon were seen no more. Here again was the wonderful loveliness of swelling clouds of more vivid colors gone before I could name them, and, sometimes rising from the lower field, and very swiftly altering in color tones from pale purples and rose to grays, with now and then a bar of level green or orange intense as lightning and as momentary.

When I opened my eyes all was gone at once. Closing them I began after a long interval to see for the first time definite objects associated with colors. The stars sparkled and passed away. A white spear of gray stone grew up to huge height, and became a tall, richly finished Gothic tower of very elaborate and definite design, with many rather worn statues standing in the doorways or on stone brackets. As I gazed every projecting angle, cornice, and even the face of the stones at their joinings were by degrees covered or hung with clusters of what seemed to be huge precious stones, but uncut, some being more like masses of transparent fruit. These were green, pur-

ple, red, and orange; never clear yellow and never blue. All seemed to possess an interior light, and to give the faintest idea of the perfectly satisfying intensity and purity of these gorgeous color-fruits is quite beyond my power. All the colors I have ever beheld are dull as compared to these.

As I looked, and it lasted long, the tower became of a fine mouse hue, and everywhere the vast pendant masses of emerald green, ruby reds, and orange began to drip a slow rain of colors. All this while nothing was at rest a moment. The balls of color moved tremulously. The tints became dull, and then, at once, past belief vivid; the architectural lines were all active with shifting tints. The figures moving shook the long hanging lines of living light, and then, in an instant, all was dark.

After an endless display of less beautiful marvels I saw that which deeply impressed me. An edge of a huge cliff seemed to project over a gulf of unseen depth. My viewless enchanter set on the brink a huge bird claw of stone. Above, from the stem or leg, hung a fragment of some stuff. This began to unroll and float out to a distance which seemed to me to represent Time as well as immensity of Space. Here were miles of rippled purples, half transparent, and of ineffable beauty. Now and then soft golden clouds floated from these folds, or a great shimmer went over the whole of the rolling purples, and things, like green birds, fell from it, fluttering down into the gulf below. Next I saw clusters of stones hanging in masses from the claw toes, as it seemed to me miles of them, down far below into the underworld of the black gulf.

This was the most distinct of my visions. Incautiously I opened my eyes, and it was gone. A little later I saw interlaced and numberless hoops in the air all spinning swiftly, and all loaded with threaded jewels or with masses of color in long ropes of elustered balls. I began to wonder why I saw no opals, and some minutes after each of these circles, which looked like a boy's hoop, became huge opals; if I should say fluid opals it would best describe what was, however, like nothing earthly.

I set myself later to seeing if I could conjure figures, for so far I had seen nothing human in form, nor any which seemed alive. I had no luck at this, but a long while after I saw what seemed a shop with apothecaries' bottles, but of such splendor of green, red and purple as are not outside the pharmacies of fairyland.

On the left wall was pinned by the tail a brown worm of perhaps a hundred feet long. It was slowly rotating, like a Catherine wheel, nor did it seem loathly. As it turned, long green and red tentacles fell this way and that. On a bench near by two little dwarfs, made, it seemed, of leather, were blowing through long glass pipes of green tint, which seemed to me to be alive, so intensely, vitally green were they. But it were vain to find in words what will describe these colors. Either they seemed strangely solid, or to possess vitality. They still linger visibly in my memory, and left the feeling that I had seen among them colors unknown to my experience.

Their variety and strange juxtapositions were indeed fascinating for one to whom color is more than it is to most men; nor is it possible to describe the hundredth of what I saw. I was at last conscious of the fact that at moments I was almost asleep, and then wide awake. In one of these magic moments I saw my last vision and the strangest. I heard what appeared to be approaching rhythmic sounds, and then saw a beach, which I knew to be that of Newport. On this, with a great noise, which lasted but a moment, rolled out in darkness wave on wave. These as they came were liquid splendors huge and threatening, of wonderfully pure green, or red or deep purple, once only deep orange, and with no trace of foam. These water hills of color broke on the beach with myriads of lights of the same tint as the wave. This lasted some time, and while it did so I got back to more distinct consciousness, and wished the beautiful terror of these huge mounds of color would continue.

A knock at my door caused me to open my eyes, and I lost whatever of wonder might have come after.

After dinner I ceased to be able to see any further display of interest. Now and then a purple or pink fragment appeared, but that was all. For a day after I noted the fact that my visions could be easily recalled by a memorial effort, but with less and less sharpness.

These shows are expensive. For two days I had headache, and for one day a smart attack of gastric distress. This came after the first dose, and was most uncomfortable. The experience, however, was worth one such headache and indigestion, but was not worth a second.

Dr. Prentiss and others describe mesal as causing insomnia. My first experience with the tincture was made early in the morning. I became deeply flushed by noon, but had no visions. I felt drowsy and slept very well the following night. The

extract used, as stated, did make me sleepless up to 4 A.M., but neither restless nor uneasy.

Some interesting reflections are suggested by my experience with that vision-breeding drug, mescal. The effect on me was more or less like what is experienced in some ophthalmic megrims, and even my most brilliant visions can be matched by those I reported in 1887, and by some to be found in Dr. de Schweinitz's more recent paper.

The following extract from my own paper will sufficiently illustrate what I desire to point out. It concerns one of the several cases of megrim visions which I reported:

"The symptoms of onset are these: frontal and occipital sense of tension lessening toward night, good sleep follows; the next day he awakes with some pain between the eyes and slight photophobia. The second night, or the morning after it, he is aware of being flushed, but has no cerebral throbbing. In a few moments the lids feel as if pulled toward the inner canthus, and fortification zigzags appear, with next partial blurring of vision, which seems in twenty minutes to efface the lines and include more or less of the field. The lines seem to be projected one inch from the eye, and flash, and come and go with shimmering prismatic colors. The dimming of vision lasts some twenty minutes, and leaves him with slight vertigo and a feeling of fullness of the head, but pain always begins over the eye which has distinct vision, and of this he is sure. It increases as the eyesight clears, and is about one inch above the eye. Exertion, stooping, anxiety increase it. The pain lasts from one to three hours, and ceases without nausea. When it occurs over the left eye he has sometimes slight aphasia for five minutes, and in youth this was more severe and more lasting.

"As the zigzags fade he has exalted sense of hearing; loud voices hurt him for half an hour, and this is the period of vertigo. At one time he had at this period of the attack tingling in the fingers of the side opposite to that of the pain. After a number of these headaches he is subject to the curious and exceptional illusions which have caused me to report his case. At times these replace the zigzag lines, but later in a series of headaches they come on independent of the hemicrania, and occur at night, while awake or in full daylight.

"1. A common delusion with him is to see about twenty feet distant a trellis of silver covered with vines and flowers of brilliant tints. This is seen best when the eyes are open, and comes and goes.

"2. He sees a series of complex geometrical figures at the center of the field. These are brilliant pink or red.

"3. Quite commonly he sees multiple red circles intertwined and in rapid rotation, and once a red eye which seemed to approach him from a distance. Sometimes there is a milky cascade before both eyes.

"4. He saw once a crescent of silver on the wall, and suspended from it numerous heads in profile. Some were strange to him, and some were vivid revivals of faces which he had long forgotten.

"5. Six years ago he saw, during an attack, a huge red spider, which melted into a series of red rectangles revolving in swift motion.

"6. He has several times, and first on awakening, seen the door opened and a procession of white-robed veiled figures enter. They did not fade until he arose and lit the gas. These were seen with his eyes open or shut, and he could not double them by causing himself to squint by pressure on one eye."

It will have been seen that mescal supplied me with one-sided (left) frontal headache—later with occipital pain on both sides, with colored zigzags or fortification lines—the rain of silver and disorder of the stomach. I ask myself now if the megrims with visions are apt to be found in association with occipital pain in the region of the convolutions, which we believe store up our ocularly acquired memories. It is worth an inquiry.

The mode of action of mescal is somewhat curious, and may vary with the dose and with the man. At first, even at the height of drug action, the visions require one to wait with closed eyes for a minute or more. To open the eyes is to dismiss the vision, no matter how dark be the room. Suggestion availed me but little, and no act of will was competent to hold my dream unaltered.

I found in these seeming laws some resemblance to those which—in my case, at least—appear to govern a quite ordinary and normal phenomenon. From childhood I, like some others, can at night, before sleep arrives, summon visions. These are not always just what I desire. Once present I can not alter them; they shift, change and disappear under influences not within my capacity to control or to analyze. To open my eyes, even in the most intense darkness, dismisses these visions. Is it true of opium visions? The same law certainly applies to

some hysterical phantasms; but the explanation does not as yet seem attainable. My normal power to summon visions was entirely lost under mescal action. I tried to see faces, gardens, etc., but none came at command so long as I was under the influence of the drug.

For the psychologist this agent should have value. To be able with a whole mind to experiment mentally upon such phenomena as I have described is an unusual privilege. Here is unlocked a storehouse of glorified memorial treasures of one kind. There may be a drug which shall so release a mob of verbal memories, or of musical records, or in fact, of tastes and odors. I naturally speak of things seen under mescal influence as glorified memories—certainly nothing seen in these visions was altogether out of my known experiences, but everything was excessive, forms were gigantic, colors marvelously intermingled. In fact, nothing was simply the vision of a thing remembered and recognized, except the familiar Newport Beach.

I see no obvious therapeutic uses for mescal in massive doses. It is yet to be tested by continuous employment in moderate amounts, and may be of value.

The Glandular Elements in Bubonic Plague. Dr. Simon Flexner, in the *Johns Hopkins Hospital Bulletin*, explains the symptomatology of the plague as obtained from a study of the lately published observations of Kitasato and Aoyoma. A paper by the latter, who himself contracted the disease at Hong Kong in 1895, has been published in the *Mittheilungen aus der Med. Facultät der Kaiserlichen Japanischen Universität*. The symptoms of this disease are incorrectly described when called multiform or protean, as the habit of some writers is, but they are simple. Prodromata are seldom present or complained of by the more obtuse part of the Chinese; the more intelligent people take note of some slight swelling and tenderness in the glands. After a day or two the glandular symptoms become more marked, and those glands first involved may reach the size of an egg. The pain increases with the growth in size, although in some cases it may be absent excepting upon pressure. The glandular affection is characteristic, inasmuch as it begins in one group and then involves in succession others, as for example, first the inguinal, then the axillary, then those of the neck and finally the submaxillary glands. The glands of the neck, of the elbow and of the knee are seldom primarily affected. Only very rarely do several sets of glands become enlarged at once. Very soon after the swelling of the glands the periglandular tissues become involved and then later the skin. In the milder cases, suppuration may not occur and the swelling gradually diminish and finally disappear. On the other hand, suppuration may occur even in glands but little enlarged. In the rapidly fatal cases, death may occur before any considerable glandular swelling can be made out, in the severest cases taking place on the second day. As a rule death occurs from the second to eighth day, and on an average on the fourth day. As suppuration of the glands rarely occurs before the tenth day it was not observed in these more rapid cases. When death takes place late in the course of the disease it may be due to a second pyemic infection. The suppuration of the glands may continue for months, so that the convalescence of the patient is rendered very slow and tedious. When suppuration does not occur the glands gradually become smaller, although the enlargement may not entirely disappear for two or three months. It is noteworthy that at autopsy the lymphatic apparatus of the stomach and intestines and the mesenteric lymph glands were never found greatly inflamed, and the last contained very small numbers of the bacilli only, or in certain cases none at all. Hence it is stated that all physicians who observed this outbreak of the pest were forced to the idea that the bacilli entered chiefly through external wounds. In the great majority of cases the deep inguinal and the axillary glands, and in a small number of cases the superficial inguinal glands, of one side were first affected and afterward other glands became involved. This fact is explicable only upon the assumption that the organism entered through small defects of the skin which were present either on the feet or the hands; and as the working class of China usually go barefoot, such small defects can easily be imagined to exist. Further, as is known, the lymphatic vessels of the feet run to the deeper and lower inguinal glands, thus exposing these first in the great majority of cases. The superficial inguinal glands receive the lymphatics of the penis and the skin over the lower portion of the abdomen, and these are but seldom primarily affected. Of the nine Japanese whom Aoyoma observed, two women showed affection of the axillary glands, one of the submaxillary glands, whereas in the other no glandular affection could be detected,

notwithstanding the fact that the bacilli were found in the blood. Of the Japanese men, four showed swelling of the axillary glands and only one of the inguinal glands. This is interesting when it is considered that the Japanese do not go barefoot. It may also be mentioned that among the Chinese the women show affection of the axillary glands rather than of the inguinal glands. The wounds through which the infectious agent enters show, as a rule, no reaction. Notable exceptions to this statement are his own case, in which a lymphangitis was present, and that of his assistant, Nakahara, who succumbed to the disease and in whom lymphangitis was also observed, in both cases beginning in the hand and extending toward the axilla. As regards the manner of diffusion of the bacilli, nothing new has been offered in this report. The period of incubation of the disease is given at from two to seven days. The increase in size of the lymphatic glands depends upon several factors, namely, hyperemia, exudation, hemorrhage, hyperplasia of the gland cells, and great development of bacteria. The bacilli which are present are found in the earlier stages in the lymph spaces about the follicles, and later they are found within the follicles, the lymph sinuses and the medullary cords. The cells of the affected gland undergo various degenerative changes and may become necrotic. They lose their nuclei in the latter case, and a variable amount of nuclear detritus is present among the degenerated and necrotic cells. The hemorrhages are not limited to the gland itself, but may be found, as well as greater or less edema, in the periglandular tissues. The usual fate of the enlarged glands is to suppurate, although in certain cases the swelling may disappear without suppuration and the glands return to normal; while in still others a fibroid induration may result. The suppuration is either of the nature of simple abscess formation, or preceding this there may be a necrosis of the gland substance; in certain cases the suppuration does not remain limited to the glands, but extends into the periglandular tissue. Sections of the lymph glands showed a variety of bacteria. It is stated that in the primary localization various bacteria may be associated. Among these can be distinguished the pest bacilli and cocci, and among the latter both streptococcus and staphylococcus forms may be discovered. Aoyama considers the association of these organisms as very important in determining the suppuration or non-suppuration of the affected glands. The spleen usually shows the presence of large numbers of bacilli, and among these more rarely micrococci. The pest bacilli were also, though not constantly, found in the interstitial substance of the kidneys and in the glomerular capillaries. They were also present in the inter- and intra-acinous tissues of the liver. The mesenteric glands sometimes contained the bacilli in small numbers; it is not stated whether or not they were found in the structures of the central nervous system.

A Case of Deciduoma Malignum. In the *British Medical Journal*, December 26, appears a paper by Julia Cook, M.D., Senior Physician to the New Hospital for Women, on the above subject.

Considerable attention is being given at the present time to the study of the clinical characters and pathology of that form of new growth known as deciduoma malignum, and it is therefore desirable that all recognized cases should be put on record. The literature of the subject is chiefly to be found in Germany and America, though scattered notices have appeared from time to time in English medical periodicals. The recent important discussion at the Obstetrical Society of London, will bring the disease more prominently to the notice of English practitioners, and as few cases have hitherto been reported in this country, the following particulars may be of interest:

Mrs. S., aged 30, was admitted to the hospital June 19. The patient had been delivered of her fourth child three weeks previously. The labor was normal, and the placenta was examined, and considered to be complete. The loss at the time of labor was slight, and she was up on the fourteenth day. She then had slight hemorrhage, and was ordered back to bed. On June 17 she got up again, profuse hemorrhage occurred, and she was admitted to the hospital.

On admission she was blanched and exhausted; the temperature was 102 degrees, and the pulse 120. She was lethargic, and it was difficult to rouse her or to take food or answer questions. The uterus on vaginal examination was felt to be high, the os closed. Hemorrhage was slight. Nothing abnormal was

detected in chest or abdomen. On June 20, the patient was anesthetized and the cervix dilated. A mass was felt adherent to the posterior wall of the uterus, the feel and appearance being that of placental tissue. It was removed by the finger and curette, and the uterus douched and lightly packed with iodoform gauze.

On June 24 she was delirious at night and tried to get out of bed, but she had no delusions. She slept at 3 A.M., after a draught of potassium bromid. On July 7 her condition was good. Slight bleeding occurred, which was thought to be probably a normal period. On July 13, she had headache, the temperature was 101 degrees, and she vomited three times. At 2:30 A.M., July 14, the house-surgeon was sent for, and found the patient had passed two large clots, and the bed was drenched by the discharge of a great quantity of blood-stained serum. She was blanched and faint, the pulse was 130. On July 15 another large clot was passed. The uterus was felt to be high. The os was patulous, and admitted the tip of the finger; a roughish mass was felt presenting through it. There was no fever. The temperature was 98 degrees and the pulse 120. Examined under an anesthetic on July 16, the os was found to be patulous, and no dilators were needed for the exploration of the uterine cavity, which measured three inches, and was occupied by a mass of pale organized material growing from the posterior wall. This was removed, and over its site the uterine wall was felt to be extremely thin. There was little hemorrhage during the curetting. The uterus was douched, and lightly packed as before.

The case was fatal on July 26. The microscope revealed heterologous deposits in primary and metastatic sites, mostly with syncytial masses in which were embedded nuclei of various shapes and sizes. Vacuolation of the syncytium was well marked. Epithelioid cells were seen either singly or in masses adhering together.

From the varying views held at present it is clear that the last word is not yet said as to the classification of this new growth, or its relation to the more usual forms of malignant disease. All observers are agreed as to its malignancy, and as in all probability hysterectomy before metastasis has occurred is the only procedure which holds out the smallest hope of saving the life of the patient, early diagnosis is of the utmost importance. The growth has a definite structure, and can be recognized from its microscopic characters. In the case of Mrs. S. some of the most characteristic sections are from scrapings removed from the uterus during life, and it is fortunate that these easily obtained specimens give, in some cases at least, a result from which a diagnosis is possible.

The following points were characteristic in the case of Mrs. S.:

1. That the disease appeared in connection with pregnancy.
2. That the patient was a young woman.
3. That dangerous hemorrhage was present; that it was intermittent, and occurred without warning after days of quiescence.
4. That nervous symptoms (lethargy and delirium) were present. In some recorded cases delirium has been a marked feature.
5. That metastatic new growths were found in the lungs and ovary.

Cutaneous Lesions Due to the Roentgen Ray.—Professor Elihu Thomas of the Lynn Electric Laboratory, experimented upon himself with the X ray, with a view to determine what foundation existed for the lesions, sometimes styled dermatitis Roentgeni, *et al.*, that have been reported as caused by the ray. He says: "I used for this the little finger of the left hand, exposing it close up to the tube, about one and one-quarter inches from the platinum source of the rays, for one-half an hour. For about nine days very little effect was noticed, then the finger became hypersensitive to the touch, dark red, somewhat swollen, stiff, and soon after the finger began to blister. The blistering started at the maximum point of action of the rays,

spread in all directions, covering the area exposed, so that now the epidermis is nearly detached from the skin underneath, and between the two there is a formation of purulent matter which escapes through a crack in the blister. It will be three weeks today since the exposure was made, and the healing process seems to be as slow as the original coming on of the trouble, while the pain and sensitiveness have largely left the finger within the last day or two, and the blister now covers the whole exposed back and sides of the finger. I think the finger will soon heal, but I assure you that I will make shorter exposures hereafter. Figuring out the equivalent exposure at six inches distance, it would equal about ten to twelve hours. The lesion is very peculiar, and I never saw anything like it. It continued to develop and spread over the extent of the exposed surface for three weeks, and I am not sure yet that the affection has reached its limit on the exposed surface. I hope the healing process is well begun, but thus far I am not decided on that point. The exposure, it must be borne in mind, was a long one. At the distance I used, it was equivalent to twelve hours at six inches. I was fully as great a skeptic as yourself before I made the experiment, but I am now considerably more than convinced that if the exposure is long enough the results will follow. I may say, in conclusion, that my experience has been that with ordinary wounds, bruises, cuts and the like, the healing process is quite rapid, showing that there is no lack of vitality of my tissues in that respect, and it would appear from my experiment that little effect of a deleterious nature is produced at all unless the exposure passes a certain limit, assuming a given strength of X ray emanation. I would say that I have recently learned from our Harrison works, that a young man who is working on testing Crookes tubes made there, had to stop work owing to the fact that his arms began to be affected, and I understand that this effect was produced through the clothing. I have lately made some inquiries, and find that two cases have been reported in Mr. Edison's laboratory in which the effects were far more severe, since they took place over the hands and arms of the victims, and made it necessary for them to stop work altogether in connection with X rays. The story goes that one of them was told by his physician that if he continued work it would be necessary to amputate his hands. I can readily understand this, as the effect produced by long exposure transcends any effect that I ever saw or knew of as being produced by the most severe sunburn, even when attended by ulceration."—*Boston Medical and Surgical Journal*, December 10.

Frequency of Spontaneous Recovery from Appendicitis.—Rotter states in his important report of the 213 cases treated in the medical and surgical departments of the St. Hedwig Hospital at Berlin, 1893 to 1895, that the mortality in appendicitis is not so large as usually assumed, amounting in his experience to only 8.9 per cent. of the total number of cases, and to only 2.5 per cent. in the circumscribed cases. (Three of these might and probably would have been saved with prompt operation.) He reviews also the results secured by others, especially Sonnenberg, which imparts extra interest to his communication. He is more conservative than Sonnenberg, who advises removing the appendix even in mild cases, that begin "stormily," particularly if there is any chronic tendency, stating that mere incision of the abscess is never sufficient. Rotter's practice is immediate operation in diffuse peritonitis, conservative treatment in the circumscribed cases. He does not accept Sonnenberg's seven forms, but divides all cases into the two: general and localized peritonitis. He found that of the localized cases, 90 per cent recovered spontaneously, and 81 per cent. of the total number of cases received at the hospital during the first six days of the attack. He ascribes great importance to the fever, which he classifies into five groups: 1. Cases beginning with high fever, up to 40 degrees C.; decrease third or fourth

day. Rapid convalescence. 2. Begin the same, with fever up to 40 degrees. Fever lasts longer, but not over 39 degrees by fifth day. Fourteen cases of this kind, all recovered. Three required operating for circumscribed abscesses. In the absence of fever, he operates such cases the ninth day. 3. Same, with temperature over 39 degrees longer than the fifth day. Grave virulent infection. Prognosis unfavorable. In eleven cases there were two deaths. The fever disappeared spontaneously in two cases the eighth to ninth day. Four were operated. Three recovered after protracted stay in bed (perforation into the intestine). This group requires prompt surgical intervention, not later than the sixth day, and earlier than this with symptoms of progressive peritonitis. 4. After an earlier fall in the temperature, it rises again, which always indicates larger accumulations of pus. Four were operated of the six cases in this category. One died of general peritonitis, and another left after the third remission, apparently cured. These cases should be operated during the first remission. 5. General peritonitis. The temperature is low, often subnormal in severe infection, higher in progressive cases. The pulse indicates the severity of the attack. Recovery is only to be expected with surgical intervention. He believes that pus is always present in acute attacks, whether found or not. It may be discharged through the lumen or the perforation and absorbed by the peritoneum.—*Cbl. f. Chir.* October 24.

A Successful Conflict with Trismus Neonatorum a Century Ago.

The *British Medical Journal* refers to an old book, Clarke on the "Diseases of Dominica," giving a few paragraphs upon his management of trismus, with a short comment on the causes of Dr. Clarke's success.

"As the trismus infantum or jaw-fall never happens to infants after the ninth day of their age, it may be considered as a third species of this disease. For many years after my arrival in the West Indies nearly one-fourth of the negro children on the plantations died of the trismus or jaw-fall on the eighth or ninth day after they were born. It therefore became a matter of serious consideration with the planters to find out a method to prevent this mortality among their negro children. That the disease could not be cured was soon discovered, as not a single instance of such a result ever occurred. . . . I observed that the children born in the large negro huts generally recovered, and that white children, or those of free people, who had their kitchens apart from their dwelling-houses escaped the jaw-fall. I therefore suspected the smoke from the burning wood was the cause of it. In consequence of this I gave orders that no fires should be allowed in the negro houses where the lying-in women were, which answered the purpose of preventing the disease, when the order was complied with; but negroes are so fond of fire that they often lighted it up by stealth, and so frustrated my plan. I then recommended a lying-in hospital to be built on every estate near the negro-houses, with a planked floor, so that no fire could be kept in it, since which no children who were born in these hospitals, and remained with their mothers in them for nine days, have ever been attacked with this disease. . . . The fires in the West Indies are made of wood, and the smoke from them is so stimulating to the eyes, that few white people can bear it for a moment. From the foregoing observations I am of opinion that the smoke of the wood used as fuel in small huts, where it has not a proper vent, is the cause of this disease among infants in some parts of Switzerland and France, and in the Highlands of Scotland, as well as it is in the West Indies." Our knowledge of the etiology of tetanus would lead us to attribute the success of this experiment in preventive medicine to the freedom from earth infection and the greater cleanliness the wooden floors entailed, and to discount the partial success claimed as the result of the prohibition of fires in the other huts. It is noteworthy that time, race, and climate do not modify the disease. In St. Kilda in 1896, in Dominica about 1796, and in this colony it is fatal alike in eight or nine days after birth, though occurring in different races and so widely different climatic conditions. It is difficult to state accurately its prevalence in British Guiana, but in Georgetown, where nearly four-fifths of the deaths are medically certified, there were in 1895 43 deaths from this cause out of 1,745 births, 2.4 per cent. Wooden floors, frequently very dirty, are the rule. In hospital practice, on the other hand, with ordinary cleanliness and attention to the umbilical cord, the disease is not met with, and out of over 500 children born alive in the hospital in the last five years, no cases occurred.

The Gensichen Diphtheria Antitoxin Case.—The meeting of the Berlin Medical Association, December 16, was enlivened by a discussion of this peculiar case. Dr. Gensichen of Vietz was taken with light diphtheria on the left side in November, 1895, and injected himself with the curative dose of serum No. 2 in his left flank. He stated that the local process healed without irritation, showing that there had been no infection from a septic syringe, or anything of the kind. A week later urticaria appeared and lasted about a week, and in three weeks small pimples made their appearance, developing slowly into large abscesses, which soon discharged a bloody pus, recalling the glanders of horses. These abscesses were limited to the region in which the injection had been made, for six months, when they spread to the other side of the body for the next half year, and he still has some small ones. Virchow made a bacteriologic investigation with the results that only staphylococci were discovered, and no glanders microbes as might have been expected. The form of the abscesses he stated was peculiar; they passed through the cutis into the subcutaneous tissues, with which they communicated by a round, sharply cut hole. Anatomists met with similar experiences, he added, from postmortem infection, with eruptions like this and copious discharges. Heubner considered that the case was merely an attack of furunculosis, which had happened to be preceded by an injection of antitoxin. Baginsky also exonerated the serum, describing the case of a boy he had recently treated for the same affection, following a traumatism, but in his case there was no question of a preceding injection. Virchow, however, emphasized the fact that the first abscesses had occurred in the immediate vicinity of the injection, and not till afterward did they spread over the body. He considers, therefore, that the injection was directly responsible for them, but added that this did not mean the antitoxin. The injection and the serum injected are two different things. Dr. Gensichen sent a description of his case to the *Berl. klin. Woch.*, which published it with some editorial comment. A garbled account was reprinted in the daily papers, which induced Dr. Gensichen to write a correct account for his local paper. Ewald deprecated this publicity and urged that such things should be kept within medical circles and not made into sensations for the daily press. He considered the case a staphylococcus infection, as frequently happens when the injection is not made with absolute aseptic precautions.—*Therap. Woch.*, December 27.

The Exposure of Nostrums.—The editor of the *Health News* has published two small volumes on "Exposures of Quackery," at about 50 cents for the set. The following are the cordial remarks upon them in the *Lancet* for December 19:

The public, even more than the profession, owe a debt of gratitude to the editor of the *Health News* for his admirable and trenchant articles on quack remedies, which have been reissued in a convenient and handy form. Although many of the exposures were made some months ago, the vendors of several of these articles continue to flourish their wares in the eyes of the gullible. Some, it is true, have succumbed before the lurid light thrown on their dishonest practices, but not a few, we fear, have obtained too firm a foothold to be so readily dislodged. However, we trust these booklets will have a wide circulation, for they are written in a vigorous and entertaining style and contain revelations based on accurate analyses which should do something to stem the current of quackery. We have often protested against the support and one may even say the protection given to the trade in quack remedies by the Patent Medicines Act, and we agree with the writer of these brochures that the Government label serves to delude the ignorant into the belief that the contents of the phial so labeled have been tested and approved by the State. His suggestions that all patent medicines should be prepared by qualified druggists and that the composition of the medicine should be given on the label, might go some way to check the evil, and of course it would defeat the object of the inventor, whose mainstay is that his remedy is a "secret" one, although he may assign its origin to a source far remote from the actual one. The perusal of these revelations should excite ridicule if it were not so pitiful; as it is, the feelings uppermost in the reader's

mind must be mixed—amazement at the amount of credulity on the one hand and scorn and contempt on the other for those who, aware of this credulity, spare no pains to foster it by practices as unworthy as they are dishonest.

PRACTICAL NOTES.

Diagnosis of the Location of Cerebral Abscesses of Otic Origin.—Rosa of Rome states that lesions of the occipital lobe produce temporary or permanent blindness or hemianopsia, while lesions of the cuneus produce hemianopsia. Aphasia and hemianopsia are therefore important indications in locating cerebral abscesses.—*Gaz. d. Osp. e d. Clin.*, December 13.

New Lacto-serum for Culture Media.—An artificial serum possessing all the properties of milk, for a culture medium with the advantage that it will keep indefinitely, is made by this formula: Lactose, 55 grams; albumin of eggs pulverized, 28 grams; sodium chlorid, 60 grams; distilled water, 1,000 grams; enough soda is added to give it a slightly alkaline reaction. It is filtered into test tubes and sterilized in the autoclave at 110 degrees C. for ten minutes on a layer of cotton.—*Presse Méd.*, January 13.

Cure of a Case of Intra-nasal Lupus with Guaiacol.—H. Bergéat describes in the *Munch. med. Woch.*, No. 52, a case of old lupus vulgaris of the entire external nose, cheeks and nasal cavities in a woman of 40, which he cured completely with two days' application of Klever's 10 per cent. guaiacol vasogen on cotton tampons of appropriate shape and size. The applications smarted for one to three hours, but not enough to require cocain. The tampons in the nose were removed before retiring. In one to one and one-half months all traces of the lupus had disappeared. A few months later it showed itself again in the same place, but promptly succumbed to a moderate repetition of the treatment. Before and during the guaiacol treatment airol was insufflated into the nasal cavities and creosote administered internally. The nasal secretions were much relieved by tannin snuffed up into the nostrils.—*Therap. Woch.*, January 10.

Anatomy of Congenital Equino-varus.—Nichols (*Boston Medical and Surgical Journal*, Feb. 18, 1897, p. 153) thus summarizes the result of a study made in the Sears Pathological Laboratory of the Harvard Medical School: The deformity in cases of congenital club-foot is due to alterations in the shape of all the bones of the foot, in conjunction with contraction of certain tendons and ligaments. The chief deformity is at the "mid-tarsal" joint, and is due to an inward deviation of the articular facets of the os calcis and astragalus. A failure to correct this obliquity will result in a failure to correct the deformity. In resistant cases the obliquity can be corrected by osteotomy of the neck of the os calcis and the astragalus, followed by forcible reposition of the foot.

Sterilization of Elastic Catheters with Formaldehyde Vapors.—Oppler announces that catheters are effectively sterilized with formalin in six hours allowing 2 per cent. of the formalin to the space in the disinfecting apparatus. A patient requiring the catheter four times in the twenty-four hours can thus be supplied with only two catheters. He uses a simple tin box with a tight cover, a trifle longer than the instruments and about 20 cm. deep. The formalin in a solution, or in formaliths (six stones represent 10 c.cm.) or in the form of prioxymethylen (more expensive and requiring a longer time to sterilize) is placed in the bottom of the box and the catheters in a wire tray above it. Calcium chlorid used simultaneously prevents the softening of the instruments. The catheters must be carefully rinsed in sterilized water and dried before using. The sterilized catheter can be carried, when traveling, in a paper box containing a corresponding formalith.—*Cbl. f. Chir.*, January 9.

The Heredity of Tuberculosis.—As the result of a careful study of the subject Szegö (*Archiv für Kinderheilkunde*, B. xxi, H. v, vi, p. 328) reaches the conclusion that the inheritance of tuberculosis is either parasitic or dispositional (perhaps toxic). This heredity does not exclude the possibility of contagion. On the contrary, the predisposed subject furnishes preëminently a susceptible soil. It is difficult to determine which is the predominant factor in the transmission. This may result through infection of sperm or ovule or through the placenta. Involvement of the lungs, of the intestines, of the glands adjacent to the mouth and the nares indicates rather origin by contagion, while tuberculosis of brain, joints, bones and abdominal viscera bespeaks rather a congenital causative condition. The congenital germ of tuberculosis may remain latent in the organism for a variable period of time, and exert its influence only when the general condition of the organism is depreciated.

Heldenberg's Theory of the Etiology and Treatment of Lumbago.—Contrary to the accepted theory in regard to the origin of acute typical lumbago, Heldenberg ascribes it not to the muscles but to a sprain of the sacro-vertebral articulation, and treats it with a systematic course of gymnastics. The patient reclines on a hard couch, with the region slightly and evenly raised. The flexed limbs are then slowly lifted and the patient is soon able to raise them himself. The next step is to slowly flex the lower limb on the pelvis, then raise the limb with the thigh still flexed on the pelvis, and then stretch the limb out and down to its fullest extension. The movements are then repeated with the two limbs simultaneously. The pain is less if the patient supports his own thighs with his hands. After these gymnastics the patient can rise, stoop and attend to his usual occupations, and a repetition is not needed except in the most obstinate cases. In very severe cases Heldenberg applies a sinapism to the rear surface of the articulation, not to the muscles, just before the gymnastics. A daily injection of water or glycerin may be needed to prevent constipation.—*Semaine Méd.*, January 20.

Triturate of Mercuric Iodid as an Intestinal Antiseptic for Children and as a Membrane-solvent.—Dr. Chittick of Detroit, in the *American Therapist* for December, offers the opinion that this remedy merits a more careful attention by our profession. He prescribes a one-hundredth per cent. triturate of the red iodid of mercury with sugar of milk, commonly called "pink powder." This preparation is especially satisfactory in the treatment of the summer diarrhea of infants, especially when accompanied with depression. It is acceptable to the taste on account of its sweetness. It is thoroughly antiseptic. The required dose is necessarily very small. It can be given as a powder dry upon the tongue, or mixed with water in a glass, so that a teaspoonful will represent the required dose. It also possesses the advantage of being a solvent of pseudo-membrane, and even of croupous membranes. He has used it frequently, and with much success, in grave cases of diphtheria, especially in young children who did not tolerate any other form of oral medication. The dose is usually from three to five grains of the trituration, every one to four hours, according to the severity of the case or age of the patient.

Cod-liver Oil Condemned in Tuberculosis.—Dr. Arrowsmith of Brooklyn is the author of a bright little pamphlet on the modern aspects of tuberculosis, in the course of which he pays his respects to the hypophosphites and the cod-liver oil. As to the latter, he says that cod-liver oil has been administered as a matter of routine in larger quantities than any other remedy. His personal experience has led him to the opinion that it is very much worse than useless. The most that he has ever felt justified in hoping from it has been that it would not do harm. He has never seen it act beneficially. Patients who improve during its administration do very much better, as a rule, after discontinuing its use. "It acts as an alternative, by

changing decidedly the oxidation process of the system. But unfortunately, its alterative effects are in the wrong direction, decreasing the perfection of the proteid oxidation and often depriving unfortunate patients of the single chance of recovery which they might otherwise have retained. The free ingestion of it rapidly decreases the urea in the urine, and increases the incomplete or imperfect products of nitrogenous waste. The more perfectly it is emulsified, the more detrimental it becomes, because, thus, it is more palatable, and is less likely to produce digestive disturbance, and to be, therefore, refused entrance to the system. The emulsion also favors the absorption of an immoderate quantity, thus exhausting the oxygen supply and rendering the suboxidation of the proteid molecule, with all its ill effects, doubly certain. It disturbs digestion and prevents the utilization of other and more valuable forms of food stuffs."

Congenital Sarcomatosis of the Skin.—In detailing a case of congenital sarcomatosis of the skin Neuhaus (*Archiv für Kinderheilkunde*, B. xxi, H. v, vi, p. 366) points out that of all the new formations of childhood sarcoma is the most common, and of congenital sarcomata the most common are found in the kidneys. Metastasis of internal sarcomata to the skin is not rare, but primary sarcoma of the skin is extremely rare. The case in question occurred in a child two months old, of healthy parents free from syphilis and tuberculosis. The infant appeared normal at birth, but when bathed on the fifth day by the mother the left leg was noticed to be more curved and thicker than the right. In the following days the extremity increased in size, especially upon its external aspect. At the age of five weeks an incision was made into the leg and a cohesive, gelatinous mass as large as a hen's egg was removed. Free bleeding ensued, but the bones were apparently healthy and not connected with the growth. At about this time the mother noticed on the external aspect of the right ankle a bluish spot, which on palpation proved to be a nodule as large as a pea. Gradually similar nodules appeared upon the trunk and upon other portions of the body, increasing progressively in size and some undergoing ulceration upon the surface. The child was large and apparently well nourished. The nodules varied in size from a lentil to a small apple, were of elastic consistence and presented pseudo-fluctuation. They were sharply circumscribed and movable upon the subjacent tissues. They were variously situated in the skin and the subcutaneous connective tissue. The lymphatic glands were slightly enlarged, especially those of the groins and of the neck. There was no evidence of involvement of any internal viscera. Examination of a removed nodule disclosed the histologic structure of a round-cell sarcoma. No abnormality was found in the constitution of the blood. The condition of the child gradually deteriorated, until death took place in the course of ten days. Post-mortem examination disclosed widespread metastasis, the evidence pointing to the cutaneous covering of the left leg as the seat of the original growth, which must further, it was concluded, have been of congenital origin.

Absolute Alcohol as a Disinfectant for Surgical Instruments.—That absolute alcohol is not an absolute germicide is admitted, but that it has an area of usefulness in the care of instruments has been claimed. Dr. R. L. Randolph, in the *Johns Hopkins Hospital Bulletin*, states that his experiments as to the effect of this substance upon the keen edged instruments of the ophthalmic surgeon have led him to prefer it to the use of heat. He is satisfied that dry heat, as well as moist heat, dulls the edges of instruments. He says: "For the past eight years I have employed absolute alcohol as a disinfectant for all cutting instruments used in operations upon the eye, and recently I instituted a series of bacteriologic experiments to test the value of this agent as a practical disinfectant. The cataract operation demands a keener knife, probably, than any operation in

surgery, and the peculiar objections to heat for sterilizing cutting instruments led me to adopt the use of absolute alcohol as the best substitute for heat." The alcohol employed in these experiments was Squibb's absolute alcohol, which is supposed to have a strength varying from 98¹/₈ to 99.9 per cent. This is the grade of alcohol which he uses in operations. He presents the following conclusions: 1. That in a given number of eye instruments, by far the majority are infected by exposure to the air. 2. That absolute alcohol will seem a valuable disinfectant for instruments infected under the conditions which ordinarily surround us in everyday life. This conclusion seems warranted by the results obtained in the first and second series of experiments. Attention may be called to the fact, too, that in the second series the nails were all without a doubt infected, and it might be said that they had been exposed to conditions which, to say the least, were extraordinarily favorable for infection, so that this series, I think, is strongly suggestive that alcohol possesses disinfectant properties of no little value. 3. That the septic character of instruments infected with a pure culture of staphylococcus albus is not altered by exposure for twenty minutes to the action of absolute alcohol.

Diphtherial Antitoxin at Montreal.—The editor of *Therapeutic Progress* makes the following correction in his February issue: "In our December issue we reprinted a table, 'Mortality of Diphtheria as treated with or without Antitoxin.' The figures relative to the comparative mortality at the Montreal General Hospital (without antitoxin, 103 cases, 10 deaths; with antitoxin 10.3 per cent.) are obviously incorrect. Dr. A. T. Bazin, superintendent of the hospital, advises us that the mortality in the years previous to the advent of antitoxin ranged from 40 per cent. to 66 per cent., but that since antitoxin has been administered the mortality has fallen to less than 10 per cent., 103 cases with 10 deaths. In justice to the institution and to Dr. Bazin we take pleasure in making this correction."

Whale Oil in Acne Vulgaris.—Boeck, referring to the observations of Guldberg on whale oil, directs attention to the peculiar power of penetration which it possesses. But another remarkable property does not seem to have been previously noticed, viz., that to a certain extent it restrains the vitality and growth of bacteria in the skin; this endowment the author has specially endeavored to make of use in the treatment of acne vulgaris, and not, as it appears to him, ineffectually. He uses the following formula:

| | | |
|---|---------------------------|----------------|
| R | Powdered camphor. | 30 to 50 parts |
| | Salicylic acid. | 30 to 50 " |
| | Sulphur | 10 " |
| | Zinc oxid | 2 " |
| | Medicated soap. | 1 " |
| | Whale oil | 12 " |

The ointment is applied every night, and in the morning washed off with soap and water. The camphor is added to cover the unpleasant odor of the whale oil. —*Edinburgh Medical Journal*.

Rupture of Heart. Dr. Cecil Robertson, in the London *Lancet*, reports one of those cases of rupture of the heart, from external violence without penetration of the chest, that are of very infrequent occurrence. "Erichsen, in the last edition of his 'Science and Art of Surgery,' says that Ganjee was only able to collect twenty-two published cases. In the majority of these cases the blow was directly over the cardiac region. For two reasons I think the following case is not unworthy of being recorded: 1, the small number of recorded cases; 2, that the heart in this case was ruptured by indirect violence. An apparently healthy man aged 49 years opened the door of a railway carriage just as the train commenced to move and fell somewhat heavily on his left shoulder. On being asked by the officials if he had hurt himself he replied 'no,' and proceeded some two or three hundred yards from the station to his work,

where he died within three-quarters of an hour of his falling from the train. On postmortem examination I found the pericardium intact but distended with a mass of blood clot and fluid blood. In front of the left auricle was a laceration one and a quarter inches long through which a piece of clot protruded. The wall at the seat of the laceration was considerably thinned; both ventricles were very much hypertrophied; the whole organ weighed 22 ounces. Beyond a slight abrasion over the right knee there was no external evidence of an injury and there is little doubt that the cause of the rupture was the violent impact of the left shoulder on the platform."

Euchinin, A New Preparation of Quinin.—Dr. O. Van Noorden, in *Centralblatt für innere Medizin*, November 28, says that a preparation of quinin, called euchinin, possesses the curative properties of quinin without having its bitter taste, or producing a disturbed appetite, nausea, noises in the ears, heaviness, etc. It is formed by the action of ethyl-chlorocarbonate on quinin. Euchinin crystallizes in needles, and is readily soluble in alcohol, ether or chloroform, but is with difficulty dissolved by water. The chlorid of euchinin is easily soluble in water, the sulphate is less soluble, and the tannate least so. The base euchinin is tasteless unless it remains on the tongue for a long time, when it is slightly bitter. If given in sherry, milk or cocoa, it produces no unpleasant taste. Healthy people can stand 1 gram, and usually 2 grams, without unpleasant effects. Once 2 grams caused a sensation of heaviness in the head. No unpleasant results were noted in patients, and no complaint was made during the prolonged use of the larger doses of 1 to 2 grams in the day. In the absence of cases of malaria, the author has tried euchinin in fifteen cases of whooping-cough, fourteen cases of hectic fever in phthisis, five cases of sepsis of various origin, in pneumonia, typhoid fever, and also in several cases of neuralgia. One gram of quinin has the same action in whooping-cough and in febrile states as 1½ to 2 grams euchinin. Beneficial and rapid effects were noted in twelve cases of whooping-cough. The temperature had a lower range in the fever cases after a few days. The results were especially good in one case of supraorbital neuralgia. A dose of 0.6 of quinin or 1 gram of euchinin gave relief when all other nervine tonics failed. This result was seen in eight different attacks. Euchinin is best given in tabloid form. In children it may be given in milk, soup or cocoa. The tannate is much to be recommended. The author thinks that euchinin certainly deserves a further trial, and that it will prove an addition to our resources.

Use of Steam in Puerperal Endometritis.—Dr. E. Kahn, in *Centralblatt für Gynäkologie*, December 5, describes the method of Snegirjow in the use of steam in uterine surgery as a cauterant and hemostatic. After eight years of experience it can be claimed for this agent that it checks hemorrhage, destroys odor, lessens the sensibility of the internal uterine wall and possesses valuable antiseptic properties. It has been used with some success in cases of inoperable cancer of the uterus, in hyperplastic endometritis, in putrid abortion, and recently in puerperal endometritis. The apparatus consists of a metal reservoir mounted on a stand, heated by a large spirit lamp or gas flame. From the top projects a thermometer registering up to 200 degrees C. The steam is conveyed from the dome of the reservoir by means of elastic tubes to which may be attached nozzles of various shapes and sizes. A stop-cock is provided to regulate the passage of the steam. The nozzle is passed cold into the uterine cavity through a speculum; the steam is turned on and made to play upon the affected part in a single jet or in several small jets according to the requirements of the case. The temperature of the steam is kept at 100 degrees C. for two minutes and is then raised to 115 degrees for a quarter of a minute to a minute. The steam fills the uterine cavity, stretching its walls and exciting powerful con-

traction. The patient feels no discomfort except the slight pain caused by the strong uterine contraction. No subsequent ill effects have been noticed even in cases where the infective process had already spread into the tissues around the uterus. The powerful uterine action excited by the steam is found to continue and involution is more rapid. In regulating the temperature of the steam and time of its application, the consistence of the uterine wall must be taken into account. The thinner and softer it is, the lower should be the temperature of the steam; the thicker it is, the higher may be the temperature used and the stronger will be its action. If there is inflammation without as yet pus-formation, the results will be good; but steam should not be used if there are collections of pus in the tubes. If there are blood-clots in the uterus or portions of placenta or membranes, they must be first removed by means of the finger or curette, as steam hastens decomposition in such materials. When steam is brought directly in contact with the internal uterine surface, the scalded endometrium forms a protective covering preventing fresh infection. The subsequent treatment consists of an intra-uterine douche on the second or third day of hot sterilized water or an ordinary saline solution, or a 1 per cent. lysol solution. Nine reports of cases are given, with temperature charts, and the author presents the following conclusions: 1. This form of application is without injurious results and but slightly painful. 2. It removes or diminishes uterine tenderness. 3. It arouses powerful uterine contraction. 4. It removes odor and destroys bacteria directly. 5. Through the closure of the blood and lymph vessels by the coagulation of albumin, it tends to form a protective covering beneath which fresh granulations form.

Experimental Study of Cerebral Compression.—De Gaetano has been making an extensive series of experiments on animals in which he introduced fragments of bone, laminaria or sponge into the cerebral substance, and studied the resulting processes. The tolerance was less as the animal stood higher in the zoölogic scale. The degenerative processes consist in a varicose appearance of the cylinder axes and an extensive diffusion of myelin, with vascular dilation in the zone of compression. Severe compression produces marked optic disturbances, first venous stasis in the optic papilla, more intense in the eye on the opposite side, followed by amaurosis from edematous optic neuritis, whether the pressure is in the occipital or parietal lobe. The effect of slight compression on the circulation is to decrease the pressure of the blood; with a little stronger compression the blood pressure returns to normal, or is greater than normal, increasing with the amount of compression, to become very high with violent compression. The variations in the pressure are identical, no matter in what part of the brain the foreign substance has been inserted. They are also the same whether the animal has been deprived of its cerebro-spinal fluid or not. But he found that the sanguine pressure increased in all cases, independently of the degree of compression, when double vagotomy had previously been performed. The sanguine pressure is decreased in all cases by irritating the nervous fibers of the dura mater or cerebral convolutions with the electric current, the proportion depending upon the strength of the current. The effect of irritation of the dura mater and convolutions is therefore identical with that produced by slight compression of the cerebral substance. He ascribes this effect to the fact that slight compression irritates the dura mater and cerebral convolutions, which irritate in turn the vagus and thus induce the decreased pressure of the blood. He explains the increased pressure in cases of strong compression by the irritation of the vasomotor bulbar center. If the external jugular is ligated separately and then the entire internal jugular the carotid pressure remains unaltered. The blood pressure in the jugulars of dogs is not affected by any amount of cerebral compression. The respiration becomes superficial and less

frequent in proportion to the amount of the compression, whether the cerebro-spinal fluid has been removed or not. But after double vagotomy, the tracings of the respiration cease to show these modifications, and instead it becomes very irregular. Irritating the dura mater or the cerebral convolutions increases the superficiality and rarity of the respirations, which become still more marked when the jugulars are ligated and cerebral venous stasis is thus induced. These phenomena appear suddenly the moment the ligature is completed, but pass away in time and the respiration returns to its normal frequency and grows deeper. The temperature falls with slight cerebral compression less than a tenth of a degree, a tenth with moderate and over a tenth with strong compression. The report published in the *Gaz. d. Osp. e d. Clin.* of January 10 concludes with the deductions that the effect of compression of the cerebral substance is due to the direct irritating action of the compressing body on the dura mater and the cerebrum in the first place, and to the indirect action of the increased endocranial pressure of the cerebro-spinal fluid in the second place. The therapeutic conclusion emphasizes the importance of removing the foreign body with the least possible delay.

Precocious Adolescence in a Girl of Six and a Half Years.—Wladimiroff (*Archiv f. Kinderheilkunde*, B. 21, II. v, vi, p. 360) has reported the case of a girl 6½ years old, who came under his observation on account of rachitic deformity of the thighs and legs. On inquiry it was learned that the birth had been normal, the infant resembling other newborn children. The child was nursed at the breast for a year, when it began to walk and so continued to do for four months. Shortly afterward signs of rachitis made their appearance, and in the second year the deformity of the lower extremities was noticed. At the age of 4½ years a slight growth of hair appeared upon the mons veneris, and at the age of 5½ years the breasts increased appreciably in size. The child was forty-seven and a half inches in height and weighed fifty-five and a quarter pounds, while the circumference of the head was nineteen and a half inches. The girl was pale but well nourished. The musculature and the subcutaneous connective tissue were well developed, the skin was clear and elastic; skull, sternum and especially thighs and legs presented distinct evidences of rachitis. The left foot was supplied with six toes. The size, weight and general measurement were like those of a child of 11 years, while the breasts and the external genitalia were those of a girl of 16 years. While under observation a slight hemorrhagic discharge took place from the vagina for the first time and continued for a period of four days. There was no sign of psychic or nervous abnormality. The child submitted reluctantly to physical examination, but otherwise displayed no manifestation of sexual feeling and exhibited no sign of sexual irritability. The other five children in the family showed only peculiarities in stature, the oldest daughter, of 11 years, being smaller than the child under consideration, and the eldest boy, of 16 years, resembling rather one of 10 years.

The Inguinal Operation for Femoral Hernia. Edebohl's (*Post-Graduate*, February, 1897, p. 75) expresses the opinion that the classic operation from below Poupart's ligament should be the operation of choice for femoral hernia, the inguinal operation being performed only when special indications exist. In the absence of such indications the method of Bassini (closing the hernial canal and the saphenous opening by suture), modified so that the upper sutures shall include Poupart's ligament and the periosteum of the os pubis, is to be preferred. When the inguinal operation for femoral hernia is indicated the best method consists in opening the anterior wall of the inguinal canal from the external to the internal ring, hooking the spermatic cord or the round ligament out of the way, and cutting through the posterior wall of the inguinal canal. After reduction of the hernia, liberation and high ligation of the sac

and clearing of the femoral canal, the crural ring, if small, should be closed from above by suturing Poupart's ligament to the periosteum of the horizontal ramus of the os pubis. Should the hernial aperture be large a fibro-periosteal flap should be formed and used in the manner described, to close the crural ring. In either case the irritation of the periosteum produced tends to the new formation in and about the crural ring of osseous tissue which will constitute an efficient barrier, efficiently placed against the redescend of the hernia. The saphenous opening may then be closed by sewing the falciform process to the pubic portion of the fascia lata, although this procedure is of secondary importance. The posterior wall of the inguinal canal is reunited by suture and the inguinal canal reconstructed after the manner of Bassini for the radical cure of inguinal hernia. The chief advantages of the inguinal operation for femoral hernia are the possibility and the ease of performance of high ligation of the hernial sac and of high and effective closure of the crural ring. The special indications for the inguinal operation for femoral hernia are, 1, the coexistence of complete or incomplete inguinal hernia with a femoral hernia of the same side; 2, in women the coexistence with femoral hernia of retro-displacement of the uterus which can be corrected by shortening of the round ligaments.

Aids to Cerebral Localization.—Dr. Eskridge of Denver, offers as aids in localization diagnosis a group of five speech-defects, symptoms of interesting variety that might be almost indefinitely extended, but the more valuable are among the summarized below:

1. If the lesion is in the foot of the left third frontal, Broca's convolution in right-handed persons, and in the corresponding portion of the brain on the opposite side in the left-handed individuals, the patient will be unable to speak voluntarily, to repeat words after another, to read aloud, to think in speech, and in the majority of cases to write voluntarily or from dictation so as to be understood, but he can not understand the speech of another. He usually will be able to use and understand gesture expression.

2. A lesion in the oro-lingual center (lower portion of the central convolutions) will cause paresis or paralysis of the oro-lingual muscles, including the lower side of the face, and imperfect articulation, but the patient will be able, with a decided effort, to repeat words after another, to talk voluntarily, to think in speech, and to write, although the letters may be imperfectly formed. There is, as a rule, no omission or transposition of letters or words unless the lesion is sufficiently extensive to affect the adjacent cortical centers or their commissural fibers. It is possible that this center is bilateral; that a lesion on either side may give rise to somewhat similar symptoms, and that the loss of function in the affected muscles will not be completely abolished from a unilateral lesion.

3. A lesion in the foot of the second frontal convolution on the left side in right-handed persons or on the right side in left-handed individuals (the probable orthographic center) will be attended by disturbances in writing, consisting of inability to write from inability to spell. In the only case reported of this character the patient formed all the letters of the alphabet perfectly, but he omitted, transposed and substituted letters to such an extent that his writing was unintelligible. He wrote well if the words were spelled for him.

4. A limited lesion in the posterior two-thirds of the first and second temporal convolutions will be attended by word-deafness, and inability to write at dictation, pure word-deafness. In a more exhaustive lesion in this region, mind deafness with paraphasia and some disturbance in reading and writing will be added. The greater the extent of the cortical and subcortical areas involved the more marked the paraphasia and other symptoms of sensory aphasia.

5. A lesion involving the angular gyrus and adjacent parts

will cause word-blindness and inability to read, defects in writing, copying and in speaking. In these cases paraphasia is often present. If the lesion affects the parts posterior to the angular gyrus, mind blindness may be added.—*University Medical Magazine*, January.

Mental Effects of Hasheesh.—In a recent number of the *Journal of Mental Science*, in which Dr. Clouston gives an account of the Cairo Asylum, he also gives some interesting information obtained from Dr. Warnock, superintendent of that asylum, in reference to the prevalence and the nature of the mental disturbance associated with the excessive use of hasheesh. Thus of 253 admissions to the asylum in the latter half of the year 1895, no less than 40 were admitted on account of symptoms attributed to the excessive use of the drug. In 41 per cent. of all the male patients hasheesh, alone or in combination with alcohol, caused the mental symptoms, while this was the case in only 7 per cent. of the females. As to whether there is a special recognizable form of mental disturbance produced by hasheesh, Dr. Warnock's conclusions are that in a considerable number of cases in Egypt hasheesh is the chief, if not the only, cause of mental disease, although it is doubtful whether hasheesh insanity can be diagnosed by its clinical characters alone. The usual types are three in number: 1. Hasheesh intoxication—an elated, reckless, "swaggering" state, with optical hallucinations and delusions of demoniac possession. The condition may be actual delirium, milder and less aggressive than that of alcohol, and exhibiting none of the ataxic phenomena of the latter. Recovery takes place in a day or two or less, and the patient usually recognizes the cause of his excitement. An interesting medico-legal question arises in connection with this intoxication, viz., whether the subject of it is to be held responsible for crimes committed in this state. 2. Acute mania is another form of hasheesh insanity. Terrifying hallucinations, continued restlessness, sleeplessness, incoherence and exhaustion are the prominent symptoms. Such cases usually last some months and do not always recover. 3. This insanity also takes the form of weak-mindedness. The patients are usually quiet and well-behaved, but are over-talkative, easily pleased, excitable about small things and unconcerned as to the future. Beside these three types, Dr. Warnock says there are numbers of cases of chronic mania, mania of persecution, etc., said to be produced by hasheesh, but with these he is not familiar. Female lunatics in Egypt are usually kept at home, even in the larger towns, but he also admits "it is at present quite impossible to even approximately gauge the extent to which lunacy prevails in the country generally." No doubt harmless lunatics are in some instances kept in their homes, but Egypt is now constantly traversed by English sanitary inspectors, to say nothing of police, irrigation and preventive officers, and it is difficult to understand how the more violent cases could be systematically kept in concealment. Dr. Warnock bases his conclusion that in Egypt female lunatics are usually kept at home on the ratio between the sexes in English asylums, but the conditions of life in the two countries are so different that his deductions would seem to be by no means inevitable. The general health of the inmates is not good. "Internal parasites affect nearly every patient, anchylostomas, ascariides and tapeworms being found at nearly every autopsy. Bilharzia also is very common." Melancholia is extremely rare among natives of Egypt. Five per cent. of the admissions were due to this form of insanity, but nearly all the sufferers were foreigners. The alcoholic insanities are seldom seen, and suicidal tendencies are well-nigh unknown. General paralysis of the insane, also, is not common, the admission rate for the year having been under 3 per cent. In connection with the latter affection Dr. Warnock makes the following remarks: "The idea that sexual excess and syphilis are important agents in the causation of general paralysis is not strengthened by these observations, since both these causes have free play in Egypt, and yet apparently little general paralysis results. The Egyptians are usually easy-going and are not subjected to overwork or strains, nor are they often addicted to alcohol."

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SATURDAY, MARCH 13, 1897.

THE MECCA PILGRIMAGE.

Now that the troubles with the "unspeakable Turk" appear to be coming to a head in spite of the efforts of the powers, it is timely to ask the question if the insanitary practices of Mahomedan superstition may not receive some attention. One or two non-Moslem travelers have reported something of the conditions that exist in Mecca, during the immense annual pilgrimages and they have been pretty thoroughly shown up by ERNEST HART, PROUST and others within the last three or four years. The Turkish government, which, were it an enlightened and honest one, could do more than any other for the general welfare in this regard, cares for nothing but to have its own way and to prevent outside interference by lying and diplomacy; sanitation of any kind is altogether outside of its sphere of action and the welfare of the world in general does not trouble its calculations. So whenever an epidemic exists it puts nothing in the way of its extension and if it is not at hand it practically favors every possible means for its origination. It may also be truthfully said that the British government, which has under its control the fountain head of cholera, has also in the past been criminally remiss, and the salvation of Europe from this plague has not been due in any manner to its agency, but to the results of the labors of scientific investigators who have practically disarmed the infection by demonstrating its source and the method for its management.

The existence and spread of the bubonic plague in oriental countries at the present time puts a new face

on the matter, and brings before us another possible calamity. It may be that the danger is slight of its affecting Europe, and the fact that modern bacteriologic science is awake to meet every contingency, is perhaps an adequate safeguard, but yet it would be still more satisfactory could we feel assured that all possible precautions were being taken. The Mecca pilgrimage has been in the past, and still is one of the greatest dangers to the health of Christendom and it is possible that in a single year it might cost more of human lives and human treasure than even a Jihad or holy war of the Moslem against the Christian world. The outcome of such a war would not be doubtful, as intelligent Mahomedans are well aware, and hence the danger of its occurrence is minimal; it is only one of the bugaboos that the wily Turk employs to reinforce the timidity and jealousy of time-serving politicians. If anything, however, should result from the present critical conditions in the Levant, to bring about a more complete limitation of the powers of barbarism in that quarter, it is to be hoped that among other desirable happenings the sanitary control of the Mecca pilgrimage by some enlightened European power or powers, so as to do away with its present actual disease breeding and disease spreading function may be sometime or other secured. Such religious observances are only commendable when they work no general harm to mankind—"by their fruits ye shall know them"—and the Mecca pilgrimage as it has been and is at present conducted is a pestilential nuisance to the civilized and semi-civilized world. It may be difficult to fully control and impossible to prevent, but it is certain that it can be in some ways amended for the better, and the time will come when the necessity of this will be recognized by the nations. War in the East and general disturbance of European concord would undoubtedly be accompanied by many and great evils, but, to amend a common quotation, "peace has its slaughters as well as war," as recent history has demonstrated, and they are a part of the price paid for Mahomedan rule in the East. A much larger expense in human life is that to be attributed in the past to the Mecca pilgrimage, the greatest pestilence-transporting agency of the present century. However the Cretan and Turkish troubles may be treated, it is possible that an invasion of Europe by the bubonic plague via Mecca and the Suez Canal would bring the powers to a realization of the necessity of meeting one phase of the Eastern question promptly and thoroughly.

THE VALUE OF FLUID EXTRACTS AND OF TINCTURES PREPARED FROM THEM.

From time to time in pharmaceutic literature and to a less extent in medical literature, may be found animated discussions between pharmacists and physicians as to the value of fluid extracts, and more par-

ticularly as to whether it is proper and right to prepare tinctures from fluid extracts, particularly from those fluid extracts which have been assayed and standardized.

In the Alumni Report of the College of Pharmacy for Feb. 18, 1896, a very considerable number of its pages are devoted to the discussion of this important question, which on its surface is of little interest to the practicing physician, unless he stops to consider it thoughtfully, when it immediately becomes one of the most important questions to which he can devote his attention, for too often failures in treatment arise not from a lack of judgment on the part of the physician, but because the drugs which he employs to accomplish the results which he desires, are, for various reasons, incapable of producing the physiologic effect which is sought for. In the article which we have quoted we find a discussion by Messrs. KEBLER, ENGLAND, REMINGTON and others, in which the matter is pretty well covered.

It will be remembered that fluid extracts have become popular preparations for several reasons, the chief of which have been, 1, that they were standard preparations, or in other words, that each cubic centimeter of the fluid extract equals one gram of the crude drug, and the physician prescribing the fluid extract may therefore rest assured that his patient will develop a physiologic effect similar to that caused by the ingestion of the crude remedy, without any of the disadvantages associated therewith; 2, that being concentrated preparations, doses of the fluid extract must necessarily be small; and, 3, that if properly made and taken care of fluid extracts represent fairly permanent preparations.

But it is evident that with the processes recommended by the United States Pharmacopeia for the making of fluid extracts, that we have no absolute guarantee that the original drug from which the fluid extract is prepared, has a definite and equal strength with another fluid extract which is prepared from another lot of the crude drug coming from another source. Thus a plant or tree growing in very sterile soil and under disadvantageous circumstances, might very readily contain in its bark, leaves or other parts far less alkaloid or active medicinal ingredient than another plant of the same character growing amid surroundings that were exceedingly favorable to the development of these drugs, or their constituents, and yet the bark in each case might be so similar in appearance as to prevent the buyer from recognizing any difference between them. It would only be by chemie analysis and determination of the alkaloids which given samples contained, that the pharmacist would be able to obtain reliable crude products of equal strength, and from them prepare finished products which, because of their similarity, would not vary one from another in their physiologic action.

In other words, given a crude drug which on analysis is found to contain a certain percentage of alkaloid, or a fluid extract which contains a certain percentage of alkaloid, it must stand to reason that all fluid extracts which contain identical quantities of alkaloid must be equally valuable in therapeutics, even though the processes by which they are prepared differ with each manufacturer.

The advantages, therefore, of employing a fluid extract which contains a known and definite quantity of the active constituents of a remedy is very great, and if the physician would always prescribe a fluid extract made by some manufacturer in whose honesty he has confidence, and with whose standard he is familiar, he can vary his dose at will, with no other uncertainty as to the success of his treatment than possible variations in his patient which may arise from idiosyncrasy. In other words, any change in effect will depend upon the patient and the dose, and not upon the possibility that the dose taken on Wednesday contains in reality twice as much of the active ingredient as that taken the previous Wednesday, when the prescription was filled with the fluid extract made by a different manufacturer.

A few years ago the writer had a very good illustration of the necessity of using such standardized preparations, for he found that a tincture of *nux vomica* made by one of the foremost druggists in one of our large cities, was almost four times as strong in the quantity of strychnin and brucin which it contained as another tincture made by a druggist occupying an equally prominent and reliable position, so that if the physician were to double the dose of the prescription, and the prescription were to be put up at the first druggist's we have named, the patient would be receiving eight times as large a dose in reality as he had originally been taking; or, in other words, if the first dose was ten drops of the tincture of *nux vomica*, the second prescription would give him the equivalent of eighty drops of the first tincture. It is manifest, therefore, that the possibilities of such variations should be made as remote as possible, and for this reason it seems evident that physicians should always prescribe fluid extracts in preference to tinctures if possible, and further that they should employ fluid extracts which are carefully assayed and standardized even although different manufacturing druggists have set for themselves varying standards.

Thus, supposing there were four or eight large manufacturers, each of whom had a standard for his fluid extract, in all probability these standards would vary very little, and the variations certainly would not be as great as those which would be possible should the physician rely upon non-standardized fluid extracts, each one of which would vary with the technical skill of the retail druggist who prepared it, and there would be, therefore, a possibility of a thousand

variations in a large city, instead of four variations. It is true that tinctures are exceedingly popular preparations, but even the Pharmacopeia does not throw about them the precautions which result in desirable exactness, for pharmacopeial tinctures do not in any way represent a definite quantity of the crude drug, much less do they represent a definite quantity of the alkaloid which the crude drug contains, for the process of exhausting the crude drug is not so complete nor is it designed to be so accurate, and so far as we know, no tinctures which are made direct from the crude drug are standardized by assay.

Recognizing the facts which we have named, both physicians and pharmacists have been tempted more and more to cease employing tinctures made according to the pharmacopeial process and either to rely on fluid extracts, or to employ tinctures which are made by the addition to the fluid extract of a menstruum which will dilute it to approximately the same strength as the tincture is supposed to possess, and it is about this question that debate now seems to be most hotly waged. In the discussion which we have quoted, the point was first taken, and very correctly, that if all physicians, in writing a prescription for a tincture, are supposed to demand the tincture named in the United States Pharmacopeia, it goes without saying that the honest druggist must dispense a tincture prepared according to the process therein named; but if, on the other hand, it can be shown that the pharmacopeial process for the manufacture of a tincture does not give the best results, and if the physician has full confidence in the scientific acumen of his druggist, and further, is in touch with the facts that we have named, it certainly seems to the advantage of both physician and patient that a tincture should be employed made from an assayed fluid extract in the manner that we have described. Particularly is this the case toward the close of a decade, when the process recommended in the Pharmacopeia last issued may not represent by any means the latest advances in analysis or in the preparation of medicinal compounds. The only difficulty which we see in the way of preparing tinctures universally from standardized and assayed fluid extracts lies in the possibility that it may be impossible to dilute a fluid extract without precipitating some of the substances which it contains; but here, again, it is probable that in many instances the precipitate is practically without physiologic power and does not carry with it to the bottom of the vessel the soluble active principles which are intended to produce a given physiologic effect.

In some letters concerning this matter published in the Report of which we have spoken, Dr. E. R. SQUIRE takes the ground, which may be legally correct, but which is scientifically not advisable, that it is objectionable to resort to any practice not authorized by the United States Pharmacopeia, and that tinctures

made by dilute fluid extracts are not official, but are substitutes for the official tinctures. Mr. CHARLES RICE makes the following proposition: If a fluid extract differs from a tincture only in the quantity of the solvent or menstruum, and if the dilution of the former to the strength of the tincture by the addition of more of the solvent throws nothing out of solution, the two tinctures must be alike in the quantity of active ingredients, and therefore be alike in therapeutic effect. Second, if the dilution of the fluid extract to the strength of the corresponding tincture by the addition of even the most favorable menstruum causes a precipitation the two tinctures may be regarded as alike in therapeutic effect, for the precipitate contains none of the useful medicinal constituents.

As Dr. RICE states, these propositions are so self-evident that they can not be gainsaid, and we can therefore lay it down as a rule that physicians, when prescribing tinctures, should employ those which are made by the dilution of standardized fluid extracts, whenever such fluid extracts can be diluted in any way which will not alter their physiologic activity.

As to the third proposition, Dr. RICE states that the practice of preparing tinctures from fluid extracts in all cases where dilution causes obvious physical changes, such as precipitation and gelatinization, is not to be recommended for general use, but may be adopted in cases of necessity or urgency when a prescription calls for a tincture of a drug of which only the fluid extract is obtainable. With this proposition we also agree and believe that in many instances a tincture so prepared, with all its disadvantages, will give more definite and measurable results than the ordinarily prepared tincture, which has no definite strength.

Mr. LLOYD of Cincinnati points out that where constituents of the drug are firmly established and known, and in which no question exists concerning the exact value of the fluid extract, he can see no question but that the tincture may be made by diluting the fluid extract, and he even goes further and says that, owing to the difficulty of extraction in the case of the drug *nux vomica*, unless the tincture is assayed in order to establish its value, the method of preparation from the standardized fluid extract is to be preferred to blind extractions from the standardized drug. He also states that in his belief, certain tinctures can be made as reasonably (or even cheaper), from fluid extracts, and with a greater uniformity than from the drug.

Against the views which we have urged, Mr. JOSEPH ENGLAND strongly protests, believing that the value of standardized fluid extracts over those which have not been standardized in actual medical practice has been much exaggerated, but in this we do not agree with him and, except in a few instances, we do not think that the objection which he urges against diluting standardized fluid extracts will hold in the mind

of the practicing physician, even although Mr. ENGLAND's objections are pharmaceutically correct. For even if the precipitate does occur on the fluid extract being diluted, the resulting medicinal preparation, while pharmaceutically inelegant, is practically as efficient from a pharmaceutic point of view, provided, as is so often necessary in other instances, the bottle is shaken before its contents are taken.

Let us use standardized fluid extracts of known and definite strength and avoid the risk of using tinctures made from them, for it is better to know that a slight decrease in activity may result, than to be in the dark as to whether the tincture is prepared from an inert or an abnormally powerful crude drug.

THE PHYSICIANS OF THE FRENCH REVOLUTION.

Among the professions particularly active in the French revolution, the lawyers and physicians are especially distinguished. Though the latter did not possess the same influence as the lawyers they nevertheless played a remarkable part in the stormy scenes of that stupendous new creation of Europe. Many of them entered into the hazardous career which often raised the lowest citizen to power and renown. Of some of them the names are engraved on the iron page of history; others are lost in the rolls of committees, directories, etc. Among the former are found, though in widely different degree and with widely different principles, MARAT, GUILLOTIN, CHAMBON DE MARVAUX, CABANIS, BAUDAT, BOUSQUET, BOURRU, DUGERS, CLEDEL, MANNE, EUBOUCHET, SOUBERBIELLE, THIERY, FURCROY, LAVOISIER, PLISSIER, PLANCHARD-CHATTIERE, TAILLEFER, LARREY, PINEL, etc. The most luridly peculiar figure of these is that of MARAT who, previous to the time when deep sense of popular oppression so violently agitated his mind, was of a mild and peaceable temperament. He was devoted to science and ten or twelve works proceeded from his pen, witness his "Traité de l'Homme." Born in the neighborhood of Neufchatel, in Switzerland. MARAT practiced his profession in Paris. His name is inscribed in the books of the Faculty of Medicine in the year 1785. At that time he lived in the Rue de Bourgogne and was attached as veterinarian to the Duc d'Artois, afterward CHARLES X. MARAT was a thick, short man, with a degenerate face, restless with envy, pride and suspicion. A countenance expressive of a low uncompromising ferocity; withal his stature was unattractive and his manners inelegant. Yet his language and style were in singular contrast with what he always had hitherto been. The same man is hardly discernible in the author of the "Treatise on Medical Electricity," and the editor of that latterly rabid journal, *L'Ami du Peuple*. MARAT was a paranoiac degenerate. There was little in the early patience with which he bore insults from the aristocracy and the charlatans whom they promoted and

encouraged, to indicate the later development into that personification of the wild-beast spirit with which the mob met and conquered the aristocracy and plutocratic farmer-generals. MARAT's first conflict with his brethren was about a management of phthisis practically based on lines which guide its treatment today. He brought it in professional manner before the Paris Academy of Medicine, but fiercely resented the attempt made to crush it in the interest of a wonder-working relic of a Paris church. LAVOISIER, the chemist, then a farmer-general, was not ashamed to engage in this intrigue, whence MARAT's fierce denunciation of him as a quack. The neurotic taint in MARAT, such treatment naturally tended to develop. Of him, CARLYLE paints the following two vivid pictures, not destitute, however, of strong touches of caricature. At the States General (according to CARLYLE) MARAT thus appears:

"Surely also in some place, not of honor, stands or sprawls up, querulous, that he, too, though short, may see, one squalidest, bleared mortal, redolent of soot and horse drugs, JEAN PAUL MARAT of Neufchatel. O, MARAT, renovator of human science, lecturer on optics; O, thou remarkablest horse leech, once in D'Artois stables, as thy bleared soul looks forth through thy bleared, dull, acrid, woe-stricken face, what sees it in all this? Any faintest light of hope, like day spring after Nova Zembla night. Or is it but blue sulphur light and spectres; woe, suspicion, revenge without end!"

Of MARAT's appearance at the fall of the Bastille, CARLYLE thus speaks:

"One poor troop of hussars has crept reconnoitering, cautiously along the quais as far as the Pont Neuf. 'We are come to join you,' said the captain, for the crowd seems shoreless. A large-headed, dwarfish individual of smoke-bleared aspect shambles forward, opening his blue lips, for there is sense in him, and croaks: 'Alight, then, and give up your arms.' The hussar captain is too happy to be escorted to the barriers and dismissed on parole. Who was the squat individual? Men answer: It is Dr. MARAT, author of the excellent pacific *Avis au Peuple*."

The same causes which revolted the French people against the English, the royal family and the aristocracy, treachery, fixed MARAT's suspicious delusion. He suffered from a horrible dermatosis of the scrotum and perineum, which forced him to remain in his famous slipper bath for months together. It was in this bath he was stabbed by CHARLOTTE CORDAY. His body was conveyed to the Pantheon, but afterward at the Revolution of Thermidor thrown into the common sewer, where its winding-sheet was discovered by BRUNESAU when he inspected the sewers of Paris in 1805.

The lynch law of the French Revolution is embalmed, not in the name of MARAT, but in that of that most genial, most philanthropic, yet most ill-omenedly famous of men, Dr. GUILLOTIN. One of the most skilled sanitarians of his time, a pioneer in prison reform, a philanthropist shocked by the tortures of the public executioner, he sought to save pain by substituting the certainty of machinery for the uncer-

tainty and resultant brutality of a swordsman. His name in its horrible fame is likely to outlive CÆSAR'S. GUILLOTIN lived many years after the date of his discovery; nothing pained him more than its mention. Horrible recollections shook him, when, as sometimes happened, some mischievous fool addressed him with "Why, Doctor, how come you to have escaped—you know what death?" He died in 1814, of diabetic carbuncle on the left shoulder. Many sanitary reforms instituted by him still guide modern sanitation. His confrère, BOURRU, delivered his funeral oration. BOURRU, in 1793, re-baptized his two sons, one Hippocrates and the other Galen.

There was a curious similarity in fortune and skill between AMBROSE PARÉ and LARREY. The candid, able, modest Huguenot surgeon, who won the affection and esteem of the butcher of St. Bartholomew, CHARLES IX., resembles closely in clinical insight, in surgical skill, and in conscientious devotion to professional duty, LARREY, whom NAPOLEON I. characterized as the most virtuous man he ever knew. PARÉ, dressing the wounds of the victims of the "Bartholomew," and LARREY, dressing the wounds of the victims of the Moscou retreat, under snow, sleet and Cossack shot, are two equally pathetic pictures of professional devotion. Another pathetic picture is that of PINEL soliciting, amid the "Terror," from the potent Committee of Public Safety, permission to strike chains from the insane and thus inaugurate a reform in psychiatry which remained unaccomplished more than three-quarters of a century later in the progressive city of Chicago.

Among the other physicians remembered on account of medical practice only, is Dr. SOUBERBIELE, who was physician during the Revolution to MARAT, ROBESPIERRE and DANTON. His case book disappeared during the Franco-Prussian War. CABANIS, an eminent physiologist, was friend and physician to MIRABEAU. LAVOISIER made up for his defense of faith-cure, by his exposure of mesmerism, of which CARLYLE ("French Revolution") draws the following picture:

"Observe Herr Doctor MESMER, in his spacious magnetic halls. Long-stoled, he walks, revered, glancing upward, as if in rapt commerce, an antique Egyptian hierophant in the new age. Soft music flits, breaking fitfully the sacred stillness. Around their magnetic mystery, which to the eye is mere tubs with water, sit breathlessly, with rod in hand, the circles of beauty and fashion, each circle a living circular passion flower, expecting the magnetic afflatus and new manufactured heaven-on-earth. O women, O men, great is your infidel faith. A parliamentary DUFORT, a BERGASSE, D'ESPREMENIL we notice there. Chemist BERTHOLLET, too, on the part of Monseigneur DE CHARTRES. Had not the Academy of Sciences, with its BAILLYS, JUSSIEUS, FRANKLINS and LAVOISIERS interfered. But it did interfere. MESMER may pocket his hard-earned money and withdraw."

This committee reported that mesmeric phenomena were the result of a subjective impression on the mind of the patient, and not due to a special force. August,

1784. Among the physicians of the time who should not be forgotten, especially by Americans, is Dr. MATTHEW LAURENT MICHEL MANNE. He was born in France, March 25, 1734, and became a navy surgeon in 1756. He followed Admiral d'ESTAING to America during the Revolutionary War and served throughout, fighting for American liberty. After the Revolution, he returned to France, where he became Surgeon-General to the Port of Toulon. He was a member of the Academy of Surgery and Commander of the Legion of Honor. He was the author of two valuable works, "Surgical Diseases of Bones," and "Fractures Dependent on Muscular Action." MANNE died March 19, 1806. The United States never even thanked him for his services to liberty.

"DR." RUTLAND IN THE TOILS.

It is with pleasure that we inform our readers that the Wisconsin Eclectic Medical College, so-called, and its proprietor, the alleged "Dr." FRED RUTLAND, have come to grief. "Dr." RUTLAND was arrested in Chicago last week, and held over in five thousand dollars bonds to appear before the federal grand jury of the Northern District of Illinois in answer to a charge of carrying on swindling through the United States mails:

For many months we had been in receipt, from time to time, from various members of the ASSOCIATION, of letters and circulars issued by this precious rascal, in which, in varying terms all more or less evasive, it was evident that diplomas were offered for sale at prices ranging from thirty-five to fifty dollars. We first induced one of the daily papers of Chicago to take the matter up. They sent a reporter to RUTLAND'S house, as already stated in a previous number of the JOURNAL. The circulars and letters continued to be sent, and in the meantime we submitted the case to the Postmaster of Chicago, and to Capt. STUART, the Postoffice Inspector, who detailed Inspector GOULD on the case. On conversation with this officer, we decided to allow one of the office boys of the JOURNAL to purchase a diploma, and he entered into correspondence with "Dr." RUTLAND to that effect. In due course of mail he received a circular signed by the said RUTLAND, in which it was stated it would be necessary for him to answer certain questions which were propounded. These questions were as follow:

EXAMINATION BLANK.

1. Give your name.
2. Have you ever studied medicine in any medical school or college? If so, for how long and where.
3. Or under a preceptor or physician. If so give name or names.
4. Or in private studies. How and what books have you studied.
5. Have you ever practiced medicine either as a profession or otherwise? For how long.
6. What system of medicine do you prefer? Allopath, Homeopath, Eclectic or other.
7. What do you understand by the term an element?
8. Define a chemical change.
9. Define the term Decomposition.
10. Define the term Materia Medica.
11. Define the term Therapeutics.
12. Define the term Pharmacy.
13. Define the term Toxicology.
14. Define the term Obstetrics.
15. Name say 30 or more remedies which you consider in the front rank as being of most service to man.
16. What is the

office and use of the Brain in the human anatomy and to what diseases is it most liable? 17. Same of the lungs. 18. Same of the heart. 19. Same of the Liver. 20. Same of the Spleen. 21. Same of the Kidneys. 22. Same of the Intestines. 23. Give an outline of how the bony frame work of the body is built up and name some of the more important bones. 24. Same of the Arterial and Venous system. 25. Same of the Nervous system. 26. Outline your treatment of Bronchitis, Cancer, Consumption, Diphtheria, Erysipelas, Fever (Scarlet), Measles, and any other troubles you have particularly studied or treated successfully. 27. What treatment would you give a case of poisoning by Belladonna, Digitalis, Chloroform, Carbolic acid, Nitric acid and Nit Silver? 28. What is a Tonic Medicine? 29. What is an Alternative? 30. What is an Antipyretic? 31. What is a Cathartic? Name 2 or more of each of these classes. 32. What is the first stage of childbirth? What is the second stage of childbirth? What is the third stage of childbirth? 33. How would you reduce a dislocation of the elbow joint? 34. How would you reduce a dislocation of the hip? 35. What is the essential difference between sterility and impotence? 36. Do you consider it good practice to administer as a regular thing such a class of medicine to a sick person which would under ordinary circumstances make a healthy person sick? 37. Give your ideas of what characteristics a physician should have to make him or her successful.

Do not make your answers on this blank. Use a separate sheet or sheets for this purpose. This blank must not be returned.

The following are the answers given by the applicant mentioned:

1, ———. 2, No. 3, No. 4, Only in a general way. 5, No. 6, Allopath. 7, A portion or part. 8, A change produced with aid of chemicals. 9, In state of decay. 10, Pertaining to medicines. 11, Healing remedies. 12, Drugs. 13, Science of poisons. 14, Childbirth. 15, Quinine, belladonna, opium, brandy, epsom salts, castor oil, laudanum, pepsin, tincture of arnica, mustard, Dover's powder, ginger, chloroform, ether, port wine, wormwood, iodine, whisky, tincture of iron, chloral, celery, coca, arsenic, extract of beef, cocaine, kola, charcoal, codliver oil, vaselin. 16, Seat of intelligence, apoplexy, fever. 17, Breathing organs, consumption, pneumonia. 18, Circulates the blood, heart disease. 19, Strains the blood, liver complaint. 20, Use not fully known. 21, Secretion of urine, Bright's disease. 22, To digest food, dyspepsia. 23, The bony framework of the body is built up to protect the vital organs. Some of the more important bones are: skull, back, shoulder, hip and collar bones. 24, 25, 26, Treatment would vary according to severity of disease. 27, Warm water and salt, to cause vomiting, and then coffee or other stimulant. 28, Strength producing. 29, A change for the better. 30, Containing iron and sulphur. 31, Purgative. 32, 33, Force arm back into position and splint. 34, Force into place and bandage. 35, Sterility means barren and impotence the lack of sexual power. 36, No. 37, A constant endeavor to acquire more knowledge and the ability to make good use of what he or she already has.

The young man answered the questions so as to make them ridiculous as possible as he was entirely without technical knowledge. These being sent to RUTLAND, in due time a diploma bearing the coveted letters, "M.D.," was sent through the express office, C. O. D. As the young man had no particular use for the diploma, Inspector GOULD was immediately communicated with. Mr. AHNE, a young man from Wisconsin, acting on information published, it is said, in the *Tribune*, and under authority from Wisconsin, and the young man from the JOURNAL office, proceeded to RUTLAND's house in Chicago, where Mr. GOULD was introduced as a prospective student, and RUTLAND offered to sell him a diploma on reasonable terms. The interview ended, however, by RUTLAND accompanying the Inspector and his amateur assistants to United States Commissioner HUMPHREY's office, who, after a hearing, bound that worthy over to await the action of the grand jury under the sum of five thousand dollars.

The reason why a "fraud order" was not issued by the postoffice department, so as to stop the mail and circulars being sent, was that this would not prevent RUTLAND's carrying on his business through the express companies, and he would simply laugh at such an order and continue his infamous work. If, however, he becomes indicted by the grand jury, it will probably result in his speedy punishment; at least the machinery of the law has been set in motion in the proper direction.

The exposure of the books of "Dr." RUTLAND showed that he had issued his diplomas to a great many people. We print a partial list in another column.

Attorney-General MYLREA's suit in Madison, Wis., to annul the charter, came to an end March 8, by "Dr." RUTLAND's voluntary appearance and the filing with the Secretary of State of a formal notice of the dissolution of the corporation, the "Wisconsin Eclectic Medical College." This may possibly prevent his incarceration, but we shall see.

TWELFTH INTERNATIONAL MEDICAL CONGRESS.

Professor NICHOLAS SENN of Chicago has accepted an invitation to deliver the address on Surgery at Moscon. We are not advised who will give the other addresses. These orations have always been considered as the highest professional honors of the Congress.

CORRESPONDENCE.

Acute Otitis Media.

PERU, IND., March 8, 1897.

To the Editor:—In the case of acute otitis media in the person of Dr. Merrill Hopkinson of Baltimore, and reported by him in the February 27 number of our JOURNAL, the course of his ailment, infection of the middle ear by the product of a mild attack of post-nasal catarrh, after using a nasal douche, by forcibly blowing the nose, and his treatment as outlined by him does not occur to me to harmonize very well, even though he considered that his treatment obtained good results.

In the first place, if his ear was infected as he states, and by the product he mentions, the indications would have been to use a Eustachian catheter in connection with an air-bag, and have blown out the offending substance, instead of continuing to jeopardize his sound ear as well as the crippled one by holding the nose and inflating the ears in the same manner, and with the product of the acute catarrh in the post-nasal, as when the ear was first infected, as he says he did. In the second place heat and moisture are both essential to suppuration, and by using this combination he favored that condition; whereas he should have used dry heat, the hot water-bag or salt-sack, which would have burned the moisture of the involved tissue and epithelium, thereby lessening the pressure and in consequence the pain. The temporary relief from pain that he obtained from the use of the hot water as described, was from the heat alone, and the increased pain following the relief was due in a measure to the over-supply of moisture.

Thirdly, the temporary relief he obtained following his dose of pilocarpin, was due to the relaxation, partially from the shock it caused the system through the cardiac center, and partially through the diaphoretic effect (which effect is very

closely connected with the shock as mentioned above), and thereby removing the local pressure by lessening the fluid and hindering the blood supply by this drug's action on the heart center.

Now as to his recovery. His infecting substance, even though it might have been the catarrhal product (but was probably only a drop or more of the fluid he had been using) was not of a pus-producing character, and therefore we would have scarcely expected suppuration even under more unfavorable treatment than was used. He states that upon the eighth day the inflammation subsided rapidly, which I would suggest is about the usual course of all simple inflammations of like character, regardless of treatment. After the process of such an inflammation has once fully begun it passes through the three steps of engorgement, deposit and resolution, which requires ordinarily from six to ten days as in acute tonsillitis, etc.

Now, as to what the Doctor should be mindful of concerning his ear. Just such cases are the ones that most often lead to defective hearing, and once fully crippled by the process so many times following such inflammations, it is the most difficult to restore.

The preventive treatment then should be occasional mobilization of the drum membrane and ossicles together with the use of the Eustachian catheter and air-bag. This will prevent the ankylosis of the ossicles and stiffening of the drum membrane and the closing by adhesion of the Eustachian tube.

J. O. MALSURY, M.D.

PITTSBURG, PA., March 5, 1897.

To the Editor:—The instructive report of a case of acute otitis media in the JOURNAL of Feb. 27, 1897, by Dr. B. Merrill Hopkinson of Baltimore, Md., in which he figured and suffered as a patient, leads me to give to the readers of the JOURNAL some instructions that I have for many years carefully enjoined upon patients and the profession who use the nasal douche in any form, viz., *to blow one side of the nose only at a time* after using the douche or after snuffing fluids up into the nares. It is a physical law that fluids will pass always in the direction of the least resistance. Hence, if one naris is left open as must be done to blow it in this manner, it is quite impossible to blow fluids into the Eustachian tube and thereby set up an acute otitis media and nearly all the cases of that very painful character in my practice have been caused by a disregard of this simple injunction. "Blow only one side of the nose at a time" is well worthy of attention, not alone after the use of the douche but at all times, since it is the most efficient means of not only cleansing the parts, but is nearly free from the possibility of causing dizziness and entrance of fluids into the Eustachian Tube with all the attendant evils.

I can not refrain from using this opportunity to speak of the charming sketch of a country doctor in the same issue of the JOURNAL by Dr. Thos. H. Shastid of Galesburg, Ill. It is quite worthy a place beside the lovely character portrayed by Ian McLaren in the "Bonnie Brier Bush," and the portrayal is quite as touching to one's better nature. And now, Mr. Editor, while paying compliments I feel that much is due you for the uniform improvement of our JOURNAL in all its departments. It is now the best journal in America and while its capabilities are still not all developed, they are making a headway that no one can fail to notice.

W. H. DALY, M.D.

Foreign Products Advertised.

NEW YORK, Feb. 25, 1897.

To the Editor:—For the life of me I can not see how some of our practitioners can legitimately maintain the position which they occupy. They will refuse to prescribe "mercauro" for example because it is proprietary, notwithstanding its for-

mula was long ago published in the JOURNAL, while on the other hand they will not only prescribe, but will write about and talk about foreign products which are not only proprietary in the fullest and widest acceptance of the term, but are also patented, yes, absolutely patented! These foreign products come to this country and the owners of the products will flood this country with all sorts of extracts from supposed foreign journals, and will quote high-sounding foreign names of medical practitioners. The physicians of this country swallow the whole story, use the products and then the American journals go ahead and print clinical reports regarding them. This matter strikes me as being an injustice to American progress in chemistry and therapeutics. Here we have products which have been heretofore considered chemically impossibilities, yet we have been able to produce them, in spite of the fact that chemically literature states that they can not be made. It strikes us that we should be commended for this progress and not condemned. It strikes me that we should at least be upon an equal footing with the foreign products, for we are Americans, this is America, the patients upon whom the products are used are Americans and the large proportion of physicians can be called Americans. I can not see why a foreign product should be received with open arms and taken into the ethical fold, when everything in connection with that product is doubly at odds with the code of ethics. Yet the foreign product is received with open arms, while ours is branded as the "yellow dog." This is really a serious subject and is getting more and more serious. The foreigners have a big advantage over us under the existing circumstances, for the manufacturers go ahead and make their own statements, attribute them to some doctor with a foreign name, resort to all sorts of measures to have the articles quoted, and I am sorry to say that they meet with success. I am not opposed to competition, on the contrary I am glad to see it, but I don't call it competition where one man is thrown upon the ground and tied hand and foot, and his opponent free handed is allowed to hammer him to death. I certainly feel that this subject is worthy of full discussion and comment, and would indeed appreciate the receipt of a letter from you stating your views upon the subject. With kindest regards, believe me

Cordially yours,

AN AMERICAN MANUFACTURER.

Modern Immorality.

CONANT, FLA., March 2, 1897.

To the Editor:—Dr. E. S. Bullock, in the New York *Poly-clinic* and Dr. A. R. Reynolds, in the JOURNAL, discuss the moral condition of the nation and its bearing on the future well-being of our people with varying degrees of apprehension. Each looks to the new woman as the one best fitted to take the case in hand.

From various recent publications the following quotations are gathered: "Hoodlums that glory in being 'toughs' are thicker on American soil than on any other spot on the crust of the planet." "Masturbation is well-nigh universal" among our boys and youth. Syphilis has spread until "the question is not who has but who has not" the disease. "Fifteen per cent. of all diseases of women, exclusive of prostitutes, are caused by gonorrhea and its sequelae." "A moral nature so finely developed that it will not permit its owner to enter into the marriage state, bearing the seeds of possible direful results to wife and family, is not common among men." "Not one woman in twenty escapes solicitation" for her ruin. "Ninety out of every one hundred men cohabit with women before marriage." "City children soak and blacken soul and sense in city slime," and "human nature is no better out among the farms." "The country school grounds often prove slippery places for young feet." "Crime and hunger casts our maidens by the thousands on the streets." "If it is all true,

then American society is suspended over an abyss and it will require the engineering skill of the best elements in church and State to keep us from falling into depths of distress." If any part of it is true, then the disease is in the system and "the treatment must be constitutional and radical and preventive."

The new woman does not care to pose as a reformer, much less as a martyr, but her pledge demands of her that she endeavor to do the "whatsoever" and to follow her leader, the Healer of Gennesaret, even to the cross, but does not every manly instinct cry out against sending our virgin daughters to face Sodom and Gomorrah? God pity that people whose women stand alone against the fiercest, the most implacable, as well as the most insidious foe that ever assailed home and country. Until men and women together, with the little child in the midst and the stranger within our gates as well "hear and learn and observe to do all the laws" of that only perfect sanitary code ever formulated, written in the books of Moses so plain that a wayfaring man, though a fool, need not err therein, written in the very substance of our normal being so that violation of them brings the penalty in weakness and pain. Until we teach them diligently, father, mother, priest and doctor, to our children from the time they "know not anything" the full counsels of the God who created their bodies, we are in danger.

The story of Onan and of Baal-peor; of Eli and David and of Herodias' daughter, are not without their parallels today. If we are ashamed of and forsake the words of life, life and health will forsake us as surely as they did Canaan or Israel. When we read of a Pearl Bryan and think of the young girls unprotected by law after the age of legal consent from the wiles of the deceiver, who blights heart and soul as well as body, a crime tenfold more heinous than he commits who only destroys the body by violence. Does Jeremiah seem unmanly weeping for the slain of the daughters of his people? When we realize that from heredity, the seed of wild oats, or "the transmission of lust from unrestrained licentiousness in wedlock," little blistered feet that never walked are hastening to the grave; and infants of tender years in homes where we least expect it are children who are corrupters. What man worthy of the name will say hush! hush! to Isaiah's call: "Lift up thy voice like a trumpet and show my people their transgressions?"

When, in our practice, a young wife is fallen down at the door of her married home, fit subject for the surgeon's knife, what Christian physician but thinks of Benjamin destroyed, of Jabesh-Gilead smitten and forty thousand of Israel slain to right one woman's wrong? Not one husband's conscience, but our whole social system is at fault that our daughters, yes, and our sons, are not afforded the protection which was given the slaves from diseases more loathsome and persistent than smallpox and the plague.

"Is there no balm in Gilead? Is there no physician there? Why, then, is not the health of the daughter of my people recovered?"

W. O. E.

"Mirror Speech."

DENVER, COLO., Feb. 21, 1897.

To the Editor:—In the editorial comments of the issue of the JOURNAL for Dec. 19, 1896, page 1307, you have a paragraph on "Mirror Speech," quoted from the Bulletin of the *Progrès Médical*, November 28; you do not state where the little patient was reprimanded, whether on the left or right side of the head or over what portion of the hemisphere.

I have been engaged in working up speech defects of late and in one case, cyst of the brain, there was a transposition of the letters of words. The patient talked nearly normally, but writing was almost unintelligible from the transposition of the letters, but it was not "mirror speech." I will mail you a

reprint of six cases of speech defect. The one that I refer to is the fourth case of the series.

I shall feel greatly obliged for any additional facts in Baudouin's cases. I am

Yours truly,

J. T. ESKRIDGE, M.D.

Cretins in America.

BALTIMORE, MD., March 5, 1897.

To the Editor:—Will you kindly allow me the use of your columns to ask for information on the subject of cretinism in America? I have been detailed by the Pediatric Society to take part in the discussion on *Internal Secretions* at the Congress of American Physicians and Surgeons in Washington, on May 5, and I am anxious to present the experience of American physicians on the use of the thyroid extract in the treatment of cretinism. I wish brief statements, 1, of the name, age and sex of the patients; 2, of the length of time the thyroid extract has been given, and with what results; 3, whether any case cured by treatment has been able subsequently to abandon the use of the extract; and I would also like to have photographs showing the effects of the treatment.

I shall give full credit to any of my colleagues for the information they may kindly furnish.

Very truly yours, WILLIAM OSLER, M.D.

1 W. Franklin Street.

P.S.—I have the details of the cases already published in this country, but shall be glad of any additional data as to the subsequent history.

Manufacturers in the Secular Press.

DULUTH, MINN., March 3, 1897.

To the Editor:—Permit me through your columns to call the attention of the regular profession throughout the United States to the fact that McKesson & Robbins of New York, hitherto considered by medical practitioners a reputable firm, have recently adopted the methods of the patent medicine vendors in putting upon the market a remedy for the cure of a certain disease and advertising the same to the general public through the secular press, as witness the following from the *Literary Digest* of Feb. 20, 1897.

This speaks for itself, and should not be allowed to pass unnoticed by the profession at large, to which this house is looking chiefly for support.

Yours truly, W. S. FULLERTON, M.D.

"TARTARLITHINE, the new cure for rheumatism. L. E. B., Clifton Hotel, Ottawa, Ill., writes: 'On Sunday, April 5, 1896, I was introduced to a citizen of this city who had not been able to raise his hand to his head for several weeks on account of rheumatism. He called on me one week later, and told me that after taking Tartarlithine for only one week, the improvement in him was truly phenomenal. In two weeks he was practically cured.' Pamphlet on the cure of Rheumatism by Tartarlithine sent free by McKesson & Robbins, Manufacturing Chemists, 95 Fulton Street, New York."

PUBLIC HEALTH.

Pay for New York Village Boards of Health.—Chapter 430 of the New York Laws of 1895 provides that the members of boards of health in incorporated villages shall be entitled to receive for the services rendered by them such fair and reasonable compensation as shall be fixed by the boards of trustees, which latter are empowered to appropriate annually a sum not exceeding \$500 for such purpose. Under this law, the appellate division of the supreme court of New York holds, *People v. Board of Trustees of Village of Haverstraw*, Dec. 31, 1896, that a member of such a board of health, whose term of office did not begin until after the statute went into effect, is entitled to such fair and reasonable compensation as the board of trustees shall fix, notwithstanding there was no appropriation therefor

made before his services were rendered. It might well happen, says the court, that, in the work done by a village board of health, the value of the services could be judged much more accurately after they were performed than in advance of their rendition; and in such cases, it adds, that it can see no valid objection to paying for them by means of an express appropriation subsequently made. For non-action on the part of a board of trustees, in declining to fix a fair and reasonable compensation, it further holds that the appropriate remedy would seem to be a proceeding by mandamus.

On the Consumption of Tuberculous Meat.—It may be remarked that in Germany, to prevent the heavy loss that would attend the condemnation and withdrawal from the food supply of the flesh of animals affected with tuberculosis, it has been proposed to cook such flesh in apparatus attached to the public abattoirs, by means of superheated steam and then allow it to be issued for consumption. Already there is at least one cooking apparatus in operation at Berlin, that of Dr. Rohrbeck, and in all probability there will soon be many more at work. Thorough cooking at a high temperature will no doubt render the consumption of such flesh quite safe and it will prove a boon to the poor, as it will be sold at a low price and require no further preparation, a matter of some moment when fuel is expensive.—London *Lancet*.

Violent Deaths in 1895.—The alarming increase in the number of murders and suicides in this country is shown from statistics recently collated as they relate to 1895 compared with preceding years: From these it appears that the number of murders (including homicide) in the United States attained last year the unprecedented figure of 10,500, as compared with 9,800 in 1894, 4,290 in 1890, and 1,808 in 1885. Hence, the increase of homicidal crime is of a most rapid and serious nature. The suicides in 1895 numbered 5,750, as compared with 4,912 in 1894, 2,040 in 1890, and 978 in 1885. The legal executions in 1895 were 132, being the same as in 1894, whereas in 1890 they were 102, and 108 in 1885. The "lynchings" or illegal executions were 171 in 1895, as compared with 194 in 1894, 127 in 1890, and 108 in 1885. Hence there was a decrease of 23 last year as compared with 1894. But both as regards legal and illegal executions in the United States there is an extraordinary difference between the ratio of increase in the two classes and the amazingly rapid development of murder of recent years. Thus, the combined legal and illegal executions for the 1,808 murders in the year 1885 were 289, or nearly as many as the combined number (303) for the 10,500 murders in 1895.—Chicago *Tribune*.

Austrian Commission to Investigate the Plague in India.—The Imperial Royal Academy of Sciences has employed a portion of the Treitsl Fund in sending a commission, composed of Dr. Hermann Müller, Dr. Ghon, Dr. Albrecht and Dr. Pösch, to investigate the nature of the bubonic disease now prevailing in India. Dr. Müller is assistant to Professor Nothnagel and is one of the most distinguished of our young medical men. He was born in Gratz in 1860, took the M.D. degree in Vienna at the age of 24 years and was for three years assistant to Professor Ziemssen of Munich. He is at the head of the expedition and is specially charged with the observation of the clinical features of the disease; the postmortem examinations will be performed by Dr. Albrecht, who is at the present moment assistant to Professor Weichselbaum. The bacteriologic examinations are to be made by Dr. Ghon, who is also assistant to Professor Weichselbaum and is well known to the medical world by some publications on bacteriology. Dr. Pösch, attached to the clinic of Professor Neusser, is the junior member of the commission; he is a very able photographer and will assist his colleagues generally. The four medical men set out from Trieste on February 3 and will remain at Bombay for three or four months. On January 29 they were received by Baron Gautsch, Minis-

ter of Public Instruction, who complimented them upon their courage and wished them much success in their inquiries. The Treitsl Fund is so called after the late Herr Treitsl, a Vienna citizen, who bequeathed to the academy all his fortune, amounting to about \$500,000.

The Sickness Rate in Germany.—If national health is national wealth, then individual wealth is the politically important unit of measure. This is emphasized in an interesting and "taking" way in the introduction to a handbook that is published by the Imperial Department of Health of the German Government. "The health of man is a precious possession. Its loss causes harm not only to the individual, but also to the community. The individual whose health is impaired suffers discomfort or pain, or both. He loses his ability to work or to earn a living and impairs his enjoyment of the pleasures of life. He must incur expense in order to regain his health, and anxiety and poverty are the results, both to himself and to his family. By the decrease of its productive labor the community suffers loss in its industries and incurs expense in the support of the sick; and when, as often happens, the sick man is attacked with an infectious disease, he becomes a danger to his neighbors. The extent of the loss arising from the impairment of health can be estimated from the returns of the workingmen's sick clubs of Germany. In 1891, out of a total membership of 6,500,000 more than 2,000,000 cases of illness occurred, each of which averaged seventeen days in duration. These clubs paid in medical expenses \$22,000,000. Since it may be assumed that among the remaining 44,000,000 of the German population, 24,000,000 of whom are old enough to work, the cases of illness were as numerous and as long-continued as among the members of these clubs, the expense caused by sickness in Germany in 1891 is not placed too high at \$120,000,000. The loss incurred by stoppage of wages is not included in this sum. The preservation and promotion of the health of mankind is the aim of hygiene. Among the tasks which it proposes are the prevention, limitation and removal of sickness and disease, and the preservation and prolongation of the ability to work and of man's life in general."

Researches Regarding the Rinderpest Bacillus and Antitoxin in India.—An Indian authority on the subject of rinderpest as it exists in the Bengal Presidency writes as follows: If the rinderpest in Africa is the same as that going under the name of rinderpest in India, then Professor Koch is going to search for a bacillus which Dr. Simpson, the well-known medical officer of health of Calcutta, has had in his possession for more than two years. The organism is a sporeless motile bacillus which can grow both with and without air, but gradually becomes attenuated by repeated growths in air. Dr. Simpson saw Professor Koch in Berlin last May and communicated to him the nature of his discovery. He was unable to show his cultures, having left them in London with Professor Klein a few weeks before. Since his return to Calcutta, Dr. Simpson has continued his inoculation experiments and has injected in larger and larger doses cultures of the diplo-bacterium into horses and cows, and has now reached over one hundred days. In the horse, troublesome abscesses were produced which led to emaciation, but the cow is not subject to abscesses, and Dr. Simpson is now inoculating cultures of the microorganism and toxins as well. The toxins produce very large swellings and have raised the temperature considerably, but he is able to give doses of cultures and toxins which would kill five animals without more than a temporary rise in temperature, and he hopes in the course of another month to have ready a supply of antitoxin which will possess a bactericidal power as well. Some regret is felt that application was made to a foreign specialist, even one so peculiarly competent as Dr. Koch; and that Dr. Simpson, who has been studying the subject, should not have had a chance of carrying on the work, which is of vital importance. There are no

epidemics of the kind in Calcutta, and hence opportunities are wanting there. Much interest was shown by eminent bacteriologists in England during Dr. Simpson's late visit here.—*British Medical Journal*, December 26.

Typhoid Fever at Paterson, N. J.—A Paterson paper has stated that twelve cases of typhoid fever have been known to occur along the line of the Passaic River above the intake of the water supply, and in the absence of better evidence these cases may be taken as the starting point of Paterson's epidemic of fever. Between September and the middle of December there had been reported 155 cases, while in the corresponding period of 1895 the number had not exceeded 57. As all the evidence pointed to the water supply as the agent of infection, Dr. Leal made a thorough inquiry, in order that the extent and the source of the pollution might be ascertained. He says: "I caused chemic and bacteriologic examination of the waters of the river to be made, and investigated all known or suspected cases of typhoid in the drainage area of the Passaic above our intake. The examinations showed the river to be free from pollution and to be possessed of the normal amount of bacterial life at a certain point. Below that point and down to the intake, evidences of sewage pollution were found and the bacterial life was enormously increased. The common colon bacilli were found and also colonies of what are believed to be the bacilli of typhoid. The investigation into the cases and suspected cases along the river disclosed what I believe was a case of typhoid at the point where the river first showed the evidence of pollution. The drainage from the home of the patient was directly into the river. If the patient's disease was typhoid, it would scientifically account for 98 per cent. of our cases of the disease, and that it was typhoid, a chain of circumstantial evidence unerringly indicates." This prevalence adds another to the long list of typhoid epidemics caused by the infection of public water supplies. In many instances the infection was derived from only one case of the disease. It is plain enough that the people of Paterson will be exposed to typhoid infection proceeding from cases of the fever in the drainage area just above the intake of the water works until the city shall have obtained and exercised the power to guard the sources of its supply or shall have purified by filtration the water received from the river. As it will not be an easy matter either to procure the needed power or to exercise it effectively, the municipal authorities should consider the expediency of resorting to filtration.

Public Water Supplies of Illinois. The following memorial and bill has been sent to the members of the Illinois Legislature. The accompanying draft of a bill for the protection of public water supplies of the State, and the regulation of the disposal of sewage has been prepared by Joint Committee:

Dr. John A. Vincent, Springfield; Dr. Julius Kohl, Belleville; Dr. J. W. Scott, Springfield, representing the State Board of Health. Prof. Arthur N. Talbot, C.E., Champlain, Ill.; Prof. A. W. Palmer, representing the University of Illinois. Dr. O. B. Will, Peoria, Ill.; Dr. L. L. Gregory, 514 Evanston Avenue, Chicago, Ill., representing the Illinois State Medical Society. Mr. John Ericson, C.E., City Hall, Chicago, Ill.; Col. R. O. S. Burge, 6318 Stony Island Avenue, Chicago, Ill., representing the Western Society of Engineers. Mr. D. W. Mead, C.E., Rockford, Ill.; Mr. John W. Alvord, C.E., 1140 Rookery, Chicago, Ill.; Mr. Jacob A. Harmon, C.E., Peoria, Ill. (Arcade Building), representing the Illinois Society of Engineers and Surveyors. Dr. J. R. Dunham, Wenona, Ill.; Dr. H. M. Bascom, Ottawa, Ill., representing the Illinois Homeopathic Medical Association. Dr. G. R. Shafer, Morton, Ill.; Dr. Henry Wolgemuth, Springfield, Ill., representing the Illinois State Eclectic Medical Society. The appointment of this committee and the drafting by them of the bill grew out of a discussion by the Illinois Society of Engineers and Surveyors at its last annual meeting at Peoria. It is not necessary to enter extensively into a discussion of the benefits which would result from the enactment of this law. The results of such supervision and control in other States where such laws are in force, and a glance at a few statistics giving the results

following the improvement of water supplies and sewerage in the reduction of the mortality of typhoid fever alone, which is preëminently a disease produced by impure water and bad sewerage, will suffice. Twelve leading cities of Europe show deaths from typhoid fever before the introduction of a proper water supply and sewerage to have been 10.7 among 10,000 of population per annum; after such introduction, 3.5 per annum. Fifty European and American cities having no sewerage and water supply systems, or insufficient ones, show about 10 deaths per 10,000 living, while an equal number in cities having proper water supplies and sewerage systems, the number is but 2.4 per annum. The following table shows the average typhoid death rate for a period of five years, ending May, 1893, for six towns on the Merrimac River in Massachusetts: Manchester 2.95; Nashua 4.77; Lowell 10.66; Lawrence 12.72; Haverhill 3.63; Newburyport 3.60. Of these towns, Lowell and Lawrence use polluted river water and the others have pure supplies. During 1893 a filter plant was added to the Lawrence system, and in 1894 the rate was reduced to 5.00, and in 1895 to 3.07 per annum of 10,000 living. What is true of typhoid fever is true of other filth diseases. It will doubtless be conceded that each municipality within this State when confronted with the necessity of providing a water supply or system of sewerage for its people is desirous of having the problem solved in a proper and scientific manner, and if an authority on this subject were known, it would gladly seek advice therefrom. The State Board of Health being charged with the care of the health of the citizens of the State, is such an authority as should be sought in matters of this character, and it is believed by the committee which has prepared the accompanying bill, that its provisions will enable the State Board of Health to meet the exacting requirements of such a responsibility. In the furtherance of the cause of this bill, the aid is earnestly requested of every citizen of this State, who believes that its passage will in a measure accomplish the purposes desired. If it be brought to the attention of each member of the State Legislature, and its purposes and benefits briefly and clearly set forth, it would seem as though it should be unanimously passed at a very early date.

A BILL

For an Act imposing additional duties and conferring additional authority upon the State Board of Health, with reference to public water supplies and sewerage of this State.

SECTION 1.—Be it enacted by the people of the State of Illinois, represented in the General Assembly; That in order to materially promote the public health, the State Board of Health of the State of Illinois be and is hereby charged with the sanitary supervision and control of all sources of public water supply, both surface and underground, within the resources of this State, which are or may be used for domestic and culinary purposes, that said Board be and is hereby charged with the supervision and control of the methods and means of collection and disposal of sewage within this State; that the said Board be and is hereby authorized and directed to make such rules and regulations as may be necessary to enforce the provisions of this act.

SEC. 2.—No system of sewerage, or system of public water supply, shall be constructed, extended or changed by any city, village or town in this State, or by any corporation, person or persons, until the plans and specifications for such system of sewerage or system of public water supply or proposed extension or change thereof shall have been submitted to the State Board of Health and received its approval. In addition to the approval of the plans for the development of public water supplies, the State Board of Health shall examine and cause to be made, analyses of the waters from the source or sources of supply, and determine their fitness for domestic and culinary purposes before such waters shall be delivered to customers. A certificate of the finding of the Board shall be issued without delay to the municipality, corporation, person or persons, submitting plans or water for approval, which certificate shall be signed by the President of the Board and attested by the Secretary with the seal of the Board.

SEC. 3.—All analyses of water or sewage required by the State Board of Health under the provisions of this act shall be made at the laboratories of the State University at Urbana by the proper officer or officers in charge of such laboratories, and the sworn statement of the result of such analyses, under the seal of the University, shall be competent evidence in the courts and shall be prima facie evidence of the matters therein stated, so far as relating to the existing conditions of the water or sewage analyzed.

SEC. 4.—Every general rule or regulation made by the State Board of Health under this act shall be published at least once each week for three consecutive weeks in at least one newspaper in each county of this State. All special rules, regulations and instructions for any particular city or village shall be published once in a newspaper of such city or village to be affected thereby, or if no newspaper is published therein, then by posting copies in such city or village to be affected thereby.

SEC. 5.—The affidavit of the printer, publisher, or proprietor of the newspaper in which such rules, regulations or instructions are published, and the affidavit of the person posting the same, with the rules and regulations or conditions so published or posted, shall be filed in the County Clerk's office of such county, and with the State Board of Health. A copy of such affidavit, rule, regulation or instruction, certified by the county clerk, or Secretary of the State Board of Health, in whose office the same are filed, shall be conclusive evidence of such publication or posting, and of all the material facts therein stated in all courts and places.

SEC. 6.—The State Board of Health is hereby authorized to make such inspection as may be necessary to determine whether its rules, regulations and instructions under this act are complied with; and if any such inspection discloses any violation of any such rule or regulation, the Secretary of the said Board shall cause a copy of the rule, regulation

or instruction to be served upon the person or persons, corporation or municipality, violating the same, with notice of such violation, and if such person or persons, corporation or municipality, shall fail to comply with such rule, regulation or instruction, or fail to show cause satisfactory to the State Board of Health why the same should not be enforced within ten days after the service of such notice, the State Board of Health may maintain an action before any justice of the peace of the county in which such violation occurs, or in any court of record of the said county, against such person or persons, corporation or municipality for the recovery of the penalties hereinafter prescribed for such violation, and may also, upon a proper showing, have an injunction, without bond, restraining such person or persons, corporation or municipality, from the continued violation of such rules, regulations or conditions.

SEC. 7.—The penalties for the violation of or non-compliance with the provisions of this act, or the rules and regulations of the State Board of Health which may be promulgated under this act, shall not be less than fifty dollars nor more than two hundred dollars for each and every violation and non-compliance; an additional penalty of ten dollars per day shall be imposed for each day that said violation of or non-compliance with shall be continued after conviction thereof; said penalties to be recovered as provided in Section 6.

SEC. 8.—The State Board of Health shall, at its annual meeting each year, elect a consulting sanitary engineer, whose term of office shall be for one year and who shall serve until his successor shall be elected and qualified. It shall be the duty of said engineer, under the direction of said Board, to examine all plans for the construction of proposed systems of sewerage, public water supply, and extensions or changes thereof, and to perform such duties in the line of his profession as may be assigned to him by the Board; to make report to the secretary before the regular quarterly meeting of the Board of all inspections made by him; for which services he shall be paid a sum not to exceed dollars per annum, to be paid out of the regular appropriations of the Board. PROVIDED, That as soon as may be expedient after this act shall become a law the State Board of Health shall assemble and elect its sanitary engineer, who shall serve until the next annual meeting and until his successor shall be elected and qualified.

SEC. 9.—The State Board of Health shall annually, at the stated time for other reports of said Board, report to the Governor of the State, all of its acts with reference to the provisions of this act, and such reports shall be published the same as other public documents.

SEC. 10.—The provisions of this act shall not apply to any city of the first class in this State.

SEC. 11.—Since an emergency exists in that various municipalities throughout the State may desire the approval of plans so that work may be carried out during the summer and autumn of 1897, this act shall be in effect from and after its passage and approval.

BOOK NOTICES.

The Year-book of Treatment for 1897. A Critical Review for Practitioners of Medicine and Surgery. Crown octavo, pp. 448. Cloth, \$1.50. Philadelphia and New York: Lea Brothers & Co. 1897.

This is the work of twenty-six well-known British authorities, and the thirteenth year of the annual. That it has come to stay is self-evident, as it is one of the most useful of the various digests. The work covers the whole domain of practical medicine. Its very moderate price puts it within the reach of all.

Principles or Guides for a better Selection or Classification of Consumptives Amenable to High Altitude Treatment, and to the Selection of Patients who may be more Successfully Treated in the Environment to which they were Accustomed Previous to their Illness. By EDGAR A. TUSSEY, M.D. Philadelphia: P. Blakiston, Son & Co. 1896. Price \$1.50.

In a book of 141 pages the author has given us a work of immense practical value. The very questions that arise in the mind of the general practitioner with regard to the choice of climate for his consumptive patients, will be found here answered without bias. The work, however, does not stop there, for the author takes occasion to scourge the users of alcohol, and to point out the insidious sapping of the vital forces by the use of alcohol even in limited quantities.

A Pictorial Atlas of Skin Diseases and Syphilitic Affections in Photo-lithochromes from Models in the Museum of the Saint Louis Hospital, Paris, with explanatory woodcuts and text by Ernest Besnier, A. Fournier, Tenneson, Hallopeau, Du Castel, Henri Feulard and L. Jacquet. Edited and annotated by J. J. PRINGLE. Part VII. London: The Rehnman Publishing Co.; Philadelphia: W. B. Saunders. 1897. Price \$3 per part.

We have so often written in praise of this magnificent work, that it is needless to say more than that each number increases our admiration. The present fasciculus contains Plates XXV to XXVIII inclusive, with explanatory text. The number of pages has now reached 174. The contents are: Eruption from Potassium Bromid, Hypertrophic Papular Syphilides, Rupoid and Early Gangrenous Syphilides, Gangrenous Syphilides, 1, tubercle gangrenous syphilides; 2, gangrenous gumma.

The American Year-book of Medicine and Surgery. Edited by GEORGE M. GOULD, A.M., M.D., assisted by eminent American physicians and teachers. Profusely Illustrated. Svo. cl., pp. 1258. Philadelphia: W. B. Saunders. 1897. For sale by subscription only, price \$6.50.

This year-book is one of the best published in any language. The vast literature of the year has here been culled and condensed, and judicious criticisms written upon the topics included in the scope of the work. Those fortunate enough to have the last year's volume, will know better than any one else how to appreciate this one.

Dr. L. A. Duhring has been appointed to the department of dermatology, vice Dr. Hardaway, resigned. The editor-in-chief has not hesitated to pass his judgment on the value of most of the proposed discoveries and improvements noted in the volume, and in the main we see little to dissent from in them.

Hyde on the Skin. A Practical Treatise on Diseases of the Skin. For the use of Students and Practitioners. By J. NEVINS HYDE, A.M., M.D., Professor of Dermatology and Venereal Diseases in Rush Medical College, Chicago, and FRANK H. MONTGOMERY, M.D., Lecturer on Dermatology and Venereal Diseases, Rush Medical College, Chicago. New (fourth) edition. In one octavo volume of 815 pages, with 110 engravings and twelve full-page plates, four of which are colored. Cloth, \$5.25; leather, \$6.25. Philadelphia and New York: Lea Brothers & Co. 1897.

The exhaustion of the third edition of this work within so short a time after its publication, and the appearance of this fourth edition, afford gratifying evidence of the value of the work to the profession. This revision is a conscientious one. Old chapters have been rewritten, new ones added, and critical corrections have been made where necessary to bring the work to correspond in all respects to the recent progress in dermatology.

The enormous number of cases annually appearing at Professor Hyde's clinic, makes it possible for him to write from the standpoint of a clinician of unsurpassed opportunities for observation. That he has used his clinical opportunities to the best advantage is apparent from a perusal of the book.

ASSOCIATION NEWS.

The Journal Special Train will leave Chicago Sunday, May 30, over the Pennsylvania Line, direct to Philadelphia without change.

Railroad Rates. The Committee of Arrangements had several meetings for arranging the work, of which I was not advised. When accidentally learning of it I asked Dr. Hare to keep me posted that I might be able to reply to questions, and since then I have been invited to all the meetings of the Committee. But already Dr. E. E. Montgomery had been assigned to the railroad work, and had arranged with them as to the rate. This was as early as last December. Of course I did not propose to put my request before the roads till the opening of the year as they always insist that it is too early to consider such work till the year comes in. From what I can learn Dr. M., has done all he could to obtain one fare. When on a previous occasion I put before the roads the fact that the G. A. R. and the Y. M. C. A., etc., can obtain one fare the excuse is that these are so much larger, etc. However, under the idea just observed in the JOURNAL that we should have more time before and after the meeting, I will reopen the matter personally and endeavor to get better terms. Please ask the profession throughout the country to bring any influence they may have to bear on the powers in the railroad pool. Also, ask the delegates and all who expect to be with us to give me notice as we are anxious to be fully provided for all. The wild idea is now that we shall have 3,000 registered, without taking thought of those who will accompany them as wives, etc.

W. B. ATKINSON, M.D., Secretary.

Intussusception in Children.—Dr. Edward Martin, 222 South 15th Street, Philadelphia, desires answers to the following questions for an Association paper in preparation: Intussusception in children under 12 years; seen by Dr.; in personal practice; in consultation; age of patients; cause of intussusception (polyp?); symptoms (tumor, passage of bloody mucus, tenesmus, vomiting, intense pain); treatment, medical with result, mechanical (injection of air, water, massage), result; period elapsing from first symptom to mechanical treatment. Operative (disinvagination through abdominal opening) result; resection, result; seat of invagination; amount of bowel resected; method of joining intestines; period elapsing from the first symptom to the time of operation; result of autopsies. Further details not covered by the above headings will be gladly received, such as recovery with passage of slough, etc.

SOCIETY NEWS.

Western Surgical and Gynecological Association.—The sixth annual session of the Western Surgical and Gynecological Association was held in the Senate chamber of the State House at Topeka, Kan., Dec. 28 and 29, 1896. It was one of the best meetings in the history of the Association, being largely attended, having a good program and interesting discussions. In welcoming the surgeons on behalf of Topeka Mayor Fellows said in part: "To welcome to Topeka honored members of the most progressive of all professions is indeed a pleasure. Five years ago a few prominent surgeons met in this city and started your organization. Today it embraces among its members the leading surgeons of the West. Great as has been the growth of your Association in members and influence, it is as nothing compared to the wonderful progress of the profession you so worthily represent. During the century that is nearing the end your profession has lifted the curtain and shown a greater display of wonders and mysteries than all others combined." On Monday night a buffet banquet was served at the Copeland Hotel, at which the following surgeons responded to toasts: M. B. Ward, M.D., Topeka, "The Future of the Western Surgical and Gynecological Association." Dr. Summers, Omaha, Neb., "The Medical Profession of the West." Rev. Dr. A. S. Embree, "The Clergy's Opinion of the Profession." Dr. Grant of Denver, "A Silver Thread Among the Gold." C. A. Fellows, "The City Health Regulations." Dr. W. S. Lindsay, "Specialism in Medicine." Dr. Eastman of Indiana, "Good Night." For the ensuing year the following officers were chosen: President, Dr. Joseph Eastman of Indianapolis, Ind.; first vice-president, Dr. D. S. Fairchild of Clinton, Iowa; second vice-president, Dr. B. B. Davis of Omaha, Neb.; secretary and treasurer, Dr. Herman E. Pearse of Kansas City, Mo.; executive board, Drs. L. Schooler of Des Moines, Iowa; M. B. Ward of Topeka, Kan.; T. J. Beattie of Kansas City, Mo.; C. Lester Hall of Kansas City, Mo., and J. P. Lord of Omaha, Neb. Dr. W. W. Grant of Denver was chosen chairman of committee on arrangements.

The New York Academy of Medicine; 1847 to 1897.—From 1847 to 1850 this budding institution was cradled over a carboniferous stratum, that is it had its first home over a coal yard. Then, for twenty years, it "boarded 'round" like the country school-ma'am, a part of the time in the University Building and part of the time at the Twenty-third Street School. In May, 1875, it for the first time had a home of its own on Thirty-first Street. This was a happy mark of progress and the Academy took on new life. This building was manifestly outgrown before a decade had passed, and the new abode on West Forty-third Street became a necessity. It was opened in 1891, representing an outlay of nearly \$300,000. The Academy is free from debt, and can have all the funds it needs to keep its standard floating high. The latest proposition for adding to the useful-

ness of the institution is that made by the newly elected president, Dr. E. G. Janeway, who desires to see the board of governors establish a laboratory for pathologic research for the benefit of the members, after the example of the Royal Colleges of London.

Academy of Medicine of Cincinnati.—At the annual meeting of the Academy of Medicine of Cincinnati held March 1 the following officers were elected for the ensuing year: W. E. Kiely, president; J. C. Oliver, first vice-president; Ellen F. McCarthy, second vice-president; S. E. Allen, treasurer; W. E. Schenck, secretary; M. A. Tate, financial secretary; A. G. Drury, corresponding secretary; A. I. Carson, librarian; N. P. Dandridge, J. A. Murphy, J. T. Whittaker, trustees.

American Pediatric Society.—The ninth annual meeting will be held at Washington, May 4, 5 and 6, 1897. A session is to be devoted to the demonstration of apparatus and pathologic specimens. It is requested that announcements of such subjects be forwarded as early as possible. In order to collect papers on kindred subjects into the same session, the titles of papers are also requested at an early date. Samuel S. Adams, M.D., president. William P. Northrup, M.D., chairman of Council, 57 East Seventy-ninth Street, New York.

Kings County Medical Association, at Brooklyn.—The following officers for 1897 were elected February 9: President, J. C. Bierwirth; vice-president, L. A. W. Alleman; secretaries, F. C. Raynor and J. Scott Wood; treasurer, E. H. Squibb; member of executive committee to 1901, J. D. Rushmore; other members of committee, R. M. Wyckoff, T. M. Rochester and Jonathan Wright.

The Polish Medical Society of Chicago will hold hereafter their regular meeting every second Wednesday of each month at the Tremont House (Parlor A), cor. Lake and Dearborn Streets, 3 to 6 P.M.

Medical Association of the District of Columbia.—The following recommendations were adopted Feb. 16, 1897:

1. That any institution for medical charity shall require from every applicant for relief in a hospital or dispensary, a written certificate, to be obtained as hereinafter provided. Emergency cases are to be excepted from the operation of this rule.

2. That such certificates be obtained from physicians to the poor, the Board of Associated Charities and any registered physician.

3. That cases of sick and injured persons found upon the streets, in the stations or elsewhere, who require immediate treatment, shall be carried to the emergency hospital, or the nearest hospital having an emergency service, or to their homes, if so directed by the patient or his friends.

4. That emergency patients shall not be detained longer in such institutions than the necessity of the case imperatively demands, but shall be discharged from the service and sent to their homes, or to some public hospital as the patient may elect.

5. That members of this Association shall be entitled to the privilege of attending private patients occupying private rooms in any of the public hospitals of this city.

6. That in future the members of the medical staff of hospitals, when attending medical or surgical cases in private pay rooms, shall insist upon proper payment for their services, except in the case of such patients who are clearly unable to pay for the same.

7. That whenever a medical staff, or a majority thereof, of a hospital or dispensary resigns, and when after due hearing, this Association finds that the resignations were for just and sufficient cause, it shall be forbidden for any member of this Association to accept a position on the staff of said hospital or dispensary.

8. Whenever one or more members of the medical staff of a hospital or dispensary are dismissed, and when, after due investigation, this Association finds that such dismissal was without just and sufficient cause, it shall be forbidden for any member of this Association to fill the vacancy created thereby.

9. That complaints made under Rules 7 and 8 shall be made in writing to the Standing Committee, which, after due consideration, shall report its findings to the Association.

W. P. CARR, M.D., President.

J. R. WELLINGTON, M.D., Secretary.

NECROLOGY.

SURGEON-MAJOR ROBERT MANSER, who is the first professional victim to the plague in Bombay, joined Guy's Hospital about 1867, when he was 18 years of age. Six years later he qualified, becoming M. R. C. S., and later on, in 1877, passed into the Indian Medical Service, being attached to the Bombay army. In 1879 he first saw field service, and later on took part in the defence of Kandahar; subsequently working in the Bolan and Khyber Passes after Lord Robert's brilliant success. Going down to Bombay, he was soon appointed one of the physicians to the Jamsetjee Jeejeebhoy Hospital, and a professor in the Grant College Medical School. In 1889 he became Professor of Medicine there, and in that same year took the M.D. at Durham, passed the M.R.C.P., and became a surgeon-major. In addition, he soon acquired a reputation as a consultant, and became a most popular physician among the European community of Bombay. In private Dr. Manser was one of the most unassuming of men, as well as one of the most careful clinical workers that the Indian Medical Service has seen. When the plague broke out in August, in Bombay, Dr. Manser was at once appointed President of the Plague Investigation Committee—in its work he has been unwearied. He took the plague January, and died on the 6th, cut off in mid-career, and with a brain all active; a death that he would have been the last to rebel against, rather taking it as part of a day's work, an honor to himself and to a service that has no need to produce vouchers for its nobility.

WILLIAM S. PRESTON, M.D., of Patchogue, N. Y., died at his home February 16. He was born at Ashford, Conn., Jan 15, 1810. He was a licentiate of the Massachusetts Medical Society in 1835. In October, 1837, he went to Patchogue to practice, and during his time was one of the most prominent practitioners of Suffolk County. He was also prominently identified with the affairs of this county and village. Being an ardent politician, his friends sent him to the assembly, where he served one term and made an excellent record. For several years he was School Commissioner. He was an officer in the Suffolk County Medical Society, and was always interested in medico-educational improvements. In 1871 he was one of the organizers of the Patchogue union free school, being the first president of the Board of Education. He leaves three sons and one daughter. Dr. E. Forest Preston of Amityville is his third son.

ROBERT TODD REYNOLDS, M.D., died in Chicago, Ill., February 28, in his 86th year. He was the oldest living graduate of the McGill University and retired from practice in 1891 after fifty-five years of active participation in all its responsibilities. A widow and four children are his survivors. Dr. Reynolds was the only son of Commissary-General Robert Reynolds of the British Army, who was with the 34th Infantry at Fort Marden in 1837. Dr. Reynold's mother was a daughter of Commodore Bouchette, of the British Navy. Her first husband was Peter McGill, founder of the University.

OTTO L. DUSSELDORF, M.D., of Brooklyn, died on the 5th inst., aged 68 years, at the home of his son. Dr. Louis M. Dusseldorf. The doctor was born in Germany, but early came to the United States, spending the greater part of a half century in medical practice in New York. His fatal illness was an attack of acute lobar pneumonia.

HENRY S. GROSS, M.D., University of Pennsylvania Medical Department 1862, died in Philadelphia February 21, aged 57 years. During the war he was an assistant surgeon of the 26th regiment Pennsylvania infantry and served until Oct. 17, 1863. His regiment participated in the battles of Bull Run and Gettysburg during his official term.

WILLIAM R. LITTLE, M.D., of Bloomsbury, N. J., coroner of Hunterdon County, N. J., died in Phillipsburg, N. J., Febru-

ary 13, aged 47 years. He was a graduate of the University of Pennsylvania Medical Department in 1878.

WILLIAM B. HENDERSON, M.D., one of the oldest physicians of Dauphin County, Pa., died at Steelton, Pa., February 22. He served as assistant surgeon of the 6th Pennsylvania Cavalry and served until March 27, 1865.

MICHAEL W. A. WUELFINCH, M.D., University of Amsterdam, Holland, 1876, a surgeon in the Dutch army before he came to Reading, Pa., in 1880, died there February 17, aged 55 years.

JOHN C. LEWIS, M.D., University of Buffalo, 1874, died of pneumonia February 6, aged 48 years. He was a practitioner of Panama, N. Y., and a member of Chatauqua County Medical Society.

JOHN C. CLAUDY, M.D., Bellevue Hospital Medical College 1865, died at his residence in Newville, Pa., February 20, aged 55 years. He was an acting assistant surgeon U. S. A., during 1865.

JOHN KIRBY, M.D., University of Pennsylvania 1852, for twenty-one years connected with the State Hospital for the Insane at Trenton, N. J., died February 27, aged 71 years.

HENRY KENT HUNTINGTON, M.D., N. Y. University Medical College 1871, of New Rochelle, died February 28, aged 53 years.

ERNST ILGEN, M.D., Munich, 1836, died at his residence in Brooklyn, N. Y., March 4, in his 83d year.

MISCELLANY.

Dispensary in North Carolina.—Raleigh is to have the first free dispensary in the State. It will be opened at an early date in connection with the school of medicine of Shaw University. It will furnish free advice and medicine to the needy and deserving colored people.

Unqualified Midwives in New York.—A coroner's jury in New York City, recently had before it the case of a young woman whose death had taken place after treatment by a midwife who had a license of the city health authorities but had never been examined as to her qualifications. This jury, in its verdict, passed a vote of censure as to the granting of *pro forma* credentials.

Jefferson Medical College.—At a recent meeting of the Board of Trustees of the Jefferson Medical College, Philadelphia, Dr. J. Chalmers DaCosta was elected Clinical Professor of Surgery. Dr. DaCosta has been connected with the College for many years, and has recently been Demonstrator of Surgery and Chief of the out-patients department. The new appointment is made in recognition of his long service and valuable contributions to surgical literature.

Error in too Much Evidence.—Upon the trial of an indictment that charged that the defendant, knowingly and unlawfully, and without license, prescribed medicine for a certain person named, the supreme court of New Jersey holds, in *Meyer v. State*, Nov. 20, 1896, that evidence that he had prescribed for other persons was illegal, its only effect being to show that he habitually did those things for the doing of which in a particular instance he had been indicted. Because the State, in this case, after proving the circumstances upon which it relied to establish the fact that the defendant had prescribed for the person alleged, proceeded to prove a number of instances in which he had prescribed for sundry other people, not mentioned in the indictment, the court reverses the conviction had.

New Shoes as a Factor in Accident Insurance. John Fogarty of the firm of Winston Bros., contractors of Minneapolis, Minn., was in charge of the work of grading a roadbed on a branch of the Great Northern Railroad, and while walking from one flat car to another stepped on the iron apron, slipped and fell between the cars, the wheels passing over both legs a little below

the hips, the injury resulting in his death in a few hours. Mr. Fogarty stated after he was hurt that his new shoes were the cause of his accident; they were awkward and slippery. He claimed that if he had had on his old shoes it never would have happened. His wife was paid the \$5,000 for which he was insured. This is the second claim paid within a twelvemonth where the cause of the accident can be attributed to new shoes, the other one being that of Paul Flesher of Elkhorn, W. Va., who, in attempting to climb to the summit of Pinnacle Rock, slipped, lost his footing and fell over a precipice.—*Bulletin of the Fidelity Company*, January.

Among the Medical Colleges of New York City.—Despite the efforts of a portion of the New York medical men, the policy of consolidated interests goes on. The fruition of the higher medical education is seemingly at hand for the benefit of the public at least, if not for the amelioration of the profession at large. Yet many think that the standard can not be too high nor the emoluments too meager. The trustees of the University of the City of New York have formally accepted the deed of the Loomis Laboratory from the trustees of the University Medical College. Hereafter the trustees of the university will take charge of the Medical College, assuming all financial responsibility. The Medical College's endowment of \$100,000 and its property worth \$300,000 more pass into possession of the university. Also the Bellevue Medical College have secured 100 feet on First avenue and 150 feet on East Twenty-sixth Street, adjoining the Carnegie Laboratory, which belongs to the college. Before the fire the Charities Commissioners were anxious to secure the ground on which the original building stood for hospital purposes. The work of erection will begin at once as it is intended to have the new structure ready before September begins. Meanwhile the Commissioners are busy with new plans and devices to meet the constant increasing demands upon their resources.

John Wesley's "Primitive Physick."—Andrew Mellick, Jr., in his "Story of an Old Farm," thus writes: "In New Jersey, up to the close of the French and Indian Wars, the main reliance of the people for medical attendance was upon the pastors of the churches. It was the custom of those who came from the old country to have taken a course of medical study as a preparation for their duties in the new world. The native ministers also, even up to the close of the century, on being educated studied both professions, and often not content with two, mastered so much of the law as would enable them to draw wills, conveyances and other legal instruments. John Wesley, the founder of Methodism, not only, like many other persons, prescribed and supplied medicine, but published a book called 'Primitive Physick,' which went through thirty editions. The ignorance of the times and the extraordinary remedies in use can be best exemplified by quoting a few prescriptions contained in this precious medical volume. For a violent bleeding of the nose a piece of white paper was recommended to be placed under the tongue. Treatment for cancer in the breast was to swallow in a pint of warm ale an infusion distilled from warts taken from a horse's leg; goose dung was also to be applied externally. Consumptives were directed to breathe for fifteen minutes each morning in a hole cut in fresh turf. The sovereign remedy for apoplexy was a pint of salted water; for cuts, poultices of toasted cheese; for cold in the head, orange peel thrust up the nostrils and so on *ad nauseam*."

A Case of Congenital Umbilical Hernia.—McCosh (*New York Medical Journal*, Feb. 20, 1897, p. 248) has reported the case of a male child, born at term of healthy and well-formed parents, which presented at birth a tumor the size of a large orange in the situation of the umbilicus. There was neither constipation nor vomiting. The tumor was roundish in form, about three and a half inches in diameter, projecting two and a half inches above the level of the abdominal wall; its

surface was dark purplish in color. The external covering of the mass consisted not of skin, but of the membranes of the umbilical cord, through which the liver and the intestines could be indistinctly seen, falling and rising with inspiration and expiration. Manipulation of the tumor caused no discomfort and it was partly reducible. The temperature was slightly elevated, the pulse and respiration accelerated. Operation was advised and undertaken on the sixth day. The surface of the hernial mass had been converted into a foul, sloughing membrane, which was detached with forceps, exposing to view the liver and the transverse colon. The remainder of the membrane was removed by an incision around the base of the tumor, the liver and the intestines being held back by hot gauze pads. That portion of the liver which was contained in the sac was covered by a tenacious, partially sloughing exudate, which was scraped off with considerable difficulty. When expulsive efforts were made by the child, about one-third of the liver protruded through the gap in the abdominal wall. Approximation of the margins of the wound, after replacement of the viscera, was rather difficult on account of the excessive tension. A strip of rubber tissue was introduced into the abdominal cavity for drainage. The operation was followed by only moderate shock, but on the eighth day the pulse began to fail, cyanosis set in and death ensued.

Salivary Infection.—The *American Therapist* has gone a little outside of its *métier* to discuss the subjects of salivary infection and the sanitation of kissing. The writer pokes fun at the health official out in Indiana who has undertaken to legislate against the time-honored osculatory custom. While boards of health are proverbially lacking in those sentimental attributes which go toward making "life worth living," it has never been supposed that sanitary restriction would go so far as to heartlessly place the seal of official disapproval upon the soul-inspiring practice of labial juxtaposition between the party of the first part—the sighing swain—and the reciprocatory party of the second part—the fair damsel. The demands of prophylactic science are indeed inexorable if modern sweethearts are to be debarred from following the example of the lovers of all generations, even from the period of our common Edenic ancestors down to the present time. It is always easy to pull down and destroy, but what, if any, equally innocent and soul-satisfying substitute for this delightful pastime does this particular iconoclastic sanitary solon propose? Nothing, absolutely nothing! To be sure, in his scientific complaisance he implies that the demands of modern prophylaxis can be attained by bathing the ruby lips of fair femininity with some non-irritating and innocuous antiseptic, and rinsing the bacteria-breeding teeth of the masculine donor (or recipient as the case may be) with some equally potent germicide.

The Medico-Legal Value of Antivenin in India.—An interesting annotation in the London *Lancet*, January 23, states that Professor Hankin, director of the bacteriologic laboratory at Agra, recently had submitted to him cloths which had been removed from the intestines of some cows which had died apparently from some acute poisoning. Chemical analysis being impracticable, Professor Hankin macerated the cloths and concentrated the solution obtained. Part of this was inoculated under the skin of a rabbit, which died in less than an hour with every symptom of poisoning by serpent venom. The rest of the fluid obtained from the cloths was then mixed with a small quantity of Calmette's "serum antivenimeux" and injected into a second rabbit, which showed no symptoms whatever. If this observation proves to be corroborated by further trials, the knowledge that poisoning by serpent venom can be detected by scientific methods may check the use of this agent in India, where it appears to be frequently employed to poison animals. Another agent frequently employed for this purpose is abrin, the albuminoid substance contained in jequir-

ity seeds. A serum antitoxic to abrin has been prepared by Dr. Calmette, of the Pasteur Institute at Lille, whose researches on serpent venom are so well known, and it is possible that this also may be of use in finding the exact poison that has been employed and in bringing home crime to guilty parties. It is an interesting example of the unlooked-for practical results which often spring from purely scientific laboratory experiments. The whole anilin industry, for instance, arose from the incidental discovery of one of the anilin colors by Dr. W. H. Perkin, when carrying out a patient laboratory research in the unsuccessful endeavor to prepare quinin synthetically.

Graduates of Rutland's Mill.—Fred Rutland, president of the "Wisconsin Eclectic College," was arrested at No. 1001 Congress street February 24, on a warrant issued by Commissioner Humphrey, charging him with using the mails for fraudulent purposes. He was held in bonds of \$5,000 for a hearing. Rutland's "college" is operated, he said, under a Wisconsin charter. His scheme has been carried on for some time. Diplomas were issued to all comers for a fee of from \$35 to \$50. Following is a partial list of the victims, with the dates of their "diplomas":

ILLINOIS.

Effingham—Louis F. Beemer, Register block, Oct. 24, 1896.
Chicago—William Henry Bischoff, Dec. 30, 1896; Hyman Brook, 589 South Halsted street, Dec. 31, 1896; Knead Lauritzen Boysen, 3565 Cottage Grove avenue, Jan. 30, 1897; John Alexander Conkey, 6600 Wentworth avenue, Jan. 27, 1897; Hiram Manter Dyer, Sept. 22, 1896; Frank Harry Escher, care Caradine, 167 Madison street, Feb. 3, 1897; Oscar Lawson, 240 Thirty-first street, May 6, 1896; Lindsay, 5955 Union avenue, Feb. 20, 1897; McCormick, April 3, 1896; Thomas J. McGrath, 29 Keith street, Feb. 23, 1897; William F. Nutt, 4204 Berkeley avenue, June 4, 1896; Joseph von Osinski, 928 George street, Lake View, Feb. 1, 1897; William Henry Saunders, 1208 Michigan avenue, Jan. 2, 1897; Mrs. Delia J. Wilcox, 4202 Berkeley avenue, June 8, 1896; Maud C. Williams, June 9, 1896.
New Burnside—John Newton Newberry, Feb. 26, 1897.
Harvel, Montgomery County—H. Nester De Moulin, Oct. 30, 1896.
Pekin—Francisco Josephus Masen, Jan. 18, 1896; Joseph Martin Martin, South Capitol street, Feb. 16, 1897.
Lewistown—John Quincy Moreley, Feb. 17, 1897.
Millersburg—M. F. Staunton, Oct. 7, 1896.
DeKalb—Benjamin Scarles, Oct. 7, 1896.
Wilmington—Benjamin Franklin Ward, Dec. 15, 1896.

INDIANA.

La Otto—Albert A. Bender, Aug. 12, 1896; Claude C. Chick, Aug. 12, 1896.
Owensburg—Lafayette Bridwell, Oct. 19, 1896.
Rays Crossing—G. T. Carney, Jan. 17, 1896.
South Bend—B. Webster Collins, Jan. 29, 1896.
Anderson—Dr. T. A. Dillon, 201 North Jackson street, Dec. 23, 1896; William H. Downham, Jan. 9, 1896.
Fort Wayne—Rudolph Deppeller, 32 South Columbia street, Jan. 23, 1897.
Alum Cave, Sullivan County—John W. Davis, Feb. 12, 1897.
Howell—James F. Freeman, July 18, 1896.
Monticello—Wesley H. Hull, Aug. 19, 1896.
Aetna—Frank Heath, Dec. 29, 1896.
Indianapolis—William F. Howe, 168 Bellefontaine street, Feb. 4, 1897; Henry Noel Karchner, 171 East Washington street, Dec. 15, 1896; William Herman Kluge, care Dr. J. W. Neff, 404 North W street, Feb. 6, 1897; Gustav Lender, care Dr. John W. Neff, 404 North W street, Feb. 2, 1897; Charles H. Pfuntner, 964 1/2 North Illinois street, Feb. 1, 1897.
Lilly Dale—William Robert Howe, Feb. 6, 1897.
Elkhart—William C. Johnson, box 36, Aug. 5, 1896.
Petersburg—Davis F. LeMaster, Acme Pharmacy, Dec. 8, 1896.
Charles Matson, diploma by United States Express to Benton Harbor, May 2, 1896.
Veedsburg—Charles Albert McNeill, Jan. 18, 1897.
Frankfort—James Osborne, Oct. 1, 1896.
Coal Bluff—Thomas C. Rowe, July 9, 1896.
Blue Grass—John Richards, Aug. 27, 1896.
Garrett—John Julius Stohrer, Oct. 30, 1896.

MICHIGAN.

Detroit—Edward Francis Andrews, per Van Husen, May 2,

1896; I. Barnard, Dec. 15, 1896; George H. Carpenter, July 22, 1896; Lewis M. Dickens, Dec. 14, 1896; Frederick H. Falkner, 141 Howard Street, Jan. 30, 1896; John P. Guillott, 10 Lafayette Avenue, July 6, 1896; Louis Goldberg, per C., Aug. 22, 1896; Emil Huberman, care Mehner, 141 Gratiot Avenue, July 28, 1896; William H. Hale, 6 or 60 Washington Street, Sept. 8, 1896; Prof. Elia Le Montais, 204 Howard Street, Sept. 24, 1896; William J. Lee, Helen E. Lee, 60 Washington Avenue, Sept. 3, 1896; James McAlindon, 230 East Woodbridge Street, Feb. 18, 1897; Rudolph Carl Opperman, 182 Congress Street, May 19, 1896; George O. Pratt, 720 Antonine Street, Aug. 18, 1896; Grandville W. Stevens, per Van Husen, June 8, 1896; Frank Schaeffer, pharmacist, 871 Chene Street, Oct. 3, 1896; Clemens E. Vertal, 867 Chene Street, June 25, 1896.

Kalamazoo—Myron Hermon Bell, 213 North Burdick Street, July 2, 1896.

West Olive—William Isadore Jacques Bruinsma, July 3, 1896.
Harrisburg, Ottawa County—Chester William Bunce, July 25, 1896.

Marlette—James W. Boucher, Aug. 5, 1896.
Benton Harbor—Frank E. Brady, Avery Block, Aug. 7, 1896; Julius C. Blume, care F. E. Brady, M.D., Jan. 29, 1896; Rose Olds, June 2, 1896; R. Burt Taber, Aug. 7, 1896.

Escanaba—Adelbert Brady, 702 Wells Avenue, Oct. 6, 1896.
Hancock—Henrick Verner Bergell, Dec. 5, 1896.

Yuma—Dr. Charles S. Baker, Dec. 10, 1896.

Grand Rapids—George Albert Brink, 407 Michigan Trust Building, Jan. 21, 1896; Leonard L. Conkey, June 15, 1896; Goodwin M. Field, Aug. 17, 1896; Simon Le Roy, 72 Ottawa Street, May 12, 1896; Coleman Nockolds, Butterworth and Indiana Avenue, June 30, 1896; Samuel M. Reed, per Carpenter, June 18, 1896.

Ann Arbor—Frederick Waller Brown, 48 South Engle Street, Feb. 20, 1897.

Nunica—Earl O. Cilley, July 2, 1896; James Cilley, July 2, 1896; Annie Gilette, July 23, 1896.

Lamont—Ed. G. Cooney, July 9, 1896; John Rice, July 9, 1896; Milron Lebhrus Squier, Aug. 14, 1896.

Algonac—August A. Geisler, Pharmacist, Aug. 28, 1896.

Grand Junction—Albert D. Hurlburt, July 13, 1896.

Fenwick, Montcalm County—Albert Frederick Haskin, Feb. 6, 1897.

Big Rapids—Miss Jenks, April 25, 1896.

Columbiaville—John H. Kellogg, pharmacist, June 8, 1896.

Sunfair, Hartley A. Meyers, care C. M. Snyder, Feb. 1, 1897.

Greenleaf—A. McLeod, Dec. 22, 1896.

Port Huron—John McDonald, Jan. 5, 1897.

Tonconning Bay—Monroe Porter, Oct. 23, 1896.

Gladstone—Albert H. Powell, Feb. 20, 1897.

St. Joseph—James C. Schuler, Aug. 22, 1896.

Jackson—G. Williams Van Vleck, A.M., M.D., 708 Detroit Street, Sept. 15, 1896.

Mandie—J. Van Vleck, 708 Detroit Street, Jackson, Sept. 15, 1896.

Mulliken—J. Whesley, May 14, 1896.

Salem Station, Washtenaw County—Albert L. Walker, Jan. 20, 1897.

Holland—Jantke J. Wetmore, 15 Eighth Street, Sept. 7, 1896.

WISCONSIN.

Waukesha—Martin Henry Janer, care Boehner Bros., Feb. 12, 1897.

Trade Lake—Filip Gustav Barck, Dec. 5, 1896.

Turtle Lake—Edgar W. Brown, Jan. 9, 1897.

Wausaukee—Charles Wetherill Brewster, Feb. 19, 1897.

West Superior—Alexander A. Campbell, 714 Tower Avenue, June 17, 1896.

Stewbin—A. Earnest Dillman, May 21, 1896.

Westfield—Rolland Dickinson Earley, Dec. 22, 1896; May Rundlett, Dec. 22, 1896.

Milwaukee—Adelbert Freund, 453 Fifth Street, June 25, 1896; Herman Fleischer, per Beyer, Aug. 28, 1896; Martin W. F. Frederickson, care Beyer, Nov. 26, 1896; Fred A. Goedecke, 723 Wells Street, June 10, 1896; Konard Hahn, 309 Fourth Street, May 4, 1896; Emil Raben, National Avenue and First Street, June 30, 1896; Gustavus Schorse, per Beyer, Aug. 28, 1896; Helen H. St. John, 2220 Fond du Lac Avenue, Sept. 5, 1896.

Milton Junction—W. H. Gates, May 27, 1896.

New Lisbon—J. H. Hansen, May 20, 1896.

Underhill—George E. Hunt, per Poppe, June 4, 1896; Gustavus Jensen, per F. & A. Pope, June 4, 1896.

Poynette—Edgar E. Hinkson, June 19, 1896.

Catawba—Chester W. Johnson, May 16, 1896.

Grantsburg—Carl L. Johnson, Jan. 21, 1897.

Marinette—K. Kenyon, Arlington Hotel, Dec. 17, 1896.

Flintville—Frederick Sophie Kanute, Feb. 4, 1897.
 Monticello—Rudolph Kleiner, Feb. 16, 1897.
 Woodward—Harry S. Lester, May 18, 1896.
 Modena—Ernest B. Leid, Nov. 6, 1896.
 Milton Junction—Fred McAdams, May 19, 1896.
 Cobb, Iowa County—Gustav Newman, Dec. 11, 1896.
 Otsego, Columbus County—William A. Prase, May 18, 1896.
 Waupaca—Fred Poppe, May 19, 1896; Alfred Poppe, same address and date.
 Solder's Grove—Pere M. Randall, Dec. 11, 1896.
 Wausau—Leonard Douglass Smith, 517 Franklin Street, Aug. 20, 1896.
 Iron River—George E. Smith, Dec. 29, 1896.
 Fond du Lac—Dr. Q. Towns, Jan. 5, 1897.
 Eau Claire—Thomas E. Williams, Jan. 20, 1896.
 Barron—Charles E. Waldron, Jan. 22, 1896.

Washington.

WASHINGTON OBSTETRICAL AND GYNECOLOGICAL SOCIETY.—At the 258th meeting of this Society, held on the 19th ultimo, Dr. F. S. Nash (late U. S. N.) read the paper of the evening, entitled, "Recovery Following Right Ovariectomy Notwithstanding Left Pyosalpinx. Abdominal Stitch hole Abscesses One Year Afterward." Dr. G. B. Harrison reported an interesting case of liver colic with passage of stone, and presented the specimen.

WHAT THE "EVENING STAR" SAYS ABOUT FREE MEDICAL TREATMENT.—There can be no reasonable objection to the plan of the local physicians as outlined in the report of the proceedings of the Medical Association to restrict the free treatment of patients at the hospitals to those who are genuinely unable to pay the usual fees. The scheme of reform is simple and just. It requires those asking for free treatment to present a card bearing a certificate of worthiness signed by the police authorities, the superintendent of the Associated Charities or a reputable physician. Under such a system there is little chance of hardship or suffering for lack of proper medical attention or on the other hand of the encouragement and development of that unfortunate tendency of many people to pauperize themselves whenever the opportunity offers.

THE GEORGETOWN COLLEGE HOSPITAL.—The plans for the hospital have been prepared by the architect and have been accepted. They have in view a structure which will cost about \$40,000, and will contain from 100 to 150 beds. Of the amount needed \$10,000 has already been pledged in private subscriptions, and the immediate outlook is for about \$15,000. So soon as this amount is secured work will commence on the buildings, and it is hoped to begin work within a short time. The desire of the projectors is to have the institution completed and in operation by October next.

AN AMENDMENT TO THE APPROPRIATION BILL.—Senator Gallinger has added the following amendment to the appropriation bill (section on charities), provided, "that any legally licensed physician may attend private patients when they occupy pay rooms in any of the public hospitals in the District of Columbia."

CONTAGIOUS DISEASE AMBULANCE.—The health department has been provided with the newest design of ambulance for the use of contagious disease patients.

PROVIDENCE HOSPITAL'S OFFER.—Mr. McMillan, chairman of the Senate committee on the District of Columbia, has received a letter from Sister Beatrice, in charge of Providence Hospital, in which she offers to build and operate as a part of that institution a large ward for the treatment of contagious diseases, if a part of the proposed appropriation of \$30,000 to provide wards at two hospitals be given to Providence. Sister Beatrice calls attention in her letter to the fact that Providence Hospital has already established a contagious ward and during the recent diphtheria epidemic the hospital had many cases. She says the small ward could be extended without great expense and she cites that the government would not be under annual expense for nurses, the sisters acting in that capacity without compensation. Providence Hospital, it should be remembered, a few years ago, came to the front and admitted, free of charge, cases of contagious disease which were refused admission to any of the other hospitals of the city. It is hoped that the offer will be accepted. Such a true charity should be encouraged and assisted.

MEDICAL SOCIETY. At the meeting of the society held on the 24th ult. George M. Sternberg, surgeon-general U. S. Army, addressed the society on "Pathogenic Microorganisms," and illustrated his lecture by the use of lantern slides. He went over and illustrated almost the entire subject of bacteriology.

Detroit.

THE DETROIT MEDICAL AND LIBRARY ASSOCIATION at its regular meeting February 22, listened to an interesting paper by Dr. Maas, entitled "Malignant Tumors of the Mammaræ."

THE WAYNE COUNTY MEDICAL SOCIETY adopted the following resolutions on the death of Dr. W. R. Scurr, an active member of the Society:

Dr. W. R. Scurr has been a resident of Detroit since 1885. He attended school at the Detroit College of Medicine and also at the Michigan College of Medicine and Surgery, graduating from the latter place in 1889. He held the professorial chair of nervous diseases in the latter college. Before his study of medicine he was an ordained minister, and while taking his course in the colleges, filled some well-known pulpits. As a medical man he showed his love for his calling. The interests of his patients were ever his interests, and this one thing is what led to his early, untimely death. He always showed professional courtesy to his brother practitioners. He was charitable, generous, kind-hearted, sympathetic, and with his genial nature was loved and respected by all. His early call from his labors was a loss to us and to those for whom he was laboring in the performance of his professional duties.

Resolved, That this Society learns with deep regret of the death that has removed from our midst Dr. W. R. Scurr.

Resolved, That the Wayne County Medical Society indorses all that has been said of Dr. Scurr in the above preamble, and that the same be spread upon the records of the Society.

Resolved, The secretary be and is hereby instructed to transmit to the family of our deceased brother these sentiments, together with an expression of our sympathy with them for their great bereavement.

Resolved, That the Society do, as a further mark of respect to his memory, now adjourn.

THE PUBLIC SERVICE.

Navy Changes. Changes in the Medical Corps of the U. S. Navy for the week ending March 6, 1897.

Asst. Surgeon M. S. Elliott, detached from instruction at naval laboratory, New York, and ordered to the U. S. S. "Columbia."

Change of Address.

Caldwell, J. R., from St. Clairville, Ohio, to West Liberty, W. Va.
 Daly, W. H., from 135 5th Ave. to McClintock Building, 516 Market St., Pittsburg, Pa.
 Frank, J., from Ozark to East Carondelet, Ill.
 Hall, L. F., from St. Louis to Potosi, Washington Co., Mo.; Howland, Geo. T., from 815 to 825 Vermont Ave., Washington, D. C.
 McKee, E. S., from 57 to 33 W. 7th St., Cincinnati, Ohio.

LETTERS RECEIVED.

Alt Adolf, St. Louis, Mo.; Adamson Typewriter Press Co., Muncie, Ind.; Abbott, S. W., Boston, Mass.
 Bramüller, Wilhelm, Vienna, Austria; Biddle, James G., Philadelphia, Pa.; Burrall, F. A., New York, N. Y.; Brooksher W. R., Fort Smith, Ark.
 Cokenower, J. W., Des Moines, Iowa; Calkins, Marshall, Springfield, Mass.; Cheney, W. F., San Francisco, Cal.; Chambers, J. H. & Co., St. Louis, Mo.
 Douglass, J. C., Franklin, Ky.; Diornstad, G., St. Paul, Minn.
 Evans, C. H., Canton, Ohio.
 Fleischman, E., San Francisco, Cal.; Ferguson & Gooduow, Chicago, Ill.; Fletcher's Sanatorium, W. B., Indianapolis, Ind.; Finney, E. E., Winnebago, Wis.; Frank, Louis F., Milwaukee, Wis.
 Gilreest, J. E., Gainesville, Texas; German, Wm. H., Morgan Park, Ill.; Garcean, Edgar, Boston, Mass.
 Holland, J. W., Philadelphia, Pa.; Herdman, W. J., Ann Arbor, Mich.; Hall, H. C., Detroit, Mich.; Hare, H. A., (2) Philadelphia, Pa.
 Jay, Frank Webster, Chicago, Ill.; Judd, W. H., Janesville, Wis.
 Kellogg, C. S., New Orleans, La.; Kress & Owen Company, New York, N. Y.
 Lapsley, R. M., Keokuk, Iowa; Lester, Chas., Chicago, Ill.; Lichty, D., Rockford, Ill.; Lamphear, Emory, St. Louis, Mo.; Long, F. A., Madison, Neb.; Longhen, E. J., Andover, N. Y.
 Maytum, W. J., Alexandria, S. D.; Moore, T. M., Willoughby, Ohio; Merrick, M. B., Passaic, N. J.; Mauzy, W. P., Oakland, Cal.; Mulford, H. K. Co., Philadelphia, Pa.; Milbury, F. S., Brooklyn, N. Y.; Martin, Edward, Philadelphia, Pa.; Martin, W. A., San Francisco, Cal.; Miller, C. J., New Orleans, La.
 Norbury, Frank P., St. Louis, Mo.; Norwich Pharmacal Co., Norwich, N. Y.
 Orth, D. A., Milwaukee, Wis.
 Pressey, A. D., Grand Rapids, Mich.; Parkinson, Jas. H., Sacramento, Cal.; Parmele, Chas. Roome, New York, N. Y.; Proctor & Collier Co., Cincinnati, Ohio.
 Rubenstein, F., Berlin, Germany; Rathmell, J. R., Chattanooga, Tenn.; Rohr, S. M., Geyersville, Cal.; Raeder, J. W., Wilkesbarre, Pa.
 Stoner, Geo. W., Stapleton, Staten Island, N. Y.; Shastid, T. H., (2) Galesburg, Ill.; Smart, Chas., Washington, D. C.; Schering & Glatz, New York, N. Y.; Saunders, W. B., (2) Philadelphia, Pa.; Smith, J. W., Lincoln, Ill.
 Trueheart, P. P., Sterling, Kan.; Truax, Chas. Greene & Co., (2) Chicago, Ill.
 Warde J. A., Dubuque, Iowa; Wyckoff, R. M., Brooklyn, N. Y.; Warren, Wm. M., Detroit, Mich.; Waugh, Wm. F., Chicago, Ill.; Williams, Herbert S., Durango, Colo.
 Zumo Pharmacal Co., St. Louis, Mo.

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ADDRESS.

THE NECESSITY FOR INVESTIGATION AND OBSERVATION BY THE GEN- ERAL PRACTITIONER.

An Address to the Berks County (Pa.) Medical Society, Feb. 11, 1896.

BY THOS. LEIDY RHOADS, M.D.

ASSISTANT DEMONSTRATOR OF PATHOLOGY; ASSISTANT IN THE SURGICAL
CLINIC, JEFFERSON MEDICAL COLLEGE HOSPITAL.

Medicine is a science developed by a process of experimental induction, and by methods which lead to a complete, final evolution of undisputed facts. It is a rational science so far as the absolute conclusions, the uniform results, observable within its sphere, depend for their certainty upon comprehensive experience and complete analogy, and the reliable testimony of competent observers in the unalterable phenomena of nature. It is largely an empiric science inasmuch as the contingent methods generally accepted in the management of disease depend for their validity upon the cumulative evidence resulting from continued experimentation and observation. The institution of this method of investigation and observation formed the basis of its classification as a science.

For several centuries subsequent to its origin to a certain stage of its development, medicine, however, presents nothing that is of scientific value, and little that is of interest save from an historic standpoint, in that it is a record of the rank absurdities, the dreamy conjectures, the base impositions practiced in the ages of obscurity. Its materia medica was limited to decoctions of a few herbs common to the flora of the East; its armanentarium, a collection of agents that were used to work upon the superstitious beliefs of a credulous people—such as amulets, which were worn around the neck to chase away the ague, or an hexameter from the early Greek authors, which had power to assuage the agony of gout, or a verse from the lamentations, which was credited with the cardinal virtues of being a specific for joint affections. Mystical ceremonies, songs and incantations were used for the relief of pain, great stress was laid on the interpretation of dreams, and when death closed the scene the fatal event was attributed to want of confidence on the part of the patient. This constituted the medicine of the East in its early days, and little more can be said of surgery, which consisted principally of the extraction of the "bent and reeking spears from the breasts of the Trojan heroes," and a few crude operations with instruments of stone. No attempt was made to advancement, and thus medicine, for the dreamy blank of many centuries, was but a gaunt shadow of the infinite possibilities which the future was destined to disclose. It was little more than an instrument of deception in the hands of those instructed in the polite philosophy of the day.

What a paradox does this early history present! Medicine, created for the relief of suffering and the cure of disease, and which one would naturally expect to have been studied and developed with the greatest possible ardor and zeal in whatever age and land, made the means of artful chicanery! Medicine, noble in its purpose, infinite in its faculty, deserves a more exalted sphere. Knowledge, not superstitious tradition, should be its heritage. The spirit of investigation unchained should expand into a general movement of careful inquiry, and make the art a promulgator for public good.

On the advent of Hippocrates on the clinical stage, medicine assumed a new role. A desire for more accurate knowledge in the treatment of diseases stimulated an inquiry as to their causes and progress. It is the first evidence of the why and wherefore, the dawn of scientific advancement. It is the transition stage from the medical charlatan to the rational physician. Thus the way was led from the frauds of Priestcraft and a debasing quackery, to the significant methods based on observation and investigation, from the trammels of superstition and mental benightment to the daylight of reason, from the dictates of antiquated traditions to a sound, plausible, logical science. This investigating spirit became the epitome of medical progress. It was the nidus from which was developed a comprehensive and far-reaching science, a fountain spring whence flowed streams of energy destined to cleanse medicine of its fallacies, and to swell into a torrent of universal good. It gradually accomplished a revolution in the meaningless lethargic state in which medicine existed. A new life was infused into its followers. Once begun, its influence was incessant, and wherever medicine has since been practiced and studied and taught, this same spirit has been the dominant factor in its spread and development; and whether the seat of medical learning was in the stronghold of Grecian glory with its radiant philosophy, or was transferred from time to time from the votive tablets of the temples to the medicine of the Seven Hills, "from beneath the shadow of the cross to the empire of the crescent, from the classic shores of Italy to the warlike followers of Mahomet, and the fiery descendents of Ishmael," from the splendors of Alexandria, with its library and museum, with Herophilus and Erasistratus, to Bagdad and Salamanca, and all of those institutions which grew and flourished beneath the iron scepter of the Mamelukes, from the ecclesiastics of Salerno to the realms of Charlemagne and the West and later to the new continent, it has been the essence, the eternal element of medical scientific advancement.

Medicine today is but the outcome of this progressive spirit. With the accumulated knowledge and increased facilities for research that have resulted from its many discoveries it has attained a status which has placed it on an equal footing with the

allied sciences. Its literature, the teachings of its medical schools, the products of its laboratories, give evidence of this. But the factors which have brought it to its present state of mature development dare not cease to be dominant. Today a greater enthusiasm exists in its future development than the past has ever witnessed. All the world over there are those who are striving with the keenest interest to solve problems that have baffled workers of the past. Much of this investigation is carried on in those laboratories of whose existence the public has no knowledge until some new Röntgen ray flashes its brilliant light throughout the land. Find out something new, aid in its development, be a contributor to science, is the order of the day. Even in our schools, where but a few years ago the essential features of medical teaching were the didactic course and the clinical arena, these have largely been supplemented by the laboratory, where the student is encouraged to do original work; and the marked advance of modern medicine can be traced to the early training received in these scientific workshops. Daily there are given to the world the products of the microscope, the culture tube, and the reagent. But there are certain lines of investigation, that can not be followed out in the laboratory, and it devolves upon the general practitioner, who has opportunities for observation more particularly in certain fields, to aid in the solution of these problems, to contribute to the increase of medical knowledge, and meet the obligations which he assumed on entering a profession whose demands for observation and investigation are so urgent at the present time.

It is unnecessary to recount how these investigations are to be carried out or to quote any examples illustrating the importance and value of observation and investigation. The history of the development of the knowledge of the circulation from Erasistratus, who thought the arteries contained air, to the researches of Williams, who demonstrated the migration of the leucocytes through the capillary walls, and the later application of this knowledge to the study of inflammation by Cohnheim, is still fresh in our minds. The investigations of Priestley proving the aeration of the blood and setting aside the false views of the ancients; Galen's early and crude study of the physiology of the nervous system, to the localizing of cerebral functions of the present day, which has paved the way for successful surgical treatment of brain lesions hitherto obscure and fatal, and among the later investigations of which no name is better known than that of Keen; Alcmaeon's study of the human structure by comparative anatomy to the learned discourses of the late lamented Leidy; the weird theory set forth by Empedocles of Agrigentum to the confirmation of the illustrious Harvey's aphorism: *Omne vivum ex ovo*; the close study of the tissues and the creation of histology by the genius of Bichat, to the examination of the complex changes of the nuclear stroma in cell division—the karyokinesis of Schleicher; Koch's great discovery of the cause, which has revolutionized the treatment of tuberculous affections; the subject of callous production, of Senn, which has opened a broad field of conservative surgery, and has resulted in the saving of thousands of useful limbs; Lister's experiments on the practical use of the catgut ligature which have led to results in surgery that will ever make his name immortal. Kocher's recent announcement that myxedema fol-

lows extirpation of a goitre with the consequent cure of that disease, and the daily discovery of the bacteriologic causes of different diseases, with their consequent rational treatment—all these are but a few examples of the observations and investigations, the results of which have made the science of medicine what it is today. If the brilliant achievements of modern medicine and surgery are the direct result of these methods of investigation, future improvements must depend on the same sources of information. To aid then in enhancing the value of the science, to further its usefulness, should be the object of every physician, be he a worker in the laboratory, be he a doctor of special organs, or be he the greatest of all specialists—the general practitioner. His idea should be at once to become a close observer and investigator, his motive to promote science. In this way only can he pay the debt of gratitude he owes to his profession and meet the demands of the present investigating era.

Were there a question as to the bearing and weight which the observations of the general practitioner will have upon the medicine of the future, it is but necessary to quote a few examples of the part he has taken in its evolution during the past: How the horrors of the battle-field, the agonies of maternity, the terrible sufferings of the clinical amphitheater are dispelled by the induction of ether anesthesia, which procedure originated in a small town in the backwoods of Georgia by an obscure village doctor, Crawford Long, who is now honored, in commemoration of his discovery, by a monument in the great metropolis of Europe. How the experiments of the elder Gross on intestinal anastomosis, during the early part of his professional career in a neighboring town, decided in large measure the future of intestinal surgery and reclaimed to life those who had been left to die from wounds of the viscera. How the most formidable operation of surgery, amputation at the hip joint, designated by Percival Pott as "horrid, dreadful and an unjustifiable procedure," was first successfully performed not with the skilled assistants and the best possible surroundings of the thoroughly equipped hospital clinic, nor on the battle-field, where an urgent ultimatum might have demanded it with little or no hope of recovery, but in the wild and remote regions of Kentucky at a time when there was no consulting advice to be had, and left to his own resources in the days before antisepsis and anesthesia, Walter Brashear, the man observant, the man of daring, successfully accomplished this feat of surgery, and, strange to say, after all the half a hundred different methods have since been tried and abandoned, that of Brashear is now used by leading surgeons as the best possible procedure. How Ephraim McDowell, an obscure practitioner in the early days of the Blue Grass State, with his life in jeopardy, brave and undaunted, first removed an ovarian tumor and became the pioneer of abdominal and pelvic surgery. How in a small Southern town, after years of careful study, battling with poverty and distress in an honorable struggle for a remunerative practice, Marion Sims devised the operation for the cure of vesico-vaginal fistula, which gave relief to a multitude of suffering motherhood afflicted with this hitherto incurable malady and gained for the originator perpetual fame. How the rapidity of operations was hastened and the danger to life lessened, by the use of immediate mechanical hemostasis, by the practical Hearn apply-

ing small spring clips to the cut ends of vessels, which contrivance led to the general use of the indispensable modern hemostatic forceps. These are a few illustrations of what has been accomplished by careful investigation and observation, even under the most trying circumstances, demonstrates conclusively the varied opportunities of the general practitioner in an inexhaustible and inviting field of labor and must be a stimulus to his pursuing a course of research that will ultimately reap similar results.

But in entering upon this work of research he dare not do so with the idea that a fortnight will disclose some wonderful hidden fact which ages have shielded from the searching eyes of investigators. Progress in medicine is slow. The grand march of medical science sweeps onward, upward through the solemn pathway of the ages, not with fickle, fitful movement, but slow, calm, majestic. Every appreciable advancement of the science marks a complete cycle of human thought whose exponent was a worker of antiquity. Every era has had its blind chimeras, its fanciful theories, its experimental investigations, its new discoveries, its ultimate absolute facts by which the science has been slowly evolved. Its elucidation must be gradual, and research must be followed out in a distinct line based on the investigations of previous years. Medical truths expounded at the present day are not the result of spontaneous thought. The same grand ideas have hovered over a vista of years. They warmed and fired the genius of medical philosophers from the early days of medicine, but the proving of them, the elaboration of the idea was left for the present investigating age. The field is inexhaustible and affords ample scope for all. Lord Bacon urged upon doctors the study of those diseases incurable, and it were well to profit by his advice.

There is practically no limitation to the various subjects which might be suggested as being especially adapted to the general practitioner's opportunity for observation and research at the present time. Hygiene or preventive medicine offers probably as large a scope as any and promises much for the future. The recognition of the fact that various diseases are preventable by instituting proper hygienic surroundings is a greater boon to humanity than all drugs discovered to date—a sweeping statement, indeed, yet nevertheless evident on careful reflection. The vast opportunity for extending the usefulness of this subject in the fruitful field offered by matters of drainage, the subject of ventilation, the disinfection of clothing, the disposal of sewage and the inspection of food and water supply is open more especially to the general practitioner. The effect of peculiar local causes upon the general health and constitutions of the inhabitants within the circumscribed limits of his practice, and their influences in exciting or modifying disease; the effect of hereditary tendencies and family diatheses in producing disease; the bearing which the mode of living of the inhabitants has upon sporadic cases or endemic diseases; the influence of neighborhood and houses in the propagation of certain diseases, as cancer, are but a few pertinent questions, the correct solution of which will have much weight on medicine of the future. Or the subject of dietetics might be presented, with the rôle it played in his treatment and to what extent and with what results it has superseded the general empirical administration of drugs. Or leading his investigations into another channel of the yet hidden secrets of the deep and comprehensive science, one might suggest the need of a safer and

more agreeable anesthetic, a shorter cure for syphilis, a more extensive application of serum therapy, a hypnotic which will not form a habit, a specific for phthisis—these are but a few of the mysteries that sphinx-like stand out in bold relief, defiantly challenging to be solved.

Great as have been the discoveries of the last quarter century, who will venture to say what the next decade has in store for us. We dare not stand, awed though we be, on the brink of the twentieth century with a deaf ear to its demands. Our interest in medicine as a science would not tolerate such unconcerned inactivity. All the world over men are engaged—thoughtful, active, energetic men, in fathoming the great unknown, in recovering to us what has been lost for ages, and with this as a working basis, with exulting hearts constantly giving to the world their new discoveries, the fresh victories over disease, the taking away of the load of human suffering. They are commingling the elements which will determine the inevitable future of medicine. Let your zeal and enthusiasm swell the current of this general impulse for investigation into the mysterious workings of nature and add the results of your research to the knowledge that has been chastened and purified in the crucible of centuries, that is gradually attaining the perfection of a finished science. And when the investigating energy now spent in the laboratory of nature shall turn toward the ideal and rush into literature and the clinical arena, then there will arise authors whose works shall equal the lofty strains and discriminating judgment of a Da Costa, surgeons whose cunning hand shall have the skill of a Gross.

ORIGINAL ARTICLES.

CANCER OF THE STOMACH.

A Clinical Lecture delivered in Rush Medical College.

BY HENRY M. LYMAN, A.M., M.D.

PROFESSOR OF THE PRINCIPLES AND PRACTICE OF MEDICINE.
CHICAGO, ILL.

The two patients whom I bring before you this morning are both advanced in life; one of them is 57 and the other is 76 years of age. Both are emaciated and pale; both are cachectic and enfeebled. There are, however, certain differences between them which will become apparent on closer examination. The younger man is simply pale and thin, without special discoloration of the skin. The left foot is somewhat edematous and the glands above the clavicle, on the left side of the neck, are considerably enlarged. The expression of his countenance is careworn and the face is furrowed with deep lines. The tongue is pale, covered with a gray coating, and rather reduced in size. The thoracic viscera seem to be healthy, though the cardiac beats are frequent and feeble. The liver is small and the spleen is hardly distinguishable. Placing the patient on his back and palpating the abdomen it is easy to discover an abnormal degree of epigastric tenderness on pressure. The stomach is filled with gas and extends downward as far as the navel; it is considerably dilated and there is tympanitic resonance over a large part of the belly. The intestines are not correspondingly filled with gas. In the pyloric region a tumor, rather irregular in form and nearly the size of a fist, can be distinctly felt. It moves but little during respiratory efforts; it is sensitive to pressure, and percussion brings out over its

area a dull sound quite in contrast with the note that is returned from the cardiac portion of the stomach.

The patient, who has been a large and vigorous person in former years, tells us that he was leading an active life till one year ago. He had for many years been in the habit of taking whisky before each meal on account of indigestion. He gives a history of chronic gastritis which was perhaps caused, and was at any rate aggravated, by the alleged remedy.

Nearly twelve months ago he lost his appetite; began to lose weight and strength; complained of gaseous distention of the stomach; and about seven months ago began to vomit his food. It was often very acid and irritating to the fauces; it was accompanied by a copious discharge of gastric mucus, and lately by streaks of blood and a dark, granular looking substance, like coffee grounds. During the whole time the chronic uneasiness, with which he suffered for years, became intensified, so that he complains of deep-seated, gnawing, burning, boring sensations which are aggravated by taking food. For a considerable period of time there was no tumefaction of the stomach, but about four months ago the epigastric region became enlarged, and distinct evidence of a tumor was apparent at the pyloric end of the stomach.

The older patient also states that the greater portion of his life has been passed in the enjoyment of excellent health. He was a farm laborer, sober, industrious, married in early life, and always free from venereal disease, malarial cachexia and other maladies. After his sixty-fifth year he began to suffer during cold weather with various forms of neuralgia in different parts of the body and limbs. During one of the winters, five or six years ago, he frequently experienced attacks of gastralgia and enteralgia, which were usually relieved by a few doses of bismuth and magnesia, or by a hypodermic injection of morphin, when uncommonly severe. Two years ago he began to emaciate gradually and now you see that he is much reduced, having fallen in weight from 175 pounds to 123. I give you an opportunity to inspect the patient and you can observe the total loss of subcutaneous fat and the absence of elasticity in the skin, which only very slowly retracts when pinched into folds over the abdomen. Remark also the pallor and earthy color of the skin everywhere over the body and limbs. The thoracic viscera are healthy; the scanty urine is high colored and dense, but it contains neither albumin nor sugar; there is no distention of the stomach or intestines; the liver and spleen are not enlarged; there is some tenderness over the whole upper half of the abdomen; perhaps there is a slight increase of resistance to pressure upon the epigastrium just below the ensiform cartilage; but there is no defined tumor anywhere within the abdominal cavity. The symptoms so far are quite negative and are usually explained as the result of *senile marasmus*. But during his residence for two months in the hospital he has exhibited certain phenomena of a suspicious character. Occasionally he has vomited and the contents of the stomach have been acid, owing to the presence of lactic acid. Free hydrochloric acid has been invariably absent. Giving him a solution of potassium iodid to drink, it was an hour before the salt could be detected in the saliva, though as you are aware, in a healthy subject it should pass from the stomach through the salivary glands into the mouth in less than twenty minutes. Lately the inguinal glands and those on the left side of the neck have

begun to enlarge. In view of all these symptoms, though we can discover no palpable tumor, and though the patient does not exhibit any very acute or rapidly developing evidence of failing health, I am inclined to think that he too is a victim of gastric carcinoma.¹

Let us now consider the general symptoms of cancer in the stomach. It is worthy of note that the disease has a two-fold effect upon the health, since in addition to the cachexia that is developed as the neoplasm grows, the nutrition of the body is hindered by the local derangement of digestion that is caused by the presence of the tumor in the wall of the stomach. In this particular the effect is largely conditioned by the situation of the growth; when the pylorus is invaded, there will be obstruction to the exit of food from the stomach, and the viscus will undergo dilatation; if the esophageal portion of the organ be invaded there will be difficulty about the entrance of food from the esophagus, with consequent dilatation of that tube and shrinkage of the stomach itself. When the body of the organ itself is the seat of carcinoma, the consequent phenomena will depend considerably upon the destruction and perversion of function of the peptic glands in the mucosa. In many cases, of which the elder patient before you is a type, the symptoms are for the most part connected with chronic indigestion and progressive cachexia. No evidence of a neoplasm can be localized, and the cancer develops in an obscure and latent manner, to be discovered only after death. Consequently, the discovery of a tumor connected with the gastric wall affords one of the most reliable symptoms of the disease. But when such a tumor is in its earlier stage of growth, if it be situated at the pyloric end of the stomach, or upon its lesser curvature, it will be covered by the liver until it has enlarged to such a degree that the stomach is dragged downward by its weight. Then it may become possible to feel and to percuss the growth itself. Sometimes a change of position is necessary to affect this demonstration, the tumor remaining concealed behind the liver so long as the patient lies on his back, but falling downward and forward within reach whenever he turns upon his left side or gets upon his hands and knees.

When a tumor is demonstrable, its apparent size will, of course, depend largely upon its age and its situation. Usually placed near the extremity of the ensiform cartilage, it may finally occupy the entire epigastrium, reaching even so far as the left hypochondrium or the umbilical region. Such extensive growths are more or less irregular in their shape, a fact that can be easily demonstrated after emaciation has occurred. Unlike tumors of the liver and spleen, which are so extensively displaced by the excursions of the diaphragm during respiration, these gastric tumors are but little influenced by the movements of respiration. They are much more affected by filling the stomach with air, water or food, which causes the upper portion of the organ to rise and to carry with it the new growth, until it may be entirely concealed behind the liver, whence it once more emerges after the stomach is emptied again.

When the tumor is accessible to palpation, its outline can often be clearly defined. But in many instances this is impossible, and the explorer must remain content with a sensation of diffuse resistance

¹ The patient died three weeks later and the autopsy discovered the existence of a small scirrhous cancer in the posterior wall of the stomach, just far enough from the pylorus to avoid obstruction of that orifice.

to pressure over the epigastrium. Inflation of the stomach with air often aids in displacing the mass so that it can be more easily reached. Sometimes it will rest upon the abdominal aorta, and can be felt to rise and fall with the pulsations of the vessel. But these displacements are simply rhythmical movements in a direction perpendicular to the artery, instead of being universally expansive like the pulsating dilatations of an aneurysm.

Percussion over a tumor connected with the stomach gives out a dull sound in which there is a somewhat tympanitic resonance, though not so clear and full as when the healthy organ is distended with air. Auscultation furnishes very little help in the diagnosis, unless performed with the help of the phonendoscope. With this instrument a skilled observer can often outline the tumor with great precision.

In cases where no tumor can be discovered, it is necessary to rely upon general symptoms for a diagnosis. The books advise persistent scrutiny of vomited matter and of the feces, in hopes that a detailed fragment of a carcinomatous mass may be thus captured for microscopic examination. But success has very rarely rewarded such patience. Better results are obtained by observation of the blood that in one form or another is usually vomited during the course of the disease. Unlike the copious hemorrhage that occurs in ulcer of the stomach the blood that is present in the vomited matter is usually scanty in amount, appearing in streaks among the mucus that is discharged from the cavity of the organ; or, when it has remained for some time in contact with the gastric juice, transformed into a substance that looks like coffee grounds, due to the conversion of the oxyhematin of the red corpuscles into hematin. Similar sediments are often apparent in the vomit in gastric ulcer, so that this symptom alone is not diagnostic. The stools may also contain blood, just as they sometimes do in ulceration of the stomach or small intestine.

Vomiting is a frequent event, especially in the majority of cancerous growths that encroach upon the pylorus. Sometimes the patient experiences sudden relief and permanent cessation of vomiting when the obstructive neoplasm breaks down and leaves the pyloric opening clear. In many instances, however, the appearance of relief is due either to a degenerative paralysis of the muscular coat of the stomach, or to the exhaustion that heralds the approach of death. Vomiting is sometimes replaced by hiccough or by eructation of offensive gases. This is not diagnostic since it may occur in other disorders of digestion.

The absence of free hydrochloric acid from the gastric juice is a symptom of great importance, though not by itself decisive. Cancer that has supervened upon a round ulcer of the stomach may be accompanied by an actual increase of free hydrochloric acid if the gastric glands have not undergone atrophy. Such degeneration of the glandular apparatus is the proximate cause of a deficiency of acid; the remote causes may be various. But, when free hydrochloric acid is absent from the stomach of an elderly, cachectic and emaciated patient, the probabilities are all in favor of the existence of a carcinoma as the fundamental cause. In all such cases there is also diminution of the pepsin and other ferments that are present in normal gastric juice.

Another interesting symptom of cancer of the stomach is the retardation of absorption through the

mucous membrane of the viscus. When iodid of potassium is swallowed by a healthy person it can be detected in the saliva within ten or fifteen minutes; but when cancer exists, there will be no trace of the iodid until the lapse of an hour or an hour and a half.

When a tumor can be felt through the abdominal wall, it is sensitive to pressure. Besides the pain that may be thus excited, there is a general diffusion of dull, aching, burning, boring pain all over the region of the stomach. These pains are more widely felt and are less intense than the corresponding pain in gastric ulcer. Pain is usually increased after eating, and is often worse in the night than during the day. It sometimes is felt, like other pains of gastric origin, in the thoracic nerves, in the shoulders, or even in the arms. Sometimes, symptoms of an asthmatic character are thus excited.

The tongue is usually coated with a thin white, gray, or yellowish brown coat. If there be frequent vomiting of acid and acid liquids, the tongue becomes red, smooth, shining and dry, like the "beefsteak tongue" sometimes seen in advanced cases of typhoid fever. In the "latent cancer" of old people this condition of the tongue is often one of the most conspicuous symptoms.

During the earlier stages of the disease the bowels are constipated, but, when the large intestine has become inflamed by reason of the passage of ill-digested food and acrid products of ulceration from the stomach, there may be diarrhea or dysentery.

The urine is usually scanty, high-colored, and sometimes loaded with indican, which may be demonstrated by introducing equal parts of urine and pure hydrochloric acid into a test-tube, and then adding two or three drops of a saturated solution of calcium chlorid. When indican is present, a deep blue or reddish blue color at once develops in the tube.

A symptom of great value when it is present is sometimes afforded by an enlargement of the lymph-glands in the neck, above the left clavicle, in the immediate vicinity of the orifice of the thoracic duct. In like manner, during the last days of the disease one or more of the extremities may become swollen by interference with the lymphatic circulation, or through the occurrence of marantic thrombosis in an important vein. Serous effusion into the various cavities of the body may also precede death.

Appetite usually fails, unless the position of the neoplasm obstructs the entrance of food into the stomach; hunger is then a prominent symptom. Thirst is frequently experienced. Insomnia is a common event. Emaciation and exhaustion are progressive; the skin often assumes a dirty color, and becomes thin, dry and furfuraceous. Sometimes there is dreadful itching all over the body, especially in the latent cancer of old people. Occasionally, the patient exhibits all the phenomena of progressive pernicious anemia, and only after death is the fact of a local cancerous growth made apparent.

Continuous loss of flesh is the rule in these cases, but occasionally we see patients who die before the subcutaneous fat has been all consumed. Sometimes when there is pyloric obstruction and dilatation of the stomach, a course of careful washing out of its cavity, and attention to the diet, will result in a temporary increase of weight.

The temperature of the body usually remains normal or abnormal; but in certain cases there are intermittent paroxysms of fever occasioned by septic poison-

ing from the absorption of products of disintegration in the tumor. This may be considered as one of the rather numerous complications to which the disease is liable. Among other complications may be named dilatation of the stomach as a consequence of pyloric obstruction. Sometimes such obstruction is relieved by a process of spontaneous sloughing, and the opposite condition, pyloric incontinence, is established. When the cardiac portion of the stomach is involved, the esophagus may be invaded, and the original disease becomes complicated with the symptoms of esophageal stenosis. A gastric sound can be introduced only with difficulty, and there is a change in the auscultatory sounds that should be heard during the act of swallowing liquids, when the stethoscope is placed to the left of the ensiform process; there is either no audible gurgle, or it is replaced by a tardy trickle.

Secondary growth of cancer in other organs is a not uncommon complication of the disease. Sometimes the liver is so extensively invaded by the secondary process that the primary gastric neoplasm is quite overshadowed during the life of the patient.

The duration of the disease is not easily determined because of the obscurity of the early symptoms. The course of the disease is more rapid the younger the patient is. Sometimes it proves fatal, apparently after a few weeks only; and it may be prolonged for two or three years. Ordinarily it continues for about one year. Death may occur suddenly, as a consequence of profuse hemorrhage; or perforation of the wall of the stomach, followed by peritonitis; or it may occur during coma, with collapse that is suggestive of auto-intoxication. Sometimes death results from slow starvation due to obstruction, either pyloric or esophageal. Frequently the patient gradually wastes to a skeleton, and slowly sinks into a condition of apathy that terminates in death. Albuminuria, edema of the extremities and venous thrombosis are not uncommon incidents in this mode of decease. When there is esophageal obstruction regurgitated food may find its way into the trachea, producing fatal pneumonia, abscess or gangrene of the lungs.

Despite the gravity of the symptoms it is not always easy to diagnosticate the existence of gastric carcinoma. In the absence of a tumor there may be only the symptoms of progressive pernicious anemia; or of progressive emaciation and cachexia. But when an old person without apparent cause, suffers loss of appetite, indigestion, insomnia, persistent itching of the skin, cachexia and frightful emaciation, the probability of latent cancer is very great. The gastric juice should be examined, with regard to the presence or absence of free hydrochloric acid. Some have emphasized the presence of lactic acid in excess, but this is not always the case in gastric cancer. The absence of pepsin in the urine has also been announced as an important symptom in doubtful cases. Slow absorption of potassium iodid is another valuable indication of the disease. Reduction of hemoglobin to less than 60 per cent. is another suspicious circumstance. But none of these symptoms are diagnostic; it is the concurrence of several indications that gives a high degree of probability to the diagnosis in these obscure cases.

When a tumor is present it should be, if thus accessible, explored with a sound. Sometimes it can be reached through the esophagus by the aid of a sound of extra length. From tumors of the liver or spleen

it may be differentiated by the almost total absence of movement during respiration. But it may be considerably displaced if the stomach be distended with air, water or food.

Sometimes the tumor can not be accurately defined, but gives only a generalized sense of increased resistance to pressure over the epigastrium. In such cases, it is allowable to entertain the possibility of a tumor consisting of cicatricial tissue after previous ulceration of the stomach, or of a fibroid hypertrophy of the gastric walls or of the presence of foreign bodies, or of other tumors outside of the stomach. In the last case it is necessary to discuss the differential diagnosis of all possible abdominal tumors, such as sub-phrenic abscesses, circumscribed peritonitis, enlarged mesenteric glands, intestinal tumors, coprostasis, mesenteric cancer, tumors of the pancreas, uterus and ovaries, together with aortic and other intra-abdominal aneurysms. The field for contemplation that is thus opened to the diagnostician is one of the widest in medicine.

About the prognosis in cancer of the stomach there is very little to be said, and that little is absolutely unfavorable. When the disease is sufficiently advanced to render the diagnosis reasonably certain, it is only a matter of a few months before the inevitably fatal termination. Consequently, there is nothing that is known regarding curative treatment. During the early stage the symptoms are usually vague, and merely characteristic of indigestion, the treatment then is that which is appropriate for gastric catarrh. During the later stages, when symptoms of pyloric obstruction are present, the question of resection of the tumor should be raised. When a notable tumor, that is circumscribed and not adherent to other parts, can be demonstrated, it may be very properly removed by a surgical operation. In cases of doubt, an exploratory incision may be needed in order to decide whether an operation upon the pyloric tumor can be safely performed. In many instances it will be found that what seemed, before the incision through the abdominal wall, to be a small and freely movable growth is really extensive and widely adherent. When such a state of disease exists, relief may be procured by making an opening between the cavity of the stomach and the small intestine below the tumor, gastro-enterostomy. In the majority of cases this will be the preferable operation, because less dangerous to the life of the patient. When there is esophageal obstruction the operation of gastrotomy may be resorted to. By these methods nutrition is once more established and life may be prolonged.

But, in the majority of cases, the fatal day is only delayed for a brief period. Death comes at last in every instance.

When pyloric stenosis does not exist, and when a tumor is either late in its development or can not be demonstrated, the treatment should have for its object the relief of suffering, and the improvement of nutrition. In the earlier stages of the disease much benefit may be derived from the use of sodium iodid in doses of ten or fifteen grains three times a day, with five drops of Fowler's solution of arsenic after each meal. So long as the mucous membrane of the stomach remains without ulceration, digestion may be aided by the administration of diluted hydrochloric acid, ten drops in half a glass of warm water after meals. But in the later stages of the disease, when acids are liable to cause pain, it is better to give the

various peptonized foods which are prepared by the manufacturing chemists. Being already partially digested they are more easily disposed of by the enfeebled stomach. For the same reason kumys and extracts of meat will be found useful. As a stimulant of the appetite and a preventive of nausea, the various preparations of condurango have considerable reputation, though the extravagant expectations that were aroused on the first employment of the drug have not been justified. It is, however, a valuable gastric tonic, which may be given before meals in doses of twenty or thirty drops of the fluid extract, well diluted with water. If the stomach be dilated by reason of pyloric stenosis, much relief will be obtained through daily washing out of the stomach with the gastric syphon-tube. This will prevent the accumulation of decomposing substances which liberate irritating gases and liquids that excite pain, and when absorbed into the general circulation, act as toxins upon the tissues of the body. Vomiting will be often relieved by this operation, which in any case should precede the administration of internal remedies. If the distressing nausea be not arrested by simple lavage, trial should be made of ice pellets, creosote, cocain, tincture of iodine, and the milder narcotics. If they fail to afford relief, we should give one-eighth of a grain of morphia with a drop of diluted hydrocyanic acid every hour till the pupils begin to contract. In severer cases, when pain is a prominent symptom, morphia and atropin should be freely given with the hypodermic syringe. In the later stages of the disease this often remains the only means of relief; and the comfort thus procured leads the unfortunate patient to exclaim, with the celebrated Dr. Bartlett, that "opium is God's greatest gift to man!"

THE EARLY DIAGNOSIS OF CANCER OF THE STOMACH.

Read before the Detroit Academy of Medicine. December 9, 1896.

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If our treatment of cancer of the stomach shows poor results, it is due to the fact that the medical practitioner usually does not make his diagnosis early enough, and when the surgeon is called, he finds a disseminated mass instead of a circumscribed tumor to be extirpated. When we take into consideration that 5 to 25 per cent. of all deaths and 35 to 45 per cent. of all cancers are of the stomach, it is time that more attention be paid to an early diagnosis. It is because the average physician neglects a more detailed examination and resorts to bismuth and pepsin, that cancer of the stomach has been allowed to attain such development as makes an operation practically useless. What, years ago, Brinton said of cancer of the stomach, is still true today. He said, it is obscure in its symptoms, frequent in recurrence and fatal in its course. In spite of the progress made in the diagnosis of stomach diseases, the therapy of cancer of the stomach remains the same, namely, early extirpation. But when a large tumor can already be felt in the epigastrium, it is usually too late to operate, since then the surrounding tissues are involved by metastasis.

It is the intention of this paper to show how beneficial it would be, in the majority of instances, if a diagnosis were made before a tumor is palpable. We

are told of recoveries after operations on cancerous patients, when the tumor was already palpable, but these cases are extremely rare. It is possible that the diagnosis was made early by one who was able to locate the new formation. But can we make a diagnosis on the basis of the general course of the disease, even if the presence of a tumor has not been established? Boas tells us that strong Uffelmann's reaction after a test breakfast, points out the probability of cancer of the stomach. Heretofore it was believed that when we had a case of chronic gastritis, with absence of hydrochloric acid, either lactic, butyric or acetic acid fermentation takes place. This has been proven not to be true. While we were formerly able to demonstrate that lactic acid is present in cancer of the stomach, this circumstance was not given sufficient weight until Boas drew our attention more particularly to it. Boas says that in cancer of the stomach Uffelmann's test gives us a greenish-yellow reaction, due to the presence of lactic acid, and that the little quantity of lactic acid which results from other causes, does not react in the same way. Ewald tells us that the advantage of Uffelmann's test is its extreme sensibility to lactic acid found in carcinomatous patients, but in the differential diagnosis the abundance of lactic acid should always be taken into consideration.

To get an intense lactic acid reaction, it is necessary that there is a stagnation of the stomach contents and that hydrochloric acid is absent. If only one of these conditions is fulfilled, as in chronic gastritis or dilatation, we can not get this reaction. I concede that in rare instances we have a formation of small quantities of lactic acid, but it occurs in small quantity only and it does not give the characteristic reaction, as lactic acid does in carcinoma of the stomach. Whether we have a specific lactic acid or not in cancer of the stomach, I will not discuss here.

When the stomach contents show the absence of hydrochloric acid and the persistent presence of lactic acid, we are able to make a diagnosis by differentiation. There can be a choice of but one of three diseases, nervous anacidity, chronic gastritis or malignant new formation. We can always exclude nervous anacidity and chronic gastritis, on account of the persistent presence of lactic acid, which always indicates carcinoma of the stomach. It is necessary to look for a stagnation of the contents of the stomach. The patient may have vomited food which had been taken a day or two before, or we can estimate the amount of the stagnation by washing out the stomach. In chronic gastritis we never have a stagnation, there is usually a prompt forwarding of food into the intestine. In fact, in many cases of chronic gastritis, the motor function of the stomach is heightened, as I have often seen.

It is unnecessary to wait for the cachexia, edema of the joints, enlargement of the glands, fissured tongue, emaciation, obstinate coffee-ground vomit, insomnia, vertigo and the palpation of a tumor to make a diagnosis of cancer of the stomach. No surgeon can give us a good result after these symptoms have already appeared. It must not be forgotten that, in a number of cases, the liver prevents us from palpating a growth of the pylorus until it is quite large. It is frequently found that the fenestra of the stomach tube is filled with small particles of clotted blood. Professor Ewald regards this as an indication of carcinoma, even though a tumor is not yet palpable. These particles should always be examined micro-

scopically, and if cancer cells are present, our diagnosis is verified, but if absent, we can only suspect it. A diagnosis of cancer of the stomach can usually be made several months before the tumor becomes palpable.

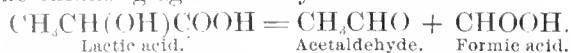
The following points may be looked for: 1, a stubborn case of stomach disorder appears, in a person (say between 35 and 60) who was formerly in good health; 2, loss of weight and flesh; 3, vomiting occurs often; 4, a test breakfast proves that free hydrochloric acid is absent; 5, there is a stagnation of the stomach contents; 6, lactic acid is shown to be present in abundance; 7, a microscopic examination shows that long thread bacilli are present. Cases are repeatedly reported abroad in which, after a diagnosis of cancer made by the above symptoms, exsection of the pylorus was performed and the cure of the patient achieved.

It seems to me we are now able to make an early diagnosis of cancer of the stomach, before metastasis has taken place, by means of a thorough examination after a test breakfast.

I do not mean to imply that by means of the seven data I have enumerated, every cancer of the stomach can be easily recognized, but they indicate a considerable step forward in an early diagnosis, and thus open up for the surgeon opportunities which were closed to him till now.

For the examination for the presence of lactic acid, Uffelmann says that diluted solutions of neutral ferric chlorid turn canary yellow in presence of lactic acid. Should this reaction give no positive results, I would advise Kelling's modification. This consists in diluting the filtrate of the gastric contents from the tenth to the twentieth fold; to this one or two drops of a 5 per cent. ferric chlorid solution is added, and a greenish-yellow discoloration takes place. This proves the presence of lactic acid. In order to avoid the obscuration of this greenish color through the rhodan, which originates from the saliva, Kelling adds a few drops of a sublimate solution. The procedure as recommended by Strauss can also be applied. This consists in filling a burette, graduated at 5 and 25 c.c. respectively. We fill the burette up to 5 c.c. with the stomach filtrate, and add sulphuric ether up to the mark 25; this is well shaken, and through a stop-cock at the bottom, the burette is emptied to 5 c.c. and filled to 25 c.c. again with distilled water. To this are added two drops of a ferric chlorid solution (one to nine) and the whole is shaken. According to Strauss, if lactic acid up to 1 per cent is present, an intense green appears, and if the percentage is lower a pale green is noticeable.

For exact scientific data, the method of Boas is valuable. It aims at a decomposition of the lactic acid into acetaldehyde and formic acid, by adding some oxidizing agent and by the aid of heat.



The presence of lactic acid is proven by the existence of the aldehyde through the formation of iodoform, with an alkalin iodine solution or through the formation of mercuric aldehyde with Nessler's reagent.

In former years the results attained by exsection of the pylorus were far from satisfactory. This was due to the fact that it had been resorted to too late in the stage of the disease, when complications had arisen and the patient had been reduced in vitality, and metastasis had taken place. Later statistics, however,

are more favorable, and show what can be accomplished when a diagnosis has been made early. Haberkant performed 207 exsections of the pylorus, of which 114 were due to carcinoma; he had 93 recoveries and a mortality from pylorectomy in the carcinoma cases of 55.8 per cent. Hahn in 1891 had a mortality of 77 to 41 per cent. Zeller in 1893 a mortality of 61 to 34 per cent. But the most gratifying results Mikulicz reports in 1895. Out of eighteen pylorus exsections he lost only five cases. These statistics are in themselves a proof of the possibilities of success of pylorectomy, on condition of an early diagnosis. I can not warn too earnestly against the habit which physicians have, of waiting for the appearance of a palpable tumor, before they advise surgical procedure. Czerny and Rindfleisch have as far back as 1892 emphatically declared that, in the majority of cases when we make a diagnosis of cancer of the pylorus by the palpation of a tumor, no radical operation should be made.

32 Adams Avenue West.

THE FEVERS OF SOUTHWEST TEXAS.

A THIRD FEVER OF THE SOUTH.

BY R. S. WOODSON, M.D.

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The differentiation of the fevers of the South has not kept pace with modern medical progress. The diagnostic dragnets, typhoid fever and malaria, have so monopolized the nomenclature of such diseases that the suggestion of a third fever is received with incredulity on the part of the profession. Many continued forms of disease, of doubtful etiology, have been reported as typhoid fever. Some local practitioners have disregarded differentiation and have adopted such terms as slow fever, Rio Grande fever, Texas fever, etc. Such looseness of diagnosis can not but be a bar to the progress of medicine.

It is conceded that the variability of the personal thermic coefficient, the different powers of resistance against the ravages of disease and the difference of intensity and virulence of bacterial infection will modify the classical course of any fever.

That saprophytic microorganisms may under certain conditions develop into pathogenic bacteria, capable of inducing infectious disease, the type of which, being dependent upon the environment of the germ, the stage of its evolution and the extent of infection may also be accepted.

The conversion, in the intestinal tract, of the colon bacillus into the typhoid bacillus, which it so nearly resembles and from which it is with such difficulty differentiated, its absorption through infection atriæ, may be regarded as a possibility. Indeed, it has been advocated that the colon bacillus itself may become the specific causative agent in the production of disease, and certainly no one will deny that the absorption of various ptomaines, developed in the intestinal tract from the decomposing contents, may be productive of continued fever.

While thus granting that mild atypical and abortive types of disease may occur, the conviction has been forced upon the writer that there exists a third fever of the South, not due to specific infection or to a hidden latent lesion; and though variously denominated by different observers, yet, from their consensus of opinion as to its symptomatology, I am led to believe that I am discussing the Texas fever (not the south-

ern cattle fever) of Assistant Surgeon McCullough, the intestinal toxemia of Surgeon Davis and the atypical typhoid of Surgeon Maus. (See report of Surgeon General, 1893-96.)

Two cases, with thermographs, illustrative of the types of the disease are presented.

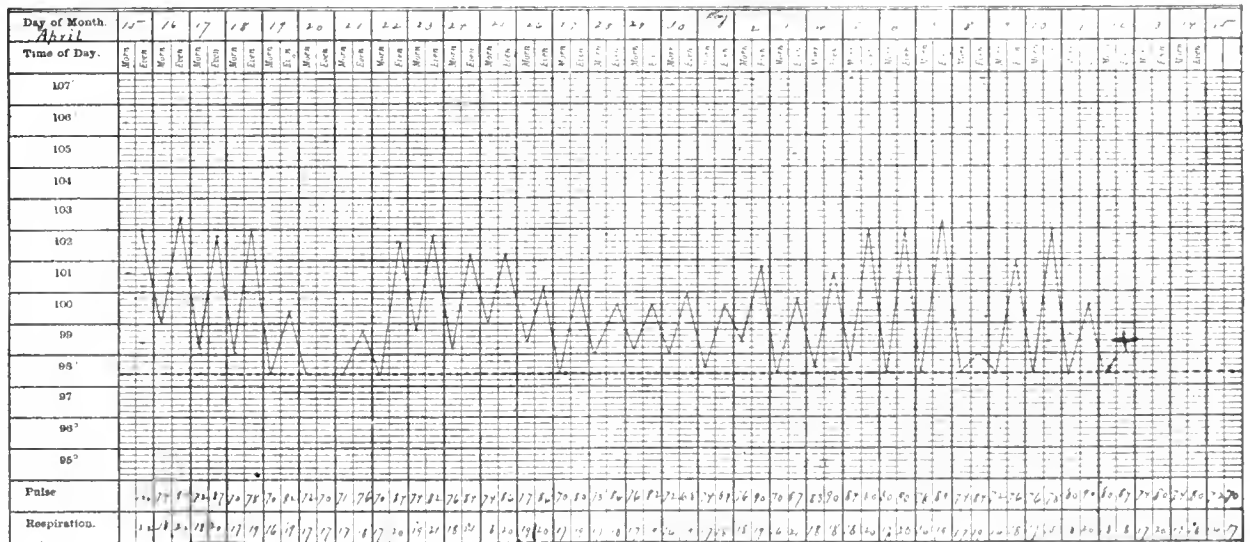
Case 1.—Trumpeter Barton, Troop C, 5th Cavalry, Fort McIntosh, Texas, a man of great muscular development, gouty diathesis, exercised violently while playing the opening game of base ball, Sunday, April 12, from 1 to 4 p. m., weather intensely hot. Was much exhausted after the game. On the following day he suffered from general muscular soreness and fever. Was admitted to hospital April 15, 1896. Temperature 103 degrees F., general myalgia, headache, skin dry, constipation, partial suppression of urine, 420 c.c. in twenty-four hours, color reddish brown, strongly acid, sp. gr. 1.030, loaded with uric acid, calcium oxalate, and phosphatic deposits, pulse slow and strong. The disease dragged on with irregular thermic movement, for two months, during the course of which the subjective sensations of the patient were excellent; no emaciation occurred beyond what a light diet and confinement to bed would naturally produce. Urine continued scanty, only 450 c.c. excreted as late as May 12.

Case 2.—Blacksmith Graeff, Troop C, 5th Cavalry, a man of powerful physique and likewise of gouty diathesis, played base ball Sunday, April 26, 1896, for the first time in four

reasoned, *a priori*, from their gouty diatheses, large consumption of meat and beer, with a consequent retention and deposition of uric acid in the tissues during the cold months of comparative sedentation, and its fulmination into the blood during excessive exercise upon the advent of intensely hot weather; *a posteriori*, from the partial suppression of urine, increased excretion of uric acid, slow, high tension pulse, headache and diminished metabolism occurring during the disease.

In addition to the fever in question the following relevant facts were observed: 1, that children in this region (Southwest Texas), are to a great extent exempt from this disease; 2, that officers and women suffer from lithemia and neurasthenia; 3, that robust unacclimated cavalymen were the principal sufferers from fever.

In searching for an explanation of these observations, my attention was directed to an article by Prof. John Elliott, in the *New Orleans Medical and Surgical Journal*, 1878, entitled "Combustion and Assimilation," and to Alexander Haig's monograph, "Uric



potentiality as forming the physical basis to the phenomena of life, are questions of importance in this discussion—of especial importance is the nervous system in controlling this production, distribution and dissipation. Those portions of the nervous system engaged in this functioning are the vaso-motor and trophic, the first having to do with the distribution and dissipation of heat (thermo-lysis), the second with its production (thermo-genesis).

The process of heat production is known to be an oxidation, in which, under the domination of the *trophic nervous system*, the potential energy stored up in the protoplasm of the cell during tissue anabolism, is converted into kinetic heat and mechanical work plus the products of katabolism, as evidenced by the appearance of carbon dioxide and water in the pulmonary exhalations, and urea, uric acid, etc., in the renal excretion. But the maintenance of the nitrogenous equilibrium in this fever, as evidenced by the lack of emaciation and normal excretion of urea, would

ing starvation, although tissue combustion is increased in the attempt to supply the requisite heat.

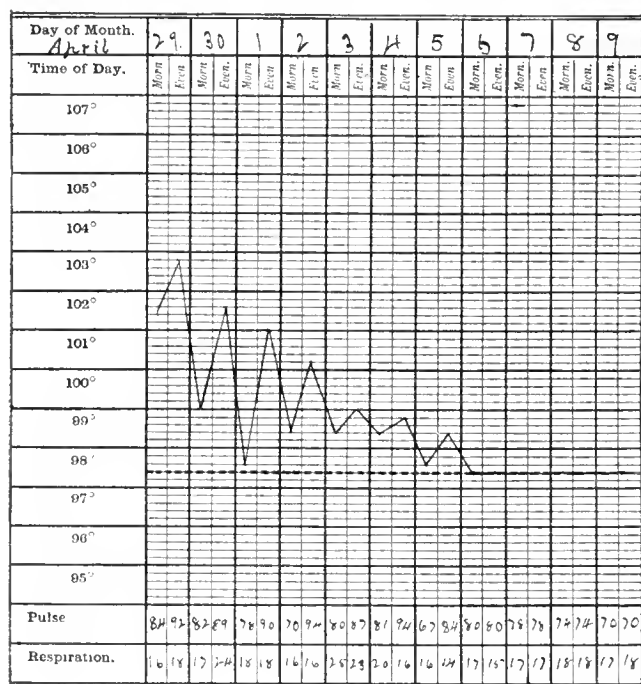
Under normal conditions of diet, exercise and health, the normal ratio between these two processes obtains, under the specific agency of the trophic nervous system; and with the aid of the vasomotor system in distributing and dissipating heat, the thermic balance between heat production and dissipation is maintained at 98.5 degrees F.

Now any inhibition of function of the vaso-motor and trophic nervous systems, arresting anabolism and diminishing heat dissipation, whether it be produced by surgical shock (surgical fever), in hysteria (hysterical fever), the passing of a sound (urethral fever), the irritation of bacteria or their toxins (specific fevers), exhaustion and fulminant uric-acidemia (the third fever), the transformation of energy, falling short in the work of anabolism, a lower grade of energy is produced in the form of animal heat. This heat, generated at such times and expended by the elevation of body temperature, is the mechanical equivalent of the arrested energy of anabolism.

The potentiality of the nutritive pabulum itself is of importance, the inhabitants of cold climates requiring food of higher potential energy than those of the tropics. According to physiologists 1 gram of fat = 9000 gram-calories; 1 gram of carbohydrates = 4000 gram-calories. Given a constant nutritive papulum, with a variable thermal environment, an increased demand for animal heat will necessitate diminished tissue building, a less demand, an increase, or else an over-production of heat to be eliminated. Therefore, if an Esquimaux subsist on a vegetable diet, the entire potential energy of his nutritive pabulum would be transformed into kinetic heat, to meet the requirements of his environment, at the expense of tissue building. If an inhabitant of the tropics subsist upon fat, the high potentiality not being rendered latent in the formation of tissue (except in the case of growing children, and this explains their relative immunity against tropical environments) there would occur an over-production of animal heat.

As this theory of heat production is applicable to all fevers, it may be asked, what are the factors productive of the trophic inhibition? Beyond the physical exhaustion, incident to excessive work or exercise, involving exposure to the intense heat of a semi-tropical climate, there are produced during muscular metabolism large quantities of crystalline nitrogenous bodies, leucomains (uric acid group). In addition to this production, there is among carnivorous animals, a continuous introduction of these waste products, contained in their food. The daily consumption of 20 ounces of butcher's meat (soldier's ration) with its proportion of uric acid and allied leucomains, products of its own ante-mortem metabolism, must introduce a large quantity of these waste products into the system.

These bodies are soluble in the blood in direct ratio to its alkalinity, and are excreted in the urine. Any diminution of alkalinity must result in a deposition and consequent accumulation of uric acid *et al.* in the tissues. The alkalinity of the blood is lowered during the cold months, by reason of comparative sedentation, absence of sweating, increased consumption of nitrogenous food, combined with (at this post), excessive beer drinking. It is increased during warm months, in spite of nitrogenous and vinous ingesta, by excessive exercise, and especially through the



CASE 2.

indicate the small rôle played by morphotic combustion in its production, and while not denying the causative agency of this form of combustion in the production of the pyrexia of other diseases, yet in my opinion it has but a limited place in the etiology of this affection.

Constructive metabolism is not believed by physiologists to be attended by the evolution of heat, but the nutritive pabulum which is not lifted up into the protoplasmic molecule, the *luxus consumption* of the ancients, also undergoes oxidation and contributes largely to the maintenance of normal bodily temperature, and principally to the production of this fever.

It is evident that the bodily heat produced by the combustion of floating proteids must vary inversely with constructive metabolism, the evidence of this is the elevation of temperature observed after a full meal, where there exists a "luxus consumption" to be oxidized, and the subnormal temperature observed dur-

agency of the sweat glands in dissipating the acids of the blood.

Ninety per cent. of the heat elaborated in the human economy, is eliminated through the skin by radiation, conduction and evaporation. In this climate (south-west Texas), during three-fourths of the year, radiation and conduction are *nil* so that all the 90 per cent. of heat is eliminated by evaporation of sweat, with consequent increase of blood alkalinity. Now, any sudden excessive exercise, in a gouty subject, upon the advent of intensely hot weather, will result in a fulminating uric-acidemia, with a consequent shock to the vaso-motor and trophic nervous systems, together with the symptoms, high blood pressure, diminished metabolism, retention of waste products in muscular system, headache, partial suppression of urine, urine of high color and specific gravity.

It is to the culmination of the intense uric-acidemia that the paresis of the nervous system is due, with resultant continued fever. Children are exempt to a large extent, from this fever by reason of the fact that all of their nitrogenous ingesta is utilized in the up-building of tissue; officers and women by reason of their comparative sedentation and consequent exemption of this culmination of the uric-acidemia, do not suffer from inhibition of function of the vaso-motor and trophic nervous systems (fever), but do suffer to a marked extent from lithemia and neurasthenia.

I would define the affection as follows, a simple continued fever occurring in a gouty subject, primarily dependent upon a partial inhibition of function of the vaso-motor and trophic nervous systems, as a result of a fulminating uric-acidemia and physical exhaustion, consequent upon excessive and unaccustomed work or exercise, involving exposure to the intense heat of tropical or semi-tropical climates.

The limits of this article prevent an exhaustive discussion of all the facts and individual cases that might be advanced in support of my conception of the etiology of this affection. This paper is presented more as a suggestion than as a dogmatism, and while it represents my own personal convictions, yet a further study of the subject, with more elaborate methods of investigation, would be necessary before they can be accepted.

The writer has suggested the term *febris auto-intoxica* for reasons above indicated, but from its possible confusion with intestinal autotoxis it was withdrawn. Continued thermic fever, while a step forward, does not meet every requirement.

At the present time and in view of our uncertain ideas as regards its etiology, it is believed that "simple continued fever" expresses the condition as nearly as any.

At the time of these observations Vidal's method of diagnosis had not been presented. The writer takes this opportunity of expressing from his own limited observations, his convictions of its efficacy, and with the aid of which he hopes in the future to be able to make a further study of so interesting a subject.

Prescription Taking Done to the Letter.—Abbe Huc, the renowned French explorer and missionary, says that when a Tartar doctor finds himself without his drugs and medicines, he is not in the least embarrassed. He writes the names of the needed drugs on slips of paper, and these, being rolled up in little balls, are swallowed by the sick man. "To swallow the name of a remedy, or the remedy itself," say the Tartars, "comes to precisely the same thing."—*St. Nicholas*.

A BRIEF HISTORY OF INSANITY AND TUBERCULOSIS IN THE SOUTH-ERN NEGRO.

BY THOS. J. MCKIE, M.D.

WOODLAWN, S. C.

As a further elucidation of the subject of the etiology of tuberculosis and insanity in the southern negro is not without interest to the readers of the *JOURNAL*, as indicated by the able article of Dr. Powell and the discussion following, which appeared in the *JOURNAL* of December 5 of the year just past, the following brief history is offered as a record of the rise and progress of these allied diseases in a small portion of Edgefield County, on the extreme western border of South Carolina, and lying immediately between Stevens' Creek on the east and the Savannah River on the west.

Going back to 1848, when these observations began, it may be generally stated that tuberculosis and insanity were unknown and rarely heard of as diseases of the negro, in this section of our State; but, on the other hand, it was an admitted fact that he was peculiarly exempt from both. In 1866 the first case of tuberculosis ever seen in this locality by the writer occurred in the family of J. T. H., recently removed from the 96 section to the plantation of the late Governor Pickens, which lies in the fork of Stevens' Creek and Savannah River, nine miles above Augusta, Ga. This family (white) had already suffered a loss of several members before removal, and must therefore have brought the disease with them, or in them. No other white family has had a case.

The first case seen in the person of a southern negro happened in the family (man and wife) of J. H., who were servants to the white family H., both of whom died, as all who have since been attacked have done. Unlike the whites these two were previously considered healthy and of pure negro blood.

The next case occurred in the person of a married woman of mixed blood living seventeen miles north of the Pickens plantation, without social or other relation with any one on it, as far as could be ascertained. Soon other families began to suffer without regard to situation or social intercourse, showing, however, a predilection for certain families, whether living far or near. Especially has this characteristic been marked in the family of the woman of mixed blood, which has been well nigh destroyed, though quite a large one. In the aggregate, more families however of pure than mixed have succumbed.

Surprised and puzzled at this sudden and unaccountably new feature in the nosological table of negro complaints, it seemed not impossible that something of the true cause of tuberculosis might be gained here in a field where hitherto it had been entirely unknown, particularly in the southern negro, and a study of the diet, habits, mode of life, etc., of these stricken families was undertaken on the surrounding plantations and has been steadily pursued through the intervening year.

During this time many theories of its etiology have been advanced without having established one fact beyond the one of its wide prevalence in a region of country where before the establishment of a new order of things its existence was not known. Repeated inquiries made among fellows of the State Medical Society at their annual meetings, establishes the fact that very many have observed this change in the

character of disease in the negro, and many and various guesses have been made at the cause or causes that have brought it about. Among these, frequent mention has been made of scrofula and more of venereal, though neither seems to have anything to do with it, either as predisposing or exciting cause. In justice to the negro, be it said, taking into view his more limited moral training, his fewer social restraints, his unrestricted fields of social indulgence, his less refinement in the practice of vice or virtue, his want of knowledge of the baleful influence of the resulting evils, and he need not fear comparison with his more enlightened white neighbor, though both have kept comparative free from disease of this kind, contamination proving the rare exception in either. The co-existence of tuberculosis with syphilis, hereditary or otherwise, has not been observed in any case, notwithstanding the fact of a professional acquaintance with the diseases of several of these families which extends back to the days of slavery, when both¹ syphilis and tuberculosis were entire strangers in the rural districts to which these observations relate.

Freedom from restraint permitting freer indulgence in all manner of excess, absence of regard for hygienic law or practice, excess in eating and drinking, the want of wholesome food, especially of the accustomed ration of fat bacon, have all had a place in the etiological table without sufficient reason for being there. In the ante-bellum ration, hog meat (bacon) and corn bread held first place for working people. For children, corn bread, pot liquor, milk, usually buttermilk, syrup or molasses formed the staple articles of diet, though meat (bacon) was not prohibited. Under the new dispensation, wheat bread of inferior quality and for the most part execrably prepared, took the place of corn bread (which the negro cooks as no other can), as milk and butter did the place of bacon. Here, it was at one time thought, might be found one of the causes which gave rise to tuberculosis, but further observation proved the fact that the most thriftless, with or without the use of milk or wheat bread, the most indifferent to the forms and usages of civilized life escaped the disease.

A population of 900 to 1,200 occupying an area of territory twenty by five miles in extent, and divided into plantations of creek, river and uplands, these latter for the most part broken and hilly, compose the material from which these observations are drawn, and will compare favorably with occupants of neighboring plantations in point of general health conditions. Continuing these observations with unabated interest it was noted that the most elegant, the most refined, well-to-do families supplied by far the greatest number of insane and tuberculous subjects. The most successful, those who seem to put forth the greatest effort to imitate the better class of their white neighbors, those living in the best houses, which are well kept and well supplied with the necessary comforts of life, are the chief if not the only sufferers. To attain this higher degree of civilization requires some ambition and far more than ordinary mental effort on the part of a people who had hitherto been totally unaccustomed to such mental strain, and who are equally unfitted either by nature, education or practice to assume these grave responsibilities, and as a consequence the penalty of an overworked nervous

organization, never strong, but delicate and sensitive in the extreme, must naturally follow.

It is a well-known fact that the negro's perceptive faculties are little inferior to those of the lower class animals. His olfactories are delicate, his vision is keen, far surpassing that of the Caucasian, particularly in the absence of strong light and at night; nor can any epicure boast the equal of his gustatory apparatus. Mentality or cerebral excitement but tends to insanity, and, when under continuous strain as in the struggle to get forward in the world, to its cousin german, tuberculosis. At least such has been the course marked in these observations. Religious frenzy has been a frequent precursor if not a cause of insanity. Several cases can now be recalled in which fatal results have followed attacks beginning in church during religious excitement. One fatal case can also be recalled in which unsatisfactory division of crops gave rise to it.

From the observations it may be concluded that in their etiologic relations insanity and tuberculosis are allied diseases; that both tuberculosis and insanity in the Southern negro have been the outcome of an overtaxed and overworked nervous organization unfitted by nature and otherwise to bear the burden imposed by newly created necessities or environment; that insanity and tuberculosis are *primarily and essentially neuroses*.

AN AORTA WITH A DOUBLE ARCH.

BY D. LEE SHAW, M.D.

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Congenital malformations of the aorta are comparatively rare. Quain divides such cases into six classes, viz.: 1, variations in position and extent; 2, variations of septum; 3, variations of stems; 4, variations of arch; 5, variations of descending portion and ductus arteriosus, and 6, variations in number and position of branches. The most uncommon of all, are those of the fourth variety, under which the double arch will be described.

In mammals the aorta normally passes to the left side of vertebral column, arching over the root of the left lung; in birds it passes to the right; and in reptiles it divides and passes to both sides. In this instance the arch presents a reproduction of the reptilian arrangement.

This specimen was taken from a fairly well nourished, white, male subject, in the anatomic laboratory of Rush Medical College. Previous condition and cause of death is unknown. No abnormalities were found in the venous system. The heart is 12 cm. in length, muscle normal, and the cavities are perfectly formed; no communication whatever exists between right and left sides. Pulmonary artery is normal in position and distribution, although, from its point of division, a septum 2 cm. in length extends into the main trunk.

Arch of the aorta, ascending portion, is 2.5 cm. in diameter and in its usual position. It divides, 3 cm. above the pericardial attachment, into a small left branch and a large right branch. The left division, 1.5 cm. in diameter, passes in front of the trachea, in the position of the normal arch; and 2 cm. from its origin, at the left antero-lateral aspect of the trachea, gives off the left common carotid; immediately behind which the left subclavian arises. The left arterial trunk is continued by an isthmus, .75 cm. in diameter

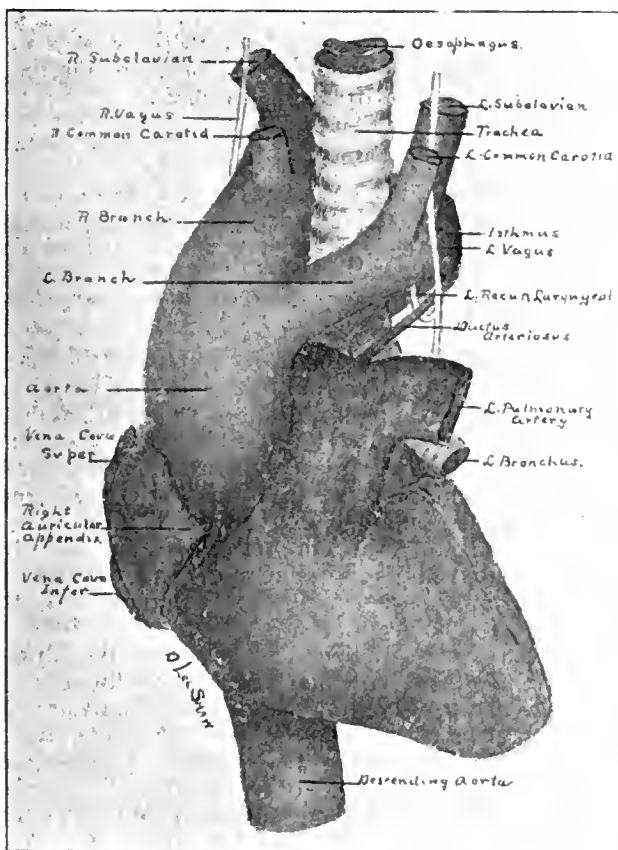
¹ Only two cases of syphilis happening before 1865 can now be recalled, one in a girl of 15, the other a man, both on the same plantation, and contracted in Augusta, Ga.

and .5 cm. length, which, with the ductus arteriosus, joins a dilated portion, 2 cm. in diameter and 1.5 cm. in length, which extends backward to the left of the trachea and esophagus, and communicates with the right branch. The ductus arteriosus is a firm round cord in normal position and is not patulous.

The right division, 2.5 cm. in diameter, passes upward, along the right side of the trachea, reaching the level of the third dorsal vertebra; and 2 cm. from its origin, it gives off the right common carotid and 2.5 cm. beyond this, from the highest part of the aorta, the right subclavian arises. Beyond the origin of this vessel the right branch passes downward and backward, 3.5 cm., and behind the esophagus, unites with the left to form the descending aorta, which extended downward along the right sides of the dorsal vertebra, from the fourth to the seventh inclusive.

Malacarne's report, as described by Meckel and Quain, differs from all the others. Five valves guarded the aortic opening of the left ventricle and the arterial trunk immediately divided into two branches, which before uniting, embraced the pulmonary artery, trachea and esophagus; from each division, was given off in succession, a subclavian, an external and an internal carotid artery. In Welch's case, the posterior branch passed between the trachea and esophagus and, from each division arose a common carotid and a subclavian artery. On the posterior branch, was found an aneurysm from which the right common carotid took origin.

My specimen differs from all of those described, except Malacarne's, in that the two divisions unite behind the esophagus. It differs from all, in that the right branch is the larger, the junction of the two

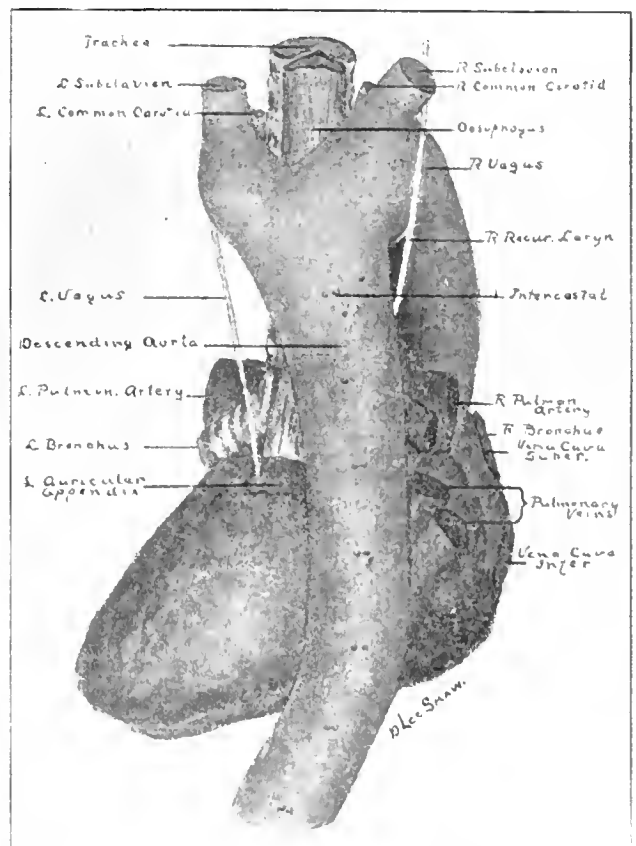


Heart with large arteries. Anterior view.

and, on the body of the eighth, crossed diagonally to the left side and continued below in its usual position. No septum is found in the descending aorta.

The pneumogastric nerve, on either side, lies between the common carotid and subclavian arteries. The left crosses the isthmus and its recurrent laryngeal branch winds under the ductus arteriosus, in the normal position. The right passes downward over the main arch, under which the recurrent branch of this side is given off. Similar cases have been reported by Hommel, Curnow, Malacarne, Zagorski and Welch.

Hommel, in 1737, was the first to record findings of this character. In his case, according to Meckel, the two divisions united after encircling the trachea, and passed downward on the left side of the vertebral column.



Heart and aorta. Posterior view.

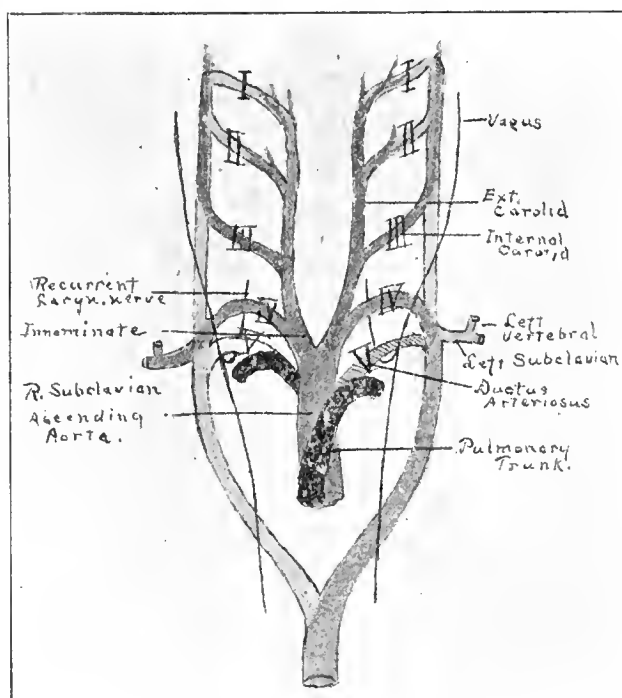
branches is on the right side and the descending aorta passes downward on the right side, to the upper border of the eighth dorsal vertebra.

This arrangement not only resembles the vascular rudiment in the reptile, but also more closely follows the distribution in the bird, than does it that in the mammal.

These congenital malformations of the large arterial trunks, are probably due to the persistence and enlargement of fetal vessels which normally become obliterated. From the aortic bulb of the embryonal heart, which is situated under the cephalic extremity, two vessels arch backward, one on either side of the foregut, forming the first pair of vascular arches, and descend along the sides of the notochord as the primitive aorta. As the heart is gradually moved away from the head, four more pairs of vessels are succes-

sively developed, which connect the bulb with the descending trunks; making in all, five pairs of vascular arches or one for each branchial plate. Zimmerman describes an additional pair between the fourth and fifth.

The bulb, primarily a single cavity from which, through two common trunks, one on each side, blood is sent to all the arches, is divided by a septum parallel to its long axis, into two compartments; one becoming the pulmonary artery, situated anteriorly, and continuous with the fifth pair of arches, the other forming the systemic aorta, placed posteriorly, and communicating with the fourth pair, through which all the arches above receive their blood supply. Notwithstanding this separation near the heart, both pairs of arches, *i. e.*, the fourth and fifth, ultimately empty into the descending aorta which has been formed by the coalescence of the primitive aortae.



Vascular arches. [After Quain.]

This symmetrical arrangement of the vascular system is soon destroyed by the obliteration of certain vessels. Even before the last arch is perfectly formed the connections between the first pair and the descending aortae may be destroyed. However, the fourth and fifth arches, lying nearest the heart and soon exceeding the others in size, are the chief factors in this transformation. The vascular arches on the left side continue to increase in size and in greater part become permanent, while those on the right gradually become obliterated, except where they furnish the supply to permanent arteries.

On the left side the fourth arch becomes the arch of the aorta and, in the fetus, is constricted between the origin of the left subclavian and the junction of the ductus arteriosus, forming the isthmus, which, soon after the closure of the duct, attains the diameter of the adjacent trunk. The fifth, on this side, forms a part of the left pulmonary artery and the ductus arteriosus, which is occluded soon after birth but remains as a round cord. On the right side the

fourth arch is permanent for a short distance as the innominate and right subclavian arteries, as far as the origin of the vertebral, beyond which it diminishes in size and finally disappears. Only a small portion of the fifth persists on this side as the root of the right pulmonary artery; the distal portion becomes obliterated.

In this case, the fourth arch of the right side has not only remained patulous throughout, but has exceeded the left in size. The fourth arch of the left side has retained some of its fetal characteristics; because it was doubtless unnecessary for the isthmus to enlarge after occlusion of the ductus arteriosus, as the blood current could readily pass through the right arch.

The position of the recurrent laryngeal nerves is due to the fact that they pass to the larynx from the vagi under the fifth pair of arches, while the heart is well forward, and, as this organ assumes its position in the chest, these nerves are drawn down by the vessels and, consequently, are eventually found, on each side, looping under the lowest permanent arch.

34 Washington St., Chicago.

ACROMEGALY—WITH A CASE.

Read before the Georgia, Tennessee and Alabama Tri-State Medical Society at its Seventh Annual Meeting.

BY J. R. RATHMELL, A.M., M.D.

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Dr. Paul Marie of Paris, in 1886, gave to the medical world a classic description of certain rare pathologic conditions and appearances to which, though noted possibly for many years, he gave the name *Acromegaly*, thus adding to medical nomenclature a new word. This word is a combination of two Greek words, meaning enlarged extremity. But the term is elastic enough to cover more territory than just what its root words signify, so that in general, *acromegaly* may be defined as a symmetrical enlargement of the extremities and face.

Reported cases studied to the present time apparently fix five facts, viz., that hereditary influences cut no figure in causation; that the disease usually appears between 12 and 30 years of age; preponderates in males; that theorists are at sea as to the causes, and that all treatment up to date is unavailing.

To account for the simultaneous and abnormal growth of the supraorbital arches, the malar eminences thick nose and lips, the protruding chin, the enlarged bony arches of the jaws, the voluminous tongue, the big spade-like hands, with sausage shaped fingers, the feet showing same changes as the hands, and toes same as fingers; to show why, as the disease progresses, the strength diminishes; there is loss of precision in and coördination of movements; for failing sight, lassitude, apathy, slowness in movements, defective memory, amnesic aphasia and other symptoms I shall not now list, is the question. It was to ascertain the central causes of these conditions that led Marie, Klebs, Virchow, Friedrich and others to make their investigations. Several of the theories contemplated the involvement of one or more of the ductless glands and glandular structures. Klebs advanced the theory that the disease was due to the persistence of the thyroid—a ductless gland. Virchow maintained that the macroscopic appearances were simply the terminal stages of conditions whose early periods were not rec-

ognized. Marie's theory claimed the disease to be of neurotic origin, and dependent upon the involvement of the pituitary body—a ductless gland—as the essential feature. Others again theorized to disprove the existing theories by stating that the pituitary body had been found enlarged without the presence of acromegaly; also the entire absence of this body had been observed and no symptoms of the disease were present; that the thyroid gland, the spleen, thymus gland and suprarenal capsules have all been diseased and yet no acromegaly existed. Others again show a close relation between this disease and cretinism, myxedema, otitis deformans. So in view of this uncertain state of things we seem to be sure of three facts, as gathered from the literature on this subject, viz.: we have a disease, a name and a description.

While I shall not be able to add anything new in the way of discovering any predisposing or exciting causes and bring forth anything new in the pathology of this disease, yet I desire to add to the list of reported cases yet one other, which not only has many of the symptoms common to the cases already reported, but also some features that, so far as I have been able to ascertain, have not been mentioned.

On Dec. 17, 1894, there came into my office a man complaining of shortness of breath that at times distressed him so much he could scarcely live. He also stated that he was so extremely weak at times that he was compelled to sit down to keep from falling; also that he had great difficulty to keep his food and drink on his stomach. So soon as he would take nourishment, the stomach ejected it like a bullet from a gun. He was born in England, of English parents, and he gave his age as 52 years, height five feet eight inches, weight 165 pounds.

I observed that he was pale, in fact the skin was extremely white, with a purplish hue to the lips. The face large and broad; brow heavy; orbital arches prominent, due to dilatation of the frontal sinuses; cheek bones prominent, due to dilatation of the maxillary sinuses; nose large; lips thickened; jaw protruding; chin large; the junction of body of jaw with inferior maxillary formed an obtuse angle; tongue broad, thick, smooth, yet slightly fissured, filling the whole mouth, making it quite difficult to articulate distinctly. The neck was short, thick, letting the head well down between the shoulders. Spinal column slightly kyphotic in the cervico-dorsal region. The muscular system was well developed, having been an iron-worker as well as a farmer, but his extreme weakness greatly annoyed him. His feet and hands were cold all the time, he said, though he had them well protected. Fire even did not warm them. Examination of the lungs revealed them to be sound, but the heart showed hypertrophy and some dilatation, with an occasional loss of a beat. The cardiac symptoms led me to suspect something wrong with the valvular arrangement, though nothing could be definitely determined. Pulse was small and feeble. The hands were very large in all their dimensions. The fingers were thickened and nails broad. The hands looked like paddles. The feet, like the hands, had grown to an abnormal size. The toes, especially the big toes, had thickened and lengthened until they were odd-looking appendages.

About fourteen years previously, he noticed a change taking place in the size of his hands, feet and face. But progress was very slow. About eight years ago his attention was called to his vomiting his food occasionally, and also to the peculiar manner in which he

did it. He was not nauseated nor sick, but would suddenly empty his stomach. He thought this dyspepsia, as it was called, was produced by the water of a certain spring from which he was drinking. He noticed that the food and water would return unchanged in character. He was treated by the profession for dyspepsia, but without good results. For some time before coming to my office he said he had suffered occasionally from difficulty of breathing, which he could not explain. He did not think he suffered from asthma. He gave no history of syphilis, alcoholism, insanity or any hereditary disease.

After trying to meet the indication for treatment with the proper remedies, he went to his home three miles in the country. Early in January, I was called to see him at his home. He was spending his time about equally between lying in bed and sitting up in a rocking-chair before the fire. His loss of strength had increased; he could keep no nourishment or drinks on his stomach, and was having at intervals great distress from the peculiar character of breathing. He had lost rapidly since I saw him. He had a good appetite, was hungry and thirsty all the time, but the stomach refused to retain anything.

I wish to call your particular attention to this refusal of the stomach to retain nourishment, and also to the abnormal rhythm in the respiratory act. The vomiting I regarded as reflex, of cerebral origin. The peculiar spasmodic breathing was of the Cheyne-Stokes variety, which indicated a disturbance of the equilibrium of the respiratory act at the breathing center. The breathing was irregular day and night until three weeks before death, when he seemed to get some better in this respect. The pause between the respiratory movements lasted ordinarily a half minute, sometimes reaching a whole minute. To compensate for this cessation, the respiratory movements, at first feeble, increased rapidly until in the succeeding thirty seconds there would be eighteen respirations, when apnea would be overcome and another rest in breathing followed. This continued day and night incessantly, whether asleep or awake. Sometimes these storms of breathing were so terrific that upon two occasions the interval of rest was so long the friends thought him dead, but he rallied and breathed again. The severest attacks of spasmodic breathing occurred at night.

As to the physical symptoms: his dulness, apathy and inability to think and articulate—these continued to increase until the end, yet at no time was he totally unconscious. He had great difficulty in finding suitable words to express his idea. This form of amnesic aphasia is not uncommon in acromegaly.

Being unable to retain food in the stomach he was nourished wholly by the rectum. Thus he was kept alive, though the waste of the system was not counteracted, by enemas of milk, eggs, wines, etc., from January 5 to March 29 following, when he died. He was nourished by enemas about thirteen weeks. His body wasted rapidly during the last of the illness, so that the abnormally large bones were made more prominent thereby.

His death was by apnea. The end came during one of the spasms of abnormal respiration.

Assisted by Dr. W. C. Townes, postmortem examination was made six hours after death. The skin was exceedingly white, but the lips and finger nails were blue. Rigor mortis had begun but had reached only a slight degree.

The circumference of the head through the occipito-mental diameter measured $27\frac{1}{2}$ inches; from the angle of the face to the symphysis, $4\frac{1}{2}$ inches; circumference of hand around the palm, $10\frac{1}{2}$ inches; width of palm, $4\frac{1}{2}$ inches.

The costo-cartilages were completely calcified so that it was necessary to saw them in two in order to open the thorax. The lungs were sound with calcified points, size of a millet-seed on the surface. The heart was hypertrophied, but no evidence of valvular disease. There was no calcareous deposit in the endocardial region. The right ventricle was filled with blood; the left partially so. Heart stopped in diastole. Postmortem and antemortem clots had formed in both ventricles. No disease of the heart was discernible. The nuchous membrane of the stomach was highly congested, and enlarged blood vessels roughened its surface. This condition is most likely accounted for by the long absence of food. A small upper portion of the ileum was filled with fecal matter of considerable consistence; the lower part was filled with gas. The large intestine was normal, except an occasional enlarged gland undergoing cheesy degeneration, probably antecedent to calcification. Appendix vermiformis was normal.

An indenture on the external surface of the calvarium, posterior to the coronal suture on right side, indicated that at some time the skull had received a blow from some blunt instrument. No history, however, of an injury having been received was obtained. The internal surface of the skull was roughened by a number—a dozen or more or less—of sharp-pointed spinous projections, varying from one-sixteenth to one-eighth of an inch in length, which pressed hard upon the dura mater.

The upper surface of the hemispheres of the brain was apparently normal. The base, however, showed an imperforate and knotted condition of the posterior cerebral artery on the left side. It looked like a string of beads. The remaining portion of the surface of the base was normal, except in the region of the sella turcica, where the pituitary body was greatly enlarged. This glandular structure had grown to the dimensions of a medium-sized hen's egg. The dura mater round and about it was calcified, and it was difficult to remove the body from its attachments. The average weight of this body is from 5 to 10 grains, but this one weighed, after having lain in alcohol six months, 476 grains.

The questions that naturally arise are: Did the growth of this gland cause the peculiar enlargement of the face, hands and feet? What caused the obstinate vomiting, and what produced the Cheyne-Stokes respiration?

SEPTIC DISEASES OF THE KNEE JOINT.

Read before the Wabasha County Medical Society.

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The great size and peculiar formation of the knee joint, with its many communicating bursæ, render its destruction probable by infection, and the loss of the limb, or life itself, is of comparative frequency.

A brief review of the more important of its anatomic features will explain why sepsis is so destructive.

The strength of this largest articulation of the body is in its powerful ligaments, which unite its opposing surfaces, articulating only by contact. The bony axis

of the limb changes at the knee, the femur slanting inward from above and the tibia being vertical. The lateral ligaments of the joint have the least strength. The posterior are strong and the capsule becomes ligamentous anteriorly. The most powerful and important ligaments of the joint are the crucial. The synovial membrane extends above the patella and beneath the extensor tendon, the cul-de-sac reaching a point one inch or more above the trochlear surface of the femur. Above the synovial sac is a bursa about one inch long separating the quadriceps tendon from the femur and communicating with the joint in four out of five cases. The upper third of the ligamentum patellæ is separated from the synovial sac by a pad of fat, the lower two-thirds are in relation to the bursa interposed between it and the tubercle of the tibia. In the popliteal space interposed between the internal condyle of the femur, the inner head of the gastrocnemius and the semimembranosus is another bursa usually communicating with the knee joint. The bursa beneath the popliteus tendon always connects with the joint and usually with the tibio-fibular articulation. The posterior part of the synovial sac has other bursal pouches in the adult. The epiphyseal line of the femur is intracapsular, showing the route of infection in the complicating joint abscess, occurring in some cases of periosteal and osteomyelitic diseases, and the source of effusion in fractures involving this region.

In a consideration of septic diseases of the knee joint we are only concerned in the more simple injuries causing synovitis, when auto-infection renders them septic. The entrance of blood into the joint is of the same significance, as a slight injury may occasion a hemorrhage, which never entirely coagulates, regardless of the quantity effused, but mixes with the synovia, and its absorption is extremely slow. These cases, through delay in absorption, or improper management, may develop the simple purulent synovitis.

Acute purulent synovitis occurs in young children, as a rule, in the first few weeks of life, and has been considered a probable umbilical infection. These cases discharge early and in most cases the joint function is not permanently impaired—as shown by Krause and Volkmann. In a case of doubt concerning the character of a joint effusion the hypodermic can be used for aspiration with the same freedom as it is now used on the chest to demonstrate fluids in the pleura. The withdrawal of a small quantity of serous effusion has the same effect as is so frequently noticed in the pleura, the stimulation of absorption. In the more simple purulent collections, a large caliber hypodermic needle can be used to withdraw the contents of the joint, and then distend it with a 1 to 1000 bichlorid solution. After a massage of the joint withdraw the bichlorid solution, repeating the process with normal salt solution.

Gonorrheal synovitis, which has been shown by Councilman and Ott to be due to auto-infection by the gonococcus, may be treated in the same manner, after a thorough trial of large doses of potassium iodid has been made without relief.

Penetrating wounds of the knee joint, including incised, punctured, lacerated and gunshot injuries, are well classed among the most dangerous of bodily injuries not proving immediately fatal. Their gravity depends solely upon the introduction of septic matter into a serous cavity at the time of injury, or during its subsequent care.

The simpler forms of lacerated and punctured wounds are the most frequent, as distinguished from the complicated cases in which the injuries to adjacent structures may be of more serious consequence than the opening of the joint. Where the wound is small and the synovial sac not visible great care must be exercised in judging of joint penetration. The free flow of synovial fluid may only indicate the opening of a bursa, or large tendon sheath; the rapid distension of the joint with blood may also come from a contusion, without joint penetration.

In cases in which the nature of the injury would indicate a possible foreign body, septic origin or contamination, the probable diagnosis must be confirmed by exploration of the wound, under strict antiseptic precautions, when, should the synovial sac be found opened, the interior of the joint should be thoroughly flushed with a 1 to 1000 bichlorid solution and drainage established, preferably by means of folded rubber tissue, and a copious dressing applied. In cases of joint injury where we can be reasonably certain of an aseptic wound, an antiseptic dressing may be applied, with rest of joint, awaiting the development of symptoms before further interference.

Should infection occur during treatment, the incision should be enlarged, antiseptic irrigation applied and freer drainage established. Synovia may flow for several days, and unless infection supervene, a perfect recovery results. In those cases in which infection occurs the result obtained will depend upon several factors, viz.: The nature and degree of infection, the freedom of drainage and the treatment applied. Infection produced by the less virulent pus-producing germs may not be clinically demonstrable for from two to seven days. The turbid effusion filled with flakes of lymph will then indicate vascularization of the synovial sac. The joint becomes red, swollen, painful and tender; a chill more or less severe indicates the commencement of infection.

Systemic toxemia is evidenced by a fever, which continues as long as the joint is distended with pus. In the less virulent infection, if a free drainage is secured, the joint structures may be maintained and a fair degree of joint function preserved, even after several weeks of discharge. Insufficient drainage, or a more virulent form of infection, may rapidly so disintegrate the joint structures that a functional result is impossible. The ligaments become softened, the cartilages necrosed and separated, the synovial membrane thickened and the extension of the purulent process into adjacent bursae and tendon sheaths develops abscesses in the thigh and posterior tibial regions. The limb is enormously swollen and the general septic condition is very marked. Life may be saved and recovery hastened by an early amputation, otherwise death may ensue from toxemia, or after months of discharge life and limb may be saved, with a functionless joint.

In the case of streptococcus infection, the course is more rapid and death frequently occurs early, from phlebitis, gangrene or septicemia. In mild or mixed infections secondary to chronic joint disease it is possible to have a walling off of the abscess in a portion of the synovial pouch, as mentioned by Andrews, similar to like conditions in the peritoneum or pleura. Gunshot wounds of this joint require the same care as the lacerated and punctured wounds. Injuries by large missiles require exploration, and in case of serious

bone injury a partial arthrectomy may be necessary, while those made by small caliber bullets may be treated as doubtful cases until interference is demanded by the symptoms developed.

Bullets are usually sterile, but there is always danger from the particles of clothing carried in by them. In gunshot wounds of this joint, unless serious hemorrhage occur requiring control, the first consideration is the application of an antiseptic dressing. Dividing the knee-joint cavity into spaces and treating suppuration by drainage with four to six drainage tubes, as recommended by Andrews and Gerster, suffice for some cases, and may be supplemented by a tube drain through the popliteal space, as practiced by Hartley. Edmond Owen recommends the vertical incision on either side of the patella, and in some cases to connect the two incisions by cutting the patella ligament.

Frederic S. Dennis and Roswell Park report cases successfully treated by continuous irrigation or immersions in weak antiseptic fluids. The one essential feature in the treatment of the more serious forms of phlegmonous inflammation of the joint is free drainage. The transverse incision from prominence to prominence of the condyles across the front of the joint, as made for resection, presents the freer exposure for dry gauze pack of all parts of the joint, or the use of the gauze pack saturated with a solution of 5 per cent. balsam Peru in castor oil, so successfully employed by W. W. Van Arsdale in the treatment of suppurating wounds. This incision will accomplish all that an amputation can promise, with less shock and with the saving of a useful limb, and in many cases a limited degree of motion.

In three cases in which the patella was severed through its center, the two halves afforded a firm hold for passing sutures behind and closing the joint at a later period.

In the January, 1895, issue of the *Annals of Surgery*, is reported my first case treated in this manner and the successful treatment of four similar cases in the past two years, leads me to emphasize my former statements. Two of these cases have one-fourth motion. In the *Annals of Surgery*, Vol. XXII, page 503, in report of transactions of the New York Surgical Section, is the following from Dr. Arpad Gerster, which so perfectly describes the treatment, I present part of it here: "Dr. Mayo's suggestion struck him as very plausible, and he has applied it in two cases. The result had been excellent. As all know, these acute forms of joint phlegmon necessarily end in ankylosis, if, indeed, they do not cause loss of limb or life. The cartilaginous covering of the bones forming the joint is destroyed, and therefore ankylosis is inevitable. Knowing this fact, the surgeon in adopting this method of treatment frankly accepts the necessity for ankylosis. The road then becomes very clear. The treatment consists in laying the joint open by a transverse incision, extending from one condyle to the other, just as a joint is laid open for resection. Then as many more incisions are made as may be necessary, in order to open up every collection of pus or fluid in or about the joint. The capsule in all these cases is very intumescent and swollen, and for this reason occludes all drainage tubes in a way to make retention inevitable. Then lay the joint freely open, removing or not removing tissues, as the case may be, pack and drain every recess, and treat it as an open wound. It is astonishing how rapidly the phleg-

monous process ceases, when compared with other methods of treatment. After the symptoms of active inflammation have subsided, the joint is put in proper position and ankylosis is allowed to take place."

THE IMPORTANCE OF SYSTEMATIC EXAMINATIONS OF UTERINE SCRAPINGS AND EXCISED PORTIONS OF THE CERVIX.

BY PALMER FINDLEY, M.D.

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This paper has for its object: 1, the emphasis of the importance of systematic examinations of uterine scrapings and excised portions as an aid to diagnosis in gynecology; 2, the presentation of a well known method of making such examinations; 3, the setting forth of its limitations; 4, the relation of the microscopic to the macroscopic appearances; 5, the relation of the microscopic findings to the clinical manifestations.

It will be the purpose of the writer to demonstrate that such systematic examinations can be made by all who have a practical knowledge of microscopy; that without such systematic examinations a malignant growth will often escape detection until clinical manifestations point to a growth too far advanced to permit of a radical removal, and that many times such an examination is the only means of making a positive early diagnosis. It is the custom of the writer to preserve for examination all products of curettage, to make a systematic microscopic examination of them, which is kept on record, and to which subsequent reference can be made. All who have followed this routine method can not fail to appreciate the importance of such examinations. Where a malignant growth has not been suspected it has been detected in its early development; on the other hand, a condition highly suspicious of malignancy has been proven innocent. In the majority of cases the microscope has only served to verify the clinical diagnosis. Not infrequently has a timely hysterectomy been performed as a direct result of the microscopic findings, and, on the contrary, where the clinical symptoms strongly indicated a hysterectomy for a malignant growth the microscopic examination contraindicated and precluded the radical and formidable operation. It is therefore evident that the greater part of the examinations will no more than verify the clinical diagnosis, yet the occasional finding of an unsuspected malignant condition, the verification of a suspicion and the disqualification of a wrong clinical diagnosis will be sufficient reward for the time and labor expended. The practice of making these examinations is becoming more general. The busy surgeon usually trusts the work to an assistant pathologist or colleague, and in most hospitals such examinations are made as a matter of routine by the resident pathologist.

The following method adopted by the writer will be presented in the belief that it will be found to be the most reliable and simple method for diagnostic purposes; it is the simple method of practical utility to the general surgeon. Where original research in the histologic and microchemic methods is desired the reader is referred to modern works on microscopy.

Because of the difficulty in obtaining sections of the mucous membrane of the corpus uteri the tissues

are best obtained by curettage; while with the cervix the mucous membrane is so closely adherent to the underlying tissues and the desired tissue is so easily excised it is preferable to remove a wedge-shaped piece of the cervix for an examination. The section should include some healthy tissue, in order to make a microscopic field of the entire pathologic condition together with some healthy tissue. Scrapings are never so satisfactory for examination as are excised pieces; the relations of the histologic elements are disturbed, the extent of the lesion can never be ascertained, and though the scrapings may show only inflammatory changes the underlying tissue may be the seat of a malignant growth.

CELLOIDIN EMBEDDING METHOD.

The scrapings and excised pieces are first cleansed of blood in cold water. They are then placed in a 4 per cent. aqueous solution formalin for twelve hours, then in 50 per cent. alcohol for twenty-four hours, next in 70 per cent. alcohol for twenty-four hours, followed by 95 per cent. alcohol for twenty-four hours, and finally hardened in absolute alcohol for twenty-four hours. The specimen may be placed directly in 50 per cent. alcohol without fixing in formalin, and if the sections are small they may be placed directly in 95 per cent. alcohol for twenty-four to forty-eight hours and then in absolute alcohol for twenty-four to forty-eight hours. After the tissue is thoroughly hardened in the alcohol solutions they are placed in a dilute solution of celloidin for twenty-four hours. If the solution is quite dilute it is not necessary to precede this step by placing them in a solution of equal parts of commercial ether and absolute alcohol for twelve to twenty-four hours, thus saving time. The next step is to place them in a thick solution of celloidin for twelve hours, then mount on cork or a block of wood in celloidin, expose the mounted specimen to the open air for a few minutes, then place in 70 per cent. alcohol for a few hours and the specimen is ready for section cutting. The most satisfactory stain is the double stain of hematoxylin and eosin. In this way about eight days are required, but the actual time spent in the work is not so great providing all necessary material is at hand. Where time is an essential factor the paraffin method may be adopted and the specimen ready in forty-eight to seventy-two hours. For serial sections the paraffin method may be used, but for ordinary usage the serious objection to its use is the necessity of an oven for the purpose of keeping the paraffin at the proper temperature. Dr. Cullen of Johns Hopkins University has presented to the profession a freezing method by which the examination can be made in fifty to sixty minutes.¹

The steps in the method are, in brief: 1, tissues cut with a freezing microtome; 2, sections fixed in a 4 per cent. formalin solution, three to five minutes; 3, 50 per cent. alcohol, three minutes; 4, absolute alcohol for one minute; 5, stain and mount. By this method it is possible in a doubtful case to determine upon further operative procedures within an hour after the exploratory curettage, and hence is of the greatest value in those exceptional cases where an immediate diagnosis is imperative, otherwise it is not satisfactory because of the hasty and imperfect preparation of the section for microscopic examination.

By way of illustrating the importance of such examinations the writer will briefly mention his

¹ For a full description of the method see Johns Hopkins Bulletin, No. 49, April, 1895.

experience of the past two months in the examination of scrapings. In all cases clinically diagnosed as chronic endometritis the microscopic examination of the scrapings verified the diagnosis. Where the diagnosis was in doubt from a clinical point of view the microscope was indispensable. The following cases occurred in the practice of Dr. E. C. Dudley of Chicago, they have been reported in detail and will here only be referred to in brief for the purpose of illustrating the value of systematic examinations of uterine scrapings in diagnosis:²

Case 1.—Was deaf, hence no history could be obtained further than that she is 40 years of age, had menstruated regularly until the last two months, during which time she has flowed almost constantly. For two weeks the flow has been increased in amount and has had an offensive odor. The patient denied the possibility of pregnancy. Dr. Dudley examined the uterus under ether and found it free of adhesions, regular in outline and about the size of a fetal head at term and of the consistency of a pregnant uterus. From the physical examination Dr. Dudley believed it to be a pregnant uterus, but decided to explore the uterine cavity because of the negative history of pregnancy and the offensive bloody discharge. Accordingly a curette was introduced, the instrument went to the handle, an incident which for the time suggested the possibility of having penetrated the uterine wall. An offensive sloughing mass was withdrawn by the curette. From the naked-eye appearances this mass was thought to be either placental tissue, sloughing fibroid or a malignant growth.

The scrapings were examined by Dr. Eisendrath, pathologist of St. Luke's Hospital, by whom chorionic villi were demonstrated. Three days later the woman was delivered of a sloughing fetal mass which bore evidence of having lain dead in the uterine cavity several weeks. In this case the history was entirely misleading and the symptoms and local condition indicated operative interference. The microscopic examination was made in a few minutes, the specimens were neither hardened nor stained. Simply a thin section of the scrapings was made with a razor and examined under a low magnifying power.

Case 2.—Mrs. B., age 45, American. Attending physician, Franklin B. Favill of Chicago. The clinical history was that of a chronic endometritis together with some loss of flesh, nausea, loss of appetite, menorrhagia which had existed for two years and in the past two months was followed by an odorless watery discharge. Dr. E. C. Dudley performed an exploratory curettage October, 1896. Profuse vegetations were removed by the sharp curette. On examination of the scrapings I found adeno-carcinoma of the corpus uteri in its early development. The diagnosis was confirmed by Dr. Arthur Edwards of Chicago and afterward by examination of the sections of the uterus. Dr. Dudley, assisted by the attending physician, Dr. Favill, Dr. William H. Rumph and the writer, removed the uterus per vagina two weeks later. Since the exploratory curettage the uterine growth was seen to have almost filled the uterine cavity and to the naked eye appeared as a soft, red villous growth confined to the endometrium. Sections of the uterine wall including the growth were examined, and the atypical glandular growth demonstrated to have extended into the underlying tissue to a considerable depth. It is hoped that a radical removal of the growth is effected. This case would undoubtedly have passed for a chronic endometritis had no microscopic examination been made.

Case 3.—Mrs. H., age 46; was undoubtedly approaching the menopause, the menses had become more and more infrequent and scant. Six months ago she began to flow profusely and frequently and six weeks later the menorrhagia was followed by a watery discharge, which had a disagreeable odor. An exploratory curettage was made by Dr. Dudley, in which he removed a submucous polypus from the corpus uteri. Upon examination of the scrapings I was able to demonstrate the presence of a round-cell sarcoma of the corpus. The round cells were mixed with a lesser number of spindle cells and a few giant cells. Notwithstanding the fact that the patient had marked symptoms of uremia from a chronic nephritis which had existed for an unknown period prior to the exploratory curettage, the urine containing a large amount of albumin,

granular casts, blood in great quantities and 200 grains of urea secreted in twenty-four hours; a vaginal hysterectomy was performed by Dr. Dudley, assisted by Dr. Franklin Favill, Dr. Peterson and the writer. Chloroform was given and the patient came out of the operation in fairly good condition. Following the operation the uremic conditions were deepened, but gradually became less marked until the fourth week after the hysterectomy, when there ensued lobar pneumonia, with suppression of urine. At the present writing the kidneys are secreting 200 grains of urea in twenty-four hours and the patient is gradually recovering from the lobar pneumonia. Examination of the extirpated uterus demonstrated a submucous polypus which had undergone sarcomatous degeneration at the base. In addition there was a double pyosalpinx and pelvic abscess, from which a culture of streptococci was made. Microscopic examination of sections of the uterine wall including the growth established the diagnosis of round-cell sarcoma, which had not penetrated far into the uterine wall.

These three cases, briefly recorded, illustrate the importance of systematic examinations of the uterine scrapings as a means of diagnosis in gynecology.

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THE ABDOMINAL TYPE OF RESPIRATION AS OFTEN EMPLOYED IN SINGING.

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My attention was directed to this subject by observing that among a certain class of singers who practiced the abdominal type of breathing, there existed a marked disproportion in development of the chest and abdomen. Not alone this, but in seeking for a causative factor for some deranged conditions of the generative organs my investigations brought me to the abnormal employment of abdominal respiration as used in their singing. As soon as I became cognizant of the fact that the over-indulgence in this form of breathing was to blame for the trouble in hand, I readily saw the irreparable amount of damage that may come to these organs of generation by following such a method; and I thereafter made it a special point of observation and inquiry in all cases of this character to observe the type of respiration employed and to inquire as to the method taught them in their singing. In one case I was told the singing teacher laid particular stress upon the forcible employment of the abdominal muscles in the expiratory act. This was done, he explains, to add force to the act and hence volume and power to the voice. And thus regardless of all consequences, ignoring one of the important elements of physics—that no two things can occupy the same space at the same time—he tells his pupils to force down these powerful abdominal muscles, displacing the contents of the abdomen, so as to press up on the diaphragm and thus add force to the act of expiration. Apparently there is but one object in view and that is to add strength and power to this expulsive act of respiration. But in selecting the abdominal type the teacher disregards all laws of physics, physiology and health, and as a result of exercising these muscles for the purpose indicated we are so liable to see, and in many cases where we do not see, they really exist unknown to us, the want of symmetry and proper development of the chest, the over-developed and protruding abdomen, and the train of symptoms resultant from a constant and forcible displacement of the contents of the abdomen. Like any other muscle or group of muscles under persistent exercise, there is bound to result a highly developed state of its fibers, and as a consequence we often

² While this paper was under preparation, the writer received the very instructive and interesting article on "The Importance of Systematic Microscopic examinations of Uterine Scrapings and of Excised Pieces as an Aid to Diagnosis," by Hunter Robb, M.D., of Cleveland, Ohio, reported in the American Journal of Medical Sciences. This report is based on Records of 100 cases, and strongly emphasizes the importance of such examinations.

find in these cases a very perceptive protrusion of the abdomen; and in one case that I had under observation, the muscles were so developed that in placing my hands in the attitude of palpation upon them they felt like bands of iron, so firm and strong and contracting were they. It is then only too apparent with such powerful muscles acting synchronously, pressing down through their contractive action upon the underlying organs, that everything is displaced to a more or less extent, and that this constant displacement, and often too under great force, by its pushing and crowding, drags upon and stretches the natural lines of moorage that anchor the different organs in their proper and respective places. And hence on account of the peculiar position, suspended as they are in the very center of the pelvis, the generative organs are more easily and disastrously displaced. Like its sister evil, the tight corset and girdle constrictions, many of these generative disturbances may

and cramming the much suffering stomach to adapt itself within a space not any too roomy for a chicken's gizzard.

In pursuing my investigation upon the lines of inquiry, I learn from most all of the singers interviewed that there exists a manifested degree of abhorrence to the prominence of motion assumed by the shoulders and bosom in the normal and physiological mode of breathing and hence I have been led to believe that the employment of "abdominal respiration," upon the principle that strength and force is added to the voice production, has been used more as a guise under which to parade a fad or a new method. That the natural type of breathing among women is the costal is an admitted physiologic fact and scarcely needs any substantiation in connection with this article. A reason for this form of breathing in the female sex may find an explanation in an anatomic condition, namely, the existence of the uterus and its suspended position allowing and providing for its

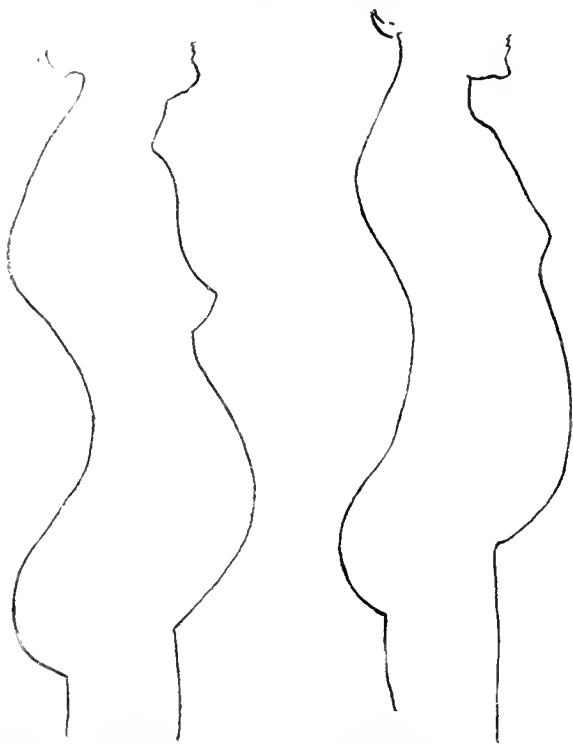


Fig. 1.—Appearance as a result of abdominal breathing.

Fig. 2.—Same as figure 1, but to a less degree.

be attributed and directly traced to these displacing forces. Only in the factor under consideration I consider the evil a still greater one, in that by the alternating contracting and relaxing action of the muscles, there necessarily results an unstable position of location in the organs much at variance with the more natural and healthy conditions, which reciprocal successions putting the ligaments now taut, now slack, ends in such a stretched and useless condition that malposition is the only inevitable result. I am directing my remarks now more toward the uterus and its appendages, but what is true of these organs is also, but probably to a much less degree, true of other organs in the abdomen; and particularly here I may mention the stomach. Now just imagine in what an embarrassed position this so often abused organ is placed when the singer with her herculean-like belly muscles causes them to forcibly contract, pressing in upon all that lies underneath causing a general scattering, as it were, of everything within and crowding

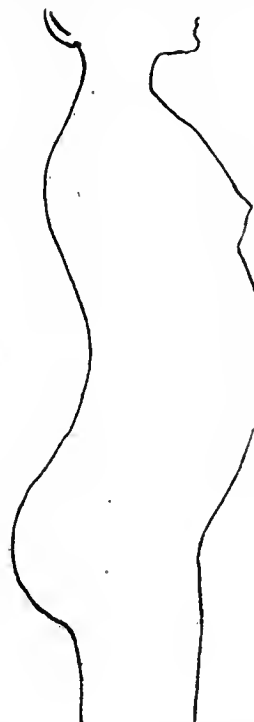


Fig. 3.—Appearance as a result of costal breathing.

child-bearing function. It has been claimed by some that the costal type of respiration in the female depends upon the constriction of the chest by corsets or other causes (Landois and Stirling, Text Book Human Physiology), but this again seems refuted by others maintaining that this type is quite distinct and characteristic, even in sleep when all constrictions are removed. Then, too, there exists in women a greater flexibility of the ribs, allowing the muscles of the chest to act more efficiently upon the ribs (Landois and Stirling, Text Book Human Physiology). In my mind the whole subject hinges upon the recognition that respiration consists of but *one* active movement and that is the inspiratory one. The act is a muscular one under the influence of the central nervous system. The muscles involved are the diaphragm, the two sets of elevators (levatores costarum longi et brevis), the saw-tooth muscles of the back (serratus posticus superior) and the intercostal (intercostales external, et intercartilag.) The stimu-

lus coming from the center of respiration in the medulla oblongata causes the muscles in question to contract. The diaphragm through its nerve, the phrenic, contracts and consequently on account of its dome shape descends, causing an increase in the vertical diameter of the chest. The levatores through their branches of the dorsal nerves, and the serratus through the cervical nerves, likewise contract and arising as they do from the spine as their fixed point and passing obliquely downward and forward to the ribs, they necessarily raise the ribs, which movement is of a rotary as well as elevatory nature. Thus the lateral and antero-posterior diameters of the chest are increased. In short, the chest is an air chamber; the muscles attached to its walls are endowed with the power of enlarging the cavity of the thorax so as to draw air through the windpipe into the lungs, which therefore become inflated. The lungs have not in themselves any ability to increase their capacity, but are merely blown out by force of the air which rushes into them according as the chest expands in order to prevent the formation of a vacuum (Holmes' Voice Physiology).

Now presuming we have in object an exaggerated form of inspiration as employed in singing, we set the accessory muscles of inspiration in operation. And these are the muscles of the hyoid bone, the sternum, upper ribs, collar bone and a few less important ones of the chest.

Now comes the second part of the respiratory act, which is non-muscular and hence purely passive. The cavity of the chest is diminished simply by the weight of the chest wall. It is the elastic recoil of the chest and lungs, which diminishes the cavity and by the relaxation of the diaphragm, which again resuming its dome-like shape presses up and against the lungs. But as in the exaggerated inspiration we have accessory muscles of expiration, in which the chest is squeezed, so to speak, by an extra effort. This extra effort lies in the muscles that depress the ribs, like the internal costals, the triangularis sterni, serratus posticus inferior and quadratus lumborum, and also by contraction of the abdominal muscles, which retaliate upon the diaphragm which had by its contraction and consequent descent pressed out the belly muscles. It is this fact that the abdominal muscles, being accessories to the expiratory act, are so often taken advantage of, and on account of the ready control one has over them and the power they contain, that their use is so shamefully abused. The mere fact of these muscles being accessories does not admit of their forcible use and hence abuse. One might say then that the levator ani should be forcibly used, for it is also an accessory muscle of expiration.

In following the drift of argument that I have I do not wish to be interpreted in advocating so called clavicular breathing, a form of breathing accredited to many singers, wherein the shoulders are prominently elevated. It is a very pernicious habit of respiration and should always be discouraged. The very first point of counter argument heard from singers and teachers when confronted with the evil effects following the employment of the abdominal type of respiration is the ill appearance presented by one using clavicular respiration; thus at the very outset disregarding the great difference between costal breathing and shoulder breathing. In fact, elevating the shoulders has but little influence in dilating the chest, as they raise the ribs only to a comparatively

small extent, because their power is mostly exerted over the upper ribs which have little freedom of motion and hence the effort is greater than the result warrants.

25 E. 47th St.

SURGERY ONE HUNDRED YEARS AGO.

AN HISTORICAL STUDY

BY DR. GEORGE FISCHER.

DEDICATED TO THE GERMAN SURGICAL ASSOCIATION.

TRANSLATED FOR THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION
BY CARL H. VON KLEIN, A.M., M.D.

(Continued from page 498.)

CHAPTER III. AT THE UNIVERSITY.

Academical training: The German student: Rough students' life; Göttingen Woodmen union (Hainbund); The student in war: Number of those who study medicine: Lectures, Latin language, dictation; Gatherings, libraries; Professors, their rank and income: Misdemeanor of the doctor-graduation, dissertation factories, our time; State examinations; Ceremonies, religious confusion at the graduation: Women doctors; Study of anatomy, public prejudice: Anatomical theater, scarcity of cadavers; Pathologic and surgical anatomy.

"Young people positively must learn Latin: I insist upon it. Moreover it must be reduced to the easiest and best rules for teaching it to young people. Whether they become merchants or turn to something else, it is always useful and the time will come when they will find it so." So ran a cabinet order of Frederick the Great, although this monarch knew Roman and Greek authors almost wholly through French translations. Latin was the soul of the *Gymnasia*, but the instruction in many of them was very poor and to little purpose. Monks, for the most part rude, ignorant and superstitious, did the teaching in the Catholic countries. In the Palatinate schools the Catechism of Kanisius was taught as the basis of religious instruction, and Latin from Alvares's Rudiments, and a few abridged authors. For history there was a text book, which related, on one page in the most absurd Latin, on the other in dreadful German, events according to the Jesuit point of view, with a multitude of fables. The monks early inculcated in the boys a hatred of heresy and innovation. The Lutheran and Reformed schools were even worse, since the lazy teachers there did not even understand Latin. Many gymnasia cultivated mathematics to the neglect of history, geography, physics and languages, and taught only a miserable monk's Latin. With this meagre instruction many young people went to the universities without the requisite preparation. A searching reform became necessary. Gessner brought in new life when he ingrafted the Greek language in the schools, and advanced the new principle, enthusiastically received, that not the stuff of the grammars but the spirit of antiquity is the essential thing. In general people were inclined to send boys to school as early as possible and they often finished the course at the age of 14. They then pursued philosophical studies, began medicine at 16, and finished at 19 or 20. A. von Haller became a student at 15, Mauchard at 16. Schlözer met at the Catholic universities boys of 16 who heard lectures on Institutes and Pandects, spoke Latin and were well versed in philosophy and mathematics. Schlözer's daughter Dorothea, at the instance of her father, was, in her eighteenth year, examined by the Philosophical Faculty in Göttingen and was made Doctor of Philosophy. Still there were always a large number of students of medicine who did not begin to study at a university

be ore 18 or 20. A few did considerable preliminary studying before they turned to medicine. It is known of G. G. Richter that aside from his favorite study, Oriental languages, he attended the philosophical and philological lectures for a long time, and it was only after he had obtained his degree of Master of Philosophy that he began the study of medicine. Likewise A. von Haller went to Basel for over a year especially for the study of mathematics.

We are captivated by the picture of the *German student*. At the beginning of the eighteenth century he wore a three-cornered hat over long curled hair, a broad-breasted coat lavishly decorated with embroidery and buttons the size of a dollar and slashed to the elbows, black knee breeches, black stockings and buckled shoes, with a parade sword hanging at his side. The life and activity of the students were still sunk deep in the barbarity of the foregoing century. Any high devotion to science was almost wholly lacking in universities whose chairs were given to spiritless pedants and ignoramuses. No wonder then, in view of the laxity and weakness of the administration, that the beastly drinking bouts, fighting, duelling, harrying of townsmen and ribaldry were the order of the day. The student songs of that day were coarse and insipid and teemed with unredeemed vulgarity. With the most extravagant wantonness, rioting and gambling, there prevailed the darkest superstition among the students. We find the same crudity in the second half of the century in the so-called seats of learning (*Musensitzen*). Frederick Lankhardt, in his autobiography (1792-97) gives the following picture: "The tone of the students or Bursche at Giessen was quite like that at Jena, and this indeed because of the many expelled Jena students who came to Giessen. Whoever wished to be a good fellow went, at least in the evening, to one of the many beer kneipes—the Rhenish Maass of beer cost two kreutzers—drank till 10 or 11 o'clock and then moved on. It was considered pedantic to speak of literary subjects, so student affairs were discussed and generally indecent stories were related. I know very well that in Eberhardt's student kneipe, lecture on obscenities (*Zotologie*) were regularly held and there was a compendium on the subject in manuscript. Drinking bouts were permitted in Giessen, and we have held drinking bouts (*kommersirt*) four times on the street. Most of the students walked like swine. A jacket (*Flausch*) was a part of a student's dress Sundays and week days. He wore with it leather breeches and long riding boots. Fighting was very frequent and they fought in the public streets. The challenger went to the window of his adversary, rapped a few times on the wall with his sword and cried: "Pereat N. N., the puppy, the hog!" Then the challenged party appeared, the fight proceeded and at last the beadle came and stopped the disturbance, the brawlers went to prison and so the sport came to an end. Among the gross vulgarities which were the fashion at Giessen were the *Generalstallung* (the general's stabling) and the *Wüste Gesicht* (bad face). The former consisted of twenty or thirty students filling themselves completely with beer and going before some house where women lived, when, at a regular command, with a neigh such as horses give, made some indecent display. The *Wüste Gesicht* was a mask of horrible appearance, which was fastened to a bundle of rags on a long pole. With this mask the students went in the evening to a house where the people lived in the second story, and rang. When some one

came to the window to ask who was there, they held up to him the ugly face, and the good people were frightened to death. The feverish desire to scribble full great notebooks did not bother the Giessen students. In every university I have found lusty scribblers, but never more than in Halle, where the students filled many quarto volumes with academic college wisdom. In other respects the tone of the Hallensers was very rude. In Jena every student had his so-called *charmante*, a common wench with whom he went about, so long as he was there, and whom at his departure he forsook for another. In Göttingen, on the contrary, the student sought entrance to the house of a gentleman and paid his court there. In general it stopped with courting and it had no further consequences than to empty the purse of the gallant. But many times things went much further and there followed living witnesses of an intimacy which just as often ensnared a knight's daughter as a pretty, buxom serving-maid." Letters about Jena (1793) relate that even in the seventies there was dueling in the market place on clear days. The Jenenser wore an overcoat, a jacket, leather breeches and a great laced hat. He possessed the extraordinary ability to pour down his throat a half a cask of beer; everyone who came near him he struck behind the ear and stood ready to settle the case upon the spot. His ideal of perfection was a consummate fighter, and the lowest creature a man who had no desire to riot every moment in the night and devote himself to dressing with a certain delicacy and elegance. The docents often vied with the students. The academic secret societies were in full bloom in the middle of the century. Growing out of the propensity of that time to form secret societies, the *Moselbund*, one of the oldest in Jena, was founded in 1746. Brawls between the different orders were not long in coming and led in Giessen in 1777 to bloody riots. Peter Frank is quite beside himself over the uncurbed excesses of the students, the wildness of whose life surpasses that of the lowest rabble. If in general the medical students participated less in these things, because of lack of money, yet they indulged in nonsense enough. The mania for dueling prevailed everywhere to such an extent that this professor (Frank) remarked that "yearly thousands (?) perished in this most disgraceful way. From early morning till late at night there was no end to the fighting and swaggering. All the *Landsmann* and other riotous societies owed their existence to the fencing-room. Whoever went to the university, on the very first day fell among these murderous bands, who thought it disgraceful to let a week pass without bloodshed." One exception to all this was the new University of Göttingen, where they had no Middle Age traditions and would not recognize the absurdities of student usage. A number of students lived there who formed the so-called *Hainbund* (*Woodmen*), in sharpest contrast to the above described rude student life, as the well-known letter of Voss to a friend described it: "Ah, you should have been here the 12th of September (1772). The two Müllers, Hahn, Hölty and I went in the evening to a neighboring village. The evening was clear and the moon bright. We gave ourselves up entirely to the contemplation of beautiful nature. We drank milk in a peasant's hut and then betook ourselves to the open field. Here we found a little clump of oaks and immediately it occurred to all of us to take the oath of friendship under those holy trees. We wreathed our hats with

oak-leaves, laid them under the tree, seized each other by the hands and danced around the encircled oak tree and called the moon and the stars to witness our bond and promised each other eternal friendship, etc." The Hainbund founded the Göttingen Musenalmanach, but was scattered when the bonds of association were broken.

From 1780 the academic conditions improved. The entrance of Karl August and Goethe at Jena had an influence for earnest scientific work and limited the barbarities. It was an event for the city when Schiller delivered his inaugural address as professor in May 1789, and he was given a serenade by the students, with loud *vivats*. The theater began to fascinate them and sometimes to throw them into real paroxysms of enthusiasm. Iffland reigned supreme. Once in Lauchstädt, when the curtain fell at the end of the play, one of the wildest students of Halle dashed up to another Hallenser, whom he scarcely knew, and with streaming tears swore he would never again touch a card. Poor students saved for a week in order to visit the theater in Lauchstädt once; then they ran back to Halle in the night, that they might be at the college the next morning. The student life became less rude when its administration instituted a stricter police supervision and more sharply opposed the misuse of arms. No Prussian students, except the nobles, were allowed to wear swords. And in Göttingen, where in 1763 the student was obliged to part with his favorite animal, the bulldog, and the university gave stipends to a number of hunters instead of the soldiers in order to keep peace, neither teacher nor student carried a weapon. There the surgeons were bound upon oath to report to the authorities the wounds of students as soon as they were bandaged. The students at Pavia and Padua wore swords when visiting as late as 1787. The Chancellor Boco took the swords from the English students and the French surrendered theirs to the rector.

With the war for independence came a new impulse into academic life. In 1813 lectures were suspended in Berlin, Breslau and Königsberg and almost all the students departed from Jena, Göttingen and Halle to Breslau. From Halle they went stealthily, in little groups, for the University was still under Westphalian jurisdiction. In Breslau they voluntarily entered the rank and file to defend the Fatherland. And in the gymnasia the oldest and stoniest pupils donned the uniform and became the pride of their classes, envied by the younger boys. In the bloody battles for German freedom the student learned a better use for arms than to whet them on "stupid boys," heavy with drunkenness, in the beer rooms at home. After peace was declared, when the lecture rooms were filled again, the academic life was carried along with the great movement of the time. In Berlin there arose, as a new form of the old secret orders, the "Burschenschaft," and in Jena, then the center of the German universities, another such society was solemnly founded in 1815. The idea of sometime serving the Fatherland with honor has contributed not unworthily to curb the wild life of the universities. When in our day *la grande nation*, which is always marching at the front of civilization, loosened against us her *Turcos* and *Guns* in this great struggle to be or not to be, the German students were under arms. Two thousand seven hundred and forty-five grasped their swords in the summer of 1870, and 914

served as hospital attendants; 248 of them met their death. Further, 15 university teachers went to battle and 253 consecrated themselves to the service of the wounded; of these 4 fell.

Germany was rich in universities and in 1792 possessed over forty. Many of these have decayed with time; among others, Altdorf, Bamberg, Erfurt, Frankfurt-on-the-Oder, Helmstadt, Ingelstadt, Mainz, Rinteln, Wittenberg. Concerning the number of medical students, Göttingen, where the majority always gathered, had in the years 1767-78 an average of 50 to 80 medical students, in the following ten years between 80 and 100, among 600 to 900 students. The thousand mark was reached there for the first time in 1816, when among 1,005 students 206 were in medicine; in 1866 there were 189 to 769. In Jena in 1768 there were 17 medical students; in 1773, 42; in 1785, 73; in 1792, 162; in 1866, 65. Marburg in 1793 had 56; in 1866, 32. In Vienna in 1723 25 studied medicine. This extraordinarily small number was in part due to the great number of prescribed holidays, which kept many young men from the Catholic universities. In 1795 there were only 24 students practicing in the Vienna clinics, where there were 300 but a few years later. Many German universities could not compete with those in foreign countries. In 1772, 364 students attended the medical lectures in Edinburgh; in 1787 there were 400; in Pavia in 1782 among 2,000 students 200 were in the medical department.¹

The study of medicine was free. Every young man, whether he had an education or not, if he came from the apothecary or the barber shop, could, if he had means enough, attend the medical colleges. It was considered desirable for those studying medicine to understand Greek and Latin, so they could read Hippocrates in the original. And the modern languages should not be neglected; Conrad Sprengel even desired a knowledge of Arabic. Philosophy, history, belles lettres, and especially the mathematical sciences (pure mathematics, mechanics, physics, optics and hydraulics), were considered very valuable to steel the mind against vacillating theories. Finally, the medical student should be sufficiently informed in botany, mineralogy and zoölogy; in short there were few supplementary sciences which were not considered, by this one or that one, as absolutely necessary. That was an educational luxury before which the mind recoiled and which diverted the young men from the special line of study. For the rest the medical instruction was by no means in a position to satisfy these large pretensions. In the majority of the universities there was much left to be desired, as in the smaller states they were not sufficiently endowed to support the necessary number of teachers. At first Halle and Göttingen boasted only two professors, one for theoretical and one for practical medicine, but this number was soon increased. In 1750 Leipzig had five professors: in therapeutics, pathology, anatomy and surgery, physiology, and botany; in 1763 Heidelberg had four professors. In Vienna until 1775 there were only three professors; under Maria Theresa a fourth, for chemistry and botany, was added, and in 1780 under Joseph II. still another, for natural history. In very many of the universities there was a total lack of practical facilities. It was proposed

¹ In the winter semester, 1872-73 there were at 21 German universities, 1,620 teachers and 17,858 students; at 10 polytechnical schools, 300 teachers and 1,500 students.

therefore to make one large institution out of two small schools and wherever possible to establish it in a populous city.

(To be continued.)

PECULIARITIES OF THE SURGICAL DISEASES AND INJURIES OF THE NECK.

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(Continued from page 501.)

SURGICAL DISEASES AND INJURIES OF THE PAROTID REGION.

Congenital absence of the parotid and atrophy of the gland are very rare. However, occasionally subjects are seen with a deep hollow between the ramus of the jaw and the mastoid process, showing the partial atrophy at least of the gland.

Congenital hypertrophies are not on record. Branchial fibrochondromata are sometimes found over this region. *Acquired atrophy* or destruction of the gland has been observed as the result of neuroses, injuries, congestions (mumps), inflammations and gangrene due to general fevers. *Acquired hypertrophies* are represented by the various kinds of swellings of the region. *Swellings* may be due to some forms of injuries or neuroses.

Injuries of the parotid region are rare; they are grave, on account of cicatricial disfigurements and injuries to the facial nerve and to Steno's duct. Punctured superficial wounds are of no consequence, nor are the deeper wounds unless the instrument be large and the great vessels be injured. Incised superficial wounds may injure the facial nerve and the duct and may be followed by paralysis; when large, the divided nerve and duct should be at once stitched. Incised deep wounds are most serious. The diagnosis of the penetration of the gland rests upon the escape of saliva. When the wound is narrow, the hemorrhage, and later the suppuration, prevent the diagnosis; if the pus is very liquid, it is probable the gland is seriously injured. To prevent fistule, stitch tightly and procure rest of jaw. Deep wounds are more serious, because of the presence of the temporo-maxillary vein, which becomes the external jugular; also of the other deep vessels. The bleeding is profuse and sometimes terrific; it should be at once stopped by plugging; then a provisional loop ligature should be applied on the common carotid close to the bifurcation; the bleeding points should then be ligated. If this fails, it should be determined with care which vessels furnish the hemorrhage. If the external carotid, ligate it; if the internal carotid, ligate it separately or ligate the common carotid at the very bifurcation to prevent the return through the collateral circulation. If the jugular vein is injured, ligate it as high up as possible, at least above the facial and lingual, or ligate there. After the ligation or ligations have been done, the accidental wound should be packed tightly with bits of aseptic sponges to prevent hemorrhage by the distal end of the vessels; this plugging will usually accomplish this, but plugging should never be relied upon if the trunk has not been ligated; the hemorrhage is almost sure to recur, and often the patient thus loses so much blood that when the ligations are at last performed the patient still succumbs to hemorrhagic anemia. When the hemorrhages are

unmistakably venous, the thorough systematic sponge plugging may suffice even in wounds of the internal jugular. *Contused and lacerated wounds* call for the same remarks, but it must be remembered that although the primary hemorrhage may not be copious, the secondary hemorrhages are most to be dreaded, and proper instruction in consequence must be given.

Gunshot wounds call for the same remarks, with the aggravation of the presence of the ball in the deeper structures, in the pharynx, in the bones or in the brain. *Poisoned wounds* present nothing peculiar.

Neuroses are represented by paralysis due to the injury of the facial or auriculo-temporal nerve by blows or operations in this region; or they may follow disease of the nerve or pressure upon it by products of inflammation or tumors. *Nervous hypertrophy of the parotid region* has been recorded; it is characterized by a rapid congestion of the gland, in a few minutes, with a constant desire to swallow; sometimes the two glands are affected at the same time; the cause seems to be a mental excitement. It is soon dispelled under proper antispasmodic remedies. Softenings and indurations present nothing special.

Hyperemia of the parotid is here represented by the disease called *mumps*. It is considered a specific infectious disease; it is contagious in schools; it is most serious in spring, in damp or cold weather; young male children are more commonly liable; sometimes it follows orchitis, but it is usually the reverse. Its pathology is obscure. The most remarkable symptoms are pain and swelling without redness or heat, softness of the part; no induration, no fluctuation; the pain is increased by biting, chewing, swallowing; there is little or no general reaction. The beginning is often sudden, also the termination; it sometimes removes suddenly to the testicles, ovaries or breasts. The duration is about ten days. Termination by resolution is the rule; it is altogether exceptional when suppuration takes place. The treatment consists of soothing liniments and keeping the parts warm. It may affect both sides and also the submaxillary gland; it is sometimes epidemic; it may be due to the localization of a microbial infection coming from the mouth, and following the mucous membrane of Steno's duct.

Adenitis or adeno-cellulitis of the lymphatic glands situated on the parotid gland is usually due to lesion of the scalp or face: the symptoms are not so severe, the motion of the jaw is not so painful. *Simple* and non-virulent *inflammation* of the parotid may be due to cold, traumatism, obliteration of Steno's duct by a calculus or to the presence of a calculus in the gland; to mumps, to goitre (parotid goitre), mercurial salivation, iodid of potassium or menstruation. The symptoms are those of ordinary localized cellulitis; the pain is usually great on account of the capsule.

Acute parotiditis is a comparatively rare disease. Its causes may be mumps (rare), a debilitated state of the system, an infectious disease (typhoid fever, sepsis): it may be complicated with ear, eye, tonsil or brain syphilis, but it is always very rare. A pathologic peculiarity is that the capsule of the gland prevents the pus from coming to the surface quickly.

The symptoms are those of deep cellulitis with the addition of the general symptoms due to the lesion which is the cause of the parotiditis. The mouth is closed; there is facial edema, earache; the speech and deglutition are painful. The course is usually rapid; it may be sthenic or asthenic; the pus forms rapidly,

almost at the very outset. The duration is about fifteen or twenty days. It terminates almost always by suppuration; the pus may open into the ear, pharynx, vessels, down in the neck and chest, in the space behind the pharynx; it may terminate by several successive abscesses; it may terminate also by gangrene. Its prognosis is most grave.

The treatment consists in keeping the mouth disinfected and in an early evacuation. In superficial abscesses be mindful of the course of the facial nerve and of Steno's duct; in deep suppurations, of the external carotid; in these cases follow Hilton's method or dilatation upon a guide. The complications are extensive dissection of pus, hemorrhages from ulceration of large vessels, venous thrombosis of facial, external and internal jugulars, of cavernous sinuses. Its sequelæ are cicatrices, fistulæ, paralysis of facial nerve, parotidian ephidrosis. The forms and varieties are: Deep parotiditis with abscess opening in the pharynx; purulent catarrhal inflammation of the gland; multiple abscess, lobular abscesses, having to be each opened separately; diffuse parotido-cellulitis.

Gangrene of the parotid region may follow injuries and inflammations; its usual sequelæ are salivary fistulæ or paralysis of the facial nerve. *Ulcers* of this region present nothing peculiar except that they may be followed by fistulæ.

Fistulæ of the parotid are not very common. The causes are abscesses, furuncles, carbuncles, gangrene, ulceration, operations and diseases due to calculi developed in Steno's duct or in the gland itself, or abscesses due to microbic infection, or from any other cause. The symptoms are an orifice through which the saliva runs, increasing during mastication and meals; it is increased by lemon, salt, vinegar; the orifice is usually single, is situated on the center of an ulcerated fungosity; it may be small or large; a probe penetrates more or less deeply. They sometimes cure spontaneously, but the prognosis is generally bad, because they are often difficult to cure. The treatment consists in local cauterization; if this is insufficient, in making a large hole in the region and closing the surface opening by a plastic operation; in persistent cases in destroying the parotid. The forms and varieties are, multiple capillary salivary fistulæ; they are also called ephidroses; they are caused by obliteration of the duct or traumatism or loss of substance; they are characterized by a sort of transudation through the skin of the region of the parotid of a transparent liquid which forms numerous drops at the time of meals.

Tumors of the parotid.—The lymphatic nodes while not situated in the parotid, may present almost all the tumors that develop in the salivary gland; they are called supraparotid tumors; they are usually movable, whereas the tumors developed in the parotid gland are not. Gaseous tumors of the parotid region do not exist. Liquid tumors, such as liquid hematoma, angioma, varix, present nothing peculiar; aneurysms are almost unknown; lymphangiomas of the parotid are congenital cysts and show after birth. Glandular angioma of the parotid is usually called glandular hypertrophy; it usually shows at birth; the skin is sometimes bluish; it has been observed only in children; perhaps they change with age. Salivary cysts due to the obliteration of a duct of the gland may be followed by fistulæ if treated by mere outside incision; it is best to try and open them from the inside of the mouth. Mucous, mucoid, serous and

dermoid cysts are rare; they present nothing peculiar. Hydatid cysts have been reported. Purulent cysts or chronic abscesses are not common; tuberculous abscess of the parotid gland itself has never been observed (Duplay), but in the lymphatic glands they are common enough proportionately. Solid tumors of the parotid may be of all the varieties elsewhere found. Hematoma, sebaceous cysts, dermoid cysts and keloid present nothing peculiar. Simple adenomata or lymphadenomata of the parotid itself (due to simple hypertrophy) are very rare; those developed in the interlobular tissue are also rare; at first their growth is slow, then rapid and may be generalized; those developed in the lymphatic glands are common. Adenoma of Hodgkin's disease is very rare here. Strumous adenoma presents nothing peculiar. Tuberculous adenoma has never been observed in the parotid gland itself; in the lymphatic gland it is comparatively common, especially in children; it may at the outset simulate a tumor of the parotid gland and later a salivary cyst. Syphilitic adenoma of the parotid and gumma of the parotid are doubtful. Syphilitic adenoma of the lymphatics are common in syphilis. Adenoma of the gland is rare. Lipoma may be circumscribed or diffuse and infiltrate between the acini and the lobules of the gland.

Fibroma has been observed. Myxoma has been observed; it presents a gelatinous aspect. Myomata are very rare. Neuroma is doubtful. Chondroma forms 30 per cent. of the tumors of the region. Sarcoma, together with fibroma and cystoma, is about equally often present. Carcinomata represents about 45 per cent. of all the tumors of the parotid region; usually they are mixed tumors, in which the epithelial element has taken a great development; they may be secondary to similar tumors originating in the pharynx or on the face; primary carcinoma is rare. Encephaloid develops at 41 on the average. Pulsatory encephaloids are very rare. Melanotic cancer is very rare; it usually involves the lymphatics. Scirrhous usually develops at 60 or 70. Mixed tumors are commonly those called simply chondromata; they usually remain limited to the parotid and do not invade the other regions; they may become very large so as to affect mastication; some have a rapid course, some a slow one; they may degenerate into sarcomata; they return rarely if operated upon in the first period; they return often if operated upon in the second period; generalization is very rare.

Tumors special to the parotid region are represented by the salivary calculi developed in the parotid; they are rare in the gland itself; they are said to be more frequent in males and in adults, also to be due to the inflammation of the duct-radicles which retard the flow of the saliva; also to changes in the chemico-composition of the saliva. They usually cause pain, inflammation and an abscess, which upon opening, leaves a salivary fistula; using the probe through the opening or by penetrating the gland deeply with a needle, the calculus is felt; they may cause atrophy of the gland by sclerosis. They should be removed through an incision.

Surgical operations of the parotid region.—The possibility of extirpating the whole parotid has been much discussed, but it presents no practical or clinical importance; when the gland is diseased, the disease must be removed, whether it affects the whole gland or not. A partial disease of the gland with prolongations is as bad as, if not worse than, a disease affecting the

whole gland without such processes. The dissection should proceed from below and behind, upward and forward; the external carotid should be located and ligated or clamped, otherwise it might be cut several times; when the dissection leads into the deep parts, the patient's mouth should be opened, as this increases the size of the parotid cavity and renders the deep dissection easier by affording more room. A previous permanent ligation of the external carotid might be done, or provisional loop ligature applied to the bifurcation, so that if it should become necessary to ligate the internal carotid the same incision will answer for all purposes. In penetrating the region the dangerous structures are at the entrance and in front, to the inner side of the head and neck of the condyle; more deeply they are on the posterior wall. Some tumors of considerable size, and sometimes extending to the pharynx, are removed with little difficulty and little hemorrhage if the adhesions are loose; whereas adherent tumors, even of small size, are fraught with danger. The safe plan is to proceed as long as the adhesions with the surrounding structures are easily broken, and to stop as soon as they become too resistant, and as we approach the deep dangerous structures which may be adherent to the tumor. Then the cleared part of the tumor should be cut off. It is a remarkable fact that often the stump left will, in growing again, become more superficial, and it is sometimes possible to remove the stump entirely by a second operation.

(To be continued.)

SOCIETY PROCEEDINGS.

Chicago Ophthalmological and Otological Society.

Regular Meeting, held at the Chicago Athletic Association Rooms, December 8, 1896.

Dr. GRADLE in the chair.

There were seventeen members in attendance.

Minutes of the last meeting were read and approved.

Dr. COLBURN discussed a method of operation for strabismus which he had used in a good many cases with satisfactory results. The method is as follows:

An incision is made over the tendon of the internal rectus and a partial tenotomy done. This tenotomy involves the whole tendon, with the exception of a few upper and lower strands; then an incision is made with the scissors, external to the muscle, carried very deeply back toward the orbit, so as to divide the so-called check ligament. This ligament consists of a bundle of fibers from the orbital fascia, or capsule of Tenon, very firm in many cases, and extending from the orbital border to the sheath of muscle. If necessary, this procedure is combined with advancement of the external rectus.

The operation can also be performed as well in divergent strabismus, the check ligament existing at the outer side of the eyeball, as well as the inner. The point about the operation that was most insisted upon, was the necessity of section of these ligaments in a large number of cases.

Almost no ophthalmic literature mentions the existence of these ligaments, but they are described in several general anatomies. The steps of the operation were illustrated by a number of colored plates, and numerous cases were quoted.

Dr. GRADLE asked if any of the Society had noticed a peculiar condition in cases of squint of moderate degree, where on covering the squinting eye it was found that the squint became greater, but immediately returned to the original position when the squinting eye was uncovered.

Several members had noticed this condition, and Dr. Starkey spoke of a case in which the eye symptoms turned further in, and at other times rotated upward, downward or outward, there seeming to be no constant change.

Dr. COLEMAN spoke of a class of cases which did not have diplopia, but after operation, the squint not being completely corrected, the patient had crossed diplopia.

Dr. COLBURN referred to a large class of cases of recurrent

heterophoria, where the whole amount was seemingly corrected by operation, but afterward returned in large part, and sometimes the same change took place after repeated operations, in one case five being done without permanent abolishment of the heterophoria.

Dr. GRADLE spoke of some experiments that he had made with the so-called rest prisms. He had found that it was possible by means of these prisms to develop in an eye having equilibrium of muscles a marked degree of any sort of heterophoria if the glasses were worn for an hour or so. He also had found, as was well known, that an apparent amount of heterophoria could be decidedly increased by means of glasses.

Drs. HOTZ and COLBURN did not agree with Dr. Gradle as to the effect of normal eyes. They had found quite the contrary, that in those cases where the rest prisms increased the amount of heterophoria, that the indication for operation were stronger, and that it was only in cases of latent heterophoria that the rest glasses caused any manifest lack of equilibrium.

Dr. COLEMAN said that a number of years ago he had prescribed prisms to a considerable extent, but that in recent years he had found that they were of little or no value in the treatment of asthenopic symptoms. As a rule, they will give temporary relief, but the symptoms almost invariably return, and for a long time he had found it best not to prescribe prisms at all.

Dr. HOTZ showed a modified form of bifocal lens for the use of presbyopic myopes. Instead of segment being cemented to the lower part of a fully corrected glass, the glass was ground to only partial correction and the segment giving full correction was cemented to the upper side of the lens. The segment was quite long, but did not extend as far as the center of the lens. He had found after a number of months' trial in his own case, that the relief from such a combination was very great. Ordinarily, he uses simply the lower segment, but if he wishes to look at a distance he looks through the upper segment, which gives him full correction.

Dr. PINCKARD, about a year ago, had made several experiments with the solid form of bifocal in a case of myopia in a presbyope, having the upper part of the lens ground in full correction and the lower part in the presbyopic correction. A number of lenses were ground, the segment varying in size, but the distortion from prismatic action at the junction of the two segments was so great that he was obliged to abandon the experiment in that case. It seems to him that any scheme of a small segment above would probably be applicable to cases of myopia of considerable degree.

Dr. STARKEY spoke of trouble he had had with lower segments in general, in having the segments decentered inward sufficiently, most of the opticians setting the segment in the center of the glass.

The Society adjourned by limitation.

C. P. PINCKARD, M.D., Secretary.

SELECTIONS.

Some Popular Errors about Medicine.—Dr. A. L. Benedict, in the *Cosmopolitan* for February, tries to show the general public some of the errors into which they have been led, or gone without any leading, and which more or less throw out of plumb the normal relations between physician and patient. He points out the false idea that prevails as to the possibility of assigning names to cases. Terms commonly understood, such as diphtheria, croup, quinsy, bronchitis, pneumonia, etc., are applicable in only about a third of all cases; perhaps another third is covered by purely technical expressions, while the remainder embraces cases so extremely simple or so complex that they must be described rather than named. The attempts of different physicians to translate into simple language the technicalities of medical science often lead to apparent contradictions and to much undeserved criticism. In chronic cases, and these are the very ones which are most apt to apply to a number of doctors, several organs are usually simultaneously involved. Different physicians will naturally locate the disease in one or another of these organs, and, in the attempt to explain the complex relations of one organ to another and to give the patient an understanding of a diseased organ, when he is ignorant of the action of that organ in health, it would be a surprising coincidence if any two doctors used expressions which the patient recognized as identical. Neither is the phy-

sician whose tongue is nimblest in finding a name always the one who best understands the disease. Dyspepsia, for example, is a high-sounding title and the one which is very satisfying to the average patient; but a physician who really understood the stomach would feel that he was scarcely nearer the mark in using this term than in saying that the patient was sick. Neurasthenia is another dainty diagnostic morsel; but the man who serves it is scarcely wiser than the one who says, "I don't know what to call your trouble, but you are simply worn out and nervously unstrung, and you need a rest."

Fevers usually divulge their nature little by little. The clinical thermometer makes it an easy matter to say whether a patient has fever or not; mere sensations of heat or "feverishness" are utterly unreliable; but the question immediately presents itself, What kind of fever? To this question, the honest physician at his first visit must usually reply "I do not know," unless he has been summoned after diagnostic symptoms have developed. Scarlet fever can not be positively diagnosed in less than twenty-four hours, measles in less than three days, typhoid fever in less than five or six days. The dislike to avow even a pardonable ignorance has led some really honest men to use expressions that are misleading and untruthful. Not very rarely, a physician is found who will state that a patient "is threatened with typhoid" but that he hopes "the disease will be broken up." Now, the patient is most emphatically not threatened with typhoid; he either has or has not that fever, but a positive decision can not be reached for several days. If, instead of typhoid, the disease happens to be a rather common and not very clearly understood "simple fever," the doctor gets the credit of having broken up a case of typhoid, a feat which all the great medical authorities of the world declare themselves unable to accomplish.

Few persons not thoroughly versed in medical art appreciate the true value of medicines. For example, a patient has passed successfully through an attack of bronchitis, having taken a certain prescription. The common opinion is that that prescription will be "good for" another attack of the same disease, either in the same or in another patient. As a matter of fact, most medicines are given without reference to the disease which is in progress, but to produce very limited physiologic changes or to control symptoms which may be common to many diseases. There is no disease which can always be appropriately treated by the same prescription, and only a very few in which any particular drug may be said to be specific. It will be readily understood that patients of different age, sex and temperament require very different dosage, but leaving this point aside, the prescription which was excellent for one case of bronchitis may be utterly worthless or even harmful in another, while it might be well adapted to certain cases of pneumonia or gastric catarrh or other conditions. Sometimes, the range of adaptability of a drug is ludicrous enough. Thus, a patient suffering from some forms of rheumatism and also from a corn, might be relieved of both troubles by using the same chemical, internally and externally, respectively. Yet other grades of rheumatism or other forms of inflammation of the extremities would fail to respond to analogous treatment. Again, a very efficient, though not ideal, treatment of erysipelas, was discovered by a careless nurse who applied externally a certain medicine which had long been used internally to support the strength of the patient. However, these are merely coincidences and, for the most part, the limitations of the usefulness of a drug are narrow enough. The same chemical may be obtained from widely different sources. Thus, oil of wintergreen, oil of sweet birch, willow bark or various artificially prepared drugs, all contain the same active ingredient and have an almost identical field of usefulness. So it may be that Dr. A.'s and Dr. B.'s prescription for a given case may read very differently, and yet represent essentially the same treatment.

The Toxic Basis of Neural Disease.—The *Boston Medical and Surgical Journal*, February 18, is among the first of our journals to properly notice the good work of Dr. Ira Van Gieson, of the Pathological Laboratory of the New York State Hospitals for the Insane, on the above subject. New York State has set for others a notable example in the establishment in New York City, under the competent direction of Dr. Van Gieson, a central pathological institute, whose function shall be to

direct the work of the several laboratories throughout the State, and at the same time serve in itself as a center of research. There can be no doubt that the establishment of such a laboratory or system of laboratories is one of the significant steps of recent years toward the foundation of a scientific spirit regarding neurologic problems. After reverting to certain statements made in a previous address relating to the fact that he believes that certain factors are at hand for the creation of a new epoch in the evolution of the pathogenesis of nervous and mental diseases, he adds, "The first and most important of these factors is the precise and definite status which the anatomy of the nervous system attained through the investigations of the past decade by the Golgi methods; the establishment of the neuron theory in particular leads to a definite understanding of the pathology and physiology of the nervous system."

"A second great factor in this new epoch of neuro-pathology is the application of the modern doctrine of cytology and its technical methods of research to the investigation of the problems in nervous and mental diseases."

"A third factor is a realization of the absolute necessity of correlating the nervous system with other organs and tissues in the body in studying the operation of the fundamental and general somatic pathologic processes in the nervous system."

In these three statements lies the substance of our present point of view regarding the pathology of the nervous system. Certain points are of particular interest, and by no means sufficiently realized by the medical profession at large. The significance of the Golgi methods in the light they have thrown on the fundamental principle of anatomic structure received a quick recognition. The neuron theory needed only to be advanced to be accepted, so reasonable did its fundamental idea seem to be. As applied to pathology, however, it had been accorded a much more tardy recognition, on account, no doubt, of the deeply rooted conception that cells and fibers did not essentially belong together. Because of our failure to recognize in the neuron a unit of histologic structure, we have been unable to apply a true cellular pathology to our investigations of disease processes in the nervous system. When, however, it becomes a habit of thought to conceive of the highly differentiated nerve cell as we do of the simpler liver or kidney cell, it will be at once evident that we may apply to the nervous system those general pathologic principles which are everywhere else operative—a step certainly of much significance.

The second point upon which Van Gieson dwells is of almost equal importance, namely, the elaboration of new technical methods of research. It is entirely natural that the highly differentiated nerve cell should demand for its proper investigation staining methods of extreme refinement and delicacy. Until methods were found which could demonstrate minute structural alterations, it was hopeless to expect any material advance in our knowledge of the subtle anatomic changes underlying and associated with many marked clinical phenomena. This difficulty is now, in a measure at least, a thing of the past. We have come clearly to recognize that transient injuries to the nerve mechanisms leave their impress, as well as those of greater severity and longer continuance. We are now no longer deterred from histologic investigation, which a few years ago would, of necessity, have been fruitless owing to inadequate methods.

A matter of extreme general importance is Van Gieson's third factor, in which he speaks of the necessity of correlating the nervous system with other organs and tissues in studying its pathologic processes. We can not do better than quote his own words relative to this point:

"However obvious or trite," he says, "the statement of this third factor may appear, it is nevertheless true that much of the present obscurity in the pathogenesis of nervous, and especially of mental disease, is largely to be explained by the very

simple fact that the brain and the rest of the nervous system have been studied altogether too much as something apart from the rest of the body—as something beyond the jurisdiction of the laws of the great fundamental pathologic processes which operate on the whole organism.”

Van Gieson insists that the nervous system can not be exempt from the workings of pathologic laws which are elsewhere operative, and that we must recognize this fact if we are to progress. Of necessity, the manifestation of such laws in the nervous system, as elsewhere, must depend upon the peculiar differentiation of the ultimate histologic elements, but because the nerve cell is highly differentiated affords no reason that it must be governed by pathologic laws peculiar to itself.

We owe Van Gieson a debt of gratitude for having clearly stated this broad point of view, and for his insistence upon the fact that the nervous system is, after all, merely a part of the organism as a whole, and therefore must be amenable to the same laws of disease and decay.

Presence of Tubercle Bacilli in Feces from a Non-Tuberculous Intestine.—Dr. R. B. Shaw, resident physician at the Royal Victoria Hospital, in the *Montreal Medical Journal*, January, reports a case of the above nature in a male patient, aged 54 years. The case presented the following conditions: the presence of tubercle bacilli in the fecal matter of a non-tuberculous intestine; a pernicious type of anemia incident to senile tuberculosis; the association of meningeal hemorrhage and grave secondary anemia; the existence, without symptoms, of a psammoma, and the presence of an auricular endocarditis.

The patient was a mechanic by trade and entered the medical wards of the Hospital June last, complaining of persistent diarrhea and general weakness. He was born in Scotland and came to Canada when 20 years of age. Of his past history he was unable to give a very satisfactory account and apart from some indefinite statements about his having had “fever and ague” while in Cuba some four or five years ago there was nothing of importance. Late in the fall of 1884, the patient had a severe chill lasting about five minutes and subsequently suffered so much from general weakness that he was obliged to give up work. Diarrhea supervened and a week later he entered the Montreal General Hospital, where he remained about one month and was then discharged feeling restored. Within a very short time afterward the diarrhea returned and has persisted ever since. So far as he knew no blood had ever been passed in the stools, which had been more or less liquid for the past six months. His appetite had been steadily failing but there was no vomiting. He had observed for the past six months that he was rapidly losing flesh but had never suffered from cough, though from time to time slight expectoration was present.

The patient is a much emaciated and markedly anemic-looking man of good intelligence. His skin has a somewhat subicteroid hue, but the sclerotics are of a bluish tinge. He sleeps well and has no pain, but his appetite is very poor and he is so weak that he is able to sit up in bed only a few minutes at a time. He has no cough, though from time to time he expectorates a small amount of greenish muco-purulent sputum. Temperature 97.3 degrees; pulse 88; respirations 20.

Autopsy. The abdominal cavity: The panniculus is greatly atrophied and the fat is bright yellow. The muscles are thin and gelatinous looking. The abdominal cavity is dry. The intestines are collapsed, their serosa pale, smooth and glistening. The small intestines have here and there blue-black patches of discoloration opposite the mesentery. No tubercles are seen. The omentum is pale, broad, thin, non-adherent and irregularly disposed throughout. The liver descends to the costal margin. The diaphragm is at the fourth interspace at the right side and at the fifth rib on the left.

On removing the sternum, which appears normal, both lungs retract. The right is gathered up at the vertebral column in its upper half, where it is adherent behind and at the apex. There it is puckered very much. Both pleural cavities are dry. The left lung weighs 325 grams: there are slight apical adhe-

sions and much anthracosis. The lung is fairly crepitant in general, with a few nodules of consolidation here and there, and on the surface there are some pseudo-tubercles. The apex is puckered with a thickened pleura, and there is a small caseous and fibroid mass. Centrally in the upper lobe are isolated tubercles, broncho-pneumonic areas, with purulent bronchitis, all well localized. There is a slight marginal emphysema. The lower lobe is anemic and dry, but otherwise normal. The bronchi contain slight muco-pus. The vessels are free. The peribronchial glands are pigmented and calcified. The right lung is much contracted and puckered at the apex, where it is alternately solid and emphysematous. The upper lobe on section has slight cavitation, with smooth walls and a few caseous flocculi. Around this are areas of tuberculous pneumonia with isolated tubercles and pus cavities. In the upper half of the lower lobe there is a small area of simple pneumonia, and near it a patch of tubercular pneumonia as well, each of the size of a filbert. At the lowest part is also another patch of simple pneumonia. The bronchi are filled with thick muco-pus.

The cerebral convolutions are of normal size. There is much cerebro-spinal fluid. The ventricles and substances of the brain and cerebellum are normal. Superiorly in front of the vermis cerebelli, and apparently attached to the pia, is a small bean-sized oval tumor, brownish gray in color, and varying in firmness, in some parts being fairly soft, in others calcified.

The retina of the right eye presents several recent hemorrhages.

The bone marrow of the femur is very red, looking like red jelly. There is very little evidence of fat. Cultures taken from the heart blood and pericardial fluid gave growths of the diplococcus lanceolatus; from the liver and left lung, staphylococcus pyogenes aureus and diplococcus lanceolatus. The spleen pulp remained sterile.

Remarks.—As will be seen from the above case report, the patient was suffering from advanced senile tuberculosis, and yet the subjective symptoms were comparatively slight, a condition which indeed seems to be by no means in the tubercular processes of the aged. In the present instance, persistent diarrhea and the grave anemia had rendered the physical condition so weak as to give the pulmonary symptoms far less prominence than might be expected under other conditions and in a younger subject. The presence of a blood condition, which is indistinguishable from that of pernicious anemia, is one which has long been recognized as a possible occurrence, though the association with retinal and meningeal hemorrhages is of more than usual interest. Hemorrhages into the meninges, so far as the literature indicates, seem to be particularly rare under such conditions.

It may, perhaps, be argued by some that the relative proportions of hemoglobin and corpuscles is not such as to warrant the application of the term pernicious to the type of the anemia, and yet Eichhört distinctly refused to acknowledge that in pernicious anemia there is necessarily a relative increase in the amount of hemoglobin. The most interesting feature perhaps, however, in the present case is the occurrence of tubercle bacilli in the feces, when no anatomic lesion in the intestines, suggestive of tuberculosis, could be found. The explanation is, however, obvious, the patient having swallowed the sputum which was maintained in such a condition as to render examination for tubercle bacilli a comparatively easy matter. The lesions found in the intestines presented absolutely no evidence of tuberculosis, the pigmented scars being in all probability merely old typhoid ulcers. The persistent diarrhea was obviously associated with the chronic colitis. The cerebral tumor present, while close to important structures, had evidently not attained sufficient size to present characteristic symptoms.

Medical Treatment of Cancer of the Stomach.—Much can be accomplished in relieving cases of this kind in which the physician is too apt to consider himself impotent. A suitable diet is of great assistance, A. Robin asserts in the *Bulletin gén. de Thérap.*, Dec. 13, 1896. It should include lean meat, tender fowls, gelatins, peptones and meat powders, to which can be added green and nitrogenous vegetables. All easily fermenting substances, such as bread, cheese, cabbage, kefir and sugar, should be strictly avoided and the stomach regarded merely as a passageway for the food, which is not digested at all until it reaches the intestines. Albumin and milk is usually digested with difficulty, and the latter is only indicated to increase the appetite, taken for a short while occasionally, in hematemesis and in incoercible vomiting. Three meals a day are enough, as the digestion is slow. The medical treatment is of course only

palliative. To increase the appetite give: 1. Condurango, taken as a tonic; 15 grams cortex condurango alb. are boiled down in water from 250 grams to 150, filtered and sweetened with syrup; a tablespoonful of this is taken fifteen minutes before each meal. 2. Strychnin (tinct. nuc. vom., tinct. fab. St. Ignat.). 3. Theriaca wine. 4. One powder ten minutes before each meal as follows: Ammon. chlorat. 0.15; natrii. bicarb. 0.26; pulv. Dover, 0.10. To assist digestion, have the patient sip a glass of a solution of 1.66 hydrochloric acid in 1,000 grams of water at the close of the meal, and during it take a powder: Pepsin, 0.50; maltin and pancreatin, aa 0.10. To diminish the amount of fermentations, prescribe sulf. sublim. or præcip. 0.15 to 0.20, or sulf. iodat. 0.25 to 0.50 in a powder at the end of each meal, or during the meal a large tablespoonful of a 1 in 300 solution of fluorammonium. To arrest vomiting, prescribe: 1.5 to 7 drops of the following solution, five to ten minutes before eating: Picrotoxin and morph. mur. aa 0.05; atropin sulf. 0.01; aq. lauroceras. 10.0. 2. A teaspoonful of a cocain solution (0.15 in 150 water), a teaspoonful chloroform water or aq. menth. 3. A vesicans over the stomach. 4. A suppository on waking in the morning made of pulv. opii. 0.10; pulv. fol. bellad. 0.02; butyr. cacao q. s. Hemorrhages can be combatted with ergot injections in severe cases, and in less severe, a tablespoonful of the following solution: Ergotin Bonjean, 4.0; acid gallic. 0.50; syr. terebinth. 30.0; aq. til. 120.0. Or, acid tannic 0.60; opii pur. 0.15; sacch. alb. 1.0; M. f. pulv. div. in dos. vi. One powder every four hours. To relieve the pains: For merely sensitiveness in the gastric region, apply locally, empl. diachyl. empl. theria. aa 5 parts; extr. bellad., conii, hyoscyam. aa 1 part; ammon. acetic. 2 parts. For severer pains prescribe one to four teaspoonfuls daily of the following: Ka. bromat. 6.0; morph. muriat. 0.50; aq. lanrocer. 10.0; syr. æther 30.0; aq. tilia. 120.0. For very violent pain, morphin injections loco dolenti. In pyrosis, prescribe magn. decarb. 0.60; opii pur. 0.02; bismuth subnitr. 0.20; natr. bicarb. 0.75. M. f. pulv. tal. dos. no. xx. For constipation order one of the following pills to be taken every evening before retiring: Aloes 2.0; resin., jalap-scammon, turpeth veget. aa 1.0; extr. bellad., hyoscyam. aa 0.15; sap. amygdal. q. s. M. f. pill. no. xxv. Treatment of diarrhea: Electuar. diascordi, bismuth. subnitr. aa 4.0; f. boli no. xx. One every two hours. Or, in case of violent diarrhea, a pill every six hours made as follows: Cal., pulv. ipecac and extr. opii, aa 0.01. The cachexia is best combatted by the administration of glycerin phosphates per os or subcutaneously; 5 to 6 grams of a solution of natr. glycerino-phosphoric. 0.20 to 20 water, injected each day. Robin has treated thirty-nine patients in this way and nineteen are still living; seven have gained in weight, among them patients from 50 to 72 years of age, who gained one to two kg. in the course of two to five weeks.

PRACTICAL NOTES.

Percussion of the Vertebral Column.—Bechtereff draws attention to the diagnostic importance of percussion of the sacral region in some cases, as shown by the following instance: A patient was admitted under his care with symptoms of compression of the cauda equina. There was plantar and perineal anesthesia, spontaneous pain in the joints, etc., pain on percussion of the sacral region and the sphincters were affected. The history was that the patient had suffered from a severe contusion in the lumbar region in falling from a horse eight months previously and for the last six months the symptoms had been gradually increasing, till at the time the case came under observation there was considerable hectic. On account of the grave condition of the patient and his severe suffering it was decided to perform laminectomy. This showed considerable caries of the sacrum with caseating material compressing the

cauda. After the operation the anesthesia and pain disappeared, but the condition of the patient prevented his ultimate recovery. The postmortem examination showed tuberculosis of the sacrum, suppurative prostatitis and tuberculous pyelitis. During life percussion of the sacral region gave a marked dull note, while in the healthy condition percussion of the triangular area which has for its base the upper part of the sacrum and for its apex the coccyx, should give a slightly resonant note. In the case just quoted the dullness corresponded exactly with the tuberculous mass which was found post-mortem.—*Gazzetta degli Ospedali di Milano*.

To Differentiate Appendicitis from Acute Catarrhal Salpingitis.—Vineberg notes that the pains are more violent in appendicitis but more strictly localized, without radiating pains, while in catarrhal salpingitis, especially if the ovaries share in the inflammation of the tubes, the pains radiate toward the thigh. The alarming symptoms also show a noticeable remission toward the third or fourth day, which is a useful point in deciding dubious cases, as the alarming symptoms in appendicitis may persist and increase in intensity. If differentiation is impossible, the patient should be examined in narcosis. The treatment of appendicitis should be prompt operation, while in salpingitis a waiting policy should be preferred, as it often heals spontaneously without the necessity of an operation.—*Gaz. d. Osp. e d. Clin.* February 11.

Tardy Traumatic Strictures of the Urethra.—Professor Bazy describes a case and quotes one other on record, in which the symptoms of stricture were preceded by fracture of the pubis forty and fifteen years previously. As the retention of urine was not complete, the idea of prostatism was rendered less probable, and in exploring the urethra the bulb could not be felt through the perineum, but only through the rectum. He considers this fact a valuable means to differentiate spasm of the membranous portion from stricture located in the remotest part of the perineum, and thus close to the membranous portion. In his case the bladder was two finger-breadths above the umbilicus, prominent and painful. With a No. 23 blade, he sectioned the stricture which seemed as hard as any gonorrheal or other premembranous stricture, and the section was absolutely bloodless. Evidently a slow process of sclerosis had terminated in the production of a stricture. The treatment was successful.—*Presse Méd.*, February 13.

Connection Between Lead Poisoning and Gout. The *Semaine Méd.* of February 13 contains a long study of this subject, showing beyond a doubt the intimate connection between gout and long-continued lead poisoning. The special characteristics of this form of gout are that the lead has produced pallor, anemia and emaciation, before the gout appears, while in other gouty subjects there is usually the appearance of good living and a tendency to obesity. In other respects the disease manifests itself in about the same way, and is treated alike in both cases, as what is good for gout also serves to eliminate the lead from the system. Hot and vapor baths stimulate nutrition and favor the elimination of the poisons, but sulphur baths are contra-indicated, as they are injurious in gout, increasing the formation of uric acid, as Bouchard has shown, although beneficial in saturnism. For internal medication, potassium or sodium iodid is indicated, in moderate doses, if the condition of the digestive apparatus allows their use. They favor the elimination of the lead through the kidneys, either by combining with it to form lead iodid, soluble in alkaline liquids, with a tendency to combine with the alkaline iodids and form a double salt, still more easily dialysable, or by promoting disassimilation, which is the end sought in administering them in gout. Anemia requires a tonic and invigorating treatment, but it must not be exaggerated. The state of the kidneys must be carefully watched, and if nephritis is discovered, it should receive the usual treatment, as there are no special indications

for this variety of renal atrophy. The prognosis depends upon the severity of the saturnism, and whether it is combined with a hereditary tendency to gout, when it becomes much more grave. Plumbers, painters, printers, machinists and all who handle lead are exposed to it, but hearty eating predisposes to it.

Direct Diagnosis of Hernia of the Diaphragm.—It is so difficult to diagnose hernia of the diaphragm, that only 7 out of 266 cases reviewed by Lachner were diagnosed *intra vitam*. Prof. E. Maragliano has rendered it much easier by his application of the Lieberstein method of insuflation of the intestines to this purpose. He describes a case of hernia of the diaphragm, preceded by a traumatism two months before, which had evidently weakened the diaphragm. An attack of influenza caused severe coughing and the hernia suddenly occurred with its attendant phenomena. After differential diagnosis, certainty was attained by insuflating the intestines rhythmically with a pump *per rectum*. The insuflated gas did not produce any increase in the endo-abdominal pressure nor upward displacement of the thorax, but the left thorax increased a centimeter in volume, and simultaneously with each insuflation a sound was heard in the fifth intercostal space, while at the back, the hypophonic area was smaller and higher. Auscultation also showed a murmur at a certain point in the left thorax. Further certainty was obtained by introducing an aspirating needle into the left thorax, connected with a syringe filled with a liquid, when the insuflated gas could be heard bubbling up in the liquid. A third test was made with liquid introduced with an ordinary syringe into the intestines, when an area of dulness was noticed in the left thorax, where it had been clear before. These tests produced such dyspnea in the patient that they were arrested as soon as the result was observed, but they were continued at length on animals, and the experiences confirmed. M. advises prompt surgical intervention in these cases, although many instances have been known in which the hernia produced no inconveniences, and was only discovered at the necropsy. But the danger of strangulation is always imminent, and he therefore recommends an operation.—*Gaz. degli Osp. e delle Clin.*, February 15.

Hemoglobinuria in Malaria.—Prof. G. Baccelli classifies the cases of hemoglobinuria accompanying malarial attacks into 1, those in which the hemoglobinuria is caused by the malarial infection and is cured, with the malaria, by the administration of quinin, and 2, those in which the hemoglobinuria is independent of the malarial infection and may be caused by the quinin administered. He ascribes it in these cases to an individual idiosyncrasy and states that clinical experience has shown that hemoglobinuria can be caused by the unnecessary administration of quinin, viz., without simultaneous malaria. These statements are based on his own, Tomaselli's and Murri's experiences, which he does not attempt to explain, remarking that hypotheses live but a day, while carefully observed clinical experiences last and are the constant source of the discovery of new truths. He adds that hemoglobinuria unchecked leads to hemodyscrasia, and always requires special treatment, whether it accompanies as a satellite the febrile process of malarial infection, of which it is a pernicious symptom, or whether it complicates a mild attack, originating independently of the infective cause, or whether it follows malaria, after a shorter or longer interval, appearing spontaneously or induced by even the smallest doses of quinin. Baccelli has found useful the administration of ferric persulphate, combined with inhalations of oxygen, and a strict removal of all the causes that, beside malaria, have been found to possess a tendency to produce hemoglobinuric phenomena. When the severity of the malarial attack requires intervention with quinin, he does not hesitate to use it, even although he may have well founded

fears that the hemoglobinuric phenomena of the fever may be increased by it. He has been conducting a series of experiments, administering quinin to healthy persons, to persons suffering with the various forms of malaria and with other diseases, and analyzing the quinin as it was eliminated in the urine. He has found that the quinin thus eliminated, while retaining its bitter identity, has lost its crystallizing faculty more or less completely and the shape of the crystals is noticeably different from that of the original crystals. This demonstrates that "the quinin has certainly lost something in its journey through the organism, but what? Can the action of quinin be of an electro-chemical nature? Mystery!" His experiments in administering this quinin derived from the urine to other patients with malaria, will be watched with interest.—*Gaz. degli Osp. e delle Clin.*, February 14.

Dual Infection in Diphtherial Cases and their Treatment by Two Serums.—Dr. C. C. Fite, in the *North Carolina Medical Journal*, January, advocates the use of both the anti-diphtheritic and the anti-streptococcic serum in cases of mixed infection. He says: "Marmorek and others have used anti-streptococcic serum in cases of diphtheria showing the streptococcus as well as the Klebs-Loeffer bacillus, also in scarlet fever, puerperal fever, general septicemias, infective tonsillitis, erysipelas and other diseases, whether due to, or complicated by, the appearance of the streptococcus pyogenes, and it seems as if it will prove of great value in other cases, perhaps in multiple abscess and in broncho-pneumonia, or, in fact, wherever the streptococcus is found as above stated." Dr. Henry Dwight Chapin has been giving some attention to its use in the two diseases last named. In reference to its use in diphtheria, I am firmly convinced that it is indicated in all cases where the microscope shows the streptococcus, and we almost invariably find it in cases which do not yield to the anti-diphtheritic serum and where we see a zone of inflammatory action extending beyond the area occupied by the true diphtheritic membrane. Therefore, if a case does not yield promptly to the anti-diphtheritic serum, we should, I believe, use the anti-streptococcic serum, without waiting for the report from the bacteriologist. The method of producing the anti-streptococcic serum is in the main a similar process to that used in the production of the anti-diphtheritic serum, or by injecting virulent cultures of the germs instead of the toxin. I am indebted to Dr. Charles T. McClintock of Ann Arbor for advice in regard to this matter. Dr. McClintock writes as follows: "As regards the difference in methods for producing the anti-diphtheritic and anti-streptococcic serum, I may say in general that the streptococcus, like a number of other germs, does not readily give off its toxin to the surrounding liquid. If you want to get the toxic properties of the germ, you must take its own protoplasm. On this account we are compelled to use the germs themselves, in order to successfully immunize an animal. The filtered toxins are not very powerful. This is the essential difference between the two materials. In the case of the streptococcus we use a living virulent germ in bouillon culture." There has been a great deal of good work done quite recently in this investigation of the anti-streptococcic serum, and I feel confident that we are near a solution of the problem. The New York Board of Health is having it carefully studied in the Willard Parker Hospital, and the great reputation and well-known ability of the scientific corps of this board and of the gentlemen composing the staff of the hospital is a sufficient guarantee that the work will be well done. The profession of this country owes much to Drs. Biggs, Park and Prudden.

Fat as a Factor in Hernia.—It is known that emaciation has a tendency to produce hernia, but J. Lucas-Championnière asserts that fat is still more important as a factor, and that it plays a preponderant role in the evolution of hernia and also in the everted conditions that follow radical operations. He empha-

sizes the fact that fat at the temperature of the body is not a solid but a fluid, and does not act like a stopper when an opening presents itself as it would if it were cold, but flows through it dragging other tissues with it, and tends to enlarge it. It also renders everything slippery, which favors the easy displacement of the viscera. Accumulations of fat also cause such pressure that the viscera are forced out of any chance opening. It also renders the tissues so friable that a radical operation has little chance of permanent success, and eventration is almost inevitable. For these and other reasons, presented in the *Journal de Méd. et de Chir. Pratiques* for Sept. 10, 1896, he urges the importance of seeking for traces of impending hernia in persons either young or old, who are acquiring obesity at a rapid rate so that they can be treated at an early stage, and also emphasizes the necessity of reducing the obesity. Even in inoperable cases, he has rendered life endurable by reducing the obesity, which combined with the inconveniences of the hernia made life a burden. The obesity should also be carefully reduced as a preliminary to a radical operation. He describes one obese case in which three months of preparatory treatment transformed the patient, until she was able to undergo a two-hour operation that restored her to complete health. The treatment in this case was, decrease in the amount of liquids taken, especially with the meals, a mixed diet, excluding nitrogenous substances almost completely, regular exercises and massage (massage of the bowels alone excepted). The medication included the administration of Santenay lithiated water, as much as three glasses a day, small interrupted doses of potassium iodid, and the administration of thyroïdin, most carefully watched. He considers regular exercise of the utmost importance in preventing hernia and as post-operative treatment, avoiding merely those gymnastics that suspend the body from the arms, and high leaps. Exercise is especially indispensable after severe abdominal operations, when the long repose in bed and the generous diet predispose to accumulations of fat. Regular exercise is not productive of hernia which are due to sudden violent shocks, or extreme efforts in defecation or coughing. He warns against an excessive meat diet and the use of alcohol in tonics or any form, as fat-producing. His experience of hernias has been extensive, as in 1894 he published a report of 275 radical operations. He concludes his vigorous denunciation of fat as a cause of hernia, with the remark that the sole advantage of fat in the matter of hernia is that it makes the wearing of a truss or bandage more endurable. His method of administering the potassium iodid is 25 centigrams a day in an aqueous solution, for two months, and resumed again after suspending it for two months more.

Ambulatory Lobar Pneumonia.—Dr. Gordon Campbell reports in the *Montreal Medical Journal*, January, a fatal case of this rarely observed affection. In hospital practice, where the great bulk of patients come from the poorer classes, it is not unusual to meet with acute pleurisy with effusion in the out-patient department. Several times I have been consulted for "shortness of breath and slight cough" of a few days' duration and found one pleural cavity almost completely filled with fluid. Pneumonia, or at least that form which sets in abruptly with a severe chill, met with during adult life is extremely rarely encountered in an out-patient hospital practice. The following are briefly the particulars of the case:

N. M., aged 49, a wood carver by trade, came to the clinic of the Montreal General Hospital on October 23, complaining of cough with slight expectoration and general malaise. Inquiry into the history of the disease revealed the fact that it had been induced by a severe wetting which he got on October 18. On the morning of the 19th he rose as usual at 4 A.M., but shortly after he had a severe chill lasting one hour and followed by pain in the side. During the day he took to bed, and at night cough and expectoration set in. During the 20th he

remained in bed, but on the following day got up and sat about the house, not feeling quite able to go to work. On the 23d, feeling that he was not improving, he came to the hospital, a distance of over a mile from his home, and walked a part of the way. The personal and family history contained nothing of interest. He had been a hard drinker in his early manhood, but had been temperate for a number of years. On examination the temperature was found to be 101.5 degrees, the pulse 120. The right lung showed dulness from the spine of the scapula down, and at the side and front, corresponding very closely with the lower lobe. Over the dull area there was intense dry, blowing breathing and bronchophony. The vocal fremitus was slightly if any increased. A diagnosis of acute lobar pneumonia was made and the patient advised to remain in the hospital. To this, however, he demurred, not feeling, as he said, that he was "ill enough for it." After the grave nature of the disease was explained to him, he consented to be admitted, but insisted on going home first, which he did. The same afternoon he was admitted to the hospital. The temperature shortly after admission rose to 103 degrees, and remained between that and 101 degrees until death occurred on the tenth day of the disease. The expectoration was rusty, viscid, and contained pneumococci. The urine contained no albumin. On the 26th, two days before death, an area of consolidation was detected at the base of the left lung. The autopsy revealed acute lobar pneumonia, total gray hepatization of the right lung with commencing red hepatization of the left lung; acute bronchitis; chronic right and acute plastic left pleuritis; old apical tuberculosis; spleen large and firm; "hog's back" kidney with mixed nephritis and some fatty degeneration; slight cirrhosis of the liver; very marked dilatation and hypertrophy of the heart; polypoid white thrombus of the right ventricle and slight pulmonary embolism.

Asepsis and Anesthesia in Urethral Surgery.—Dr. John A. Wyeth, in the *New England Medical Monthly*, January, treats of the modern technic of urethral surgery, noting that two important branches of the subject are worthy of closer attention than they commonly receive. The first and most important is urethral asepsis. A urethra which is about to be incised should be made sterile, if this is possible, and the urine of such a patient should always be sterilized at least twenty-four hours before the operation, and should be kept sterile during the time of treatment. We recognize the fact that the so-called "urethral fever" is a form of septic infection. The administration of twenty drops of a mixture of 1 drachm of salol and 2 drachms of oil of gaultheria, three or four times a day, will sterilize the urine within twenty-four hours. "It is also claimed that the administration of boracic acid, 5 grains four or five times a day, will effect the same result, but I have used the first formula with such satisfaction that I have never tried the boracic acid. We are indebted to the late Prof. E. R. Palmer of Louisville, Ky., for popularizing this important point in treatment. In addition to this, the urethra should be irrigated with permanganate of potash, 1/3000 for five minutes before the operation, or it should be thoroughly 'ballooned' with this antiseptic solution by using the ordinary conical syringe introduced at the meatus, and the canal thoroughly distended with the fluid. This should be repeated three or four times, and a sufficient pressure employed to overcome the resistance of the cut-off muscle, in this way reaching the entire canal. The second point is the question of anesthesia. The vast majority of all strictures of the urethra can be treated practically without pain with cocaine anesthesia. From the meatus to the cut-off muscle, the urethra can be anesthetized by using from 1 to 3 drachms of a 2 or 4 per cent. solution. I give varying quantities and strengths of solution, because no given prescription would fit every case. It is my rule to study carefully the susceptibility of every new patient to this agent, and disregard of this rule has given the unfortunate results

that now and then find their way into the journals. When the entire urethra is injected, 1 drachm of a 2 per cent. solution should first be employed, and the degree of susceptibility of the patient, as well as the anesthetic effect produced, can be ascertained in five or ten minutes. If the anesthesia is incomplete and the patient shows no susceptibility to the drug, another drachm of the same or a stronger solution may be injected. It is also very important to remember that a patient is much more susceptible to the absorption of cocaine when it is employed for the introduction of sounds for the first few times after, than at the time of the operation, for the simple reason that an incision, more or less extensive, has been made, which incision is covered with granulation tissue, rich in capillaries and ready and capable of absorbing under pressure a considerable quantity of cocaine. Anesthesia of the membranous portion of the urethra may be obtained by carrying the Keyes-Ultzman syringe point down to the cut-off muscle, pushing it slightly within, and injecting 10 to 15 minims of a 4 per cent. solution. Anesthesia beyond the cut-off muscle is practically impossible, for the reason that the urine is in contact with this part of the urethra and so dilutes the cocaine as to make it practically inefficacious. In meatotomy a few crystals applied just within the meatus or 10 minims of a 6 per cent. solution injected, limiting the application by digital closure of the canal one inch behind the opening, will effect complete anesthesia in division of the meatus or of an organic stricture here."

Prevention of Hemorrhage in Operations on the Liver.—A couple of Russian surgeons, Kousnetzoff and Pensky, have been experimenting with a view to find a process that would enable the liver to be resected without danger of hemorrhage. They now announce in the December *Revue de Chir.* that they have succeeded experimentally and in attempts on cadavers, and prophesy that ablation of large tumors and resection of part of the hepatic parenchyma will soon enter into current surgical practice. They find that ligature of the mass of the liver, slowly and firmly drawn tight, closes the lumen of the vessels, and thus prevents hemorrhage. After chloroform the peritoneum is opened and the lobe of the liver drawn out through the wound. A row of ligatures is then made through the liver, with a blunt needle and a double silk thread, the entire length of the piece to be removed. A sharp needle would injure the vessels and produce hemorrhage, possibly. The needle is pushed into the mass of the liver and drawn out the other side. It is thus passed through the substance of the liver several times, a few centimeters apart. The holes made by the needles each contain therefore two threads, the ends extending out above and below. The nearest threads in the different holes are then tied together; one thread in a hole thus acts on the hepatic substance to the right of the hole, and the other to the left. When these ligatures are drawn tight, the piece to be resected in front or back of them is then removed. If the ligatures have not been drawn tight enough, some vessels will bleed, when they must be separated and pulled up out of the parenchyma with a pair of Péan forceps and tied with a silk thread, or the surrounding tissue compressed with an intervening ligature. Compresses of gauze should be applied to control hemorrhage of the parenchyma. In secondary hemorrhage the bleeding surface may be thermocauterized after the row of ligatures has been made, but this is unsatisfactory and usually the vessels have to be tied finally. But hemorrhage rarely occurs if the ligatures through the hepatic mass have been drawn absolutely tight. After the ablation the hepatic stump is sutured to the edge of the abdominal wound, or the great omentum can be sutured to the cut surface of the liver or the stump can be put back into the abdominal cavity and the walls closed with a suture in three stages, after dressing with collodion gauze. This means of hemostasis is almost invariably successful; it can be sup-

plemented by suturing the edges of the wound in the liver together, after interposing a gauze tampon, leaving the end of the tampon protruding from the cutaneous wound, and removing it in a few days in one or two sittings. Mikulicz has treated a case of syphiloma of the liver in this way with great success. Experience on the cadaver shows that the most convenient cutaneous incision is parallel to the arch of the false ribs, one or two finger breadths below, 10 to 15 cm. in length, starting at the right parasternal line for the right lobe, and at the median line, swerving to the left, for the left lobe.

Surgical Intervention in Tuberculosis of the Kidneys.—Tuffier reports fifteen operations performed on the kidneys for tuberculosis, about a tenth of his operations on these organs (152 in all), in the course of the last eight years. He only operates when all medical treatment has been found ineffective, and considers the three principal indications: intense hematuria, pains and evidence of infection and intoxication. Benign hematuria does not require intervention, but only severe cases, with sufficient loss of blood to weaken the patient to a dangerous degree. He has operated twice under these conditions. The first was a woman of 42, with dangerous crises of hematuria and consecutive anemia, on whom he performed nephrectomy. The ablation of the left kidney disclosed a number of tuberculous abscesses in the parenchyma. The patient has never had a recurrence of the symptoms and when seen three and a half years afterward was in perfect health. The other case was a woman of 20, with severe hematuria for three years previously. After lumbar incision, and the discovery of a voluminous kidney, he performed nephrotomy, and the patient continued eighteen months without a recurrence of the trouble. Since then she has had slight returns of it at times, but not enough to warrant another intervention. He has performed four operations to relieve excessive pain. The first case was a woman, whose sufferings had much reduced her. The kidney was found riddled with tubercles and removed; the ureter seemed intact. She recovered finely and when seen five years later was still in perfect health. One peculiarity of this case was the sudden appearance of obesity after the operation, which assumed such proportions as to be actually pathologic, as also occurred with another patient. This condition gradually passed away. The second operation to relieve pain was performed on a young Russian woman, who had been examined by Billroth of Vienna, Wood of London, and Erb, who at first all ascribed her troubles to neuralgia, and later to lithiasis, as did also Senator and Israel at Berlin. Finally Gennes discovered the Koch bacillus in the urine, and Oertel at Munich and Czerny confirmed the diagnosis of tuberculosis and advised an operation, after the whole range of local applications had been tried in vain. Her renal pain was so severe that it was impossible for her to walk, and there were also frequent desires to urinate. Morphine alone relieved her. The pain dated from a fall in 1892, after which she had suffered from the pain in the kidneys, with frequent crises, becoming worse and worse. Tuffier performed nephrectomy by the lumbar route, January, 1896, freeing the patient from her troubles. The ureter was found dilated and granulous, and by the end of the year the desires to urinate returning, she consulted Israel again, who found by cystoscopic examination a tuberculous patch at the entrance of the ureter, showing descending infection. A third patient was operated and restored to health except for a slight frequency of mictions and trifling hematuria. When a calculus forms the pain is atrocious, and in one case had driven the patient, a former pupil of his, to morphinomania. The calculus was the size of a large nut and was found in the lower end of the ureter. The suffering had undermined the patient's health to such a degree that he did not long survive the operation. Tuffier has performed nine operations to relieve the accidents of tuberculous pyelonephritis, acute or chronic, but these operations are merely palliative and with the sole hope of affording temporary relief. They emphasize anew the importance of operating at once when the diagnosis has been established with certainty. He advises nephrectomy as preferable both in the hematuric and painful variety. His experience certainly demonstrates the existence of primary renal tuberculosis, which some have denied; and the perfect health of some of his patients operated four, five and six years ago, is conclusive evidence of the value of intervention in these cases.—*Presse Méd.*, January 9.

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SATURDAY, MARCH 20, 1897.

CARDIAC DISTURBANCES AS THE RESULT OF
EXHAUSTION.

While physicians and pathologists are well acquainted with the clinical and pathologic changes which take place in the heart in cases of true disease, we know very little about those alterations in its nervous and mechanical government which result very often in serious functional disturbances, and some of the most troublesome and puzzling cases which we have to treat occur in patients without apparent grave organic valvular or myocardial disease, but who nevertheless suffer from cardiac disorders with palpitation and a sense of oppression and precordial discomfort. Quite thirty years ago, attention was called to at least one type of this condition by Dr. J. M. DA COSTA, who described it under the title of "The Irritable Heart of Soldiers," but although we in this country have not a sufficiently large military force to bring us in contact with persons whose hearts have been strained by the severe exertions of military life, active practitioners constantly see persons who have over-exerted themselves in athletic games, presenting symptoms of cardiac disorder which follow out in every respect the symptoms described by DA COSTA. In some of these cases any exertion develops very marked over-action of the heart so that it beats violently against the chest wall. Its sounds are exaggerated and its impulse is diffused. In other cases the action of the heart may become unduly feeble, yet the age of the patient, the condition of his blood vessels, showing an absence of degenerative changes,

and the absence of any history of infectious disease, prevent us from considering that there is degenerative change in the heart muscle.

Our attention has been recently called to this matter once more not only because we have had under our care several cases of this character occurring in young men who have been engaged in foot-ball under excessive training or no training at all, but also by a brief article in the *Journal des Practiciens* for Feb. 13, 1897. In this article it is pointed out that on the continent of Europe palpitation of the heart in soldiers and also in civilians is frequently met with. It is usually associated with nervo-vascular disorders, with over-action of the heart and sometimes conditions of asystole. Two chief factors are supposed to underlie these conditions of cardiopathy; the first of these is excessive fatigue when the heart and other portions of the body are not accustomed to over-exertion, particularly if the fatigue is continued over a considerable period of time. Probably in these cases there is both dilatation and hypertrophy. Other causes which have been considered as pathogenic have been grouped together in three theories; the first theory is the mechanical one which expresses the belief that the condition of the heart is solely produced by the mechanical strain thrown upon it; the second, or the chemie theory, rests upon the opinion that the excessive labor produces a toxemia which acts deleteriously upon the heart; and the third theory is that there is an inflammation of this viscus. Certain it is that in a number of cases there is an excessive accumulation of blood in the right cavities and in the venous circulation, associated with insufficient oxidation of the blood and the constant accumulation of poisonous materials in this fluid. Thus SEITZ and CURSHMANN believe that the accumulation of sarcolactic acid and carbolic acid is very considerable under these circumstances and in addition we must remember that the valves of the heart are strained by such excessive endeavors. It is supposed by some French authorities that the accumulation of these products exercises a very deleterious influence upon the tissues, an influence similar to that produced by the poison of typhoid fever. The symptoms of heart-strain have been divided by other authors into several classes: First, those in which there is arrhythmia, palpitation or intermittence. Second, those in which there is congestion, hyperemia, myocarditis, hypertrophy, dilatation and fleeting valvular murmurs. Third, those in which there is a myocarditis and endocarditis definitely developed, with permanent murmurs and marked cardiac feebleness. Associated with these symptoms we find in the first class loss of appetite and weight, that the patient is pale, and easily fatigued, has various pains darting and otherwise, and altogether is in a condition of asthenia. In the second class, for the more grave forms that we have men-

tioned the lassitude is extreme; there is pain in the muscles and in the joints, and general depression; digestion is embarrassed; the tongue is coated; the patient is sleepy, has a poor memory and a feeble walk, and dislikes exertion. There may also be precordial pain, some edema about the ankles, with albuminuria and even a slight degree of fever, with dyspnea and small pulse and profound adynamia. Murmurs can be heard in the heart and are usually widely diffused.

The treatment of such functional troubles consists in absolute rest, the use of cardiac tonics and an exceedingly gradual return to active muscular movements.

RECENT INNOVATIONS IN MEDICAL INSTRUCTION.

The last generation has witnessed marvelous advances in methods of medical instruction, practical demonstrations having gradually displaced merely didactic teaching, and laboratory and clinical work superseding wherever possible the ordinary lecture. Within this period of time too the various special departments of medicine have grown up and the demands upon student and teacher are today much greater than ever. The obviously crowded state of the profession, the lengthening of the period of study, the requirement of State examination and other considerations of allied character seem not to deter increasingly large numbers from taking up the study of medicine and the continual organization of new institutions of teaching.

The medical profession of the United States owes a debt of gratitude to the city of Philadelphia for a number of reasons. In the first place, Philadelphia is the birth-place of the AMERICAN MEDICAL ASSOCIATION. That city has besides furnished some of the most brilliant names in the annals of American medicine, and indirectly through its schools it has provided the country at large with a considerable number of able, conscientious and faithful practitioners and teachers. Philadelphia has also contributed very generously to medical literature. More recently it has distinguished itself by the introduction of several new features in medical education, of which we shall speak briefly.

To the observant critic it will be admitted that the true spirit of medical progress still holds sway in Philadelphia. Though a number of other cities have entered into active competition for the first place Philadelphia still occupies a leading position as a medical center. Her publishing houses turn out annually more medical works than do those of other cities; her medical men write as liberally, if not more liberally, than the medical men of other cities; her medical schools stand upon the highest educational plane and their graduates compare favorably with those of other schools; her College of Physicians possesses, next to the Office of the Surgeon-General of the United States Army, the largest medical library in

this country; and finally she has not been backward in original investigation. The occasion seems opportune to speak of a few of these things. In this connection we would refer first to some facts in connection with the development of the University of Pennsylvania in the past decade. Each year sees the organization of new departments, the extension and strengthening of old courses and the erection of additional buildings in response to the increased demands for a higher and still higher plane of general and medical education. The University possesses one of the first laboratories of hygiene established in the United States, which is doing excellent work both on its own account and in the education of hygienists who take up similar work in other institutions and in other cities. From the only recently established Pepper Laboratory of Medicine a series of original investigations is emanating and a corps of scientific investigators is developing that promise to do credit alike to Philadelphia and to the entire medical profession. All of the other Philadelphia medical colleges also have made strides, as evidenced by the erection of new buildings, the establishment of new courses and the lengthening of the period of study and of collegiate attendance, etc.

In post-graduate instruction also Philadelphia occupies an enviable position. Her Polyclinic, with its large hospital and enormous dispensary service, its numerous corps of instructors and its wide range of facilities, is affording an opportunity to graduates in medicine that will in time remove all excuse for want of expertness on the part of any practitioner in any branch of medicine, however remote from the so-called medical centers. Two innovations recently introduced by this institution seem deserving of especial notice. The one consists in the establishment of an instructorship for anesthesia and the appointment of a competent official anesthetizer whose duty it shall be to administer anesthesia whenever necessary and to instruct the student physicians and resident physicians in the practical application of this important procedure, as well as in methods of resuscitation, etc. Of the deaths and other accidents that occur during or following the administration of anesthetics a certain number at least must be attributed to faulty administration from want of training and practical knowledge on the part of the anesthetizer, perhaps sometimes from inattention and carelessness. The placing of this indispensable therapeutic procedure upon a legitimate and dignified basis commensurate with its importance and the recognition of the responsibilities attached to it, as exemplified by this action of the Polyclinic, will without question do something to make anesthesia safer, simpler and even more useful than it has been. The second innovation made by this school consists in the establishment of a lectureship for defects of speech, probably the first department of its kind in the United States, if not in

the world, with clinical facilities, etc., and the appointment as lecturer of one especially fitted by training and experience for this special work. The profound influence that speech defects are capable of exerting upon the life and usefulness of an individual is so obvious as scarcely to require elaboration at this place. Some of these defects are due to anatomic causes; others are of purely functional character. In both groups of cases intelligent training and persevering education, preceded if need be in the one group by appropriate manipulative or surgical interference, are capable of yielding remarkable results, as has already been demonstrated. The placing of this subject in this manner upon a proper scientific basis must be viewed as a distinct advance in medical education.

In Roentgen photography excellent work is being done in Philadelphia and students are afforded the opportunity of receiving instruction in diagnosis by this new means. Many of the hospitals possess their own equipment, and ready and willing assistants demonstrate daily the practical utility of this most important discovery. In the laboratory of the Philadelphia Polyclinic the presence of particles of steel in the vitreous body has for the first time, we believe, been detected with the aid of the X-rays. In the University of Pennsylvania improved methods have resulted in vastly shortening the period of exposure, so that skiagraphs can be made almost with the same readiness and celerity as ordinary photographs, and some important original observations upon the physical nature of the rays have been made.

The few facts thus somewhat indiscriminately thrown together will tend to show that Philadelphia, while not aspiring to metropolitan distinction, still holds a foremost place in the matter of medical education and sustains her established position as a medical center. That this is not mere idle boast we feel sure the coming semi-centennial anniversary of the AMERICAN MEDICAL ASSOCIATION will amply show. The welcome of a mother to a long-absent child is not more cordial than will be that of Philadelphia for the members of the ASSOCIATION that was organized in her midst fifty years ago and in whose welfare and advancement many Philadelphians have maintained an active and consistent interest. The members of the AMERICAN MEDICAL ASSOCIATION may rest assured that at the coming meeting in Philadelphia they will be made to feel not only that they are not among strangers, but that they are the welcome guests of brothers and sisters in one large harmonious family.

In addition to the regular sessions of the ASSOCIATION and the usual entertainments steps are being taken to provide a series of clinical and post-graduate demonstrations during the week preceding and that following the meeting. All in all, the coming reunion promises to be the most notable in the history of the ASSOCIATION.

COMPARATIVE ANATOMY EXHIBITS IN WASHINGTON.

No other place in the country has a finer collection of specimens illustrating the morphologic representation of form met with in the organization of the animal body than is to be found in the museums of the National capital. Disciplinary scholastic requirements now place zoöatomy side by side with anthropotomy, and the student of the present, whether intending or commenced, can not ignore the practical relativity of these two branches to the science of medicine. By way of preliminary work, most tutors agree that one's anatomic foundation should begin at least with the amphioxus and ascend the zoölogical scale. Indeed, one of the best German anatomists averred to the writer that a medical student should not attempt the human skeleton until he is thoroughly familiar with the osteology of the alligator. We may say further, that he should go back to the remotest physical basis of life: thence working up to the vertebrates, and through the embryology of the horse, for instance, he may gain sufficient insight into the phenomena of ontogeny and thereby acquire a training in the healthy use of his speculative faculties that shall enable him to begin to investigate the material substratum of the human body. Another claim for the study of the comparison of the organization of animals with that of man, is that it develops common sense and fixes the scientific habit of mind.

Properly speaking, the special domain of compared anatomy lies in the comparison of apparatus and organs in the series of beings, as well as the comparison of animals among themselves and with man. Being the foundation of all zoölogic classification, it has come to be recognized that the character of any good distribution of animals should be drawn from the particulars of their organic make-up rather than from any other consideration. Thus we have come to define the whale as a quadruped. Though fish-like and of essentially aquatic habits this animal is a mammal, has rudimentary femurs, a four-chambered heart, and the blood globules common to quadrupeds.

In addition to the aid to the anatomist in studying the organs in the series of transformations throughout the animal kingdom, physiology draws useful deductions from this study, and the comparative method also teaches that ideas formed at first sight often require to be reformed: for instance, the notion derived from human anatomy that serous membranes are shut sacs does not hold good in other animals, for the peritoneum, pericardium and plenra are not always closed sacs, as we see in some of the animal series where the texture and epitelial investment of these membranes are more essential characters than their imperforation.

The display of stuffed specimens in the National

Museum, though quite complete and intended for pedagogic purposes, is more useful to the zoölogist than the anatomist. It is rather to the osteologic exhibition that we turn for comparative purposes. Here one finds ample materials for studying the osseous system paleontologically and otherwise in the faithful images of organs represented by saurians from Pennsylvania marl pits, mammoth remains from Alaskan ice cliffs, along with most of the existing forms, upon all of which are impressed constancy of type and variety in modification.

The study and arrangement of many of these objects of biologic interest leads to the diverse paths of correlation and subordination of development, analogies and homologies, to transcendental anatomy, and to other convenient abstractions that the classification of the sciences has rendered necessary.

It is to be regretted that there is no positive fixed classification of these collections nor even a short descriptive catalogue to point out to the student even in a conjectural way the connection of many of the groups to other branches of science. Perhaps the authorities in charge of the collection may look upon the material as that of a building which there is no immediate need to begin for fear of having to tear it down later owing to vicious or faulty construction. Say what we may, however, as to the utility of such collections and of the questions of induction and generalization they introduce into science, the practical physician sees that the consideration of many things in comparative anatomy touch upon points of embryology, therapeutics and toxicology.

Without going into details we know that many of the lower order of animals are subject to the same diseases as the human species. Monkeys and other animals have rickets in confinement, while tubercle is common in pigs and cows. Among the specimens of the Army Medical Museum are the head of hydrocephalic calf, an osteo-sarcoma from a bull and from a horse, and a large collection of urinary calculi from the latter animal. There is also a series of cancer specimens from the dog; a horse stomach showing rupture and parasites; the heart of a horse with cardiac hypertrophy, and the mesenteric artery of a horse showing verminous aneurysm.

Nor is the question of immunity without a ray of filiation to the subject in hand. Recent bacteriologic experiments show the immunity of animals to typhoid fever; some are susceptible to anthrax as mice, but rats are exempt; tubercle is extremely rare in sheep, goats, horses, asses, and in most animals of active habits; guinea pigs are most refractory to pneumonia; rats, mice, guinea-pigs and rabbits succumb to plague, but pigeons do not, though this has been questioned; glanders and farcy are communicable from horse to man; and tumors in animals are histologically identical even in fishes.

We therefore can not survey the great field of biologic science without seeing how such ideas as the foregoing bear upon medicine both theoretically and practically, and how they have helped to shape the mind of the great exponents of evolution as well as that of the humble practitioner.

HYPNOTIC INFLUENCE AND CRIME.

About two years ago, there was tried in the State of Kansas a case that excited considerable general interest through the country, inasmuch as it was one of the first in which the plea of hypnotic influence had been employed by the prosecution in the criminal courts. The result made it still more notable; instead of the plea being ruled out by the court, it was employed with such effect that the prisoner was convicted and sentenced to death for "suggesting murder," while the actual homicide, whose trial came later, was acquitted. It is said that the frequently repeated assertion of the prosecuting attorney that "this big man, ANDERSON GRAY, had a hypnotic influence over this little boy," frequently repeated, though with no more basis of truth than any other possible invention of an unscrupulous lawyer, had such an effect as to carry away the imagination of the jurymen and to bend all evidence in this direction.

The case attracted much attention at the time and was variously commented on, though generally with condemnation, as an extreme application of a theory not even generally accepted by those competent to judge its worth. Hypnotism was then still in the stage of a popular fad, though medical interest in it was on the decline, and these Kansas farmers doubtless felt that they had the support of scientific opinion in their verdict. It was an excellent example of the truth of the adage that a little knowledge is a dangerous thing, and that Kansas was saved the disgrace of a judicial murder is only due to the delays in the carrying out of the verdict. The victim's friends were active, the public gradually realized that an unwise thing had been done, and to complete the case, the leading witness for the prosecution, the actual homicide, who had been acquitted of the murder on the ground of self-defense and not apparently on that of hypnotic influence, finally confessed that he and his wife had given false testimony, and the last act of the late retiring Governor MORRILL, was to sign a pardon of the innocent victim of pseudo-science.

The case is a hard one for the unfortunate who has been deprived of liberty and fortune and has been so long under an unmerited stigma of murder. It has its public use, however, as an example of what ought not to be done, a warning against the unscrupulous and ignorant use of medical facts and theories in cases involving human life and liberty. If GRAY had been executed, perhaps the moral would have been the same in the end, but there would have been then

more of a tendency to suppress the facts, and some of them might never have come to light in such a way as to demonstrate, as has now been done, the absolute falsity and fatuity of the hypnotic plea. It seems hardly creditable to the Kansas administration of justice that one man could be convicted on the plea of having exercised hypnotic influence for causing a crime, and the party whom it was claimed was thus influenced be afterward acquitted on entirely different grounds, without apparently any stress being laid on the alleged fact that was the sole or principal issue in the earlier trial, and without, at least, a prompt reversal or pardon.

In our editorial of February 16, 1895, commenting on this case the JOURNAL said:

"It will be seen, therefore, that no new psychical elements are introduced into the problem, but the old ones of criminal surroundings and environment which furnish the motive for the commission of all crimes. The logical deduction from these premises is that hypnotism as a defense for crime can have no standing in a court of law; that the commission of crime is as much determined by the moral character of the individual in a hypnotic state as it is in his waking moments."

The sequel of the GRAY case is a striking corroboration of the correctness of our views expressed at the time.

The result will be to discredit future resort to the plea of hypnotic influence as an accusation or a defense, and for this the country is the better off. It lessens the chance of what might be, if certain extreme theorists were to be believed and their views accepted by the courts and the public, a real danger in the administration of justice. It may be that this peril is a very remote one, and that we have safely passed the second cycle of human credulity as to hypnotism; but the outcome is fortunate nevertheless.

A NEW MOTTO FOR THE "RECORD."

The *Record* in a belated article on the Wisconsin Eclectic Medical College proposes a new motto: "Let us have no Diploma Mills in the Capital City of the AMERICAN MEDICAL ASSOCIATION." The *Record* is entirely welcome to any kind of a motto its Editor thinks he needs. Our valiant friend always does better when he has some back-number literature to fight about, and if a motto of this kind is essential to greater New York and the still greater SHRADY, let him print it in red ink at the head of his columns and sail right in. By the way, we printed last week a full account of the downfall of "Dr." RUTLAND and his bogus college, and several times we have published exposures of RUTLAND's mill, but the *Record* did not find it out until the matter had ceased to be news to everybody but the unfortunate readers of the *Record*.

One other charming custom of our sweet and graceful contemporary is the confidence game it continues to play upon its patrons by the announcement "[seventy-six pages in this number]" constantly

displayed on its front page. In the number for February thirteenth, we notice that forty of the alleged "seventy-six pages in this number" were advertisements, of the publishing firm owning the *Record* and others. The poor old thing is apparently compelled to resort to desperate straits—nothing suits it—it frets about the editorials in this JOURNAL, about the Code, about Secretary ATKINSON, and about other matters. In fact we are beginning to think, and the thought pains us beyond expression, that we are not suiting the *Record*; that the ASSOCIATION itself will fall under its once mighty displeasure if something is not done quickly to quiet its nerve.

"Quick! Some civet, good apothecary!"

THE MISSION OF THE "MEDICAL RECORD."

The persistent attacks of the *Medical Record* of New York upon the AMERICAN MEDICAL ASSOCIATION, lead us to look into the matter, with a view of determining the motive underlying them, and taking the most reasonable explanation of its course that offers, we are impelled to the conclusion that the *Record*, reading the handwriting on the wall, and knowing that the healing of the old dissension on the Code question would make it no longer a potent factor as a leader, deliberately seeks quarrels and promotes discord. Should the New York State Society and the Association heal their differences, and once more come into the AMERICAN MEDICAL ASSOCIATION, there would be no market for the embroiling paragraphs of the *Medical Record*, and its peculiar mission as a promoter of discord and dissension would be ended. This is contrary to the business interests of the manufacturers of the *Record*, and consequently we observe ebullitions from time to time in the columns of our great and frequently good contemporary. We have been told that the editorial sanctum of the *Record* was usually kept at a temperature of -13° F., but when some trembling slave of the mighty incumbent, through inadvertence, mentioned the name of the ASSOCIATION, the air became blue with exelamation points, and the temperature rose to 212° F., with incredible speed.

ACCESSION TO THE NEWBERRY LIBRARY.

Prof. NICHOLAS SENN on Saturday last cabled to Berlin a telegram authorizing the shipment to the Newberry Library of the entire collection of the late Prof. DU BOIS-REYMOND of Berlin. This collection consists of 14,000 bound books, mostly on physiology, and a proportionate number of pamphlets.

It will be remembered that the former generous donation of Professor SENN to this library consisted of the BAUM Library mostly surgical. This will add to the SENN collection a complete physiologic library equaled probably by few if any in the United States,

and it goes a long way toward putting the Newberry in the front rank of medical libraries.

The generous act of Professor SENN is one which will still further entitle him to the gratitude of the medical profession of Chicago and indeed of the profession in general, for bringing these two famous collections to America.

THE MAYORALTY CONTEST IN CHICAGO.

The Democratic platform says among other things: "We condemn the appointment of health commissioners made by the present Republican administration and declare for the selection of a physician to fill such office." The Republican candidate for mayor says that he will not appoint any incompetent person to any office. So that it is not at all probable that the lay-commissioner-business-man health officer will be a factor in the affairs of the city government after May 1, 1897.

TRANSACTIONS AND JOURNALS WANTED.

We have an inquiry from Berlin asking rate at which we can supply a complete set each of 1, The Transactions of the AMERICAN MEDICAL ASSOCIATION; 2, JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. Any of our readers having a complete set of either for sale, will confer a favor by addressing this office and naming price.

CORRESPONDENCE.

Acute Otitis Media.

CHICAGO, March 16, 1897.

To the Editor:—In the JOURNAL of Feb. 27, 1897, a paper appeared on "Otitis Media" by Merrill Hopkinson, M.D., of Baltimore. After having favorably referred to Dr. Pierce's paper on this subject (JOURNAL Dec. 19, 1896) he disagrees with the latter especially as regards treatment, on account of an experience he had in his own person. Dr. Hopkinson was suffering from an acute otitis media produced by using a nasal douche in a "mild attack of post-nasal catarrh." Dr. H. should have known of the violent protests against the use of the nasal douche in every little affection of the nose. The only one indication for this procedure is the removal of crusts in ozena. Even there it is not fair to let a patient use it until the physician is perfectly convinced that it is well applied. After the douche the nose should be cleared only by snuffing the crusts back into the pharynx and spitting them out, never by blowing; this produces only negative, not positive, pressure in the nose and nasopharynx.

In consequence of this 50 per cent. glycothymolin douche an inflammation of the middle ear made a hasty appearance, which the doctor tried to check with instillations of cocain and atropin. What was the reason for this? Did he expect that these drugs would be absorbed through the epidermis of the external meatus? And even if they were, would he expect any antiseptic effect from them in the middle ear? Do we not have to add antiseptics to either one of these solutions in order to keep bacteria from growing in them? Or perhaps he thought of the anodyne effect and stoppage of secretions, attributed to these two drugs by some people who wrongly infer that they produce the same results in infected tissues and inflamed mucous membranes which they produce in healthy tissues. Even

if they would stop the secretion, is that not just the opposite from what we want? Or does the Doctor not prescribe an expectorant in cold of the lungs or nose, where the secretion is thick and dry, and does he not remember the relief a free secretion brings? In acute otitis media the great ease after paracentesis is equally produced by the abundant secretion.

The only reason for the use of cocain and atropin in otitis is therefore compliance with the well-known maxim *ut aliquid fiat*.

A little worse must be said about the advice of Dr. Chisolm, who being opposed to the use of ice, instructed Dr. Hopkinson to syringe the external meatus with hot solution of mercuric chlorid, 1 to 1000. The heat may have been agreeable to the patient at the moment it was applied, but it certainly did not have the desired effect on the course of the inflammation. Ice would have been better, though less agreeable. Furthermore, the irritation and stirring caused by ten or twelve injections daily is surely not beneficial. Does not the Doctor notice that we are giving up this terrible active treatment of acute inflammations, wherever they are located, in favor of complete rest; for example, in peritonitis, lymphangitis of limbs, etc. And finally, what effect should the bichlorid have? The best of it is that it is not absorbed. But it involves danger. A perforation of the membrane in acute otitis may happen at any moment, and then a bichlorid solution, 1 to 1000, is forced into the middle ear. What oculist would use such a solution in conjunctivitis of the eyes, and the mucous membrane of the ear is much more tender than the conjunctiva. Mind, I do not speak of old badly infected suppurations and necrotic processes, where the deepest structures of the membranes are altered and the sensitiveness lowered to almost nothing, but of acute inflammation, and there a bichlorid solution, 1 to 1000, can do only great harm. Furthermore, such a solution has a tendency to produce fibrous thickening of the membrane, which we have so much reason to avoid, since the function of the ear depends greatly upon the perfect elasticity of a great part of this membrane. All these facts have been discussed time and time again. But yet another proof that the Doctor is not quite familiar with the literature of ear diseases, is the name of "modified Politzerization" which he gives to inflating the ear by grasping the nose and blowing. This is called Valsalva's method in English, American, German, French and Italian otologic literature, from Dr. Valsalva, who described Dr. Hopkinson's "modified Politzerization" some two hundred years ago.

Later on the Doctor expresses his satisfaction with the effect pilocarpin had on him. Against this there is nothing to be said. Undoubtedly, it was one of the best things to use under the circumstances. Yet we can not help admiring his logic; he is scared of morphin and uses another more dangerous alkaloid, the pilocarpin. A Turkish bath or a hot stove and a hot bed with some hot tea or other drink would have brought about the same result. Why use a sledge hammer to kill a louse?

But the emphasis the Doctor lays upon the injunction to perform paracentesis has absolutely no reason. Yet I do not think that I can convince him. It seems that it must be easier to drive a nail in the hardest rock of the Rocky Mountains than to convince the Doctor of this error of his treatment, although it caused him much trouble and pain, which he might have avoided. All I feel bound to do is to describe the treatment as it is advised by common sense, and taught in literature by Gradenigo and Bezold and endorsed by a number of American and English writers. As soon as the diagnosis is made, the external meatus should be syringed with boric acid solution. With a well disinfected paracentesis knife a paracentesis should be made in the posterior half of the membrane, down nearly to its margin. The authorities are explicit in demanding that every general practitioner be able to perform this little operation. This may be followed by one careful inflation, then dry-

ing of the meatus and packing it gently with iodoform gauze, which may be changed once or twice every day. Ice is indicated when there is tenderness of the mastoid process. The patient feels great relief after an hour or two, when free secretion sets in. He usually sleeps soundly the first and every following night. The success is so general that, if it does not ensue, the perforation must be too small or there are complications. Should the perforation close before the symptoms have disappeared, paracentesis is repeated. As soon as the inflammation has ceased the opening will close without leaving any trace, and hearing is restored after six or ten days. Against the one experience of Dr. Hopkinson I can produce dozens of my own histories and hundreds from literature. The advice of free drainage of every acute gathering of pus is as useful in the ear as elsewhere. Why should we always go back and rely upon unsafe medical means, to repeat again and again every unsatisfactory experience? Why not at once use simple surgical treatment for such a typically surgical disease as acute otitis media? Why expose our patients to all the bad consequences that a retention of products of inflammation may bring about?

Respectfully,

J. HOLINGER, M.D.

PERU, IND., March 16, 1897.

To the Editor:—In my comments on the treatment of "acute otitis media," in the last issue of the JOURNAL, March 13, the clause reading "which would have *burned* the moisture, etc., should have read: which would have *lessened* the moisture, etc. In the same issue Dr. W. H. Daly of Pittsburg, Pa., gives instructions about blowing the nose, following the use of the nasal-douche, etc. "To blow one side of the nose only at a time."

I would suggest that the only efficient way of blowing the nose after the use of the douche, etc., as well as other times, is to simply *blow forcibly without holding either side*, on the same principle that you expectorate without holding the mouth. To be convinced of the truthfulness of this statement, you have only to follow out the above suggestion.

J. O. MALSBURY, M.D.

Respiration and Phthisis.

OTTAWA, ONT., March 6, 1897.

To the Editor:—Will you kindly give space to the following in an early issue and thus aid in this important work? Without the coöperation of the leading medical journals nothing can be accomplished in that behalf. Trusting you will so favor, I may hereby thank you in advance, and am, sir,

Very truly yours, EDWARD PLAYTER, M.D.

To Members of the Medical Profession, Individually—in the Interest of Medical Science:—

As there is evidence tending to prove the theory that all persons predisposed by heredity to consumption have a respiratory capacity or action insufficient for good vigorous health, probably a proportionately small chest with insufficiency of lung membrane, that the predisposition is mainly or primarily due to this cause; in other words, that the insufficient respiratory function is the special primary feature of the predisposition (a condition which may be, practically, acquired by habit, occupation, etc.), I desire the coöperation of the profession in an endeavor to help to establish by means of collective investigations, the correctness or otherwise, of this theory.

In this behalf I heroby ask all physicians who have patients predisposed to, or in the early stage of, consumption, to send to me on a post card (will suffice), the information below indicated. As soon as I can study and collate the replies I shall make the results known to the profession.

Give 1, name (or initials); 2, sex; 3, age; 4, occupation; 5, height; 6, weight (average, when in usual state of health); 7, circumference of the chest on a level with sixth costo sternal articulation when momentarily at rest after an ordinary expiration, and also 8, after habitual natural expansion or inspiration (which last usually exceeds the first measurement, expiration, 7, by an increase of only about one-fourth of an inch);

finally, 9, the circumference after a forced expiration, and also 10, after a forced inspiration (these two measurements, 9 and 10, varying or showing a range of from 1½ to 4 inches). The patient should be as calm as possible and had better, usually, practice the forced breathing for a few acts before these two last measurements, 9 and 10, are taken.

To be of value, all four measurements should be taken as carefully, accurately and free from haste as possible.

Any further information, in brief, as to the degree of heredity (family history) in cases, prominent symptoms, loss in weight, cough, dulness on percussion, etc., etc., or any remarks, will be a decided advantage.

Measurements of two cases, or several, on the average, could be given on one card.

With the hope that many will comply with the above request, and with much respect for and interest in the profession, I am,

Yours truly,

EDWARD PLAYTER, M.D.

"Devil on Two Sticks."

CHICAGO, March 5, 1897.

To the Editor:—Is this an authentic quotation of a book published in 1768? As you are an authority on these matters I ask you.

Cordially yours,

E. J. DOERING, M.D.

FOOTE, "DEVIL ON TWO STICKS" 1768.

Hellebore: "I have discovered the primary cause of all distempers incidental to the human machine. And these, brethren, I attribute to certain animalculæ or piscatory entities, that insinuate themselves thro' the pores into the blood and in that fluid sport, toss and tumble about like mackerel or codfish in the great deep."

Yours,

WILL.

Feb. 24, 1897.

"This piece consisted of nothing more than the introduction of several well-known characters in real life, whose manner of conversation and expression this author had very happily hit in the diction of his drama, and still more happily represented on the stage by an exact and most amazing imitation, not only of the manner and tone of voice, but even of the very persons, of those whom he intended to take off. Among these characters there was in particular a certain physician, who was much better known from the oddity and singularity of his appearance and conversation, than from his eminence in the practice of his profession. The celebrated Chevalier Taylor, the oculist, who was at that time in the height of his vogue and popularity, was also another object of Mr. Foote's mimicry and ridicule."—From article upon Samuel Foote, in Baker's "Biographica Dramatica," vol. I, part I.

Samuel Foote actor and dramatic author, born 1720, died 1777. The character of "Hellebore" was one assumed by the Devil.

Le Sage also wrote a novel with the same title. Of course there was nothing new in Hellebore's suggestion, as Redi a century before had announced it and Vitruvius the Roman architect came very near it, in advising that houses be built away from swamps so as to avoid the exhalations from the "fenny animals."

Ophthalmia Neonatorum.

PITTSBURGH, PA., March 8, 1897.

To the Editor:—Recently I had a case of ophthalmia neonatorum in which only the left eye was affected. This has never occurred in my practice before. The disease has always affected both eyes and this is the reason I report the case. My treatment for this disease is first to wash the eyes out well with warm water by means of a small wad of medicated cotton followed by a wash of muriat. ammon. gr. vi, bichlorid. hydrarg. gr. j, aquæ dest. ʒvi. M. Sig. A teaspoonful in a teaspoonful of boiling water, immediately followed by a 20 grain solution of argentum nitrate and then by a saturated solution of chlorid of sodium. This is repeated every three or four hours. Once a day or once in two days I apply a drop or two of the solution of sulphate of atropia 1 grain to the ounce of distilled water. My cases have always rapidly recovered

under this treatment. If we have reason to believe that the disease is of a specific nature then small doses of calomel may be given.

JOHN M. BATTEN, M.D.

Sequela of Measles.

TIVERTON, R. I., March 13, 1897.

To the Editor:—Are measles followed as a sequela by acute or chronic articular rheumatism?

A case: W. H., exposed to measles came down sick Monday, March 1; eruption that evening. Friday or Saturday March 5 or 6, pain in joints developing articular rheumatism; at present time improving, but not able to leave bed except as removed by attendants. Query: Would W. H. have had the rheumatic attack now if he had not had measles or is it dependent upon the peculiar poison of measles. I should like the experience of the profession upon this point.

Respectfully,

E. P. STIMSON, M.D.

PUBLIC HEALTH.

Infection from Pork.—An epidemic that affected fifty persons and caused one death was investigated by the authorities, and no toxic substance was found in the suspected pork, but bacteriologic tests showed the presence of a bacillus, evidently the specific bacillus of the pneumo-enteritis of the pig. It was not found in the fecal matter of the patients, but the bacterium coli was found in them in a very virulent form. An epidemic of hog cholera had been prevailing in the district just before, and one farmer had sold fifty-seven pigs, forty-one of which had died of the disease. The meat that had been found too much diseased to be offered for sale had been buried at a slight depth, instead of being burned, and no precautions had been taken to isolate the diseased animals. Pouchet, who reports the circumstance, adds that it is the first time that bacteriologic investigation has been applied in such a case.—*Semaine Méd.*, February 13.

The Vaccination Laws of Europe.—Dr. Thorne Thorne, C.B., principal medical officer of the Local Government Board, returned to London last week after his visit to Paris and Brussels to study the means of vaccination at both capitals. Dr. Thorne Thorne, who was accompanied by Dr. Monckton Copeman, first visited Paris and was given every facility for inquiry by the professors of the Institut Vaccinal affiliated to the municipality of Paris, and the Académie de Médecine, where vaccine lymph is distributed gratuitously after admixture with glycerin, throughout the whole of France at the expense of the state. A visit was afterward made to Brussels, where the state institution, the École de Médecine Vétérinaire, and Dr. Janssen's vaccination department under the municipality of Brussels, were visited. Visits have also been made to certain stations in Germany, one of the late issues of the *Lancet* having a report of one to Berlin. The result of these investigations, caused no doubt by the report and recommendations of the Royal Vaccination Commission, may be pretty confidently forecast, namely, the gradual discontinuance of the old English method of Jennerian arm-to-arm vaccination (very little bovine virus having at any time been officially employed in Great Britain) and the substitution thereof of the more modern methods and material. It is evident that there is a more promising future before the forms of glycerinated vaccine, if it be true as has been stated regarding the new lymph of the New York City Department of Health, that it is possible to report 1,500 consecutive primary vaccinations with the new agent without one failure.

Bacterial Purification of Potable Waters.—The London correspondent of the *American Practitioner and News* refers to some recent researches of Dr. Percy Frankland, F.R.S. He has discoursed to the Institute of Civil Engineers on bacte-

rial water purification. The discussion which followed centered round the importance to be attributed to Koch's arbitrary standard that a so called "good" water should not contain more than one hundred microbes per cubic centimeter. Dr. Frankland pointed out that this statement of Dr. Koch's was made in the infant days of bacterial investigation, and no serious meaning could be attached to it now. He reminded the assembly that many years ago he showed how, on keeping a sample of the very purest drinking-water obtainable, the original microbes present could increase to hundreds of thousands; and that yet no one would venture to condemn this water. Dr. Percy Frankland described some experiments he made recently with typhoid germs, in which he had introduced some of these microbes into deep well water, which was almost free from bacteria, into Thames water, which contained a large number, and into Loch Katrine water, in which the number was intermediate between these two. He found that the typhoid bacilli died off more rapidly in the Thames water than in that from Loch Katrine, while they persisted longest in the sparsely populated deep well water. Thus the longevity of these disease germs was inversely proportional to the bacterial population of the waters into which they were introduced.

Defense of Europe Against the Plague.—The immediate necessity of an international organization to prevent the spread of the plague is ably presented by A. Proust, Inspector General of the Sanitary Service, in an address reported in the *Bulletin de l'Acad. de Méd.*, January 26. The dangers to the rest of the world that have come with more rapid transportation and especially the Trans-Caspian railroad and steamboat route, render prompt organization of the powers necessary, and it is worse than useless to leave the task of arresting the plague to the Oriental nations, or even to comply with their wishes and entrust the frontier posts to Mussulmen physicians. Realizing the almost inevitable spread of the contagion during the annual Mussulman pilgrimages to Mecca, the French government has absolutely forbidden anyone to go from Algiers and Tunis this spring, and the Egyptian government has also announced that no one can go from Egypt unless he can prove that he has sufficient money to pay his expenses for six to eight months in the Hedjaz, and if the plague breaks out there he will not be allowed to return to Egypt. If the pilgrims did not arrive in such an enfeebled condition they would be less liable to contract disease. They are crowded on the steamers so closely that it is impossible for them to lie down, and after landing they usually sleep at night on the bare ground in the midst of miasmas and exposed to severe cold, while scorched by the sun during the day. The food and water are both bad and sold at exorbitant rates. It is politically and practically impossible to put an end to these pilgrimages, but the conditions might be made more hygienic, and Proust urges the powers to combine for this purpose, observing that the more we do for the pilgrim the less we shall have to do against him. Like all who refer to the subject, he condemns the apathy of England, who, for political and commercial reasons, refuses to allow sanitary surveillance along the Persian Gulf, where the danger to Europe is most imminent, while she sanctions the most rigorous quarantine at Malta and Gibraltar, where there is comparatively little to fear.

The Effect of Gaseous Aeration of Water on Bacteria.—Dr. G. C. Frankland, writing to *Nature*, draws attention to the results of bacteriologic research in determining the hygienic importance, from a bacterial point of view, to be ascribed to the gaseous aeration of water. Notwithstanding the large number of experiments that have from time to time been carried out, considerable divergence of opinion exists as to the precise hygienic value with which the carbonation of water can be credited. Some authorities state that in such waters the number of bacteria steadily declines, whilst others again have observed as

distinct a multiplication of the bacteria present. The possibility of these two contingencies is, however, quite conceivable without impugning the accuracy of the results obtained in either case. In the first place, it has to be remembered that widely different types of water serve for the manufacture of artificial aerated waters, the bacterial contents of which are widely divergent, both qualitatively and quantitatively. It has been shown that whereas some bacteria rapidly disappear in aerated waters, others are again endowed with fabulous powers of reproduction and longevity. Thus in one instance a sample of carbonated water was found to contain, one hour after its manufacture, 8,350 microbes per cubic centimeter: these figures rose, however, after the lapse of 210 days, to the considerable number of 213,400 per c.c.; while later on, at the end of 428 days, there were only 46 per c.c. As regards the behavior of pathogenic bacteria in carbonated waters, the results so far obtained are decidedly more unanimous. There is no doubt that a very general impression prevails that a barrier of no mean obstructive power is placed between the consumer and zymotic disease by the substitution of aerated for ordinary drinking water, at any rate during times of epidemic; and this impression is to a certain extent justified by investigation, though it can at the same time only be encouraged to a moderate extent. Although storage even for such considerable periods of time as over two years can not, at any rate in some cases, secure the entire elimination of ordinary water microbes, yet storage of considerably shorter duration is of undoubted service in the destruction of disease germs.

The Water Supply of Chicago.—The city of Chicago, in spite of the great engineering work that was carried out in 1893, has not yet secured a satisfactory water supply, and we understand that the Department of Health has considered it necessary to shut off the town water from as many as 250 public schools with an aggregate of 208,000 scholars. The task of making special arrangements for the supply of water upon so large a scale must be a very formidable addition to the duties of the School Board. The first impression of the visitor to the city on looking out upon the broad expanse of Lake Michigan, and learning that it is an inland sea of singularly pure and potable water, is that here at least the question of water-supply is solved by nature, whatever the dimensions or demands of the city may be which stands upon the shore. But, in point of fact, the very abundance of the water is its bane. If a river of moderate dimensions flowed through the city there would be no fear of contamination. The simple expedient of placing the water intake above the sewage outflow would make the city absolutely secure against this peril. But in Lake Michigan the volume of water is so vast that the flow is imperceptibly slow, and so long as any part of the city's sewage is permitted to flow into the lake there will be a danger of its drifting into the water intakes. Experiments have shown that this danger was notably reduced by putting the intake at a distance of three or four miles from the shore; but they also showed that this was no complete protection, and now the experience of the School Board confirms our experimental results and enforces the conclusion that complete isolation of the water supply is the only safe and trustworthy course. Unfortunately for a community residing on the shores of a great lake, it is a course presenting many and special difficulties. In these circumstances it is no small matter that it has a great reputation for enterprise and public spirit to maintain.—*London Lancet*, February 20.

The *Lancet* does not seem to be aware that the great drainage canal is not only not yet completed, but that nobody knows when it will be.—*Ed.*

The Weather Bureau and Medical Climatology.—A few words may not be out of place in explanation of the following resolutions: From time to time, articles have appeared in the medical press,

pointing out the limitations of our knowledge of climatology and the insufficiency of data, as regards both climatic features and clinical observation, upon which to found a really scientific climato-therapy. In an article, for example, by Dr. James B. Walker, President of the American Climatological Association, appearing in the *American Journal of Medical Sciences*, January, 1897, these points are dwelt upon, and a comparison is made of the thorough study of these matters in Europe, with the somewhat rudimentary knowledge of medical climatology that has been reached in this country. It is to be regretted that all this is, at present, true, but it is well to know that the means are at hand by which this state of affairs may be greatly improved. At the basis of all scientific climato-therapy must lie a thorough and accurate knowledge of climatology: with this alone can we correlate our clinical observations with any hope of evolving therefrom any system of scientific treatment of disease by means of climate. It is the belief of this Society that in the admirable methods and appliances of the Weather Bureau we have, already provided, the means for a well-nigh perfect determination of every climatic feature. Not only is this true, but from the fact that observers at all first-class stations have the same training, the same methods and the same apparatus, and that the element of "personal equation" is eliminated by frequent changes of observers, we are induced to believe that no foreign country is better equipped for the study of its climate. For the above reasons, it is obvious that the meteorologic records of each Western Station are strictly comparable with those of every other station, which can not be the case where independent and diverse methods of observation are in use in various places: and this feature of our Weather Bureau is one of vital importance to successful results.

The accompanying resolutions speak for themselves, but their object can be fully appreciated only by those who have made a study of the statistical tables in the report therein referred to, and it is earnestly hoped that those who read these resolutions may obtain from the Weather Bureau copies of Vol. 1, Signal Service Report, 1885. It is evident that, the object of the resolutions being the adaptation of the accumulated data to the needs of the medical profession, such an end can best be reached through the joint action of a committee of medical men and the Chief of the Weather Bureau, and it would seem appropriate that such a committee be composed of members of the American Climatological Association. To such a committee it may be apparent that certain tables might be omitted or modified and that others might with great advantage be constructed from those to be made on the lines of the existing tables.

It would be a valuable feature of the new volume if it should contain also, under the head of each station, a statistical table of the mean of all observations for the whole term of existence of each station in other words, its local climate as deduced from all data available.

It also becomes apparent that more first class stations are needed in order to obtain a complete knowledge of the climatology of the United States, and that special attention should be given to the study of those regions whose climatic features promise most as therapeutic agents in the treatment of disease. It is equally obvious that the value of the proposed volume would be materially enhanced by the incorporation of data regarding the geologic formations, topography, natural drainage, water supply, mineral springs, etc., all of which are matters of importance to be known concerning any point to which an invalid might be sent.

Finally, the volume thus made up should be supplied at a minimum cost to the physicians of the United States, enabling them to properly estimate the value of each special region as a therapeutic agent. The work should be revised and brought up to date every five or ten years, so that the effect, if any, of agencies supposed to be at work to modify the climatic conditions in various localities may be known and guarded against, and more especially, because the data for determination of climate become more reliable as the periods of observation become more extended.

To sum up: The object we have in view is to place within reach of the profession a work on the climatology of the United States, which will be a powerful aid to the attainment of a rational climato-therapy; this to be based on the uniform and admirable data of the Weather Bureau, which data are nearly valueless until properly worked up and tabulated. The last compilation was made in 1885, when both the number of stations and the data were generally insufficient, but even then of great value; if it were repeated now the accumulated data and the new stations would render it still more valuable. If more stations are established and the work brought up to date from time to time we may ultimately attain a complete climatic record of the various portions of this country; if in addition to the

tables proposed, notes concerning topography, soil, water supply, etc., should be added, the volume would be an invaluable handbook for the physician.

Your assistance and influence in this matter is respectfully requested.

J. S. EASTERDAY,

Secretary Bernalillo County Medical Society.

ALBUQUERQUE, New Mexico, Jan. 20, 1897.

THE WEATHER BUREAU IN ITS RELATION TO MEDICAL CLIMATOLOGY. Resolutions adopted by the Medical Society of Bernalillo County, New Mexico, at the meeting held Jan. 15, 1897.

WHEREAS, This Society is impressed with a sense of the supreme value of the methods and work of the Weather Bureau of the United States, in their relation to the science of medical climatology, as illustrated in the series of statistical tables published in Volume 1, Annual Report for 1885 of the Signal Service (now Weather Bureau), said tables embracing all the data bearing upon nearly every meteorologic feature necessary to a complete determination of the climate of many points scattered over the whole of the United States, so far as these data had accumulated up to the date of that report, and

WHEREAS, The value of these tables would be greatly enhanced by working into them the data accumulated in the course of the eleven years which have elapsed since 1885, and a volume of immense value to the medical profession might be produced by appending to these tables, brought up to date, some account of the topography, geologic formation, natural drainage, nature and source of water supply, vicinity of mineral springs, etc., at each station where observations are taken; therefore, be it

Resolved, By the Medical Society of Bernalillo County, New Mexico, that the Chief of the Weather Bureau of the United States be respectfully requested to take this matter into consideration; that the American Climatological Association be requested to coöperate with the Weather Bureau through a committee appointed for that purpose, if mutually agreeable; that copies of these resolutions be transmitted to the Chief of the Weather Bureau, to the Surgeons-General of the Army, Navy, and Marine-Hospital Service, to at least three of the principal medical journals of the United States, to the American Public Health Association and the AMERICAN MEDICAL ASSOCIATION, and to every State medical association in the United States, and their coöperation invited.

Cholera Disseminated by Food Contamination in India.—Mr. E. H. Hankin of the Agra Bacteriologic Station, India, occupies the difficult position of a kind of general bacillus detective for the greater part of the Northern Provinces, being in demand all the way from Calcutta to Bombay. In the *British Medical Journal*, December 26, he narrates how he was called upon to discover the causes for frequent outbreaks of cholera or enteric fever among army officers and other foreign residents, at times and in places where the natives were not attacked.

During the summer of 1896, an unusual number of military officers and European officials have succumbed to cholera and enteric fever in India. Outbreaks have been reported in not less than ten places within a period of a few weeks from the one to which Mr. Hankin was called upon to give his professional attention. Of these cases the cholera microbe was detected in the finger bowls; in another case the enteric microbes occupied this position. In another case the cholera microbe was found in a virulent condition in each of the vessels of water kept in the kitchen for culinary purposes. In most of the cases, however, to the best of my knowledge, the investigation had to be carried out without bacteriologic help. During the same time, as far as cholera is concerned, British soldiers have been remarkably free from infection. To the best of my knowledge, in the whole of the Bengal Command during the present rainy season, cases of cholera among soldiers have only been reported from two stations, and in one at least of these places the infection appears to have been contracted while the men were on the march. I believe this remarkable immunity of the British soldier, as contrasted with the relative liability of the British officer and civilian official, is due to the strenuous efforts now being made by officers of the Army Medical Staff to sanitize the soldiers' cookhouses. The kitchens in India most in need of reform are those attached to the officers' messes of British regiments. These are private institutions not subject to official control. It is high time that officers of the Army Medical Staff should be invited to undertake the task of sanitating these kitchens. It will, I think, be clear from the facts described in this paper, that the complete prevention of cholera is rapidly becoming a matter for specialists. The ordinary mess president is no more a specialist than the average subaltern is an

epicure. Together they produce and consume horrible delicacies that are often a severe strain on the digestion of their guests. This is not an isolated opinion. I find it is a matter of common remark in all parts of India that I have visited. It is as unusual as it is to me unpleasant to go out to dinner and then to criticize the *menu* in this way; but I hope it will be admitted that the occasion is one for plain speaking rather than for ceremony. When dining at an officers' mess the other day I noticed that the soup was putrid: but my hosts, with sturdy appetites bred of healthy exercise, consumed it with perfect content. The whipped cream poured over the apple pie had the abominable taste of dirty dishcloth, noticed, I believe, by no one but myself. My host had heard vaguely of my recent researches; with the result that the next item on the *menu* had the title "*crème à la microbe*." It was chocolate pudding. After dinner I inspected the mess kitchen. To all appearance it was perfectly clean, and the mess president pointed out to me with pride a long row of enameled iron saucepans with which he had replaced the more usual *degchies*, apparently under the idea that they would be less suitable than the latter for the breeding of microbes. Nine or ten subalterns in this regiment have had enteric within my recollection, so the need of some precautions was obvious; but I very much doubt whether the mess president had chosen the precaution most necessary. Though in many cases, so far as he himself is concerned, the British officer can only be stimulated into sanitary zeal by attendance at a long series of funeral parties, his care of the private soldiers under his charge is altogether admirable. As an example I may quote the following incident: A few cases of enteric occurred among the privates of an artillery detachment. Every possible precaution was at once adopted. A vigorous investigation was at once begun to find the source of the infection. All sorts of things were sent to me for examination. At length I discovered the enteric microbe in water taken from the tap of an iron cistern in the Battery Aërated Water Factory. Observations made at the time tended to show that the water coming from the piped supply that was daily poured into the cistern was free from enteric. Apparently a temporary infection of the water in the cistern had occurred. But why had it persisted? The help of the medical officer in charge of the battery was invoked. On failing to find any obvious reason for the persistence of the infection by questioning the attendants in the factory, he had the cistern emptied. At the bottom and attached to the exit pipe he found a small filter. It was one made by a well-known firm of aërated water machine manufacturers, the use of which is now strictly forbidden, and the existence of which had been overlooked when these filters had been abolished. It was found afterward that the public supply had been temporarily infected with the enteric microbe. The medical officer who investigated the matter is of opinion that the presence of this filter is a probable reason why the consumers of aërated waters from this factory suffered relatively more severely than did other bodies of troops in the station. This case appears to be an apt illustration of the capacity of ordinary filters to act as breeding places for microbes. If the ordinary mess president attempts to improve his kitchen, he is likely to do more harm than good. For instance, he will issue orders that the floor is to be washed every day, instead of once a week. Under existing conditions, cleaning kitchens in Upper India is a dangerous process. Cooking the sahib's dinner is regarded as a somewhat unclean occupation by most natives. Mohammedans do not like it because we eat bacon, and Hindus look askance at the business because we eat beef. For these reasons native cooks in general are of rather low caste and low standing; hence they are apt to stand on what little dignity they have, and consider it beneath them to clean the floors of the kitchens in which they work; consequently the sweeper has to be called in to do the business. In Upper India there are no sewers. The sweeper is a man who fulfils the functions of a sewer: he is apt to carry about outside him what sewers in other countries carry about inside them—namely, dangerous microbes. I have elsewhere published an account of a very clear case in which I proved that the sweeper was introducing cholera microbes into the cookhouse because of his methodical habit of reserving one broom for clean work, such as sweeping out barracks, and another broom for dirty work, such as cleaning out latrines and cookhouses. Those who know India will agree with me that stopping this abominable custom may not be so easy as it appears on the surface. It is possible that the mess president would most readily achieve this object by insisting that the cook should sleep on the kitchen floor, if possible with his head in a *degchie*. The mess president would then have an assurance that he at present lacks that neither the one or the other would be cleaned with the broom that is used for the servants' latrines.

Both in the present paper and elsewhere I have given exam-

ples of the dangers attending the washing of dishcloths in India. I doubt whether in the whole of India there is a mess president or club secretary who has a reasonable certainty that his kitchen dishcloths are not washed in water infected with either cholera or enteric microbes. Unless the mess president can arrange for the sterilization of washed dishcloths, it might be wiser to leave them dirty.

ASSOCIATION NEWS.

Dinner of the Section on Ophthalmology.—The annual dinner of the Section on Ophthalmology of the AMERICAN MEDICAL ASSOCIATION will take place at 7 o'clock on the evening of June 1, 1897, in the Hotel Walton. Gentlemen desiring to be present at this dinner will confer a great favor by sending their names at once to Dr. G. E. de Schweinitz, 1401 Locust Street, Philadelphia, Chairman of the Section on Ophthalmology. The subscription will be \$3.

The Journal Train.—In order that physicians residing in and west of the Mississippi Valley who desire to go on the JOURNAL Train from Chicago may do so, we have perfected arrangements with the Pennsylvania Line for a solid vestibuled train to be run under the auspices of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION and to be known as "The JOURNAL Train." It will consist of Pullman sleeping, dining, observation and baggage cars and be run from Chicago to Philadelphia without change. The success of our trip over the Pennsylvania lines, Chicago to Baltimore, in 1895, is assurance that no detail will be omitted that will contribute to the comfort and pleasure of our party en route and the reputation of the company is a guarantee of the perfection of arrangements and the manner in which details will be carried out. The train will leave Chicago about 11 A.M., May 30, and the schedule so arranged that the most interesting portion of the journey will be covered by daylight. After leaving Pittsburg the train will pass by the iron and coke industries of Western Pennsylvania, through historic Johnstown, where traces of the memorable flood are still noticeable, around the famous Horse Shoe Curve, across the Allegheny Mountains at a point where the scenery is magnificent. Excursionists will enjoy a fine view of the grand panorama as they are carried down the eastern slope of this romantic mountain range. The journey for miles will be along the blue Juniata. The Susquehanna River will be crossed just before the train rolls into Harrisburg, from which point the trip will be through the rich farming country of the eastern portion of Pennsylvania. About 12 o'clock, noon, we will be landed in the magnificent Broad Street Station of the Pennsylvania Railroad, located in the heart of the Quaker City. Applications for sleeping-car space may be made direct to H. R. Dering, Assistant General Passenger Agent, 248 South Clark Street, Chicago, Ill., or to any local agent on the Pennsylvania Line. Correspondence is invited.

NECROLOGY.

PETER DIRCK KEYSER, A. M., M.D., formerly professor of ophthalmology and dean of the faculty of the Medico-Chirurgical College of Philadelphia, died of pneumonia, on the 9th inst., at his home, 1832 Arch street, Philadelphia. Dr. Keyser was born in Philadelphia, Feb. 8, 1835, of German Lutheran parentage. In 1852 he was graduated from Delaware College with the degree in arts. He then especially devoted himself to chemistry, working in the laboratory of Dr. F. A. Genth, city chemist of Philadelphia, for two years. He continued his studies in Germany and returned to this country in 1858. In 1861 he entered the army as captain of 91st Regt. Penn. Infantry, U. S. V., and served in the Army of the Potomac in the Chickahominy campaign. Owing to wounds and ill health, he found himself obliged to retire from active service

and he resigned his commission August, 1862. He again visited Europe and in 1864 received the degree of M.D. from the University of Jena, and subsequently attended the clinical instruction in the Hospitals of Berlin, Paris and London. On his return to the United States he was appointed acting assistant surgeon to the U. S. Army Hospital at Germantown, Pa. He entered upon private practice in 1865, when he finally retired from military service. He founded the Philadelphia Eye and Ear Infirmary in 1864 and delivered a series of clinical lectures to physicians upon accommodation and refraction, in 1868, and two years later began a regular series of lectures upon clinical ophthalmology. He was one of the surgeons of the Will's Eye Hospital for a period of more than twenty years. He occupied the chair of ophthalmology in the Medico-Chirurgical College for ten years, resigning on May 7, 1893; during a great part of this period he had been the dean of the faculty. In 1889, Dr. Keyser was appointed a member of the Philadelphia Board of Health, and rendered such efficient service that he continued to hold the position up to the time of his death. The Board of Health on learning of his death, adjourned for the day and passed appropriate resolutions. The Trustees and Faculty and the Alumni Association of the Medico-Chirurgical College held special meetings and also adopted resolutions of regret and condolence. Dr. Keyser was a companion of the Loyal Legion of the United States and was one of the founders of this successful patriotic and military organization. He was a member of the AMERICAN MEDICAL ASSOCIATION, the Academy of Medicine, Philadelphia County Medical Society, and also honorary member of the Delaware State Medical Society. He was vice-president of the Ophthalmological Section of the Ninth International Congress in 1887 and also of the Tenth Congress in 1890. Dr. Keyser contributed a number of articles to current medical literature, relating to diseases of the eye and refraction, and was the originator of a clinical ophthalmoscope which bears his name. His wife and daughter survive him.

C. LOISEAU, M.D., Paris, aged 72. The life of this talented and public-spirited physician, hygienist and alienist is a noble example for the rising generation, and the general sorrow at his death is a testimony to the value of his services. Neglecting selfish ends, he devoted his talents to the welfare of the community and served as member of the city council on numerous important sanitary and hygienic committees. He was also connected with many scientific societies, and as president of the Medico-Psychologic Society accomplished much for the insane. His lectures on public, private and professional hygiene were significant factors in the progress of the last decades.

A. H. HUGHES, M.D., died at Auburn, Wash., March 2, 1897, age 78 years. Dr. Hughes was born in Warren County, Mo., and graduated from the Missouri Medical College of St. Louis in 1850. After practicing several years in Missouri, he removed to Dallas, Ore., in 1864, and after four years practice in that place moved to Kent, Wash., where he has since resided. He continued in the active practice of his profession in the White River Valley until 1889, when he retired on account of ill health.

EDWARD PAYSON ABBÉ, M.D., Harvard, 1852, died in New Bedford, Mass., February 24. He was a graduate of Yale College in 1848 and was a member of the Massachusetts Medical Society since 1853, and at the time of his death was consulting physician to St. Joseph's Hospital.

JOSEPH LOUIS DROESCH, M.D., of Brooklyn, died from pulmonary tuberculosis on February 19. He was a native of Brooklyn, the son of German parents, and was approaching his forty-first birthday. He was an alumnus of the College of Physicians and Surgeons, New York, in 1883.

HENRY M. BLACK, M.D., Jefferson Medical College, 1875, died at Strasburg, Pa., February 28, aged 45 years.

JOSEPH P. GALLAGHER, M.D., Jefferson Medical College, 1891, died at Freeland, Pa., March 3.

BOOK NOTICES.

Manuale Pratica della Medicatura Antisettica. Del Dr. ADELCHI ZAMBLER, con Prefazione del Prof. E. TRECOMI; con 6 incisioni. Ulrico Hoepli, Milano. 1896. (Practical Manual of Antisepsis.)

L'Impieghi Ipodermica e la Dosatura dei Remedi. Manuale Terapeutica del Dottore GAETONE MALACRIDA. Milano. 1895. (The Hypodermic Employment and the Dosage of Drugs.)

These two little books belong to the series of pocket-sized Italian hand-books published by Hoepli, a series which for extent and range of subjects has apparently hardly anything comparing with it in our own language. It includes at least some five hundred different publications, their subjects ranging over the fields of science, art, history, religion, etc., in cheap and convenient form. The medical publications include some fifteen or sixteen titles, which, judging from these present volumes, are meritorious handy compendiums of the fullest and latest knowledge of their subjects. The antiseptic manual gives the general principles of medical and surgical antisepsis, with a pretty full historic statement; and the other little volume, beside a general dose list of drugs, is a manual of hypodermic medication and includes a long list of formulas for hypodermic injections. Both appear to be scientific and accurate, and while many of the special methods of antiseptic detail which are being constantly added to, are necessarily omitted, they both seem fairly up to date.

Semeiotica. Breve compendio dei metodi fisici di esame degli infermi, del Professor U. GABBI, di pag. xvi-216, con 11 figure intercalate nel testo. Manuale Hoepli, elegantemente legato L. 2.50. (Semeiotics, a brief compendium of the methods of examination of the sick.)

This is another of the Hoepli handy volume series, and is devoted to the method of examination in disease, more especially to the physical and rational signs, the examination of urine, blood and other liquids of the body, both chemic and microscopic, etc. It does not go into the description of bacteriologic methods of examination; these are apparently left for a future publication. For a book, its compass covering so wide a range of subjects, it seems to be fairly complete, but like numerous similar publications in this country, it is not exhaustive. For a suggester and quick reference book it seems well fitted. As will be seen by the title it is not pretentious in its claims.

MISCELLANY.

Montana State Board of Medical Examiners.—Dr. C. O. Evans, of Deerlodge, Mont., has been appointed a member of the State Board of Medical Examiners, to succeed Dr. Bullard.

The "*Archiv fuer Schiffs und Tropen Hygiene*," the new magazine devoted to consideration of the questions affecting maritime and tropical interests and hygiene, mentions the probability that Yersin will be commissioned by the Chinese Government to found a Pasteur institute at Canton.

The Subject of Dr. Unna's Prize Competition for 1897, "is investigation of the ability of the known stains of elastin to stain elastin also, and if so, to what extent." The prize is 300 marks. Contributions are to be sent to Leopold Voss of Hamburg, Hohe Bleichen 34. There are no restrictions to the competition.

Vaccination in the Schools of Paris.—Acting upon the suggestion of the Académie de Méd., the Paris authorities are to bestow prizes upon the teachers, male or female, public or private, who compile the most complete statistics in regard to vaccinal operations and do the most to promote vaccination and revaccination in the schools.

Aberdeen University Honors an American.—Alexander J. C. Skene, M.D., of Brooklyn, N. Y., received on February 27 information that the degree of LL.D. was conferred upon him

by the University of Aberdeen, Scotland. He is to be congratulated, for the university is exceedingly chary of its honors, and he is the first to have received the compliment on this side of the Atlantic. In 1590 an ancestor, Sir George Skene, was physician to the king and a professor of medicine in King's College, Aberdeen.

Insanity of English People.—Prof. J. Holt Schooling, Fellow of the Royal Statistical Society, has ended his investigation and concludes that one in every 360 of the population of Great Britain has some form of insanity. He gives facts to show that in every 10,000 of the English and Welsh population, 31.4 people are lunatics. In every 10,000 of the Scotch population, 33.6 people are lunatics. In every 10,000 of the Irish population 40.3 people are lunatics. As among the chief causes, with the percentage of each in classes of a hundred he gives the following: Drink, 33.6; domestic troubles, 15.1; mental anxiety, 13.4; old age, 13.2; adverse circumstances, 13; accidents, 6.5; religious excitement, 4; love affairs, 3.2.

Anecdote Regarding Lord Lister.—While going round his wards in the Glasgow Royal Infirmary one day, Sir Joseph, then plain Mr. Lister, came to the bedside of a patient whose arm had been severely crushed without the skin having received any injury. Turning to the assembled students, he said: "Gentlemen, I have frequently noticed that when severe injuries are received without the skin being broken, the cases nearly always recover. On the other hand, trouble is always apt to follow, even in trivial injuries, when a wound in the skin is present. How is this? I can not help thinking that the man who is able to explain this problem will be one who will gain for himself undying fame." Lord Lister himself has proved the truth of his prophecy.—*London Daily News*.

Amputated Foot Should not Have Been Exhibited.—On the trial of the personal injury case of Rost v. Brooklyn Heights R. Co., the physician who had amputated the left foot of the plaintiff, a little girl who had been run over by a trolley car, was asked to produce the foot, which he had preserved in a glass jar. The amputation was admitted, and no claim was made that it was not properly done. But, two reasons were advanced for exhibiting the foot: "To show the size of the child at the time;" and because the discoloration upon the foot had a tendency to establish that the electric current had not been shut off at the time the child was run over, and therefore bore directly upon the negligence of the railroad company in the operation of the car. It may be assumed, says the appellate division of the supreme court of New York, Dec. 1, 1896, that technically the rule of evidence authorized the exhibition of the foot. But such rule, it holds, is without force when the legitimate purpose for which the exhibit may be made is slight, and the strong tendency is to work improper and illegitimate results. In this instance it was perfectly clear that the direct tendency of the exhibition of this mangled foot, coupled with other considerations, was to arouse the prejudice and inflame the passions of the jury into an angry resentment against the author of the misfortune. This condition, the court holds far overbalanced any legitimate purpose for which the exhibit might have been made, and rendered the exhibition of this foot, under the circumstances of the case, improper.

A Strange Case of Postmortem Mutilation was recently reported at a meeting of the k. k. Medical Association of Vienna. The victim was a woman of 37, a newspaper carrier, who was found in her locked room extended on the floor with the lower part of her body exposed, evidently by her own hand. She had probably been dead a couple of days. The external genitals were much mutilated with an extensive and irregular wound, which the absence of all inflammatory reaction showed to be postmortem. The cause of death was found to be the closing of the coronary ostium with fresh fibrin masses due to endoarteritis. The mutilations had been made by a little dog in the room,

which the woman kept and had evidently used for perverted sexual purposes, although it was known that she had sexual relations otherwise. Cases of mutilation by fishes, insects and rats are not uncommon, but this case is unique, and if the circumstances had been less clear, it might have presented a puzzling criminal aspect.—*Wien. klin. Rundschau*, February 14.

Dr. Koch and Others will Visit Bombay.—The German Commission for the study of the plague left Germany for India last week. The members are Professor Koch, Professor Pfeiffer of the Institution for Infectious Diseases, Professor Gaffky of Giessen, Dr. Disuderic and Dr. Sticker of the Imperial Health Office. Professor Koch will travel direct to Bombay on the completion of his investigations in South Africa, and till his arrival the leader of the commission will be Professor Gaffky, who was with Professor Koch in British India during the great cholera epidemic of 1884, and assisted him in the researches which finally lead to the discovery of the comma bacillus.

A Necrotomy not an Autopsy.—Mr. A. of the coroner's office, was in a sad quandary. In one hand he held a medical dictionary; the other, which he allowed to hang listlessly by his side, grasped a pen. Before him, upon his desk lay a large sheet of paper, upon which he had been writing. "Well," he remarked, after a period of thoughtfulness, "I give it up. There's something in a name after all. I have been trying for the last hour to fill out a requisition blank. Now here's the word autopsy. Some of our smart doctors have been finding fault with the way the word has been used in this office." "Why," said I, "the word autopsy means the cutting." "There's where you're wrong," he interrupted; "it means no such thing. Listen to this: 'Autopsy: Examining or seeing one's self, self-inspection. The word is strangely misapplied to the postmortem study of the body of another.' Look at yourself in a glass and according to this definition you perform an autopsy. That ought really to be a word for the exclusive use of women. Now," he continued, "there is the word necropsy, 'the examination of a dead body.' But that hardly fills the bill. It may be a merely superficial examination. Here though, is the word necrotomy, 'the dissection of a dead body.' This appears to hit nearer the mark, but how awkward this would sound: 'Coroner B. performed a necrotomy yesterday in the case of, etc.,' but, I believe that I will stick to the first principles. Every one knows what is popularly meant by the word autopsy, and some of our most eminent physicians have used the term in the sense in which I have always understood it."

New Researches Concerning Beriberi.—Beriberi is in the Dutch Indies one of the most pernicious diseases, and at the same time yet miraculous. It does not lead to death immediately, but ends in a general or particular paralysis of limbs, hands and legs. There was no cure of it, however, till now. The disease had been noticed first at Abjeh, some twenty years ago, as of epidemic standing. It was thought it befell only the natives, but among the many hundred men sick of beriberi and brought to Batavia, there were found many European soldiers. The infectious matter was then derived from the soil, which had been thrown up and ploughed through by military works. About 1885, when the plague seemed to dissolve and lessen the army, Professor Pekelharing from Utrecht, a renowned bacteriologist, was sent to Abjeh to study the disease even in its place of birth, to find out its bacilli, and, if possible, also a cure against it. In these directions Professor Pekelharing failed entirely. He returned without any result and the disease went on. Now Dr. Eykmann, physician in the Dutch military service, seems to have been happier than his colleague and countryman. Dr. Eykmann conceived the idea that beriberi had nothing to do with the soil, but with the food given the soldiers. The natives there live on rice as their exclusive food and the Europeans also in these regions take to it. Now Dr. Eyk-

mann had marked that those soldiers were taken from beriberi who got the Saigun rice, but those fed on the native "red" Sumatra rice remained healthy. In the prison at Sourabaya he found likewise, that while on July 1, 1896, ninety-nine prisoners out of 800 had been caught by beriberi, this cipher fell to 86, 82, 43, 21 and 13 during the next month on account of giving the Sumatra rice instead of the Saigun rice. Sure, Dr. Eykmann's theory has not yet any scientific foundation, but a mark is found and a practical sign, which, no doubt, will lead us sooner or later to the discovery of the growth and evolution of infectious material in the human body.

Cathode Photography vs. the Corset.—If anything will convince the fair sex of the evils of the corset, it will be Roentgen Ray photographs taken through the corset, in which they can see for themselves how their viscera are displaced and compressed by it. Madame Gaches-Sarraute, a Paris physician, recently exhibited some photographs of the kind at the Acad. de Méd. with others showing the beneficial effect of wearing a hygienic corset she has invented, for which she was awarded a prize by the Faculté de Méd. at the close of the year. The Prussian Government has appropriated 50,000 marks to further the study of cathode photography.

Jury Decides Injury Caused Septicemia.—The supreme court of Minnesota says, in the personal injury case of Miller v. St. Paul City Ry. Co., decided Nov. 9, 1896, that the evidence as to whether the disease septicemia, with which the plaintiff was afflicted, was caused by her injury on the car of the defendant, was not simply speculative. There was evidence in the case tending to show that it is a germ disease, and that an external blow on the body would not be the cause of introducing the germs into the body, but that the germs might exist dormant in the system, and be set in motion or "lighted up" by an external blow or injury, and hence that the plaintiff's injury was the direct inducing cause of the disease. The value and weight of the evidence, the court holds, was for the jury, and that it was correctly submitted to them. The jury took the plaintiff's view of it, and awarded damages accordingly.

Embryology Researches.—The University of Chicago has issued the following circular:

In the entire domain of morphology there is perhaps no province in which the investigator is so directly dependent upon the physician as in that of human embryology. Since 1857, when Karl Ernst v. Baer's "Epistola de Ovi Mammalium et Hominis genesis" marked the dawn of this branch of morphology, repeated appeals for assistance have been made. The generous responses have made possible such works as those of Coste, 1847; His, 1880; Minot, 1892; Marshall, 1893; Mall, 1893; and have linked inseparably with the progress of morphology the names of many physicians, notably Drs. Greppin, Ecklin, and Munch of Basle; Drs. Lomer and Leopold of Leipzig; Dr. Glaevecke of Kiel; Dr. Kittredge of Nassau, N. H., and Dr. Garrigues of New York.

Although we have acquired a vast amount of information there still remain fields almost unexplored. It is well known that we possess no information concerning the fertilized ovum, or its cleavage, and but little concerning gastrulation: the systematic growth changes have been very inadequately studied; while more facts concerning organogeny are highly desirable.

In order to obtain material for these and other lines of research, the Departments of Neurology and Anatomy of the University of Chicago ask your coöperation.

Should the request meet with your approval, we shall be pleased to forward you receptacles, reagents, etc., for the preservation of material to be sent us. Yours respectfully,

H. H. DONALDSON, Head Professor of Neurology; and A. C. EYLESHYMER, Associate in Anatomy.

Bills Cut Down. Uncontradicted testimony that a married woman told her physician that she wanted him to come whenever sent for, and she would see that he was well paid, the surrogate of Cattaraugus County, N. Y., holds, September, 1896, *in re* Smith's Estate, was sufficient to bind her separate estate therefor. At the same time the surrogate cuts down a bill of \$412 for four visits a day for 103 days, thinking \$350 a

liberal allowance. The reason given is that the physician resided very near his patient, called in to see her when he desired, and then made a uniform or average charge of four visits a day at a dollar each, while it was also taken into account that the patient was afflicted with an incurable disease, the physician gave her but little medicine, and often called in two other doctors for counsel and advice, from a place fifteen miles distant. The woman's condition and the character of her disease, the surrogate further holds had an important bearing upon the question of the necessity of these repeated consultations and the value of the services, and because each of the consultants was in attendance upon an invalid sister of the woman's, residing with her, against whom they made the same charges, he holds that their bills should each be cut down from \$15 to \$10 a visit. In this connection, it may also be noted that the probate judge of Cook County, Illinois, holds that \$2,000 was too much to charge for eight days' medical attendance on Mrs. Ada B. Gellatly, of Evanston, Ill., although it included a trip from California to Fortress Monroe and return to Evanston with Mrs. Gellatly in a private car. He thinks \$100 a day an ample fee.

The Hindu Lying-in Chamber.—According to the *Indian Medical Record*, the mortality in childbed among Hindu women is notoriously high, a circumstance which is no doubt largely due to the very early age at which they usually become mothers. A still more potent cause is, however, to be found in the shocking and apparently deliberate barbarity with which they are treated during the puerperium. The lying-in chamber of a Hindu family is ordinarily a little, damp, ill ventilated hut or room in some remote corner of the court yard or compound. In this the expectant mother is placed and there she remains from eleven to thirty-one days, during which, according to Brahminical law, she is looked upon as unclean. There is only one small inlet in this apartment, and the door is carefully closed to exclude those evil spirits, light and air. In order, probably, to purify the unfortunate woman by heat, wood fires are kept burning in the room both night and day. The smoke has to find its way to the outer air as best it can through any chinks there may happen to be in the roof or walls, which are usually made of bamboo with a thatching of mats or straw. With the view of more effectually exorcising the unclean spirit, a powder composed of peppercorns or ginger is given to the patient during the first few days; this preparation is administered either in the form of a paste or dissolved in boiling water as a tisane. It is not surprising to learn that the result of this elaborately perverse therapeutics is that something like 40 per cent. of the women subjected to it die of puerperal fever and tetanus within the first fortnight after delivery.

The Carrier Pigeon in Medical Practice.—Mr. James Payne, an English litterateur, quotes from the letter of a friend on the above subject, as follows: "I began using pigeons (Antwerps) for messenger purposes as early as 1874. The idea of their finding their way by 'instinct,' as is popularly supposed, is all nonsense. They go by sight, and on a misty day or if started too late in the afternoon, they either lose their way or refused to go. The birds were kept at the village where the doctor lived and where all messages had to be sent, and they were sent in turn in hampers up to me at my lodge, where they were kept in a large cage till they were wanted to go a message. At the arriving place their only way of entering was through a door of wire, which they could push open, and which rang a bell to let the man in charge know that a message had arrived. Inside this door, when a message was expected, the man hung a small cage, so the pigeon instead of finding himself in his roomy home, got into what corresponds to the letter-box inside an ordinary front door and actually delivered himself both as letter and postman. I found that the message was best wrapped up like the mottoes in Christmas crackers and tied

under and to the middle tail feather; if tied to the leg they hampered him as he could not double his leg well while flying, and was apt to pick them off. Under the wing in an envelope—though that is the way they are represented by artists—they would prevent the pigeon flying at all."

Unpaid Doctor's Bills an Expense.—In an action to recover damages for a physical injury, sustained by reason of a defective sidewalk, the court of appeals of Kansas holds, in the case of *City of Abilene v. Wright*, Oct. 17, 1896, that the reasonable cost and expense of medical attendance necessarily incurred may be recovered for, even though actual payment therefor was not made prior to the commencement of the action.

Measure of Damages for Malpractice in Setting Arm.—In an action against a surgeon for malpractice in setting and treating a broken arm, the supreme court of Nebraska holds, in the case of *Miller v. Frey*, decided Oct. 21, 1896, that the measure of damages is the damage accruing to the plaintiff in excess of that which would have accrued naturally from the breaking of his arm had he been treated with that degree of skill ordinarily possessed by surgeons. It is not the damage resulting from the breaking of the arm. That some damages would have resulted from that injury in spite of the most skilful treatment is pronounced clearly unquestionable. The defendant, no matter how unskilful he may have been, could not be liable for all the injuries resulting from the breaking of the arm. He is only liable for those resulting from malpractice; that is, for the damages resulting from his failure to exercise that degree of care and skill ordinarily exercised and possessed by physicians and surgeons in the treatment of such cases.

Hematopoietic Function of the Blood Marrow.—Roietzky has been studying this subject and announces that he finds the number of white corpuscles much larger in the blood as it leaves the bones than when it enters. The marrow therefore generates leucocytes, and does not cause their disintegration as some have supposed. The number of degenerated leucocytes is the same in the arteries as in the veins. The activity of the marrow seems to increase as other hematopoietic organs are destroyed, as for instance in the case of dogs whose spleen has been removed, the number of leucocytes originating in the marrow is much augmented. In experimental leucocythemia produced by giving turpentine to dogs, the function did not seem to be modified, but in some cases of natural leucocythemia, the number of leucocytes produced by the marrow was much increased. —*Bulletin Méd.* January 3 from *Wratsch*.

Coincidence or Cure.—Several pages are devoted in the *Bulletin Méd.* of January 17 to the description of a case that presented the clinical picture of the hectic fever that accompanies acute consumption. There was first acute febrile broncho-pneumonia, passing into a chronic state, with indications of a granulous infiltration of the right lung, etc. Exploratory punctures gave negative results. There was scarcely any expectoration, but Koch's bacilli were found in the sputum. The fever continued very high with two daily exacerbations, 39.5, 40.5 to 40.9 degrees C. This condition continued for two months, with the patient in a drowsy, exhausted state, gradually growing weaker. As a last resort the father begged to have the Roentgen rays applied to his son's chest. The first day after this was done the fever was higher than ever, but after the second application the fever stopped abruptly and the patient began to recover. In seventeen days he was completely restored and was removed to the country. Rendu and Castel, who report the case, do not, of course, venture to draw any conclusions whether the recovery was spontaneous and the cure merely a coincidence, or whether the rays were the cause of a cure. The patient certainly had youth and a fine physique in his favor. The rays produced a violent erythema, developing blisters and dermic ulcers, which lasted for three weeks and may have contributed to the cure.

Insurance of Unregistered Pharmacist.—Notwithstanding the Iowa statutes prohibit persons not registered pharmacists from conducting any pharmacy, drug store, or any store for the purpose of selling, compounding, or dispensing medicines or poisons for medicinal use, the supreme court of that State decided, in the case of *Erb v. German-American Insurance Co.*, May 27, 1896, that an insurance policy on the stock of merchandise kept for sale by an unregistered pharmacist was not void, as against public policy. Oct. 20, 1896, it held, in *Erb v. German Insurance Co.*, that a policy which contained the specific provision that "If the premises insured shall be used or occupied in whole or in part for an unlawful purpose this policy shall cease and be determined," was not rendered void by the mere fact that one not a registered pharmacist occupied the building as a drug store, it not being affirmatively shown that he conducted it contrary to law, for he might have employed a qualified pharmacist to conduct his business. Both of these decisions are cited and followed in principle, Dec. 9, 1896, by the court, in *Erb v. Fidelity Insurance Co.*, where it holds that a policy on the store furniture and fixtures of an unregistered pharmacist is not void, as against public policy, particularly when it was not shown that his object in procuring the insurance was to protect and aid an illegal business.

A Proposed Optometry Board of Examiners for New York.—Whether the people of the State of New York are well regulated or not, may be a question; but that they are much regulated there can be no doubt. Under the laws of the State not only the practice of medicine is regulated, but also the practice of dentistry, pharmacy, veterinary surgery, chiropody, plumbing and horse-shoeing, and a bill is now before the legislature to regulate the practice of optometry, and we are informed that the barbers are to introduce a bill to regulate the practice of the "tonorial profession." The bill to regulate optometry was defeated in the last legislature, lacking, however, only seven votes in the assembly. A new bill has just been introduced which provides that the Regents shall appoint a State Board of Examiners in Optometry, which shall examine all persons engaged in optometry in the State, and shall confine its examinations to such knowledge as is essential to the practice of optometry. The proposed act is to be construed so as not to apply to persons who sell spectacles or eyeglasses, without making pretensions to scientific knowledge or skill in adapting them to the eye. Registered physicians are exempt from the provisions of the act. The Optical Society of the State of New York, under whose auspices we understand the bill has been prepared, state that the principal object of this bill is to protect the public against incompetent and designing persons who may in the future "attempt to traffic upon postulate skill in adapting glasses to the sight." In a circular entitled "The Optician and the Oculist," published by the Society, the argument of the oculist that the testing of eyes for glasses should be done by him and not by the optician, is met by the following argument, which is, to say the least, ingenious, that "as the optician refracts, or bends, rays of light with his lenses before they enter the eye, and not afterward, he is treating light, not treating disease."—*Brooklyn Medical Journal*, February.

The State Medical Examiner of Rhode Island.—This little State is one of the few that have risen to the requirements of modern thought as to medico-criminal investigation, in the replacement of the antiquated coroner's office. There are twenty-five examiners, about one-half of whom have the care of Providence County. Dr. Swartz, in the last bulletin of the State Board of Health, explains some of the duties of the medical examiner, stating that for the time being—and at the same period of time—he must be a physician, a detective and a jurist. He must be an adept in medical lore and in legal requirements, attentive to every detail of surroundings and conditions, and

he must judge promptly as to the issue, otherwise the ends of justice may be perverted and the functions intended for his office come to naught. "The importance of the office is being daily emphasized by the frequent occurrence of deaths from violence and under suspicious circumstances, calling for knowledge and information on the subject from the medical examiner for all and more than the experiences of his predecessors can furnish. To obtain physicians from the fraternity at large who may possess all these qualifications is a difficult matter, for the subject is made only a side branch of instruction in most of our medical schools. It is not desirable to place in so important a position one whose experience with the world has been limited to a few years of study and to but a few years of actual contact with the ways of the world. It is preferable to obtain the assistance of those who have had the experience of a ripened practice, and whose judgment and action will not lead the State into unnecessary expense, nor by hesitation allow the cause of any criminal act to be lost to view. To find such men who are willing to give their time and their services to this work—for it requires sacrifices innumerable—is a difficult matter. Our State has, however, been well favored in this respect in past years, and it is to be hoped that the increased attention which it is necessary to give to this line of work will stimulate those undergraduates who have a liking for this branch to so perfect themselves that the position will seek the applicant, and not be necessary for the applicant to seek the position."

The Card Index in the Surgeon's Office.—Dr. A. T. Bristow of Brooklyn, in the *New York Medical Journal*, recognizes the growing position of periodical literature in the art of the surgeon, and the imperious need of saving time while keeping abreast of the march of that literature. He says "the greatest opportunity which our modern science and civilization offer to the medical worker of today is the abundance of literature which the printing press places at his disposal. There are the journals on special subjects and those which embrace the general field of the healing art. I need not specify the names of such periodicals to this audience. Indiscriminate and omnivorous reading is better than idleness, but the reader who does not classify his literature does not, it seems to me, utilize his material to the best advantage. A heterogeneous mass of information gathered from all sources is likely, in an emergency, to leave its owner in the position of one who always thinks of a bright retort after the opportunity to use it has gone by. But a lost opportunity in our art often means the sacrifice of a life. Knowledge, especially that which we gain from current literature, needs to be classified in order to be of full value. Accurate information in any branch is always classified information. I have found the following plan to be of great use in my own case of keeping my facts where they are readily attainable. As soon as possible after the receipt of a journal, as I read over the different articles, I check them off and enter each subject in a card-catalogue index. I devote my indexes exclusively to the subject in which I am engaged, surgery. Thus, on the subject of hernia, all the articles on hernia appearing in the various journals are entered by title, author's name, journal, page and volume. I find, on referring to my index, that I have fourteen such references on hernia; on the surgery of the gall bladder, thirteen references; on the surgery of the intestines, twelve references; on the surgery of the ureters, nine. Yet it is but two years since I commenced this system. Who can doubt but that in the thirteen references to the surgery of the gall bladder there is contained a mass of information concerning both diagnosis and technique which is unsurpassed, not a tenth part of which could be found in any three modern surgical text-books? Yet it is all at my disposal in the time that it takes to look over the card and get down the journals. The surgery of the ureters has been developed in the past few years, and, except in the most recent text-books

there is absolutely nothing to be found on this point. In the nine references on my card the subject is exhaustively treated, and I have almost a volume at my disposal, an amount of material at least for which no writer on surgery, no editor of an encyclopedia could find room in a single work. There is also in the labor of indexing the literature a sort of fixative which impresses the subject on the memory. The best system of mnemonics is that which involves an orderly classification of facts, and this cataloguing of current literature is that and nothing more. The method has been of great benefit to the writer, and I hope that I may be permitted to mention it, not as anything original or new, but as worth adopting, and to be commended as a means of rendering most useful one of the greatest opportunities of modern medicine, its rich literature."

Admissibility of Testimony as to Probabilities.—There is a clear distinction to be observed, according to the supreme court of Wisconsin, between the competency of testimony to be received with regard to the permanency of personal injuries, and its sufficiency, when received, to establish the ultimate fact to which the proofs are directed. On such questions as are not subject of absolute proof, the testimony should exhibit the nature and strength of the probability. It is then for the jury to determine whether it amounts to proof of the ultimate fact, to a reasonable certainty. Testimony which tends, in some appreciable degree, to establish the ultimate fact, is competent to be received, even if, in the end, it should be found insufficient to fully establish it. For these reasons, the court holds, in *Nichols v. Brabazon*, Dec. 15, 1896, that it was competent to ask a physician to state what the probabilities were for the recovery of the plaintiff from personal injuries. It also holds that damages can be recovered for bodily pain and mental suffering in the future, where it is established, to a reasonable certainty, that such damages will be endured in the future. And it holds that expert evidence to show that a failure of a person to properly exercise her limbs might have been the cause of the permanency of her injuries was inadmissible so long as there was no evidence to show that there was a want of proper exercise, and some affirmative evidence went to show that there was such exercise.

Apyretic intraperitoneal Rupture of Hydatid Cyst in the Liver.—The case described in the *Province Méd.* of December 19, presented the usual symptoms, sudden pains radiating into the abdomen, syncope, increase in volume of the abdomen, urticaria, vomiting and slight pleurisy of the right base, but no fever at any time. Professor Jaboulay performed a supra-umbilical laparotomy, which gave issue to a large quantity of fluid apparently slightly tinged with bile. The operation was followed by Mikulicz's marsupialisation, with strips of iodoform gauze reaching to the cyst in the liver. The discharge of intraperitoneal fluid continued for two months, while the general health and appetite were good. A month and a half after the laparotomy, the cyst was punctured and quantities of bile escaped with the hydatid liquid and also fragments of the hydatid membranes. Pieces of the membrane came away for three weeks and were removed with the forceps, when the wound was dressed every day. As the discharge decreased the opening healed until only a small fistula remains after three months. The presence of bile in the liquid after both operations, shows that there must have been some communication with the biliary passages and the bile as it entered the cyst must have killed the parasite. The case also illustrates anew the extreme tolerance of the peritoneum for the hydatid liquid and the bile when they are both aseptic.

Philadelphia.

THE BOARD OF TRUSTEES of the Jefferson Medical College has appointed a Committee on Arrangement for the purpose of having the institution fittingly represented at the unveiling of the monument to the memory of Prof. Samuel D. Gross, the ceremony having been appointed for May 5, 1897, at 5 o'clock p.m., at Washington, D. C.

AT THE MEETING of the Section on Ophthalmology, of the

College of Physicians, March 16, Dr. Wm. M. Sweet, by invitation, read "A Preliminary Report on the Localization of Foreign Bodies in the Eye by the Roentgen Rays." Dr. Howard F. Hansell, at the preceding meeting of the Section had reported a case of a man who had carried a piece of steel in his eye for nearly a year, in which a skiagraph being made by Dr. Stern at the Polyclinic Hospital, showed the presence and locality of the foreign body. The eye had become atrophied and vision was lost. Dr. Hansell enucleated the eye and found the fragment of iron in the ciliary body. A case was also reported by Dr. DeSchweinitz, in which the steel was successfully extracted.

THE PHILADELPHIA POLYCLINIC is organizing an intelligence bureau for physicians visiting the city, from which information may be obtained of operations, interesting cases, etc., to be presented at the various clinics held at different hospitals, not only by members of its own staff but also by any other member of the regular profession who wishes to avail himself of the opportunity offered of inviting physicians to witness his operations. In this way it is hoped that much more can be made of the clinical facilities offered by Philadelphia than by any other method. The Polyclinic is particularly favorably situated for getting into communication with physicians coming to the city and offers to furnish the clerical work, telephone connections, etc., without expense. It is expected that this will prove a great convenience during the coming meeting of the Association.

THE PUBLIC SERVICE.

Army Changes. Official list of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from March 6 to 12, 1897.

Capt. Charles Willcox, Asst. Surgeon (U. S. Military Academy, West Point, N. Y.), leave of absence granted is further extended one month and fifteen days, with permission to go beyond sea.

Change of Address.

Carmichael, D. A., U. S. M. H. S., from Vineyard Haven, Mass., to Cleveland, Ohio.

Collins, Katharine R., North College Av. and 22d St., Philadelphia, Pa.

Hall, J. N., from 1517 Stout St. to Jackson Bldg., Denver, Colo.

Hillkowitz, Wm., from 507 W. 7th St. to 704 Race St., Cincinnati, Ohio.

Leusman, F. A., from 270 E. Huron St. to 100 State St., Chicago, Ill.

McBride, M. A., from New Orleans, La., to Tahlequah, Ind. Ter.

Shepstone, J. A., from 3819 to 4844 State St., Chicago, Ill.

Vaughan, G. T., U. S. M. H. S., from Philadelphia, Pa., to No. 3 B St., S. E., Washington, D. C.

LETTERS RECEIVED.

Asher, A., & Co., Berlin, Germany; Alma Sanitarium Co., Alma, Mich.; Atkinson, W. B., Philadelphia, Pa.; Ashmead, Albert S., New York, N.Y.;

Austin, J. H., Kansas City, Mo.; American Therapeutic Co., New York, N. Y.;

Anderson, Meredith, Georgetown, Ky.

Brown, Sanger, Chicago, Ill.; Blodgett, F. J., New York, N. Y.; Branch,

B. L., Collierville, Tenn.

Cathcart, Cleland & Co., Indianapolis, Ind.; Carstens, J.

Mich.; Coldren, E. V., Topeka, Kan.; Cook, C. A., & Co.,

Cartier, A. H., Council Bluffs, Iowa; Colburn, J. M.,

Wis.; Collins, T. R., Bath, England; Cordell, E. F., Balti-

more, Md.; Dunlap, W. B., San Francisco, Cal.; de Schweinitz, G. E.,

Philadelphia, Pa.; Dudley, W. H., Easton, Pa.; Davis, N. S., Jr., Chicago, Ill.; Durham,

O. H., Defiance, Ohio; Drake, E. L., Philadelphia, Pa.

Ellenberger, J. W., Harrisburg, Pa.

Fairchild, Bros. & Foster, New York, N. Y.; Furst, O. J., Peabody, Kan.;

Frank, Louis F., Milwaukee, Wis.

Garreau, E., New York, N. Y.; Grady, B. J., Boston, Mass.

Hafton, E. M., Columbus, Ohio; Hummel, A. L., Advertising Agency,

New York, N. Y.; Hays, Geo. A. B., Jackson, La.; Harsha, W. M., Chicago,

Ill.; Hiltz, Henry B., Milwaukee, Wis.

Johnson, E. F., Des Moines, Iowa; Johnson, H. L. E., Washington, D. C.;

Jones, L. H., Wall Lake, Iowa; Judd, W. H., Janesville, Wis.

Koechl, Victor, & Co., New York, N. Y.; Kendall, W. A., St. Louis, Mo.;

Kane, H. H., New York, N. Y.; Kress & Owen Company, New York, N. Y.;

Klebs, Edwin, Chicago, Ill.

Lord & Thomas, Chicago, Ill.; Lehn & Fink, New York, N. Y.; Love

A. H., Salem, Mo.; Leighton, N. W., Brooklyn, N. Y.

Marlette, C. E., Hayneville, Ala.; Moore, J. C., Omaha, Neb.; Mills,

Harry B., Philadelphia, Pa.; Montgomery, E. E., Philadelphia, Pa.

Neal, John H., Rochester, N. H.; Norwich Pharmacy Co., Norwich,

N. Y.; Noble, Thos. B., Indianapolis, Ind.

Packer, E. B., Osage, Kan.; Parke, Davis & Co., De

mele, C. R., New York, N. Y.

Richardson, E., Louisville, Ky.; Rice, F. E., St. Paul, Minn.; Reed &

Carrick, New York, N. Y.; Rach Cocoa Co., New York, N. Y.

Smith, A. F., Wamepecoug, Ind.; Sumney, H. C., Omaha, Neb.; Strueh,

Carl, Chicago, Ill.; Stoner, C. E., Des Moines, Ia.; Staples, Franklin,

Winona, Minn.; Stowell, Chas. H., Washington, D. C.; Schering & Glatz,

New York, N. Y.

Towler, S. S., Marienville, Pa.; Trevin, J. L., Detroit, Mich.

Vincent, John A., Springfield, Ill.

Wessels, Francis E., Ridley Park, Pa.; Williams, J. D., Syracuse,

Ohio; Wingate, U. O. B., (2) Milwaukee, Wis.; Woodbury, Frank, Phila-

delphia, Pa.; Walker, H. O., Detroit, Mich.; Wilbur, C. T., Kalamazoo,

Mich.

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ORIGINAL ARTICLES.

SOME REMARKS ON MALIGNANT GROWTHS.

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The expression "malignancy" is now reserved for such pathologic new formations that will often return after removal and form metastases, if not entirely removed. As the first depends upon incomplete removal, mostly depending on dissemination of tumor-germs in the various forms of the primary growth, the latter property only is the true feature of malignant tumors.

To clear up the nature of this property is a task of the highest scientific and practical importance, and it seems always convenient to review our notions on these points, even though they are not wholly conclusive. At least, such an examination of facts will show the way for further investigation and secure the practitioner and pathologic investigator from mistakes, by removing misunderstandings.

Separating the infectious tumors from the organoid growths, in the second part of my "General Pathology" (1889) I think I have placed the question somewhat clearer. The organoid tumors spread by dissemination of tumor-cells; the infectious tumors by dissemination of microbes.

Now, in this decennium, attempts were renewed to subject the organoid growths also to the action of microbes. Sudakewicz, Ruffer and others regarded the long-known hyaloid masses, intracellular and extracellular, found in carcinomas, to be plasmodia or the various forms of those things, namely, the concentric or radial striping of globular masses, the servers of high standing, as Metschnikoff, to accept this suggestion. I have shown ("General Pathology," ii, p. 126, fig. 11, and p. 152, table 17) the formation of such bodies in blood vessels of the brain, in chorea hereditaria, in the lymphatics of the lungs, in chronic bronchial croup, and in an acute atrophic liver, processes in which the inoculation of blood and lymph seems to be impaired.

Further, if there were microbes in malignant tumors they must grow and develop under well adapted conditions of life. As all attempts of cultivation outside of the body had failed, I implanted living carcinomatous tissue from man into the livers of a number of rats, thereby induced very often spontaneous development of carcinoma, and seemed therefore to be highly predisposed to this disease. These particles contained human epithelial cells and the hyalin bodies. The cells showed in these experiments the first signs of farther development in the formation of microbes, but were involved later; the latter disappeared in a short time without a tendency of development.

I can not accept the objection of Metschnikoff that coccidia of one animal would not grow in another, for these suggested coccidia were included in living and to a certain degree developing human cells. That they would not develop under these conditions shows quite clearly that they are not living bodies at all.

After the coccidium theory had slumbered for years, came the blastomycete- or yeast-theory of the Italians. The extracellular disposition of these bodies shows clearly that they can not be the cause of tumor-propagation by cell-dissemination. As one of the observers contended that these bodies were only found in certain parts of the tumors, I encouraged a good microscopist working in my laboratory, Dr. Döpfner, of Chicago, to undertake the difficult task of staining and spreading lymphosarcoma, operated by Dr. C. Beck, in the Post-Graduate Medical School. It seemed more probable that we should have positive results in that case, as I had cultivated some yeast or blastomycetes from this tumor, coming into my hands immediately after the operation. The bodies, on fluid meat-peptone, found in cultures were somewhat smaller than human red blood corpuscles, round, quite circular, with a distinct membrane, forming internal spores and also external buds. (Knospung.)

From all these circumstances I do not think that it was a fortuitous incident, but that these growths came from out the tumor. Indeed, there were found by Dr. Döpfner in some of the preparations round bodies stained deep black with aqueous anilin gentian violet, and discolored with oxalic acid, 1 per cent. But they were smaller than the yeast corpuscles, some very small, and showed no signs of vegetation, either as buds or internal spores. Moreover, they seemed to be in connection with red blood corpuscles, which retain also other anilin dyes, namely, after using corrosive substances, mordants, as after the use of iron-ammonia-sulphate (Heidenhain).

The last prove what I have proposed long before R. Koch, in such cases to ascertain the etiologic connection of an organism with a certain disease; the synthesis of the same disease by the organism I have not yet shown, but it will be made later, notwithstanding that it may fail by not having suitable animals, positive results alone being conclusive.

The lympho-sarcoma having a place on the limits of infectious and organoid tumors, the result of such experiments would not invalidate our notions of true organoid tumors, which disseminate alone by tumor cells; a form of generalization that is not infection, but must be called decidedly *implantation*.

It is one of the best confirmed pathologic facts that every true carcinoma spreads by the transportation of its own cells through lymphatic spaces and blood vessels. The same is demonstrated in a very great number of malignant tumors; also of such originating from the tissues of the middle germinal plate,

the endothelioma, the enchondroma and the sarcoma. It is also true for malignant neuroma.

The demonstration of this fundamental fact naturally is the more sure, as the specific histologic feature of the disseminated cells are more evident, as is the case in epithelial, cartilaginous, nervous or mucous cells. But it is also assured by the identical composition of the youngest metastases exactly showing the same histologic structures as the primary tumor.

Further we can say, that every carcinoma commences with the formation of metastasis spreading; or expressed in another way, the true nature of carcinomatous condition is the dissemination of certain epithelial cells. If we have the opportunity to examine the first stage of carcinomatous development, we can perceive this fact and will be inclined to assert such a diagnosis if we can demonstrate this epithelial displacement.

In this fact reposes the theory of R. Virchow, declaring the carcinoma as an heterotopic development of epithelial cells. Cohnheim, *vice versa*, thought that epithelial tissue displaced in embryonic tissue may be the origin of cancer, while Ribbert, during the last year proposed the opinion that every cancer commences with epithelial developments near the normal epithelial covering, but originating from embryonic epithelial germs.

The theory of Virchow is no more acceptable, since we know the sharp division between the descendants of the different germinal plates, and the theory of Ribbert reposes on the hypothesis of germinal displacement of single cells, not demonstrated, probably not demonstrable. The broadest pathologic view showed Cohnheim's theory of the highest value for the understanding of tumor formation, but not for malignancy.

If we remember the large number of embryonic implantations, we must positively deny that they show a disposition for malignancy. All dermoids or natural graftings of skin particles in the depth of the organs can grow, and many of them, as the dermoid of the ovaries, will become very dangerous in later life, but only by mechanical influences producing irritation of the peritoneum or perforations into the intestine or the urinary bladder, seldom also of the abdominal wall. But I do not remember one case of carcinomatous degeneration.

The same benign or only locally dangerous course show the fetal implantations, the dermoids containing whole organs, as I have shown, dispersed parts of a second fetus included in the abdominal cavity of his brother. Here the destruction of the included fetus can be so great that the different tissues seem to have lost all their natural connection, lying pell-mell, and notwithstanding we observe here not the active penetration of connective tissue by epithelial cells, as in the cancer. Where two tissues develop together the relation between them is always the normal in these cases.

But there exists a second kind of tumor, apparently resulting from embryonic influences demonstrable nearly in all organs. In these certain parts of the tissues, composing otherwise normal organs, conserve their embryonic conditions. To this class belong most of the congenital multiple tumors, the multiple neuromas and neurofibromas, the multiple enchondromas and the multiple adenomas.

I will refer here only to the last, as they seem by their epithelial origin to be mostly adapted for cancerous growths. These adenomas are preferably devel-

oped in the ovaries, the liver, the kidneys and the mammary glands.

In the ovary they are found under the two forms of so-called compound cystoids and of papillomatous tumors.

The first, the mucus-producing form, is developed, as I have shown a long time ago, from the embryonic tubular structure of the ovarian glands (Valentin, Pflüger), not transformed to Graafian follicles.

Already Spencer Wells remarked that after extirpation of a cystic ovary the other oftentimes developed in the same manner. I could sometimes demonstrate the stages of this affection in the seemingly normal organ of the other side.

The exceedingly frequent recurrence of the adenoma of the breast after extirpation of the greater knots is well known; also the fact that these recurrences, starting from embryonic remains and finding place for development after removal of the first, are not at all dangerous or give a disposition to cancer. I saw such a breast operated upon more than twenty times and containing many more adenomas of microscopic volume.

The adenomas of the liver are often so numerous, forming small gray nodules, that they may resemble miliary tubercules. But some of them can develop to very large tumors without causing metastases.

In the kidney, where these tumors form also multiple gray spots, composed of proliferating uriniferous tubes (not to be confounded with the disseminated germs of the adrenals), I have seen as the first case that came in my hand here an enormous tumor of this sort, operated by Dr. Ferguson, Sept. 30, 1896. The patient was a young lady from Canada, operated upon some years before for a cyst, opened through the abdominal wall, the origin of which could not be located. The kidney at this time was probably not enlarged and only one of the multiple adenomas was developed to a large cyst. Now, the whole kidney formed a tumor of two feet in length and one in breadth, reaching down into the pelvis and upward into the thoracic cavity, raising the diaphragm and displacing the heart and left lung.

The enormous tumor, enucleated with great skill and with happy result, proved to consist only of the kidney; the normal kidney-substance formed a small strip at the one pole. The other pole contained a large cyst surrounded by soft gray adenomatous tissue. The median part was composed of grayish-looking, round adenomatous nodules, varying from the size of a chestnut to that of a man's fist, separated by very small tracts of atrophied kidney tissue. The cyst was formed more by necrosis and absorption of the necrotic tumor masses, than by distension of tubules.

As the recovery of the patient was effected in a short time and she gained very much (24 lbs., Jan. 30, 1897), it is not to be considered a carcinomatous development, which is also not at all sustained by microscopic investigation, showing only proliferating tubes.

In other tumors of this class we can observe the highest possible proliferation and dissemination of epithelial tissues without formation of metastases or dangerous development. So, in one case of double-sided papillomatous tumors of the ovaries, combined with a great urachus-cyst, operated by Dr. Franklin H. Martin in the Post-graduate Medical School, there protruded enormous papillomatous masses, covered with thick layers of proliferating epithelial cells, freely in the abdominal cavity without giving rise to secon-

dary development. These masses and also the same formations filling up the distended Graafian follicles exhibited a very interesting production of ovum cells, described first by Ernst Neumann in Königsberg, a true adeno-papilloma oviparum.

All these excessive productions of epithelial cells, limited to physiologic condition in the behavior and relation of tissues are quite different from carcinomatous epithelial productions.

Further, we must say: dissemination of normal epithelium produces no carcinoma. Such disseminations occur in the female body at every menstruation. All attempts made by different observers to produce carcinoma by implantation in lymphatic spaces have totally failed.

The hitherto reported observations lead to the conclusions: 1, that the embryonic condition of any part of the body can be regarded only as one of the causes of tumor formation, but not of the malignancy of tumors; 2, that the malignancy of tumors, the faculty of spreading by its elements, is due to a modification of the tumor cells.

The next question will be to disclose the nature of carcinoma cells and, if possible, the origin of this modification of cell life.

As to the first question, it suffices to indicate the two well known properties of these malignant cells, as we can now say, the faculty to grow and proliferate in a strange tissue and the deficiency of tissue formation. The epithelial cancer cell produces in any organ into which it is transported by their own movements Waldeyer's contractile epithelial pus-cells, or by the currents of lymph or blood, irregular cell masses, resembling somewhat the original tissues, flat or cylindrical cells, but very different from the original masses. The relation of the cancer cells to the surrounding stroma is deeply altered; blood vessels and connective tissue grow, as it seems, stimulated by the cancer cells in the same excessive and irregular way as in the primary tumor.

We can express this simple fact without any hypothetical suggestion as the disturbance of the laws of tissue formation or of normal growth.

As to the second question, the causes of this lawless cancerous growth, we must refuse to accept the embryonic theory and, so far as our knowledge now reaches, also the microbic theory. If new investigations should detect an organism promoting this cancerous metamorphosis, and also present in all the other malignant tumors, as endotheliomas, neuromas, myomas, etc., certainly a very intimate symbiosis must be established between such organism and the cancerous cell, the medium of metastasis. Intracellular microbes would only cover this claim.

As every effort to demonstrate such a microbe has failed, we must ask if the clinical features of malignancy suggest such a theory. But as the observations of direct or indirect infection and the formation of endemic or epidemic development of cancer (not regarding the more seldom developing forms of other metastatic growths), are not present or available in any extent, I will not delay this exposition of facts by criticising the opposite assertions, familiar and local differences in the frequency of cancer.

But I must insist on one fact not enough regarded, as it seems to me, that in a higher way as the clinical facts invalidate the idea of infection, that is, the originating of true cancer in other benign or infectious tumors.

With very few restrictions we can point out as a general law, that the origin of cancer is always a secondary metamorphosis of proliferating tissues.

That this is the case in a considerable number of cancerous growths nobody will deny; I remember the development of cancer in lupous or tubercular ulcerations of the skin, in the chronic ulcer of the leg and the round ulcer of the stomach, also in the chronic hyperplastic affections of mucous membranes. The cervix uteri gives many good examples, by the way, oftentimes affording diagnostic difficulties. Before the ulceration they seldom can be detected to be of a cancerous nature. Therefore the microscopic diagnosis of all the hypertrophic adenomatous, papillomatous and polypous forms of vegetations of the neck of the uterus is of the highest value for the question of radical operation. Once, in the practice of Breisky in Prague, I found a very well developed cancer in a pedicled small polypus of this part.

The highest support for the successive development of malignancy is given by cases in which foreign bodies promote first the development of simple benign tumors, which later on are changed to cancerous growths. The calculi in the gall bladder and foreign bodies (once a cherry stone) in the stomach, I have observed as the causes of papillomatous, later cancerous growths.

Another instructive object is found by the papillomatous growth of the urinary bladder, developing oftentimes in younger years and leading by repeated bleedings to the highest forms of anemia. I have observed a number of these cases for years, the healing after natural expulsion of these tumors and otherwise the carcinomatous metamorphosis, if these long standing tumors are not eliminated in the natural way or by surgical help. In one of my friends in Switzerland I have followed this development for years, in vain insisting on operation.

Now, I have here received from Dr. Kovats in Milwaukee, Wis., such an object, operated as I hope at the right time, but showing as I think a partially malignant metamorphosis.

In former times it seemed sufficient to give a bad prognosis, if in the urine of such cases were detected many large and irregular epithelial cells, and indeed, many of these patients died cancerous, as the operation was not undertaken. Others, in which natural elimination occurred, recovered. Hence, the conclusion is secured that the once benign tumor becomes malignant after a time.

I can show you microscopically in this tumor one part in which, at some places the intrusion of the covering and highly vegetating epithelial cells into the stroma has commenced, and in which epithelial cells at one place forming a rounded heap, are present in a wide lymphatic space, included by a fine fibrinous network. Without imbedding in paraffin it would be not possible to obtain from such tumors complete and sufficient thin slices (1-100 millimeter).

In this case the basis of the tumors containing broad arteries was found to be quite free from such development. So I could notwithstanding express a somewhat hopeful prognosis. The future will reveal if this view is correct or not. The radical cure of cancer by total extirpation is no more questionable.

But in such cases there will remain oftentimes a doubt. We must ask if really this penetration of proliferating epithelial cells will always be sufficient for the diagnosis of cancer. If we find irregular growing

epithelial masses in great extension in an also granulating stroma, there can not be justified a doubt. But if this process is going on to a very small extent, this doubt must arise the more, as one is convinced of the harmlessness of normal epithelial cells introduced by only mechanic forces into the lymphatic spaces. I have reminded you of a number of such facts.

Therefore, we must search to point out the true features of cancerous proliferation. If the epithelium cells are the seat of this metamorphosis, the proliferating cells only can give us the explanation for this biologic change. The irregularities in mature age depend upon modified development.

The principal feature of carcinomatous cell proliferations can be denoted as *hypermitosis*, depending upon supernutrition of the cells. In the place of the normal well-known forms of karyokinesis we observe in every carcinoma or other malignant growth irregular and exaggerated forms of mitosis. I have marked out a part of these processes in my "General Pathology"; also Hansemann of Berlin has given valuable observations of the same, but regards more the phases of division as the preparatory stages of the process. Here, let me give a more complete exhibition of the process.

As I have remarked in my first publication, the epithelial cells tending to karyokinesis take up a greater quantity of coloring matter in the protoplasm and in the nuclei; both enlarge, the first staining more intensely with acid anilin dyes, as eosin or methyl orange, the nuclei with hematoxylin. In intensely proliferating objects, in which these very transient processes are fixed by rapidly killing the cell life,¹ one notices after staining the fine sections (1-100 mm. thick) with hematoxylin² and eosin, that in different parts of the preparation black (methyl orange) or deep blue (eosin) stained nuclear masses are present in abundant quantity, centers of proliferation (Flemming). In the same parts are recognized the different stages of karyokinesis and lastly a greater accumulation of leucocytes with fragmented nuclei. The last are irregularly disposed; some cells are crowded with them, others are free or we find only some leucocytes between the cells.

This seems to be the commencement of the process; the cells with richly staining nuclei contain a somewhat smaller number of fragmented nuclei, the bodies of them are dissolved and the stained leucocytic nuclear masses seem to be taken up by the nuclei of the epithelium cells. The leucocytes feed the epithelium cells. After this supernutrition the nuclei will be swelled up more and more by a colorless fluid, the membrane of the nucleus becomes thinner and thinner, whereas the stained nuclear substances commence to show the different stages of karyokinesis.

The forms of the spirema (Clew, Knänel) are not so clear as in normal mitotic division in consequence of the tight accumulation of the nuclein. In the first time of this stage it makes the impression as if these masses form an homogenous semiliquid fluid, the limits of it being not so clearly defined.

As a consequence, there begins the separation of the nuclein into different parts, mostly forming manifold

¹ I use now for fixation a mixture of alcohol, about 1 parts, with formalin (40 per cent.) 1 part.

² My hematoxylin solution is prepared in the following manner: One gram cryst. hematoxylin is dissolved by warming in 20 c.c. kresol water 2 p.m. There is added for every c.c. of this solution one drop of a concentrated solution of ammonia alum in kresol water and filled up with kresol water to 100 c.c. The solution is ready for use in twenty-four hours, deposits very small quantities that must be taken off by filtration, and stains the thin sections in one or two minutes.

compound middle plates, often in connection with one another, often separating in three or four or more plates. But generally not all of the nuclein is transformed at once in this manner; greater or smaller quantities of it are disseminated in loose masses, showing the form of fine threads dispersed through the free parts of the clear nucleinic area, that is no more sharply defined against the red-stained protoplasm.

If the middle plates are separated or only curved a little with the concavity against the periphery of the cell one may notice one or two very small entosomes or central corpuscles exactly in the center of the circle, a section of which is formed by the middle plate; the whole constitutes one "attraction-sphere." The central corpuscles of the sphere are too small for showing a well-defined color, but they are best seen in preparation afterward stained with safranin. I suppose that these corpuscles are formed of the nucleolus not visible in this stage, but very large in all perfect nuclei of carcinomatous cells.

The formation of asters or stars, I have not observed in these hypermitoses. This stage must be very transient. But I have proofs that this metamorphosis and the formation of new nuclei is going on by repeated changes successively in one and the same cell, a feature quite characteristic of carcinomas. I can show you such cases in which the whole periphery of the highly enlarged cell contains well-formed nuclei, lying one near the other and containing a red-stained nucleolus, whereas in the central part the younger stages of karyokinesis are developed.

As a middle stage between these two phases, the curved middle plates and the perfectly developed nuclei, I have observed a few times large round vacuoles resembling the physalides described by Virchow, limited by a very fine membrane, and containing in a clear interior an indefinite mass stained red with safranin, possibly a nucleolus in formation; also a very few nucleinic threads. That in this case a deficiency of this latter substance resulted in a retarded or insufficient nucleus formation, I can not say with certainty, but it seems not improbable. If the attraction sphere acts by pulling of a part of the nuclein from the middle plate, it could be that this action has been insufficient in some instances. The spindle-shaped fiber of the attraction-spheres I have not been able to stain, but I am trying the methods of Flemming, which, as that observer remarks, are not always efficient. Possibly they will stain better in preparations fixed with osmic acid.

If we look over the whole process we see clearly the following phases of development of tumors, ending in the carcinomatous metamorphosis:

The first stage is that of chronic irritation or inflammation, originated by microbes or by mechanical, or probably also by chemical influences producing a chronic state of hyperplasia, the so-called benign growths composed of all normal tissues constituting the part. This development can lead to diffuse hyperplasia or tumor-formation.

The second stage commences with new emigration of leucocytes and progressive development of certain cells, losing through the hypermitotic production the faculty of normal tissue formation. The excessive proliferation and the possibility of living in a strange medium promotes the formation of metastasis, the true feature of carcinoma.

I will add the remark that this mode of develop-

ment seems to exclude the healing of malignant tumors by irritations, the electrical, microbic or chemical treatment. The delimitations of emigration processes would be preferable to the necrotising effects of these treatments. But the surest way will be always the removal in time. Possibly we may prevent or modify the cancerous metamorphosis by inhibiting substances with negative chemiotaxis, repelling the leucocytes, as the by no means sure healing influence of some bacterial toxins seem to show (Coley, Tavel, Emmerich and others).

For the diagnosis the early and repeated microscopic investigation of the diseased part will be the only reliable method. But to make this method effectual the small removed parts must be fixed immediately after removal. Our solution seems to be commendable, as the substances composing the fixative, alcohol and formalin, are in the hands of every surgeon.

CANCER OF THE RECTUM.

WHAT HAS MODERN SURGERY ACCOMPLISHED IN ITS TREATMENT?

Read before the Chicago Academy of Medicine, January 8, 1897.

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NEW YORK.

After centuries of experimentation in which almost every known drug has been tried, we are forced to acknowledge that thus far we know of no remedy which offers the faintest assurance of the cure of cancer; if we except the arsenic pastes. The rapidity of absorption and our inability to control its action, render arsenic too dangerous to use in cancer of the rectum, except, perhaps, in cases of epithelioma at the margin of the anus. Until late years the high mortality and rapid recurrence after operation rendered this avenue of escape as hopeless to the sufferers as that of therapeutics, but since the discoveries of Lister and Kraske they have been gradually declining, and the radical removal by the knife, offers today assurance of relief from suffering, and some hope of cure to the unfortunate suffers from this disease.

The late period at which most cancers of the rectum are discovered, renders it improbable that we will ever be able to extend this hope to even the majority of such patients. Up to the present time the experience of most conscientious surgeons will agree in having advised against radical operation more frequently than in favor of it. Perhaps when the profession have become more expert in diagnosis; when the careful examination of the rectum has become more systematically practiced in all cases with intestinal symptoms, and when we shall have reduced the mortality of the operation to a minimum, the balance may move to the other side of the page, and we may offer encouragement to the large majority of such patients.

What we come to study at present is: "What has modern surgery accomplished in the treatment of these cases?" What are its limitations? What are the immediate and remote results of operation?

By modern methods we mean inguinal colotomy, resection and excision of the rectum. In colotomy we have a palliative procedure with little danger attached to it, and with no promise whatever of cure; in the others we have radical operations, with some danger attached, which offer relief from suffering

together with a more or less well-founded hope of permanent recovery.

Outside of this immediate danger, there would never be any question with either doctor or patient as to which course to pursue, and it is to this particular point that I will devote the most of this paper.

The mortality of any operation depends largely upon the selection of cases. The point to be decided in each individual case is, whether it is a suitable one in which to attempt a radical cure, or not. There is a sharp division in the two lines of treatment at this point. We must either go boldly forward in our efforts to cure, or content ourselves forever afterward in that individual case, with palliative measures. I can not endorse the doctrines of some teachers that we must either excise or colostomize as soon as the diagnosis of cancer is made. The former is imperative in its demand to be done at once; the latter is a palliative measure and is only called for when the disease has progressed to a stage of obstruction, or to that condition in which the passage of fecal matter causes hemorrhages, pain and reflex symptoms.

In a large majority of cases, these symptoms, severe enough at least to call for colostomy, do not arise until the lethal period is near at hand, and then the operation alleviates the sufferings of the last few weeks. I have gone faithfully over the statistics, so far as published, year after year, and I fail to find any proof beyond the simple *post hoc ergo propter hoc*, that this operation prolongs the lives of patients to any great extent. Because one lives two, three or even four years following this operation does not prove that it was on account of it, or that he would not have lived had the operation not been done. Some cases of cancer of the rectum, of that slowly progressive type, live long periods without any operative interference; and I am perfectly sure that all the cases which have been claimed to be cured by colostomy, have been cases of mistaken diagnosis, being either simple or syphilitic proliferating ulcerations. On the other hand, I can not agree with those who hold an artificial anus to be a painful and disgusting deformity, by which no patient was ever made comfortable, and with which he was never content. At the proper period, and under proper conditions, there is no palliative procedure more benign in its effect. When properly made, such an anus can be fairly well controlled, and the normal functions of the bowels maintained. There is no reason to suppose that such an operation would retard the metastatic dissemination of the growth throughout the body, except that there is a decreased lymphatic absorption in the parts. Nor is there any proof that the growth of the tumor *in situ* is retarded by the operation, unless we accept as such the slightly increased average length of life. The worst feature of early colostomy, however, is its absolute hopelessness. To perform this operation upon a patient without the promise of a future excision, is to consign him to a certain death, which ever slowly but surely creeps upon him, which he must look squarely in the face, and from which there is no possible escape. Such hopelessness, to my mind, is worse than that of a condemned felon in his cell, who has, at least, one comfort, in that he knows the day when all his anxieties and sufferings will end. The effect of such a discouraging condition upon any man, and the fact that the very presence of the artificial anus constantly reminds him of his fatal disease, makes death almost

preferable to life. The relief afforded to a few patients in the later stages of the disease is certainly great, and I have no hesitation in advising the operation where the conditions are not favorable for the attempt at radical cure, and where the patient's sufferings are such that relief is promised by this procedure.

Beside the inconvenience and discomfort produced by the artificial anus, and the hopelessness of colostomy for malignant growths of the rectum, it is still an open question as to how much life is prolonged by this operation.

Crespin, Mathews, Adler, Allingham, Jr, and Kelsey, the great apostles of colostomy, do not claim an average of over eighteen months of life following this operation in cancer of the rectum. The statistics which I have been able to gather are very meagre with regard to details, but certainly, would not give an average lease of life of more than one year after colostomy. The claim that the operation relieves pain is partially contradicted by its most enthusiastic advocates in that they all, eventually, resort to opium sooner or later in these cases. Moreover, pain is generally one of the least distressing symptoms of the disease, unless the growth be low down, near the margin of the anus, where all admit that extirpation should be practiced. It can only have a very slight influence in preventing hemorrhage unless combined with curettage. It does relieve the constant symptoms of diarrhea, but it does not remove the spasmodic contraction of the sphinctures when the growth is low enough down to involve the sensitive area of the gut. In fact, the most of these symptoms only appear after the period favorable to extirpation has passed by; when it is a question of colostomy or morphin; and when colostomy is done, it generally resolves itself into both.

The immediate mortality from colostomy is about 3 per cent. or less. In ordinary conditions, we can almost positively promise recovery from the operation, but unfortunately, this is about all we can promise except in cases of obstruction and stricture.

But what does the modern operation offer in place of this relief and in justification of its greater risk?

I present you herewith three sets of statistics: No. 1 showing the early results of extirpation by the perineal method; No. 2 embracing the first five years' experience with antiseptics and the sacral methods, and No. 3, embracing the last six years, including over 125 unpublished cases, contributed to me by surgeons all over the United States for use in this paper.

Let us study these tables carefully, and draw, if possible, a just estimate of the results of the modern operation, and then we can answer the above question. I have not thought it worth while to include in these tables the cases of Favet the first to perform the operation in 1763; of Lisfranc, who popularized it for a while in 1833, or of Dieffenbach, whose remarkable series of cases has been received with the greatest incredulity by the profession.

TABLE I.—AMPUTATION, OR EXCISION OF RECTUM. STATISTICS PREVIOUS TO 1885. (PERINEAL METHOD.)

| Reporter. | No. of Cases. | No. of Deaths. | Mortality. Per cent. |
|---|---------------|----------------|----------------------|
| Schmidt, Gunther's Blutigen Operationen IV—1 p. 65 | 33 | 8 | 24 |
| Agnew, V. I. p. 135 | 10 | 4 | 40 |
| Gross, by Thorndyke, <i>East. M. and S. J.</i> 1892 | 193 | 39 | 20 |
| Kelsey, <i>N. Y. Med. Jour.</i> , xxxii, p. 608 | 140 | 22 | 15.8 |
| Billroth, <i>ibid.</i> | 45 | 19 | 42.2 |
| Allingham, <i>Sr. Am. Ency. Surg.</i> , v. vi. p. 124 | 36 | 5 | 14 |
| S. Fisher, <i>ibid.</i> | 15 | 8 | 53 |
| Genzner, (Voight) | 15 | 1 | 26 |
| | 487 | 109 | 22.4 |

TABLE II.—EXCISION AND RESECTION OF RECTUM. STATISTICS FROM 1885 TO 1892.

| Reporter and Reference. | No. of Cases. | No. of Deaths. | Mortality. Per cent. |
|---|---------------|----------------|----------------------|
| Arndt, (Koehler) <i>Deut. Zeitsch. f. Chir.</i> , Bd. xxxii, p. 1 | 35 | 10 | 28.5 |
| Bardenheuer, <i>Centbl. f. Chir. Beilage</i> , No. xxiv, 1888 | 13 | 45 | 15.4 |
| Hilderbrand, <i>Deut. Zeitsch. f. Chir.</i> , Bd. xxvii, p. 329 | 57 | 20 | 35 |
| König, <i>Centbl. f. Chir. Beilage</i> , No. xxiv, 1888 | 60 | 14 | 23.3 |
| * Kuster, <i>Bull. klin. Woch.</i> , 1889, p. 193 | 16 | 2 | 12.5 |
| Bloch, <i>Centbl. f. Chir.</i> , 1892, p. 65 | 9 | 2 | 22.2 |
| Rehn, <i>Arch. f. klin. Chir.</i> , 1891, p. 317 | 7 | 3 | 42.8 |
| Arndt, (Genzner) <i>Deutsche Zeit. f. Chir.</i> , Bd. xxxii, p. 1 | 17 | 4 | 23.5 |
| Arndt, Kraske, <i>ibid.</i> | 10 | 4 | 40 |
| Schroeder, (Bergmann) <i>N. Y. Med. Jour.</i> , 1892 | 46 | 5 | 10.9 |
| Hochenegg, (Albert) <i>Bost. Med. and Surg. Jour.</i> , 1891 | 88 | 13 | 14.8 |
| Cripps | 38 | 4 | 10.5 |
| Czerny, <i>Deutsche Zeit. f. Chir.</i> , xxxii, p. 59 | 109 | 10 | 9 |
| Kelsey (McCosh), <i>N. Y. Med. Jour.</i> , 1892, ii, p. 259 | 7 | 2 | 28 |
| | 512 | 108 | 20 |

* Flnet reports this 12 operations, and 8 deaths.

TABLE IV.—MORTALITY AND RECURRENCE, CANCER OF BREAST. (FROM CHEYNE.)

| Reporter and Reference. | Mortality. Per cent. | Recurrence. Per cent. | Cases. |
|--------------------------------------|----------------------|-----------------------|--------|
| Billroth, (Winniwarter) | 22 | 68 | 89 |
| Trendelenberg, (Neuendorf) | 12 | 68 | 50 |
| Lucke, (Deitrich) | 8 | 60 | 69 |
| Czerny, (Schmidt) | 6 | 46 | 82 |
| Kronlein, (Horner) | 4 | 68 | 121 |
| König, (Hildebrand) | 9 | 61 | 118 |
| Bergmann, (Elchel) | 7 | 62 | 43 |
| Halsted | 00 | 54 | 11 |
| Cheyne | 00 | 42.8 | 21 |

In the first table I have collected 487 cases, operated on by the perineal methods with a mortality of 22.4 per cent. This is not high considering the period, but unfortunately, it embraces only those cases in which the disease was situated near the anus. As will be seen later on, the operations by this method at the present day are much less fatal, the mortality being about 8 per cent.

In Table No. 2, I have tabulated 512 cases of perineal and sacral operations done after the advent of antiseptics, and the publication of the epoch-making paper of Kraske. From these there is a mortality of 20 per cent. These cases are from the clinics of special operators and there is a great difference in their individual results.

In Table No. 3. I have sought to learn the results of these procedures in the hands of a large number of operators, believing that this would be a safer test of their utility. In this table we find 259 cases with 31 immediate deaths, a mortality of 11.7 per cent. Comparing this with the previous tables, or with the statistics furnished up to 1892, we have much to encourage our hope that this mortality will eventually be so reduced as to disarm the criticism of those who still hold that it is unjustifiable on account of its danger. There is scarcely a critic of this operation but who would unhesitatingly advise the extirpation of a cancerous breast. I have thought it worth while, therefore, to insert a fourth table, the latest and most favorable upon this procedure in order to show how favorably extirpation of the rectum compares with it, and with what similarity the mortality has decreased in each with modern surgical methods and experience. With due allowance for the difficulties in diagnosis may we not hope to obtain almost as good results in cancer of the rectum as in cancer of the breast? Surely the experience of Czerny, twenty-five cases with one death, Bramann, twenty-three cases with one death, and Halsted's clinic, eight cases with no death, justifies such a hope. In my own collection no distinction or selection of cases has been made. They have been taken just as found in the journals, or described to me by the operators, and tabulated with

TABLE III.

| OPERATOR. | Sex and Age. | LOCATION. | CHARACTER OF GROWTH. | RECURRENCE WHEN AND WHERE. | OPERATION. | RESULT. |
|--|--------------|---|------------------------|--|-----------------------|---------------------------------|
| Edwards, Brit. Med. Jour., 1895, i, 366 | M. 61 | 5 inches. | Carcinoma. | | Prel. Col., Kocher. | Recovery. |
| Heuston, Brit. Med. Jr., 1895, i, 1141. | F. 50 | 4 inches. | do | | Sacral (Murphy but.) | Recovery. |
| | M. 59 | 3 inches. | do | | Cripps. | Rec'y; living 3½ yrs. |
| | F. 51 | 3 inches. | do | | Cripps. | Rec'y; living 2½ yrs. |
| Wier, Int'l Clinic, 1892, iii, 205. | M. 55 | do | do | | Kocher. | Recovery. |
| Bircher, Cent. f. Chir., 1893, 531. | M. 60 | 1½ c. | do | | Osteoplastic (Kraske) | Recovery. |
| Gersung, Cent. f. Chir., 1893, 555. | M. 43 | do | do | | do do | Recovery. |
| | F. 34 | do | do | | Sacral. | Recovery. |
| Schleky, ibid., 99, 3 cases | | do | do | | Sacral. | Recovery. |
| Stubinrauch, ibid., 1891, 1213, 5 cases | | do | do | | Sacral. | Recovery. |
| Knecht, ibid., 231. | F. | do | do | | Perineal. | Recovered; 12 yrs. |
| Gerster, Annals Surgery, 1893, 203. | F. 49 | (Anemic). | do | | Sacral. | Died, anemia, ½ hr. |
| | M. | do | do | | Sacral. | Recovery. |
| | M. | do | do | | Sacral. | Recovery. |
| | F. 50 | do | do | | Perineal. | Recovery. |
| Miblaysen, Norsk Mag. f. Laigerd, 1893, 521. | F. | do | do | | Sacral. | Recovery. |
| Montgomery, Ther. Gaz., 1893, 145. | F. 50 | Involved vag. wall; pat. in bad condition | do | | Sacral. | Died from suppression of urine. |
| McCosh. | M. 49 | 4 inches excised. | do | | Sacral. | Well 2 years later. |
| | M. 57 | 3 inches excised. | do | | Sacral. | Recovery. |
| | F. 20 | do | do | Liver, 9 months later. | Sacral. | Recovery. |
| | F. 37 | 10 inches | do | | Sacral. | Well, 1 year. |
| | F. 63 | 7 in. & post. vag. wall | do | | Sacral. | Recovery. |
| Gussenbauer (Prague), N. Y. Med. Rec., 1893, i, 715. | | 3 inches | do | | Gussenbauer. | Recovery. |
| Godler, Brit. Med. Jour., 1893, ii, 64. | M. | 1½ inches. | Epithelioma. | | Sacral. | Recovery. |
| Mathews, Int. Jour. Surg., 1893, 282. | M. 30 | do | Carcinoma. | | Kocher & Cripps. | Recovery. |
| Willy Meyer, An. Surg., 1894, xix, 675. | F. 51 | do | do | | Pul. Col., Sacral. | Recovery. |
| Montprofit, Arch. Prov. Chir., '95, 747 | M. 53 | do | do | Prolapse as sequene. Anus restored after months. | Sacral. | Well, 2 years. |
| Maylard, Trans. Glasgow Path. and Clin. Society, 1893-5. | M. 35 | do | do | | Sacral. | Recovery. |
| Basuso, Prog. Med. Habana, 1894, 15. | M. | 6 c. removed. | do | | Sacral. | Recov. no recur. after [1 year. |
| Custovitch, Bull. Gen'l de Ther., 1893, i, 155. | F. 60 | 7 c. above. | do | Recurrence in situ 8 mos. | Perineal. | Recovery. |
| | M. 38 | 8 c. above. | do | None reported. | Perineal. | Recovery. |
| Aslamian, Marseille Med., 1893, p. 351 | F. 63 | 7 c. above. | Cylindrical carcinoma. | None reported. | Sacral. | Recovery. |
| Bryant, Chir. Jr., Lond., 1895, ii, 214. | M. | do | Epithelioma. | None reported 20 yrs. | Perineal. | Rec'y; living 20 yrs. |
| Pureell, Lancet, 1893, ii, 123. | F. 46 | 13 inches removed. | Carcinoma. | None reported. | Perineal. | Recovery. |
| Boiffin, Gaz. Med. d'Nantes, '93, xii, 61 | F. 55 | do | do | None reported. | Sacral. | Recovery. |
| Hofmokl, Berichts K. K. K. Rudolf Sitzung, 1891, 273. | M. 31 | 5 c. removed. | do | None in 14 mos. | Sacral. | Recovery. |
| 1892, 378. | F. 41 | 6 c. removed. | do | None in 3 mos. | Sacral. | Recovery. |
| Englisch, ibid., 1890, 292. | F. 38 | 3 c. removed. | do | None reported. | Perineal. | Recovery. |
| Beyer, Bull. et Memoir Soc. d. Chir., Paris, 1892, 146. | F. 27 | do | do | None in 18 mos. | Sacral. | Recovery. |
| J. C. Davis, Brit. Med. Jour., '92, i, 331 | M. 50 | 8 inches. | do | None in 6 mos. | Sacral. | Recovery. |
| | M. | do | do | In situ 1 year. | Sacral. | Recovery; died 1 yr. |
| W. H. Brown, Lancet, 1892, i, 1235. | M. 52 | do | do | None reported. | Prel. Col., Sacral. | Recovery. |
| Vanderlin & de Buck, Le Flandre Med., 1895, Mai 7. | F. 31 | 7 c. above anus. | Epithelioma. | None in 3 years. | Perineal. | Recovery. |
| Pozzi, Bull. et Mem. Soc. de Chir., Paris, 1891, 505. | F. 52 | 11 c. | do | None. | Perineal. | Recovery. |
| A. Kammer, Rev. Med. de la Suisse, 1894, 580. | F. 62 | 15 c. from anus. | do | None in 2½ years. | Sacral. | Recovery. |
| Monlonquit, Bull. et Mem. Soc. de Chir., Paris, 1894, 647. | | Involved entire pelvis | Carcinoma. | None. | Sacral. | Died from shock. |
| B. M. Ricketts, Cincinnati Lancet-Clinic, 1894, ii, 679. | M. 39 | 1 c. above anus. | Epithelioma. | None reported. | Sacral. | Recovery. |
| Clighorn, New Zealand Med. Jour., 1894, p. 219. | M. 44 | Anus and 3½ inches. | Carcinoma. | None reported. | Sacral. | Recovery. |
| Marcy, Boston Med. and Sur. Jour., 1893, ii, 561. | M. | do | do | None reported. | Prel. Col., Sacral. | Recovery. |
| v. Bramann (Höhne), thesis. | F. 44 | 5 c. above anus. | do | None in 18 mos. | Sacral. | Recovery. |
| | F. 22 | 2 c. above anus. | do | None in 3½ years. | Sacral. | Recovery. |
| | M. 65 | Margin. | do | In situ and metastasis. Death in 2½ yrs. | Sacral. | Recovery. |
| | F. 54 | 3 c. above anus and in vaginal wall. | do | Metastatic. Death in 4 mos. | Perineal. | Recovery. |
| | M. 59 | Rectum, prostate and wall of bladder. | do | Metastatic. Death 3 months later. | Perineal. | Recovery. |
| | F. 38 | 4 c. above anus. | do | Death without recurrence 8 mos. later. | Sacral. | Recovery. |
| | M. 57 | Margin involving urethra and prostate. | do | None reported. | Sacral. | Recovery. |
| | M. 87 | 7 c. above anus. | recurrent. Carcinoma. | 8½ mos. (living). | Sacral. | Recovery. |
| | F. 38 | 8 c. above anus. | do | None in 20 mos. | Sacral. | Recovery. |
| | F. 60 | ½ to 8 c. above anus. | do | 19 mos. later (living). | Sacral. | Recovery. |
| | M. 50 | ½ c. above anus. | do | None in 18 mos. | Sacral. | Recovery. |
| | M. 52 | 1 to 5 c. above anus. | do | None in 11 mos. | Sacral. | Recovery. |
| | F. 62 | Margin to 2 c. above. | do | None in 6 mos. | Sacral. | Recovery. |
| | M. 40 | 4 c. above anus. | do | None in 5 mos. | Sacral. | Recovery. |
| | F. 56 | 8 c. above anus. | do | None in 5 mos. | Sacral. | Recovery. |
| | M. 65 | do | do | None in 9 mos. | Sacral. | Recovery. |
| | M. 65 | do | do | None in 8 mos. | Sacral. | Recovery. |
| | M. 59 | do | do | None in 5 mos. | Sacral. | Recovery. |
| | F. 48 | do | do | None in 3 mos. | Sacral. | Recovery. |
| | M. 48 | do | do | None in 3 mos. | Sacral. | Recovery. |
| | M. 60 | do | do | None in 3½ years. | Sacral. | Recovery. |
| John Ashhurst, Jr. | M. | Lower portion | do | | | Died from exhaustion |
| John T. Eidman. | F. 44 | Lower 2½ inches. | do | In situ 3 mos.; 2d op. none in 8½ yrs. | Sacral. | Recovery. |
| J. Riddle Goffe. | M. 40 | P. wall 4 in. above an. | Epithelioma. | Site forehead, due to traumatism. | Sacral. | Recovery; died 1 yr. |
| | M. 84 | P. wall 3 in. above an. | do | None in 1 yr. | Sacral. | Recovery. |
| A. C. Bernays. | M. 51 | Upper end. | Cylindroma. | In situ, pelvic lymph. | Sacral. | Recovery; died 1 yr. |
| | M. 48 | Entire rectum. | Colloid cancer. | | Prel. Col., Sacral. | Died, 3 days. |
| | M. 28 | Lower portion. | Epithelioma. | | Sacral. | Died from shock. |
| | M. 63 | Middle and upper. | Cylindroma. | None in 10 yrs. | Sacral. | Recovery. (7 mos. |
| | F. 48 | Upper. | Epithelioma. | Liver 3 yrs. | Sacral. | Recovery; died 3 yrs. |
| | F. 69 | Lower half, syphilitic. | Sarcoma? | None. | Sacral. | Recovery; 5 yrs. |
| | M. 54 | Middle and lower. | Epithelioma. | None 14 mos. | Sacral. | Recovery. |
| | M. | do | Carcinoma. | None reported. | Sacral. | Recovery. |
| | M. | do | do | None reported. | Sacral. | Recovery. |
| | M. | do | do | None reported. | Sacral. | Recovery. |

| OPERATOR. | SEX and Age | LOCATION. | CHARACTER OF GROWTH. | RECURRENCE WHEN AND WHERE. | OPERATION. | RESULT. |
|--|-------------|--|------------------------------|--------------------------------|--|--|
| Joseph B. Bacon | M. 34 | Middle third. | Carcinoma. | Mesentery and omentum. | Sacral. | Recovery. |
| | M. 55 | Middle third. | do | do | Sacral. | Died from shock. |
| | F. 34 | Upper third. | do | 3 mos. in gut. | Sacral. | Recovery. |
| | M. 35 | Middle and upper. | do | None reported. | Sacral. | Recovery. |
| | M. 59 | Middle third. | do | None reported. | Sacral. | Recovery. |
| J. M. Mathews | M. 57 | Lower Rectum. | do | Recurrence 1 yr. | do | Recovery. |
| | F. 17 | Lower Rectum. | do | Recurrence 2 yrs. | do | Recovery. |
| | M. 65 | Lower Rectum. | do | Recurrence 6 mos. | do | Recovery. |
| | M. 60 | Lower Rectum. | do | None in 6 yrs. | do | Recovery. |
| | M. 20 | Lower Rectum. | do | Recurrence 16 mos. | do | Recovery. |
| | M. 38 | 4 inches up. | Sarcoma | Recurrence 8 mos. | do | Recovery. |
| | F. 32 | Lower Rectum. | Carcinoma. | None reported. | do | Recovery. |
| J. A. Wyeth. | F. | do | do | do | Sacral. | Died, 36 hours. |
| | M. | do | do | Recurrence. | Sacral. | Recovery. |
| F. Kammer. | M. 22 | do | do | Recurrence 6 mos. | Sacral. | Recovery. |
| | M. 65 | do | do | Recurrence 1 yr. | Sacral. | Recovery. |
| | M. 63 | Several inches up. | do | do | Sacral. | Died from shock. |
| | F. 58 | do | do | None in 1 yr. | Sacral. | Recovery. |
| | F. 54 | Lower part sigmoid. | do | None reported. | Sacral. | Recovery. |
| | M. 42 | Upper portion. | Circular cancer. | None in 1½ yrs. | Sacral. | Recovery. |
| | F. 42 | Lower rectum & anus. | Carcinoma. | Recurrence 1 yr. | Sacral. | Recovery. |
| | M. 68 | Several inches up. | do | do | Sacral. | Died next day. |
| N. B. Carson | M. 54 | Lower 2 inches. | do | None in 1 yr. | Sacral. | Recovery. |
| | M. 48 | Lower 1½ inches. | do | None reported. | Sacral. | Recovery. |
| | F. 52 | Lower 3½ inches. | Sarcoma | do | Sacral. | Died, cerebral, 4 wks. |
| Littlewood, Lond. Lancet, 1896, ii, 745. | M. 46 | Lower 3 inches. | Carcinoma. | do | Sacral. | Died, shock, 6 wks. |
| | M. 65 | 2 to 5 inches above. | Colloid epithelioma. | None in 2 yrs. | Sacral. | Recovery. |
| | M. 42 | Lower 2½ inches. | do | Liver 1 yr. | Sacral. | Recovery. |
| | M. 54 | Lower 2½ inches. | do | None in 1 yr. | Sacral. | Recovery. |
| | M. 65 | Margin to 2 inches. | do | None in 9 mos. | Sacral. | Recovery. |
| | M. 55 | 3 to 7½ inches up. | do | None in 6 mos. | Sacral. | Recovery. |
| | F. 37 | 3½ to 7 inches up. | do | None reported. | Sacral. | Recovery. |
| | F. 54 | 3½ to 5 inches up. | do | None reported. | Sacral. | Recovery. |
| | M. 48 | 3 to 6 inches up. | do | None reported. | Sacral. | Recovery. |
| N. Senn, 24 cases. | | | Carcinoma? | | | Deaths: 1 hemorrhage, 1 shock, 22 recoveries. |
| Lejeans, Rev. Gen. Clin & Ther., Paris | F. 40 | Lower portion. | do | None reported. | Perineal. | Recovery. |
| | F. 31 | Lower portion. | do | No return in 1 yr. | Sacral. | Recovery. |
| | M. 42 | Lower portion. | do | do | Sacral. | Death, 3 days, probably iodiform. |
| | M. 28 | Lower portion. | do | do | Prel. Col. | Result unknown. |
| Kelsey | M. 58 | 3½ in. above anus. | do | None in 2 yrs. | Cripps. | Recovery, continence. |
| Broome. | M. 35 | Anus and 6 in. gut. | do | None in 1 yr. | Sacral. | Recovery. |
| Routier, B. & M. de la Soc. Chir., Paris, 1889. | F. 29 | From 3 to 5 in. above. | do | None in 1 yr. | Sacral, end to end suture. | Recovery. |
| Jessops, Brit. Med. Jour., Aug. 24, Oct. 12, '89, 7 cases. | | | | | | 6 recoveries, 1 death. |
| Goode & Dahl, Brit. Med. Jour., 1889. | M. 40 | Anus and rect., 5 in. | Epithelioma. | Liver 1 yr. | Cripps. | Recovery. |
| P. H. Millard | M. 40 | 5 inches removed. | Carcinoma. | None in 2 yrs. | Cripps. | Recovery. |
| Dr. Mynter, Buffalo. | M. 41 | Anus and 3 inches. | do | None | Right ischio-rectal fossa was opened. | 2 operations; 1 recovery. |
| Geo. Gay, Boston | M. 47 | Entire wall of gut. | do | None in 3 yrs. | Cripps. | Recovery, 3 years. |
| | F. | Semicircular growth. | do | do | Cripps. | Recovery. |
| L. L. McArthur, Chicago, Am. Jr. Oh. | F. | 2 inches of anus. | do | do | Prel. Col. and perineal excision. | Recovery. |
| | F. | Anus and 2 in. of gut. | do | do | Prel. Col. and perineal excision. | Recovery. |
| | M. | do | do | do | Prel. Col., sacral. | Recovery. |
| Bacon, N. C. Jour., 1892, p. 341 | M. 31 | Anus and 3 inches. | do | None in 1 yr. | Sacral. | Recovery, 1 year. |
| J. McJ. Gaston, Gadlaid's M. Jr., 1892 | M. 62 | 1 inch above anus to junction colon. | do | do | Perineal excision, excluding sphincter. | Died from sepsis, 7 days. |
| H. W. Pigeon, Brit. Med. Jour., 1891. | F. 44 | do | do | do | Intussusception, gut drawn down, cut off. | Died, 2 days. |
| L. J. Krouss, Cincinnati L.-C., 1891. | M. 65 | do | do | do | Cripps. | Died, 3 days. |
| T. T. Paul, Br. Med. Jour., 1895, i, 519. | M. 47 | 2½ inches. | do | None in 14 yrs. | Cripps. | Recovery. |
| | F. 56 | 2½ inches. | do | Situ 2½ yrs. | Cripps. | Recovery, 2½ yrs. |
| | F. 37 | 7 inches. | Sarcoma | None in 1 yr. | Sacral. | Recovery. |
| | M. 46 | 6½ inches. | Carcinoma. | None in 10 mos. | Sacral. | Recovery. |
| | M. 41 | 7 inches. | do | None in 3½ yrs. | Sacral. | Recovery. |
| | F. 55 | 5 inches. | do | do | Sacral. | Died with exhaustion due to delirium. |
| | M. 56 | 8 inches. | do | Situ 2½ yrs. | Sacral. | Recovery. |
| | F. 29 | 4 inches. | do | Situ 2½ yrs. | Cripps. | Recovery. |
| | M. 59 | 3 inches. | do | None in 2 yrs. | Cripps. | Recovery. |
| | M. 64 | 2 inches removed. | do | None in 21 mos. | Sacral. | Recovery. |
| | F. 42 | 4 inches. | do | Liver 10 mos. | Cripps. | Recovery. |
| | M. 56 | 4 inches. | do | None in 1½ yrs. | Sacral. | Recovery. |
| | M. 64 | 4½ inches. | do | None in 1½ yrs. | Sacral. | Recovery. |
| | M. 60 | 4 inches. | do | do | Sacral. | Recovery. |
| Nepous, Clin. & Crit. Chir., '94, p. 430. | F. 56 | do | do | None in 6 yrs. | Sacral. | Died. |
| Tuttle, J. P. | F. 58 | From anus 3½ in. up. | Adeno-carcinoma. | None in 3½ yrs. | Kocher, end to end suture. | Recovery, no incontinence. |
| Same | F. 62 | From 1 in. above anus to 4½ in. | Scirrhus carcinoma. | do | Sacral (osteoplastic), gut sutured to anal margin. | Death sixth day from cerebral symptoms and surgical mania. Postmortem showed absolutely no peritonitis, the wound healthy and the stitches holding well. |
| Same | M. 58 | Margin of anus 3½ in. up. | Adeno-sarcoma. | In situ 9 mos. later. | Sacral; gut not sutured; peritoneum not opened; wound left to granulate. | Recovery. Death 18 mos. later from recurrence; no incontinence till late in recurrence. |
| Same | M. 45 | 1½ to 5 in. from anus. 7 inches removed. | Medullary carcinoma. | None in 2 yrs. | Sacral; gut sutured end to end. | Well when last seen. |
| Same | M. 62 | Margin to 2½ in. above. | Epithelioma. | None in 3 yrs. | Sacral; gut telescoped through anus and sutured to skin. | Recovery. |
| Same | M. 50 | 1 to 5 in. above anus. 6 inches removed. | Adeno-carcinoma. | None in 20 mos. | Sacral; gut sutured end to end; small post-fistula healed in 4 months. | Recovery; well at present time. |
| Same | M. 49 | 1 to 6 in. above anus. 7 inches removed. | do | do | Sacral; gut sutured in sacral wound. | Recovery; patient died 2 mos. later from pneumonia. |
| Same | F. 35 | Margin to 2½ inches above anus. | Lympho-sarcoma. | None in 9 mos. | Perineal | Recovery. |

| OPERATOR. | Sex and Age. | LOCATION. | CHARACTER OF GROWTH. | RECURRENCE WHEN AND WHERE. | OPERATION. | RESULT. |
|--|--------------|--|---|--|--|--|
| Halstead | F. 46 | Lower quarter | Carcinoma | 1 yrs. later in lymphatics of groin | | Living now, 6 years. |
| | M. 61 | Lower third | do | Liver metastasis | | 3 years later died. |
| | M. 33 | Lower third | do | Liver metastasis | | 9 mos., died. |
| Finney, clinical assistant | M. 39 | Lower two-thirds | do | Local in 1 yr. | | Living, 2½ years. |
| | F. 33 | Lower third | do | | | Well 1½ years later. |
| | F. 38 | Lower third | do | Liver and stomach | | Death, 6 mos. |
| | M. 44 | Middle third | do | | | Living, 3 mos. |
| | F. 56 | Middle third | do | | | Living, 3 mos. |
| Dorsett | F. 40 | Right side sphincter | Epithelioma | 6 mos. later 3 in. up | | Death by anemia. |
| | F. 55 | Sigmoid and upper rectum | Carcinoma | | Death followed. Operated for artificial anus in 2 weeks. | |
| Willy Meyer | F. 36 | Lower end 3 inches above anus | do | | Sacral | Died 11 days later, iodoform poisoning. |
| | F. 40 | Lower end | | | Sacral | Died, 3 mos., syphilis of brain. |
| | M. 46 | Lower end | Ulcerated carcinoma | | Sacral | Died, 7 days. |
| | M. 52 | 2½ in. above anus | do | 2 yrs. later in xi & xii sacral vertebrae | Sacral | Cured. |
| | M. 58 | Rectum, anus | do | | Sacral | Recovery. |
| | M. 42 | High up | Carcinoma | | Sacral | Died from shock. |
| | F. 49 | 5 in. above anus | do | Liver 1½ yrs. later | Sacral | Recovery. |
| | F. 82 | 2 in. above anus | Ulcerated carcinoma | | Osteoplastic | Died, 1 month. |
| | M. 48 | 3 in. above anus | Carcinoma involving prostate & blad'r | | Osteoplastic | Died, 5 days. |
| S. T. Earle | M. 70 | 1 in. above internal sphincter | Adenoma | 15 mos. later above previous site | Perineal | Recovery. |
| | M. 42 | 1 in. posteriorly, 2 in. anteriorly | Fibro-adenoma | None | Perineal | Recovery, 12 mos.; incontinence. |
| | F. 25 | 2 in. above anus | Small cell sarcoma | None | Kraske | Recovery, 8 mos. |
| McKay, Maritime M. News, '95, p. 221 | M. 53 | 3 to 4 inches | Carcinoma | None in 2 yrs | Kocher | Recovery. |
| | M. 52 | ½ to 4½ inches | do | Recurrence 2 yrs.; 2d operation | Kocher | Recovery. |
| Bishop, Lon. Lancet, 1895, ii, 849 | F. 60 | 1½ in. above anus | do | None in 2 yrs | Kocher | Recovery. |
| | M. 58 | Where adenoid polyp had been removed 1 year before | do | None in 1 yr | Perineal | Recovery. |
| Powers, Jr. Am. Med. Ass'n, 1895, xxv | M. 20 | | do | None reported | Prel. Col., perineal | Recovery. |
| | F. 27 | | do | | Sacral | Death. |
| | F. 40 | | do | None in 2 yrs | Sacral | Recovery. |
| | F. 35 | | do | None in 2 yrs | Sacral | Recovery. |
| | M. 52 | | do | None in 2 yrs | Sacral | Recovery. |
| | F. 39 | | do | None in 2 yrs | Sacral | Recovery. |
| Van Arsdale, Sept., 1892 | M. 51 | Above anus | do | 18 mos. later small nodules near anus | Sacral | Recovery. |
| Poulton, Austral. Gaz., 1894, 85 | M. | | | None in 9 mos | Perineal | Recovery. |
| Werder, X. O., Pittsburg M. Rev., 1894 | M. | 1½ to 6 inches | Carcinoma | None reported | Sacral | Recovery, incontinence. |
| Heath, by Platt, Med. Chron., Manchester, 1894, i, 419 x | M. 34 | 4½ inches | Epithelioma | | Perineal | Died from shock. |
| Jones, ibid. | M. 51 | 4 inches removed | | Liver 9 mos. | Perineal | Recovery from operation; died, 11 mos. |
| | M. 42 | 3 in. above anus | do | Liver 6 mos. | Perineal | Recovery from operation; died 6 mos. |
| | M. 60 | Low down | Carcinoma | In loco 13 mos. | Perineal | Recovery. |
| | M. 37 | do | do | In sigmoid 6 mos. | Perineal | Recovery; died 8 mos. |
| | F. 44 | Lower end | Epithelioma | Liver 6 mos. | Perineal | Recovery; prolapse; died, 2 yrs. |
| | M. 32 | 1½ in. above anus | do | In skin 3 mos.; removed; no recurrence | Perineal | Recovery. |
| Hardie, ibid. | M. 58 | Lower end | do | None reported | Partial perineal | Recovery. |
| | M. 63 | Lower end | do | 2 yrs. in toe, leg amputated; none in 5 yrs. | Perineal | Recovery. |
| Whitehead, ibid. | F. 50 | | do | In loco 15 mos. | Perineal | Recovery; living 4 yrs. later. |
| | M. 40 | | do | None reported | Perineal | Recovery. |
| | M. 57 | 2 in. above anus | do | In liver; died 6 mos. | Perineal | Recovery. |
| | M. 50 | One side only | do | None in 2 yrs. | Perineal | Recovery. |
| | M. 48 | 2½ inches | do | None in 13 mos. | Perineal | Recovery. |
| | M. 19 | 3 inches removed | do | None in 9 mos. | Perineal | Recovery. |
| | F. 33 | 5 inches removed | do | None in 3 mos. | Perineal | Recovery. |
| Rehn, Cent. f. Gynaek., 1895, No. 10. | F. 45 | | Carcinoma | | Vaginal | Died, 3 days. |
| Edwards, Lancet, 1895, i, 408 | M. 61 | 4 inches removed | do | None in 4 yrs. | Sacral | Recovery. |
| | F. 50 | | do | None reported | Sacral | Recovery. |
| Southam, ibid. | F. 48 | 5 inches removed | do | In loco 12 mos. | Perineal | Recovery; living 2 yrs. |
| | F. 42 | 3½ inches removed | do | None in 6 mos. | Perineal | Recovery. |
| Pitts, Lancet, 1895, i, 1235 | F. 33 | 3½ in. above anus | do | None | Perineal | Recovery; living 2 yrs. |
| | M. 23 | | | In liver 2 yrs | Perineal | Recovery; living. |
| M. Zangarol, Alexandria | F. 34 | Rectum and vagina | Epithelioma | None in 18 mos. | Sacral | Recovery. |
| | F. 40 | | | None in 6 mos. | Sacral | All cases suppurated, have retention, and all recovered. |
| | M. 38 | | | None in 4 mos. | Sacral | |
| | M. 40 | | | None in 4 mos. | Sacral | |
| Rectus, Union Med., Paris, 1893, 241 | M. 72 | 2 c. above | Carcinoma | Slight in liver; 2d op. | Perineal | Recovery. |
| | M. 62 | 4 c. above | Epithelioma | None in 5 yrs. | Perineal | Recovery. |
| | M. | High | Carcinoma | None in 8 yrs | Sacral | Recovery. |

The following synopsis of a thesis by M. Finet, of Paris, which came into my possession after my paper was written, portrays the results of the operation in continental Europe. It is interesting to compare this with that made from the cases collected by myself, and which follows below. Including these we have over 1,600 cases from which to draw conclusions, and it seems to me they are convincing.

SYNOPSIS FROM FINET'S THESIS.

Immediate deaths 66
Deaths under 1 year, cause not given, 8; deaths between 1 and 2 years, 3; deaths between 2 and 3 years, 1 12
Deaths from recurrence in situ, under 1 year, 17; metastasis under 1 year, 12; in situ between 1 and 2 years, 2; metastasis between 1 and 2 years, 1; in situ between 2 and 3 years, 3; metastasis between 2 and 3 years, 1 86
Living with recurrence under 1 year, 18; under 2 years, 1; under 3 years, 1; over 3 years, 2 22
Living without recurrence under 1 year, 121; under 2 years, 11; 3 years, 23; 4 to 5 years, 10; 5 to 6 years, 7; 6 to 7 years, 6; 7 to 8 years, 5; 8 to 10 years, 5; 10 to 11 years, 3; 11 to 12 years, 1; 12 to 14 years, 1; 14 to 15 years, 2; 15 to 16 years, 1; over 16 years, 2 201

Died without recurrence after 4 years, 4 4
Mortality, 19 per cent. 341

SYNOPSIS FROM MY OWN TABLES.

Immediate deaths 81
Deaths under 1 year, recurrence in situ 8, by metastasis 6; between 1 and 2 years, recurrence in situ 4, by metastasis 3; between 2 and 3 years, recurrence in situ 4, by metastasis 2; after 3 years, recurrence in situ none, by metastasis 1 28
Living with recurrence under 1 year, 6; between 1 and 2 years, 5; 1 each 2, 1, 2, 2, 2½, 4 years 17
Living without recurrence under 1 year, 60; over 1 and under 2 years, 48; over 2 and under 3 years, 20; over 3 years, 23 181
Mortality, 11.7 per cent. 267
Sacral, 173 cases, 23 deaths; mortality, 13.3 per cent. Perineal, 70 cases, 5 deaths; mortality, 7.1 per cent. Vaginal, 1 death; anal, 1 death; not given, 1 death.

the sole desire to learn the truth concerning this operation and not with the view of confirming a preconceived opinion. They embrace the results of all grades of operators, working under favorable and unfavorable circumstances, and if under these conditions such a low mortality can be obtained, what may not be done by experts in properly equipped hospitals and in carefully selected cases.

In the tables we have not separated the perineal from the sacral operations, because we hold that the latter operations should not be done when the growth is low enough to be *thoroughly* removed by the former. All of the sacral operations have been classed under one heading, because they are more or less modifications of that one method, the "Kraske." Of these, there are 173 with 23 deaths, a mortality of 13.3 per cent. Of the perineal excisions there are 70 with 5 deaths, a mortality of 7.1 per cent. In the remainder the operator failed to state just what operation was performed, except in one fatal vaginal extirpation. Cheyne, in the Letsonian lectures for 1896, gives a much wider variation between the two operations. He says "Konig's total mortality is 38 per cent; Billroth's 34 per cent., Kocher's 28 per cent., Albert's 18 per cent., Iversen's estimate as regards the Kraske operation 25 per cent. and Czerny's with the perineal operation 5.4 per cent., with the sacral operation 19.4 per cent. So far as one can judge from a large number of reports, the mortality after the perineal operation seems to be about 8 per cent., after the sacral operation from 18 to 20 per cent., but the results vary much in the hands of different surgeons, probably in accordance with the selection of cases and the after treatment of the wound and in both instances, it can in all likelihood be somewhat reduced in the future" (p. 95). Cheyne draws his conclusions, however, from three operators and admits he is biased in favor of the English or perineal method. The difference in the death rate is due, first to the magnitude of the operation, second, to the involvement of the peritoneum, third, to the disturbance of the adjacent organs and fourth, to the fact that the higher the tumor the later will it be observed, and consequently the less favorable will be the condition of the patient for operation. Hemorrhage will not account for it, as there is less of this in the sacral than in the perineal method. The two operations have each their own field and the prognosis is more grave in the one, simply because the condition calling for it is more serious.

The results of any undertaking should always be estimated by taking into consideration the difficulties encountered and the end to be attained. In the radical treatment we undertake a serious operation, and for what? First, with the hope that by timely eradication, we may permanently cure. Unfortunately, statistics do not prove that we accomplish this desire in the majority of cases, and were this result the only object of the operation, it would hardly have been advocated by the many conscientious and brilliant surgeons who have done so. And yet, our results are not without encouragement from this point of view. Of the 259 cases we have been able to trace 219 for a certain number of years. There were 8 recurrences *in situ*, and 8 metastases within one year; there were 9 *in situ* and 3 metastases, between the first and second years, there were 4 *in situ* and 7 metastases, between the second and third years, and four all told occurring later than the third year. These numbers are important as showing how rapidly the percentage of recur-

rence decreases after the first year is past, and that when three or four years have gone by, we can almost assure our patients that they are permanently cured. The balance of these cases may be summarized as follows:

Well, when last heard from:

| | |
|---|----|
| Under 1 years, subsequent to operation, | 90 |
| Over 1 year and under 2 years, | 45 |
| Over 2 years and under 3 years, | 20 |
| Over 3 years and under 4 years, | 12 |
| Over 4 years, | 14 |

Assuming then, that these cases which pass beyond three years without recurrence are comparatively safe from the disease, we may, without assumption, thus claim a cure of 10 per cent. of those cases which survive the operation, and a more or less well-grounded hope for the 155 cases, 70 per cent., in which no recurrence has as yet shown itself.

But the purpose of the operation is not limited to absolute cure. Even when this is not obtained it accomplishes all and more than has been claimed for other palliative measures. The relief from pain, the danger of obstruction, the vesical and sphincteric tenesmus, the irritating discharges and the impeded functional activity of the bowels, are all relieved and far more completely than by any other means. It may be said that where suppuration takes place, and it does in the majority of these operations, we have not obliterated the discharge. There is a great difference between a temporary, free and unobstructed, discharge of pus from a granulating wound, from which the surrounding skin may be protected by proper surgical dressings and the perpetual, feculent, sanious, irritating discharge from an ulcerated cancerous growth. The very substitution of the former for the latter, the removal of this odor, disgusting both to the patient and to his friends, is one of the happiest results of extirpation, and a result which no other method can attain. With regard to the control of the movement of the bowels, where typical resection or excision has been performed, and the sphincters have been left intact, this function remains unimpaired, and the operation thus possesses all the advantages over colostomy that a normal anus has over an artificial one. Where the sphincters have been removed, and where it has been necessary to attach the resected rectum to the sacral wound, other things being equal, there is little choice between this and the inguinal artificial anus. They will, each, have to be controlled by functional regulation of the bowels and the application of suitable trusses or compresses to the part. Within the past few years, however, two improvements have been devised for the relief of these unpleasant sequences of excision. Gersuny proposed in 1892, that where the sphincters had to be removed, we might in a degree restore their functions by twisting the gut twice upon itself before suturing it in the wound. This operation has been done a number of times with more or less success. It certainly does accomplish the result for a time, but those who have had the most experience with it, are not confident as to its permanent efficacy. It adds no risk to the operation, consumes no time, and should, therefore, be done in every suitable case.

The second method for the prevention of incontinence is that proposed by Jaennell and Willems, and consists in making an incision through the inner fibers of the gluteus maximus muscle, drawing the resected rectum through this aperture, and suturing it to the

skin and muscular fibers. By this method, Jaennell claims to have obtained voluntary control over the fecal movements, and moreover, to have reduced the danger of peritoneal infection by removing the fecal discharges entirely without the operative field. I have had no experience with this operation, but it appears to be logical and coming from a source in which I have great confidence, I should look favorably upon it. We shall have more to say upon the subject of fecal incontinence when we come to study the sequences of this operation. It suffices here, to quote from one of the most enthusiastic supporters of colostomy on this point:

"In a small proportion of cases there will be a complete incontinence; in a greater number there will be partial control over the evacuations; in the majority, the control will be sufficiently complete to prevent the occurrence of any annoying accident."

Prolongation of life.—If we look at the subject with regard to the average lease of life which follows excision, we certainly meet with much encouragement. In the 219 cases which we have been able to follow, the average length of life is over 2 years and 3 months. This percentage has little meaning from the fact that 181 of the cases were still living at the time of the report, without any recurrence or other reason to believe that their lives would be materially shortened.

The best authorities agree that in cancer of the rectum unmolested, the average length of life is a little over one year. Assuming that all our patients had died at the period of last report, we would still have doubled the length of their days. How much more gratifying is it to remember that, out of 259 patients there are 181 to whom there still remains a hope, if nothing more; but to most of them an assurance of immunity from the disease. This is the final and, to my mind, the greatest argument in favor of extirpation; that it lends to our patients that supreme moral support that can not be over-estimated, founded on the belief that they are cured. The possibility of recurrence will always be present to some of these patients, warning them to seek relief at the very first indication. But the fact that they have already been relieved once, will give them confidence for the future, and thus remove in a large degree the depressing influence. Contrast this position with one who lives with his cancer undisturbed, and only palliated by an artificial anus, with a dreadful avalanche, as it were, slowly but surely sliding down upon him, with no possibility of escape, with only a few brief months between him and certain death, and you have the difference between excision and colostomy. For my part I can not refuse this hope to any case suitable for extirpation.

CAUSES OF DEATH.

Let us now look briefly into the causes of death from this operation. Out of the thirty-one immediate deaths reported above, nine were from shock, one from hemorrhage, eight from septic peritonitis, one from unknown cause, two from exhaustion (some weeks after the operation), one from atheromatous disease, two from cerebral symptoms, one from purulent empyema (which developed the night before the operation), one from suppression of urine, two from iodoform poisoning and three from anemia.

Having heard so much of the dangers of hemorrhage from this operation, I was, indeed, surprised to find only one death reported from this cause, although I am firmly convinced that the operation

can be done with less bleeding than that in an ordinary Whitehead operation for piles. The question of shock depends more upon the personal equation than upon the operation or the operator. I have seen a man die from shock occasioned by cauterizing a phagedenic bubo, and another from amputating a big toe. The patients who die from shock following this operation done in a reasonable length of time, would probably have succumbed under any surgical procedure. They are not proper subjects for surgical operations, and a more careful study of the personal element to be encountered in each case, will undoubtedly reduce the mortality from this cause. Three of the cases called shock among the deaths, were patients with flabby, fatty hearts, on which the operators themselves say they should never have operated. Moreover the injection of serum and normal saline infusions, promise in the future to greatly reduce the danger from this source.

Septic peritonitis is the second most frequent cause of death from this operation. It is generally supposed to be due to infection of the peritoneal cavity by the discharge of fecal matter into it, after the operation has been completed. Of the 8 cases referred to above, only 1 could possibly have been due to this cause. My own impression is, that the infection takes place during the operation, and is due to the practice of cutting off the intestine before the peritoneal dissection has been completed and this cavity walled off or closed. It may easily occur through the operator introducing his finger into the rectum in order to facilitate the isolation of the tumor and then reintroducing it into the wound where the peritoneum is exposed. The technique of the operation, as I shall describe it later, is particularly designed to avoid this accident and to control hemorrhage. Certainly, the majority of these deaths were avoidable.

The deaths from cerebral symptoms, without any condition in or about the wound to account for such a result, could not be foreseen or guarded against. They were the results of personal diathesis, of which the patient was either unaware or failed to appreciate the importance. In my own case, the history of old meningitis, with attacks of mania, which was concealed from me until these symptoms had recurred after the operation, might have deterred me from operating had I known them. I never saw a healthier operative field than the postmortem showed in this case, and there was absolutely nothing connected with it to account for death. The death from empyema was certainly not due to the operation.

Those deaths due to exhaustion from prolonged and excessive suppuration, and those from suppression of urine, anemia and iodoform poisoning, are accidents, and complications incident upon every surgical procedure, and while they may be avoided in a majority of cases, they will continue to occur occasionally, however perfect our technique.

Of the thirty-one deaths reported above, it appears to me that at least eleven of them were avoidable, some almost inexcusable. This would reduce the mortality materially.

(To be continued.)

Decline in Cocain. Cocain has been declining in price very rapidly of late, owing to heavy shipments of the leaves of the erythroxylon coca plant from Peru and Bolivia. The drug is now quoted at \$2.50 an ounce. A few weeks ago it was nearly \$4 an ounce.

NOTES ON MY TRIP TO ATTEND THE
SECOND PAN-AMERICAN MEDICAL
CONGRESS, IN MEXICO CITY,
NOV. 16-19, 1896.

Read before the Cambridge Society for Medical Improvement,
Feb. 22, 1897.

BY AUGUSTUS P. CLARKE, A.M., M.D.
CAMBRIDGE, MASS.

On Saturday evening November 7, we took the Fall River Line to New York and from there a train on the Pennsylvania road to Washington, where a change of coaches was made by the way of Atlanta for New Orleans, which we reached in the early part of the day. Leaving New Orleans by the evening train we passed through the famous Teche country, noted for its extensive fields of cotton and rice. Our course was then directed through the flat lands of Texas. After leaving Houston and San Antonio our grade grew more ascending. When we reached Spofford Junction we took the International Railroad for the Rio Grande and crossed by the way of Eagle Pass to Ciudad de Porfirio Diaz, on the Mexican border. The officers of the Mexican Custom House were exceedingly courteous and endeavored in every way to facilitate matters for our convenience. The grade at Sabinas was 1,000 feet and at Monclova, 2,000 feet above the level of the sea.

The next important station was Trevino, the junction of our Mexican International with the Monterey and Mexican Gulf to Monterey and Tampico. The course of the track now is almost due west with a steady upgrade to higher altitudes until it reaches 3,753 feet at Jaral.

In this vicinity were seen growing not only cactus plants but also large fields of carefully cultivated agave Mexicana or the maguey. This plant furnishes the natives with the material for their building. Its leaves are used for paper, cordage and for many other purposes. From its juice is prepared the spirituous liquor called pulque.

We pass along the borders of the great Bolson de Mapimi and come to Torreon, where the Mexican International road crosses the Mexican Central and extends to the City of Durango. Our course, however, was from Lerdo, situated in the very heart of the cotton district of the Nazas and San Juan Valley and southward along the Mexican Central until we reach the Tropic of Cancer and Fresnillo, the first city within the torrid zone. This is the great mining country noted for its fabulous wealth where silver is obtained in great abundance. We continue our ascent until we reach Zacatecas, which has an altitude of upward of 8,000 feet.

The next important place was Aguas Calientes, signifying "hot waters," noted for its hot baths, of the benefits of which we availed ourselves on our return.

Lagos, Leon and Silao are now passed. The latter is where we took train on our return to Guanajuato, a terraced city in a mountain defile. Here is one of the famous mints of the republic, coining a half million of gold and five millions of silver annually, and here are also the large smelting and reduction works, besides manufacturing establishments.

We visited the *panteon*, a cemetery containing ten acres of ground enclosed by walls, perhaps ten feet high. Bodies are deposited in chambers. Here there is an immense sub-cemetery where the bones are placed at the expiration of the chambers leases. By

a winding stairway descent is made into this great charnel-house, which is nearly nine hundred feet long, twenty feet wide, and more than twenty feet high. The room is arched and well lighted containing all that is left of more than 30,000 Mexicans. Bones and skulls are piled up at either end of this storehouse, indiscriminately, without reference to ownership.

The next important station south of Silao is Irapuato, where on our return we took train for Guadalajara. Here we visited the Hospicio, an extensive institution for charity and religious instruction, containing twenty-three patios adorned with an abundance of flowers and with numerous fountains. The kitchens and dining halls were of colossal dimensions. The large and airy wards were bountifully supplied with bedding, and the whole establishment bore evidence that ample provision had been made for its inmates, who were sick and disabled children.

Our journey is continued through Salamanca, Celaya and Querétaro, noted for its aqueduct, which conveys the water to the city five miles across the plain. Though it has eighty arches it is not so long as the aqueduct of San Cosme at the capital, which has 900, but impresses the traveler more on account of its greater height, some of its arches being upward of ninety feet in height.

From this point onward the scenery grows more and more beautiful with its mountains and valleys and extensive haciendas, owned by rich Spaniards and under a high state of cultivation. The road now ascends. The train toils and climbs to overcome the resisting grade. At Marquez the highest point is reached, being at an elevation of 8,132 feet above the level of the sea.

In approaching the great city the tourist is on the watch for a view of the Tajo de Nochistongo, the great drainage cut commenced in the year 1607 with the purpose to drain the lakes on the plain of Mexico and to prevent the inundation of the city. The work was afterward abandoned, but a drain has recently been constructed on a more magnificent scale, forty-five miles in length, having a tunnel through the mountains of nine miles, not surpassed in size by the ancient cloaca maxima at Rome. A special opportunity was afforded us by the government to spend a day in viewing this work, which was said to be the most stupendous ever undertaken for the drainage of a great city and valley. The canal, which throughout its entire course has a steep and rapid descent, opens out into the Tula River, then into the Pánuco River, where the waters are disembogued into the Gulf of Mexico and carried out into the sea.

At Huehuetoca the first view of the snow-capped mountains is to be had. The volcanoes of Ixtaccihuatl and Popocatepetl and the plain of Mexico appear. At 6 p.m. on Friday, November 13, our journey to the capital of Mexico ended at Buena Vista station of the Mexican Central Railway. The station was now crowded. The reception committee, professors of the University of Mexico, and also Mayor Camacho and his wife, greeted our coming.

Prominent among the delegates on our train were Dr. E. Persillier La Chapelle of Montreal, Canada, President of the Provincial Board of Health of Quebec; Dr. Irving A. Watson of Concord, N. H., the Secretary of the American Public Health Association; Dr. E. P. Benoit, also of Montreal, Editor of *L'Union Médicale du Canada*; Dr. James D. Spencer, Fellow of the New York Academy of Medicine; Dr. A. Wal-

ter Suiter of Herkimer, New York, Secretary of the National Federation of State Medical Examining and Licensing Boards. McGill University of Montreal was represented also by Dr. J. C. Cameron, Professor of Obstetrics and Gynecology, Dr. Stewart, Professor of General Medicine, and Dr. Blackadder. On our train were also Dr. Alonzo Garcelon, ex-governor of Maine; Dr. Joaquin Yela, Consul-General of Guatemala; Dr. T. M. Calnek, Surgeon of Hospital de San Juan de Dios, San José, Costa Rica; Dr. David Cerna, Professor of Physiological Chemistry of the University of Texas. Dr. A. W. Parsons of Mexico, sent by the Mexican Committee, met us at Zacatecas and accompanied us to Mexico. A representative of the "*Two Republics*" met the train at Tula and assisted in giving us a warm welcome on our approach. Several of the gentlemen on the train were accompanied by ladies. My daughter, Miss Inez L. Clarke, A.B., was with the party.

The City of Mexico to be appreciated should be seen. It has an altitude of upward of 7,400 feet above the level of the sea. In the National Theater, in Calle de Vergara, the formal opening of the Congress took place on Monday evening, November 16, and was presided over by President Diaz, who was attended by his Ministers of State, prominent military and other officers, and by many citizens of the Republic. The boxes were occupied by the leading fashionable ladies of the city. The central portion of the edifice was reserved for the officers and members of the Congress and their ladies. The exercises consisted of addresses by President Diaz and by the organizing committee of the Congress. The addresses were followed by instrumental music and by a chorus of voices.

During the meeting of the Congress we were favored with an invitation to visit President Diaz and his wife at the Castle of Chapultepec, the White House of the Republic of Mexico. Here the members of the Congress were royally entertained. Not only carriages in abundance were provided for us, but all the substantial things go to cheer the inner man.

Mrs. Camacho, a wealthy lady, the wife of the mayor of the city, gave a reception at her Mexican mansion. Refreshments and music were generously provided. The sweet singing by the rich and cultured voices produced a striking impression upon the hearers. The entertainment given on another evening was by the Jockey Club, composed of wealthy gentlemen, and modeled after one of the same name in London. Another reception was tendered to the members of the Congress and ladies by the Honorable City Council of Mexico in the municipal palace. Here refreshments on an extensive scale were again served.

In regard to the formation of the Congress, it may be said that it was composed of representatives from almost every country of the western hemisphere. At the opening of the Congress the Secretary-General said that about six hundred physicians were in attendance and were accompanied by upward of one hundred ladies. The reading of 294 papers was announced. In the Section on Obstetrics, Gynecology and Abdominal Surgery the titles of some forty papers were entered.

The work of the Congress was divided into twenty-two sections; of these several met in the Minería, or the historic School of Mines, which was established by contributions from wealthy Spanish gentlemen during the reign of the viceroys and which is

located on Calle San Andrés. This edifice underwent repairs for the reception of Gen. U. S. Grant on the occasion of his visit to Mexico in 1880. Other sections of the Congress were held in the College of Medicine, once the "holy inquisition" building, and also in the Military Hospital.

On Sunday evening, November 14, previous to the opening meeting of the Congress, a delightful entertainment was given by the faculty of the National School of Medicine of Mexico to the delegates. The visitors met in the great hall of the school, the old building of the inquisition, as before mentioned, which, though dreary in its general aspects, presented then a scene of no unusual interest. A short address of welcome was made by Dr. Carmona y Valle, President of the University. He said that the Pan-American Medical Congress differed from other medical associations in that, while the latter extended invitations in their own name the former did so on behalf of the country where the meetings were to take place. The gatherings, he said, had therefore an international significance. The delegates, he further said, had been invited to this informal reception that he might have the pleasure of introducing them to the faculty of the school and that he might give all an opportunity of becoming acquainted with one another. After some portion of the evening had been devoted to conversation the guests were directed to the magnificent salon of the Secretary, where champagne and refreshments were liberally served.

Prominent among the members of the faculty of the school who did honors most courteously were Dr. Carmona y Valle, president of the college, and his son; Dr. Eduardo Liceaga and his son Fernando Liceaga; Drs. Rafael Lavista, José Ramos, J. Ignacio Capetillo, Manuel Gutierrez, J. M. Bandera, Tejeda Hurtado, Porfirio Parra, E. Montano, Francisco Chacon, Toussaint D. Orvananos, Regino Gonzales, Tobias Nunez, Nicolas Ramirez de Arellano and Tomas Noriega, secretary of the school.

My paper was the first that was read in the Section on Obstetrics, Gynecology and Abdominal Surgery. The next paper was on "Uterine Fibroids Complicated with Pregnancy, with Report of Cases," by A. Vander Veer, Albany, N. Y. He said that some forms of fibroids, such as the subperitoneal, pedunculated or sessile, often give but little trouble on the occurrence of pregnancy, but the chief danger occurs in those cases in which the growth extends into the uterine cavity or obstructs the outlet of the pelvis. Myomectomy in the interest of the child for cases in which dystocia would in all likelihood occur, offers a means for relief; near the close of the term, when dystocia is imminent, suprapubic hysterectomy he regarded as the safest operation to undertake. In such cases the loss of the mothers may not be expected to exceed 10 per cent, and that of the children to be nearly nil. Dr. Vander Veer's remarks had reference to the larger fibroids that were often liable to take on what is denominated cystic degeneration. In many such cases he advised removal of the appendages in preference to resorting at a later date to a Cesarean operation.

"Dystocia in Women of Mexico," by J. Ignacio Capetillo, Professor of Clinical Obstetrics in the School of Medicine of Mexico, was the title of a paper read before the Section. Dystocia, he divided into three classes, maternal, fetal and ovular. The cases of maternal dystocia arise mostly from the bad direction of the axis of the uterus; it may arise from the

vicious conformation of the vertebral column and of the promontory of the sacrum, or from a peculiar conformation of the pelvis of Mexican women; these may be considered as a *modalitis*, as he termed them, and not as a defect in conformation. Dystocia from narrowed pelvis due to rickets and from osteomalacia, is extremely rare. Dystocia in the third period of labor is sometimes caused in the native Indian women in consequence of the shortness of their perineum and smallness of their vulva, as compared with those parts in the Spanish-European women. This he attributed to habits of life pursued by the native female, since these women are accustomed to occupy for unusually long continuous periods of time a squatting position while making use of the *metapile* and the metate in grinding beans, corn, or other cereals. In accomplishing these tasks, the hands, the arms and the lower portions of the trunk of the body are put to the severest test.

"Treatment of Puerperal Infection," was the subject of a paper by Dr. Manuel Barreiro, one of the leading secretaries of the Section and the chief of the clinic of the Maternity Hospital of Mexico. His paper showed that the Mexicans were thoroughly up in all that pertains to modern methods for the management of obstetric cases. He regarded placental fragments as the chief cause of infection. He said that the objections brought forward against curettage were of no value; that cases occurred in which he resorted to it two and even three times before full relief was obtained. For antiseptics he had used the tincture of iodine and the bichlorid of mercury. Strychnia, hypodermatically, for loss of blood and for cardiac exhaustion was had recourse to. A visit to the Maternity Hospital showed that all its appointments were well carried out.

A paper embracing the statistics from the Maternity Hospital of Puebla, from Oct. 1, 1894, to Sept. 30, 1896, by Dr. José Maria de Ita, brought out the fact that only one-half of one per cent. in the mortality, and the almost extinction of puerperal accidents even in the management of very difficult cases, had been the outcome since the adoption of the use of antiseptics. Bichlorid of mercury was the sheet anchor. By a strict methodical use of these means the occurrence of blennorrhagia neonatorum was almost entirely prevented.

Time will not allow me to give a synopsis of the many interesting papers offered in the Section; they were largely representative and elicited a marked degree of attention. The paper on "Penetrating Wounds in the Abdomen," by Dr. Santos Madina, Juchipila, Zacatecas, Mexico, gave evidence that it had been prepared with much care and that the writer was not unacquainted with the details of abdominal work. "A Contribution to Abdominal Surgery," by Dr. Alfonso Ortiz Alamos, Sonora, Mexico, presented several important features for consideration. Among other things, he said that a simple abdominal incision benefits or cures radically many inflammatory processes of the peritoneum, by the same unknown mechanism which cures a painful and irritable cystitis by cystotomy, an iritis by iridectomy, an incipient glaucoma by De Graefe's classic section; in the same manner that cerebral troubles of epileptiform character are relieved by means of a trephining, and as very serious otologic accidents disappear as if by charm after making the puncture of the tympanic membrane.

The paper on "Intestinal Obstruction," by Dr.

George W. Woods, Director of the Marine Medical Department of the United States, Mare Island, Cal., would lead one to believe that there is but comparatively small danger attending an exploratory celiotomy when a perfect operative technique, anesthesia and antiseptics are employed.

A paper on "Intestinal Anastomosis" was read by Dr. Jacob Frank of Chicago. Before reading his paper he was accorded, through the courtesy of Professor Lavista, an opportunity to try or repeat his experiment at the San Andrés Hospital upon a large dog. After etherizing the animal he resected four inches of the intestine and united the divided ends by means of a bone button connected with a piece of rubber drainage tube. Within forty-eight hours the dog was killed; union by anastomosis was observed to be taking place. Dr. Frank favored me with an opportunity to witness some of his work and explained to me many of the details of his method.

All discussion of papers was carried on with great dignity and courtesy. An original feature in the management of the meeting was that after an author had read his paper and it had been discussed he was invited to sit at the president's table and to take part in the conducting of the discussion of other papers that were to follow. This measure of proceeding with the work allowed the chairman an opportunity to arrange other matters for the interest of the Section, and afforded members a special opportunity to become better acquainted with one another. The greater part of the papers were in Spanish, but in a number of instances extracts were printed in English. The *précis* of all papers would have been published in the same language had the contributors furnished the organizing committee in season with sufficient data for so doing.

Our Section was extremely fortunate in having for one of its executive members Dr. Gustave Pagenstecher of San Luis Potosi. This gentleman had long been a pupil of Sanger of Leipzig; he was not only a good German and Spanish scholar, but he had acquired a most remarkable proficiency in speaking and writing English. Of any paper which was read in the Section he was able to give without delay a good abstract, in either Spanish or English, as was necessary. Dr. Pagenstecher is, indeed, a most successful interpreter in this line of work. I was fortunate in making an early acquaintance with him and we spent many pleasant hours together.

Other Sections of the Congress were well attended; their management and the papers read before them compare favorably with work done in other great medical gatherings.

The general hospital, San Andrés, situated on Calle San Andrés, is a well conducted institution. I had an opportunity of witnessing several important operations performed there. One operation by Professor Lavista was a tracheotomy in the case of a man suffering from dyspnea, due to secondary syphilitic infection. Another was the removal of a large malignant growth from the face. Some of the wards, however, of the hospital are located in the basement where the ancient flooring of stone still remains.

There are in the City of Mexico three other large general hospitals, beside several devoted to the treatment of special classes of cases, both medical and surgical. Of late there has been founded a Pathologic Anatomy Museum. This has been extended so as to embrace sections in bacteriology and bacteriologic

chemistry. The work is designed to be carried on in connection with the instruction given in the Medical University of Mexico. In this line of investigation the Mexicans are fast rivaling the great medical centers of Europe.

The Concepcion Beistegui Hospital, the Regina Nunnery, opened in 1886, is now a flourishing institution. It is the gift of Miss Beistegui, whose father was a native of Aragon, Spain, and whose mother, Donna Paula Garcia, was a native of Guanajuato, Mexico. Its medical department is under the directorship of the head physician, Dr. Joaquín Vertis, with whom are associated Drs. Ismael Prieto, J. Ramón Icaza and Francisco P. Chacón. It is opened for both males and females and for cases, whether medical or surgical. Since its establishment, over four thousand important cases have received attention. All its departments appear to be well conducted; cases of pelvic and abdominal diseases are attended to in the most modern fashion.

The Hospital de Jesús, on Calle de Jesús, was founded by Cortez, 1531. It has within a stone sarcophagus, and is still supported by descendants of the conqueror.

On our return, while stopping at San Luis Potosí, we visited the large military hospital of that place, also the children's hospital. Great attention is devoted to the sanitary matters and to the feeding and nursing of the children.

Mexico is carrying on a great deal of work in the endeavor to prevent disease. The Supreme Board of Health has instituted many measures of reform. The work undertaken by Pasteur is being recognized throughout the republic, and experiments on a large scale for rendering immunity against rabies and hydrophobia are daily performed. I saw a number of rabbits operated upon, à la Pasteur, at the laboratory connected with the Supreme Board of Health.

We took occasion early one morning to visit the American Hospital, which is situated on a short avenue just off Calle de Rivera de San Cosme; this street is a continuation of Calles San Andrés, Mariscala, San Juan de Dios, San Diego, San Hipólito, Puente de Alvarado and Buena Vista. Before stopping at the hospital we visited the United States National Cemetery, which was in charge of Comrade John Ayers of the G. A. R. In the cemetery has been erected a monument to the memory of our gallant and brave soldiers who had fallen in our war against Mexico. The cemetery is on the left as we went westward on Calle de Cosme. The fence on the westerly side of the cemetery abuts close to the Nochistongo, as already described. The cemetery, on its easterly side, is bounded by the ancient road leading around to the Castle of Chapultepec. It was on this road that Cortez spent that dismal night (*noche triste*), July 1, 1520, when the Spanish soldiers under him were so terribly slaughtered in their flight before the pursuing Aztecs. The giant cypress tree (*el árbol de noche triste*) under which Cortez wept is still standing. It was over the moat, then filled with dead and dying soldiers that, "Alvarado, like Ney, the last to retreat," saved himself by a most wonderful leap, and found Cortez, who had halted at Tacuba, and was saved from utter destruction only by reason of the darkness of the night. The venerable tree is now inclosed by an iron railing, and on the stone memorial erected is inscribed the story of that dismal night.

The American Hospital is supported by contribu-

tions not only from Americans, but from Germans, French and people of other nationalities. Dr. Bray, an American physician in charge, received us in a most agreeable manner; the matron, Mrs. Netteberg, and her daughter ushered us into the dining room, where had been prepared for us and a few other Americans a most bountiful breakfast. We were accompanied to the wards and other rooms of the various buildings and were shown in what manner the sick and disabled were cared for. The operating room was found to be well lighted and furnished with many modern conveniences: instruments were in glass cases; basins, bowls and other articles for use were made after the most improved style. Abundant means for sterilizing instruments and dressings were at hand. Most of the instruments had recently been brought from Paris. The rooms were light, cheerful and the surroundings bore evidence of the display of good taste; the different buildings had a striking resemblance to the Roman villas.

While visiting Tampico, on the Gulf Coast, I noticed that meat when exposed even for a long time to the sun's hot rays did not spoil but became only dry and hard. This immunity from decomposition there, as in other parts of Mexico, I am told is due to the absence of bacteria. The infrequent rains, the cloudless skies and the stillness of the air are unfavorable conditions for the spread or development of microorganisms.

Monterey, on the Gulf and Monterey Railway, is worthy of some degree of attention from the tourist. It has become Americanized to some extent. We visited the heights on which the Bishop's Palace is situated and the fields where were fought the battles between the Americans and Mexicans, 1846-48; there we picked up some bullets and other relics that had been overlooked by previous visitors.

It should be said that the final entertainment to the members of the Congress was an excursion to the Pyramids of San Juan Teotihuacan, about twenty-seven miles from the City of Mexico. At San Juan we were met by two bands of music, a troop of cavalry and the Rurales. Horses and carriages were in waiting sufficient for the comfortable accommodation of all. The party was first taken to the remains of a pre-historic Mexican house, thence to the pyramids. There are two of the larger variety, one of the Sun and the other of the Moon. The Pyramid of the Sun compares in size not unfavorably with Cheops. In the neighborhood of these are a great many tumuli, isolated and grouped. The opinion of archeologists in regard to these very curious remains, chiefly based upon the wide divergence from any known types of the clay masks found in what may be assumed to be the older of the tombs, is that they are the work of a race older than either the Toltecs or Acolhuas, of which only these monuments now remain. After inspecting the pyramids a bountiful repast was supplied by the Governor of the State, Gen. José Vicente Villada. Mr. Leopoldo Batres, conservator of the public monuments, advanced to us the theory that they had been used for places of worship, not of war, although there were those present who imagined that they might have been used as watch-towers in order to give notice of invasions that might take place from nomadic tribes of the hills. He called attention also to the resemblance that these mounds have to those of Egypt, and thought that they were coeval if not previous. They were, he said, indelible traces of an

undoubtedly high state of civilization on the part of the builders.

The Valley of Mexico is a basin of about seventy miles in length and forty-five miles in width. It extends from Pachuca on the northeast to the mountains south of Lake Chalco, and from the Sierra Nevada range on the east to the Sierra de los Cruces range on the west. The valley has an area of 1,750 square miles, or is about one-fourth greater than the State of Rhode Island. In the northern half are three small lakes and scores of small villages, but no large towns except Pachuca; in the southern half are three large lakes, many large villages and the City of Mexico. The lowest portion of the basin is Lake Texcoco, which in its normal condition is only six feet below the level of the city. The bottom of the valley has an elevation of 7,400 feet, while the highest point on the sides is about 17,777 feet above the level of the sea. We enter the northern half of the valley through the Cut of Nochistongo, and the southern half through an opening on the western side of Sierra Guadalupe.

In this valley we are in the earliest home of man on this continent. The Chichimecs settled there in A. D. 635, a hundred years after the Toltecs came, and these were succeeded by the Aztecs in A. D. 890. Their name for the region was Anahuac, signifying "the place of waters."

Beside Texcoco, there are five other lakes in the valley. Lake Zumpango is the highest in the valley and is east of the cut. The River Cuatitlan emptied into the Zumpango, but the cut was made so as to turn the river's course into the Tula River. The new canal carries the water of the valley into the Ravine of Tequiquiac before entering the Tula River.

Zumpango is thirty miles north of Mexico City; Xaltocan and Zumpango are at an elevation of twenty-five feet above the city. San Cristobal is a small lake immediately north of Texcoco, twelve miles N.N.E. of Mexico and is ten miles long. Chalco and Xochimilco are the southernmost, whose levels are ten feet above Texcoco. The largest and nearest is but six feet below the pavement of the city at ordinary stages of the water. Texcoco is a salt-water lake two and one-quarter miles east of the City of Mexico, with which it is connected by a canal: its greatest length from north to south is about fifteen miles, its greatest width nine miles. Its depth nowhere exceeds ten feet, and in some parts is not more than two or three feet, while its shores are swampy. The lake is said to have been much more extensive than at present and to have included several islands, on which the Mexico of the Incas was built. Lake Texcoco is without any natural outlet.

I should say that there were presented in the Section on Anatomy, including Physiology, two papers of unusual interest. One of these was on "Hematology of High Altitudes," by Dr. Galdino Casillas, Guadalajara, Mexico. He said that "the increase of red blood corpuscles in the system in elevated climates is real and not fictitious," that is, that the condition of the system in elevated regions is not a "physiologic concentration of blood discs from a loss of water."

The other of these papers was on "Anatomic and Physiologic Modifications Due to the Elevation," by Dr. Daniel Vergara Lope together with Prof. Alfonso L. Herrera of Mexico. They referred to the "increase of the biachromal distance, of the length of the ster-

num, of the clavicular widening of the thorax and the increase of the pulmonary capacity." Those authors referred to the relation of the thorax to the height, and to several other vital conditions that obtain in the organism of those who dwell in high altitudes. The summary was that man can become completely acclimated to elevated centers. His humors are concentrated, his respiration and circulation are accelerated and the decrease of oxygen is compensated for by the increased activity of the hematoses. These facts, they said, ought to be borne in mind by the physician who is established in high altitudes. If these conclusions are correct, may not the varying degrees of the stature of individuals be dependent in large measure upon the degrees of altitude to which the progenitors during a long course of ages have been subjected?

APPENDICITIS, WITH REPORT OF AN INTERESTING CASE.

Read before the Section on Abdominal Surgery, Obstetrics and Gynecology, Second Pan-American Medical Congress, Mexico City, Mexico, Nov. 18, 1896.

BY HENRY L. E. JOHNSON, M.D.

A Vice-President of the Second Pan-American Medical Congress; late President of the Clinico-Pathological Society; late Vice-President of the Washington Obstetrical and Gynecological Society; Professor of Gynecology in the Medical Department of the Columbian University; Professor of Gynecology in the Post-Graduate School of Medicine of the District of Columbia; Director of the Gynecologic Clinic in the Central Dispensary and Emergency Hospital; Consultant to the Woman's Clinic, etc.

WASHINGTON, D. C.

I have the pleasure, Mr. President and fellow members, of presenting for your consideration and criticism a few remarks and observations on appendicitis, the disease which is attracting so much attention at the present time, and which is possibly not thoroughly understood by the medical profession of the day. The disease is one of frequent occurrence, and its mortality is in direct ratio to the accuracy of diagnosis and treatment.

Nomenclature.—The disease is and has been variously known as iliac phlegmon, typhlitis, perityphlitis, paratyphlitis, cecitis, pericecitis, paracecitis, peri-appendicitis, ecphyaditis and appendicitis.

History.—M. Mastivier, in *Journal of Medicine, Surgery and Pharmacy*, Paris, May, 1759, reports the case of a man aged 45, with a large tumor in the right side near the umbilicus, who presented himself for treatment at the Hospital of St. Andrew of Bordeaux in the year 1757. Operation: evacuation of about a pint of offensive pus; postmortem showed a gangrenous cecum and appendix, the latter containing a large corroded and encrusted pin.

Early in the present century "Phlegmons in the Right Iliac Fossa" were extensively written about, without, however, attributing the same to the appendix. In 1831 Farrall published a paper on "Phlegmonous Tumor in the Right Iliac Region," in which the cecum is set down as the cause of the disease. In 1833 Dupuytren gave expression to the same views. In 1834 Copeland recognized the appendix as a possible factor, but quite secondary to the cecum. In 1837 the ulceration of the appendix from foreign bodies is spoken of as a matter of little consequence so long as confined to the mucous membrane, but causing abscesses when the peritoneum is involved. Hancock operated on one case in 1848. In 1867 Willard Parker of New York favors an early operation. From this time on, the theory of the cecum diminished and that

of the appendix increased. In 1880 Woirth of Copenhagen expressed his disbelief in the cecal theory. In 1883 Dr. F. F. Noyes reports 100 cases, of which 90 per cent. were operated upon in America. In 1886, Fitz of Boston put on record 209 cases.

Etiology.—Appendicitis is more frequent in males than in females. The disease is most common between the ages of 10 and 20. Fifteen per cent. of all cases occur in people under 15 years of age. Among the anatomic causes which predispose to inflammation of the appendix, the blood supply forms an important part, there being only one artery supplying the organ, and that forming no anastomosis. The richness of the lymphatic tissue which is found in the appendix plays an important part. Finally, it is claimed that its position favors inflammation.

Predisposing causes.—Intestinal catarrh and indigestion; distension of bowel with chronic constipation.

Exciting causes.—The usual causes assigned are the lodging of foreign bodies, fecal concretions, micro-organisms and acute intestinal indigestion from imprudence in diet.

Varieties and pathology.—Various forms of the disease are recognized by different authors, the principal ones are catarrhal, ulcerative, infective and recurrent appendicitis, and the following seems to be the usually recognized pathology:

Catarrhal.—The exact frequency of this form, when mild, can not be determined. It probably produces no symptoms and may subside without leaving a trace. Chronic catarrh is, however, frequently found on postmortem examinations and is easily recognized, as it gives a thickening to the wall. The actual changes are those of mucous membranes elsewhere. There occurs a rapid shedding of the epithelium with detachment and extrusion of the epithelial lining of the crypts of Lieberkühn. The base of the mucous membrane is infiltrated by leucocytes, and the crypts are obliterated. The lumen is found to contain an abundance of leucocytes, granular debris, mucus and casts of the interior of the crypts, and the whole is sometimes molded into a definite central mass by the muscular movements of the tube. Perfect recovery by a new growth of epithelium is at first possible, but the shedding may be so complete and over so large an area that the denuded surface can not be covered anew. The inner part of the mucous surface now comes to consist of granulation tissue. This condition happily acts often as a preventive of further attacks, as by pressure of the surrounding parts the two surfaces grow together, with obliteration of the lumen of the tube, or again fibrous tissue may obliterate the cavity, and a natural cure results. The process may be confined to only a part of the tube, in which case there will be a stricture, usually near the cecal ends. The remaining portion sometimes is largest, forming a cyst. In many cases the condition becomes chronic with great thickening of the wall, as much as one-eighth to one-tenth of an inch in some instances, rendering the appendix firm and rigid.

Ulcerative. This form is not preceded by a general catarrh. The ulceration is due to fecal concretions or foreign bodies. Feces press on the wall and injure the epithelium, which is ulcerated and finally destroyed. The mucous membrane, submucous tissue and finally the muscular coats disappear. In twenty-seven fatal cases (St. Thomas' Hospital) fecal concretions were found in eleven. Fitz (Boston), in

152 cases found them in 47 per cent. Mathews in 63 per cent. of 169 cases.

Infective.—This form of appendicitis may result from either one of the preceding, or may have an independent origin. It seems to be associated with bacterial invasion of the tissues of appendix wall, and in all cases leads to a virulent peritonitis. The bacillus usually most active is the *coli communis*.

Recurrent appendicitis.—This form is prominently known but quite recently. Treves has reported a case in which there were fourteen attacks, and McBurney reports one in which twelve attacks occurred within as many months. Krafft states that of 106 cases which he studied, 23 per cent. had been previously affected.

The writer reports herein one case in which five relapses occurred within twelve months. Operation was successfully performed during the fifth attack.

The writer believes that all cases originate in a catarrh or inflammation resulting from torsion, or volvulus of the tube or from fecal or other concretions, all producing greater or less ulceration, with sometimes perforation and subsequent bacillus infection of the appendix and adjacent tissues. The rapidity and quantity of pus formation is familiar to all surgeons, two or three pints having been known to form in some cases by the fifth day of the disease. The writer believes the process in the appendix follows a similar course with the Fallopian tubes, viz., inflammation with contractions, puckerings, obstruction and fluid accumulation with in some cases resolution, and in others the formation of an infected pus cavity, which bursts or perforates and on the one hand results in general peritoneal infection, or by adhesive limitation, forms a circumscribed abscess or abscesses. Sometimes the appendix is found diseased and even gangrenous and without adhesions. In other instances the appendix is almost disorganized and is surrounded by pus and quite free from adhesions. The writer has seen such a case recently in consultation in which the appendix was removed and the patient recovered. The adhesions and torsions of the appendix so often observed in abdominal sections in gynecologic practice, may sooner or later be a factor in the causation of this disease.

Previous attacks of appendicitis which appear to have undergone resolution, predispose to subsequent attacks of greater or less gravity. Perforation with septic infection of the peritoneum and death may result very early in the attack. Matterstock found perforation in 132 out of 146 cases, while Fenwick found it to exist in 113 out of 130 cases. Accurate pathology will be obtained only by early and frequent operations and careful laboratory study of specimens.

Symptomatology.—The symptoms are usually severe and very pronounced. Pain, sudden and severe, is the first symptom noted. It is not always in the right iliac region, though at the end of twenty-four hours it usually becomes most prominent there. There is usually headache, sometimes a chill. Vomiting may or may not be an urgent symptom. The initial temperature usually ranges from 100 to 104 degrees, with a tendency to fall within two or three days. Sometimes the temperature is low and not in proportion to the other symptoms. The pulse is usually rapid, sometimes intermittent. Tenderness on pressure in right iliac region, with marked tension or rigidity of abdominal muscles over the right iliac region is almost pathognomonic. In 1889 McBurney first drew attention to a spot at which on deep pressure pain was

always elicited. This spot is situated at from one and one-half to two inches from the anterior superior spine of the right ilium along a line drawn from that process to the umbilicus. Constipation is usually marked at first, but may be preceded by two or three loose movements. Abdominal distention is usually marked for the first day or two. Increasing distention is a bad symptom. The pain is later increased upon motion or coughing, and there is a tendency to flexion of the right thigh or drawing the leg up to the body. The patient is most comfortable when lying upon the back. There is usually a tumor in the right iliac region of varying size, which is detected from the first to the third day. It consists of the appendix, intestines, omentum and exudate, and usually increases in size as the disease progresses. Exaggeration or increasing intensity of pain, accompanied by symptoms of shock, with the disappearance of tumor, followed by chill, fever, tympanites and vomiting, indicate usually rupture into the peritoneal cavity. These symptoms to a less degree, however, may indicate the formation of pus without perforation or perforation into the bowel. Prostration may or may not be a prominent symptom. The condition of the urine is usually negative, but sometimes contains albumin. There is usually marked loss of appetite with increased thirst. There are, sometimes, prodromal symptoms manifested for a few days, consisting of abdominal uneasiness and soreness with some distention and flatulence. These may often be discovered to have existed without attracting the patient's attention particularly.

Diagnosis.—The diagnosis is based upon the history of the case, the physical signs and the symptoms above mentioned.

Differentiation.—Appendicitis must be differentiated from renal and hepatic colic, acute indigestion, cholera morbus, strangulated inguinal hernia, torsion and volvulus and obstruction of bowels, and the various acute pelvic diseases in women.

Termination and Prognosis.—Fitz says that 26 per cent. and Stimson that 25 per cent. of all cases of appendicitis prove fatal. According to Fitz, 60 out of 176 cases of perforated appendicitis died during the first five days, 56 during the first four days, 28 during the first three days, and 8 during the second day, though a large number of cases of simple appendicitis are said to terminate favorably by resolution. Bull, in 1894, placed the mortality at 5 to 6 per cent., although he had collected 450 cases with only 8 deaths. Deaver collected 200 cases with only 2 deaths. Robert T. Morris records the mortality as 15 per cent. under medical treatment, with an addition of 10 per cent. from numerous chronic complications resulting from previous acute attacks. The prognosis is consequently grave and will depend upon early diagnosis and prompt modern surgical interference.

Treatment.—The majority of writers concur in the opinion that there is no reliable medicinal treatment for appendicitis. Osler says ("Principles of Medicine," 1895): "There is no medicinal treatment for appendicitis. Operation is indicated for acute inflammatory trouble in cecal region whether a tumor is present or not, and when by the third day the features of the case point to a progressive lesion." The case once accurately diagnosticated, most writers agree that the operation should be done at once. In cases of recurring appendicitis the operation is performed in the interval, or as soon as the

symptoms recur. When the appendix can be found and its removal does not entail the breaking up of adhesions, thereby opening the peritoneal cavity, it is removed in the usual way. When not removed, the case is treated as an abscess cavity, being packed and drained. In this treatment there seems to be a consensus of surgical opinion. Thus Dr. J. D. S. Davis, of Birmingham, Ala., in *Medicine* for February, 1896, says: "To make an extensive search for the appendix is liable to break up adhesions and allow the escape of septic pus into the general cavity. The records of operation upon appendical abscess show that the great majority of cases are cured after evacuation and complete drainage."

Dr. J. B. Deaver (Surgeon to the German Hospital, Philadelphia): "The best results are obtained when the operation is performed at the earliest opportunity."

According to Ribbert 16 out of 400 cases recover without operation. Deaver recommends the removal of the organ in all cases if the operator be a skilful one! Otherwise he simply evacuates the pus and drains the cavity.

"Murray believes the mortality to be 1 per cent. When he finds a walled-in abscess in the inguinal region, the abscess cavity is cleansed with hydrogen peroxid and flushed with hot saline solution, whereupon search may be made for the appendix and multiple abscesses in the vicinity, without the danger of infecting the abdominal cavity when the adhesions are broken down."

G. M. Gray (*Kansas Medical Journal* of December, 1895) "removes the appendix if the operation is done early; if late he opens the cavity and drains. The question of removing the appendix in these cases to be determined by the operator for each individual case."

Dr. J. William White of Philadelphia says: "In a circumscribed abscess it is bad surgery to insist on finding the appendix; should be content with treating as an abscess." He (White) has left the appendix in thirty-seven cases, all of which are living. Dr. White's treatment and teaching is thus supported.

Richardson reports forty cases with the appendix left; perfect recovery in all.

McBurney says, "the appendix is frequently destroyed before the operation." If in such cases indefinitely prolonged search were to be made for the appendix fatal results would be inevitable.

Dr. Bull says: "The plan of always looking for the appendix is fraught with the risk of infecting a healthy peritoneum, and that the mortality from surgical treatment is about 2 per cent. in cases operated upon at a time when the infection is limited to the confines of the appendix."

Dr. Senn states that "persistent search is hazardous." Halstead says the same. Cabot of Boston reports thirty-two operations on thirty-one patients in the interval of the attacks, with no deaths. Hunter McGuire reports seventeen operations with one death from chronic appendicitis.

The writer holds that these cases are not prejudiced unfavorably by early operation, nor is the danger to the patient increased, hence, all cases should be operated upon at once. Even in cases of mistaken diagnosis, operation under thorough aseptic precautions will be attended with no more danger than an exploratory section, and notwithstanding the fact that the appendix is found to be normal it should be removed,

thus preventing a possible future attack of appendicitis. When the appendix is found to be diseased, it should be removed and treated by immediate closure of the abdomen by suture, preferably silkworm gut where pus is not present, and by drainage by gauze packing without drainage tube, where pus is present. In the case of a large abscess or multiple abscesses the correct treatment is drainage, after thorough flushing with saline solution, and no hazardous attempt should be made to secure an appendix which has in all probability sloughed away. Multiple abscesses should be carefully converted into one large cavity and so treated. Should the appendix or a portion of it remain and produce subsequent trouble, a second operation should be performed at once.

In cases where the abdomen is opened for other causes the appendix should always be removed as a prophylactic measure, and the danger from the original operation is not thereby increased, the "pus cases" found in women not excepted. Every attention should be given to secure absolute asepsis both before, during and after operation. The subsequent treatment is that recognized in abdominal surgery. In the case of abscesses the greatest judgment should be exercised in selecting the point for incision, thereby avoiding the danger of opening too near or perforating the exudate boundary of the abscess, thus infecting the general peritoneum.

HISTORY OF AN INTERESTING CASE OF RECURRENT APPENDICITIS, RECOVERY AFTER OPERATION.

Mr. —, age 37. Previously in excellent health. Had typhoid fever about thirteen years ago and was quite ill, with marked abdominal symptoms, but recovered without complications. Had his first attack of appendicitis on Aug. 2, 1895. The attack was ushered in very much like an attack of colic from indigestion, and followed by acute pain over entire abdomen, with nausea, vomiting and purging. By the next day the general symptoms had more or less subsided and the disorder was clearly defined in the right iliac region. The illness lasted one week and subsided under rest, diet, opiates and enemas. The diagnosis of catarrhal appendicitis was made.

A second attack occurred on Sept. 1, 1895, following the ingestion of a large quantity of pears. The subsequent history was identical with the first attack. A slight induration in the right inguinal region was apparent, but disappeared shortly.

A third attack began on Dec. 30, 1895. This attack was much more marked than the previous attacks, the patient being sick for three weeks. A similar induration appeared by the fifth day but promptly subsided. The temperature in none of these attacks reached 100, and the pulse at no time was above 90. The pulse generally ran along between 72 and 80. On Jan. 5, 1896, following an enema the patient passed a peculiar worm-like gelatinous "string" about twenty-four inches long, which was submitted to Dr. Walter Reed, U. S. A., who made the following report on the specimen:

WAR DEPARTMENT, SURGEON-GENERAL'S OFFICE,
WASHINGTON, D. C., Jan. 8, 1896.

Dear Doctor:—The specimen which you left at the Museum on Monday, the 6th inst., and which was said to have been passed from the bowel in a case of appendicitis, has been subjected to microscopic examination and found to consist of fine and coarse fibers of fibrin enclosing many necrotic and feebly staining columnar shaped cells. As far as we are able to judge microscopically I should say that the specimen consists of so-called membranous cast of the intestine.

Very sincerely yours,
WALTER REED, Surgeon U. S. A., Curator.

No hemorrhage followed the passage of this specimen and the symptoms gradually disappeared. The patient was out in three weeks.

During an interval of nine months between the third and fourth attacks, the patient enjoyed excellent health and congratulated himself upon having entirely recovered. The fourth attack occurred suddenly on Sept. 14, 1896, while the patient was prepar-

ing to leave the city on an extended tour. The symptoms being somewhat misleading and, but for the history of previous attacks, would not at first have attracted particular attention. A medical friend who was visiting the patient at that time, supposed the attack was one of simple indigestion, and administered a large dose of sulphate of magnesia. The temperature in this attack never rose above 99.4, pulse 72. The patient was considered well in ten days and moved into a new house.

On the 25th the old symptoms showed themselves again and by the 26th they were much more marked. On the 27th the patient had a chill which was not very pronounced, temperature reaching 101 and the pulse 80. Pain in the side became acute and induration with tension of the abdominal muscles in the right inguinal region, was well marked.

Operation was performed on the 28th, at which time the patient felt perfectly well, had no pain or soreness and none was produced by pressure over the inguinal region. The boggy sensation had, however extended, the temperature was 99 and the pulse 72, and the skin moist. The condition of the patient was decidedly misleading. The diagnosis of circumscribed appendiceal abscess, previously made was adhered to, and an incision resulted in the evacuation of about three quarts of greenish-black offensive pus. A small lump or mass was removed which was supposed to be the remains of the disorganized appendix, but was subsequently lost by the nurse, thus preventing an histologic examination. The abscess walls appeared to be gangrenous.

After an exploration, not endangering the exudate walls, the cavity was thoroughly irrigated with salt solution, and packed with iodoform gauze, which was permitted to remain forty-eight hours. Thorough aseptic precautions were observed in every detail. The patient made an uneventful convalescence, the wound healing promptly by granulation under gauze packing, giving a strong union without hernia.

I believe this case would have been lost through septic infection had an injudicious search been instituted further for an appendix which in all probability had sloughed away, and I re-affirm my opinion that all cases of appendicitis should be promptly operated upon.

On November 3 the patient passed an intestinal cast similar to the one above mentioned. This was submitted to Surgeon Walter Reed, who forwarded the following report.

WAR DEPARTMENT, SURGEON-GENERAL'S OFFICE,
WASHINGTON, D. C., Nov. 4, 1896.

Dear Doctor: Referring to the specimen mentioned in your letter of Nov. 3, 1896, I beg to say that microscopic examination shows it to consist of numerous interlacing fine fibers, enclosing in their meshes a large number of poorly staining cell-nuclei, and considerable granular amorphous material.

I think this specimen should be considered as a part of a membranous cast of the bowel. Sincerely yours,
WALTER REED, Surgeon U. S. A., Curator.

Baby's Turn Next Time.—Mrs. Briske—Johnny, did the doctor call while I was out?

Little Johnny (stopping his play)—Yes'm. He felt my pulse an' looked at my tongue, and shook his head and said it was a very serious case, and he left this prescription and said he would call again before night.

Mrs. Briske—Gracious me! It wasn't you I sent him to see: it was the baby. —*New York Weekly.*

DIAGNOSIS AND SYMPTOMS OF APPENDICITIS.

Read before the Detroit Medical and Library Society.

BY J. H. CARSTENS, M.D.

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Ex-President American Association of Obstetricians and Gynecologists, etc.
DETROIT, MICH.

The diagnosis of appendicitis is now generally made without difficulty by the general practitioners. Still sometimes a mistake is made and the diagnosis not easy on account of obscure symptoms.

The first symptom is pain and this varies in location. It is seldom in the region of the appendix at first, but most frequently is referred to the umbilicus. In a smaller number of cases, the pain is first located in the region of the stomach, especially in cases accompanied by vomiting; and in a very small proportion of cases only, is it located by the patient in the region of the appendix. The pain is generally spasmodic, colicky, hence the expression, "appendicular colic." Sometimes, however, the pain is not so sharp and acute, but is dull and constant. Remember, I am referring to the very first symptoms.

In the acute fulminating kind, when the appendix is ruptured and diffuse peritonitis takes place, we get the characteristic pain of the latter disease. Vomiting sometimes ushers in an attack, as the exciting cause often seems to be a full meal of indigestible food. Vomiting, however, is an unreliable symptom. The condition of the bowels also varies; sometimes the vomiting is accompanied with an attack of diarrhea and sometimes constipation exists. Hence, neither the pain, nor the vomiting, nor the diarrhea, nor the constipation are at all pathognomonic of the disease.

If we now consider the temperature and the pulse, it is just the same. Some of the worst cases of appendicitis I have ever seen had only a temperature of 99 or 99.5 degrees, although as a rule, if we see cases early enough, we will find that the first day the temperature will suddenly rise to above 100, sometimes 102 and 103, although most frequently the temperature will gradually rise, the first day to about 100; second day, 101, and the third day, 102. By this time, such an exudation has been thrown around the appendix that the temperature often drops to nearly normal and both the patient and the physician are deluded with the idea that recovery is taking place. I want to call your special attention to this very dangerous condition, because many patients have been lost and an operation delayed on this account. In from twenty-four to forty-eight hours another sudden rise takes place, rupture occurs with diffuse peritonitis, and which is often beyond surgical aid.

The pulse also varies, as the temperature, from 100 to 130 and 140, and I would like to place more reliance on the pulse than anything else, as far as the prognosis is concerned. No matter what the symptoms or the temperature, if the pulse remains between 90 and 100, or even a little more, the danger is very little. But if the pulse runs up to 120, 140, or 160, even with no other serious symptoms, and a temperature of only 99, the patient is in a most critical condition and I think authorities all agree that if there is any doubt about operative procedures, there never is when the pulse goes above 110, no matter how mild the other symptoms may be.

Hence, I would say, that in cases with pain in the abdomen, no matter where located, accompanied with

vomiting or not, diarrhea or constipation, a slight elevation of temperature or a great one, with a slow pulse or a rapid one, such cases should be carefully examined for appendicitis. We can easily do that by palpation, carefully going over the whole abdomen and gently locating the greatest point of tenderness. By keeping the patient's mind diverted, we can bear down quite strong on different parts of the abdomen and get the exact location of tenderness. If it is appendicitis, we will nearly always find it at the so-called McBurney point, which is a spot midway between the umbilicus and the anterior superior spine of the ilium. But many cases vary, as the location of the appendix varies. The appendix sometimes reaches over to the left side and is attached there, or reaches downward and is attached; sometimes it reaches upward toward the liver, and the point of attachment of the appendix is generally where the pain exists.

I operated upon a case some time ago, where the pain was located just above the symphysis, and still it was so well marked that I had no doubt about the diagnosis. I found that the point of the appendix was attached to the anterior wall of the abdomen, just about the symphysis, and had become perforated. The patient recovered. We can sometimes palpate the appendix, as in acute cases an exudate is thrown around it, and we will feel quite a swelling in the right inguinal region. But in so many cases the appendix lies behind the cecum, the cecum is filled with gas, and it is absolutely impossible to do so.

Beside, the other great pathognomonic symptom of the disease is muscular rigidity over the region of the cecum, which makes it impossible for any one to map out anything unless the patient is under the influence of an anesthetic. In a few rare obscure cases of appendicitis which have come under my observation, where I had absolutely no history, I could only diagnose the case by placing the patient under the influence of chloroform and then find deep down the exudate.

Appendicitis might be mistaken for typhoid fever; in fact, I have seen quite a few cases of relapsing appendicitis which had been treated for weeks and months for typhoid fever, which simply shows a very superficial examination of the patient on the part of the attending physician.

In women, the inflammation of the right Fallopian tube has frequently been mistaken for appendicitis and vice versa. A careful digital conjoined examination should clear up a diagnosis, but there must always remain a certain number of cases where the Fallopian tube is adherent high up, and where it is impossible to make the diagnosis. There are also a certain number of cases where both diseases exist at the same time, the one exciting the other.

A few months ago, I saw a beautiful case of tubercular appendicitis, the same condition existing in the right tube, and where I moved both through the same opening.

Invagination and intussusception of the intestines may sometimes be mistaken for appendicitis. By carefully examining the case generally no trouble will exist. Often in my experience, a diagnosis of intestinal obstruction has been made when it was a case of appendicitis, and the intestinal obstruction was only one of the symptoms. Still, in the last few weeks, I saw a case of appendicitis which had been operated upon a year ago by simple incision and letting out the pus, but not removing the appendix; the man had a

recurring attack and a well-marked tumor, and there was no question at all about the diagnosis. I cut down and found an immense hollow tube, which I thought was the largest appendix I had ever seen. But I was not quite satisfied. It seemed to have curled upon itself, and after loosening the adhesions and bringing the mass to view, I found that a small loop of intestine, near the junction of the cecum, was encircled by a small fibrinous band which absolutely occluded it and had produced gangrene, so that I was obliged to resect twelve inches of intestines and insert a Murphy button. Unfortunately, the patient died, but it was as typical a case of appendicitis as I had ever seen, with forty-eight hours duration only, and I challenge anybody to have diagnosed anything different.

Extra-uterine pregnancy may simulate appendicitis, but the hemorrhage, the collapse and the progressively weakening pulse, with a bi-manual examination will clear up the case. Painful menstruation, with other pelvic disorders, sometimes simulates appendicitis. A floating kidney with twisting of the ureter, producing nephritic colic, as well as pyo-nephrosis, renal calculi, tumors, etc., of the kidneys, on account of their location, should seldom be mistaken for the disease under consideration. Gallstones and rupture of the gall bladder can be easily mistaken for appendicitis, but by carefully examining the location of the trouble, mistakes should seldom be made. However, both require operative procedures, and by making an incision high up both the region of the appendix and that of the gall bladder can be easily explored, a diagnosis readily made and the incision increased upward or downward, as indicated. The muscular rigidity of the gall bladder troubles is found in the upper part of the abdominal muscles more than in those over the cecum. That very rare condition of an abscess in the abdominal walls may sometimes lead the diagnostician astray, but the superficial swelling, the lack of deep seated abdominal pain, will clear up the diagnosis. Tubercular peritonitis, involving the right ovary and tube, or primarily the appendix, often simulates a chronic or relapsing variety of appendicitis. But a surgical treatment is indicated in either of them and no time need be wasted in making a differential diagnosis.

To cut it short, all these different conditions mentioned above should be borne in mind, but appendicitis should always be looked for, when there is pain at the so-called McBurney point with rigidity of the abdominal muscles, some fever, however slight, and an increased pulse-rate, then there is hardly any question about the diagnosis.

CONCLUSIONS.

1. In every case of acute pain in the abdomen look for appendicitis.
2. Especially look for inflamed appendix when the pain is in the right side.
3. In every case of renal calculi, gallstones, right pus-tube and typhoid fever, look again and be sure.

TETANUS ANTITOXIN—REPORT OF CASE.

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One by one the diseases which have hitherto defied the skill of physicians are yielding to the persistent

attack of modern science. Since the successful treatment of diphtheria by subcutaneous injections of antitoxin serum was demonstrated, it has been confidently predicted that sooner or later all diseases resulting from the action of a poison secreted in the blood by a special and characteristic bacillus would be conquered by similar means. Tetanus has its characteristic microbe, which has been recognized, isolated, described and reproduced by artificial culture. The distinguishing symptom of tetanus is a persistent spasmodic spasm of the voluntary muscles aggravated by light, noise, or other disturbing influences to which the patient may be subjected. These spasms may affect any muscular portion of the body, but when, as is often the case, the maxillary muscles are principally involved, the result of the malady is usually known as "lockjaw."

I was called Dec. 20, 1896, at 8 o'clock P.M., to No. 1545 20th St., Des Moines, to see John Wilburg, age 46, who was suffering with, as they supposed, neuralgia of the head and neck. I proceeded at once to get the history of the case, as well as that of the patient, and found that he was of German descent, and had never been sick in his life, so far as he knew, save an injury or two received a few years ago, from which he had entirely recovered; but aside from this, had always enjoyed the best of health. He was married and had four healthy children, and from his story I could find no cause for the supposed neuralgia of the head, except exposure a few days previous. However, upon further inquiry I ascertained that upon December 10, he let a brick fall, striking upon the great toe of the left foot, producing a discoloration of a portion of the nail and a slight abrasion of the skin on the dorsal portion of the same toe, which did not give him much pain at the time, and caused no inconvenience in the future, and he continued his work the same as before, not thinking the injury sufficient to give it any attention whatever; but, upon the following Saturday, December 18, he fell from the roof of his barn, a distance of about twelve feet, resulting simply in a general "shake-up," without any injury whatever and even this did not prevent him from continuing his avocation as before. Upon close inquiry I succeeded in eliciting the fact that he had been having a stiffness about the neck and difficult deglutition for two or three days past, a fact that he did not think worthy of attention and simply, in his opinion, was the result of exposure incident to his vocation, that of hauling brick, but, in reality, in my opinion, was the beginning of what ultimately proved to be the end.

Upon a closer examination of the patient, I found a pulse of 120 and a temperature of 102, with spasmodic pains, the body assuming the position of opisthotonos, no part touching the bed, except the heels and head, the arch being that of nearly a semi-circle, producing typical tetanic spasms, spastic masseters, with trismus, diminution of the visual angle, and apparent permanent spastic contraction of orbicularis palpebrarum muscle, with difficult deglutition and irregular respiration. The pain was not constant, but came periodically and with it the spasm incident to tetanus. I informed the family that, in my opinion, the case was one of tetanus, or lockjaw, caused by the injury to the great toe, December 10, which very much surprised them and their friends because it seemed that they had heard or knew enough of the disease to know what it meant. I gave him nerve sedatives and anodynes for the night and called the next morning,

December 21, at 8.30. Found no material change in the patient from the evening before, save that the respirations were made with more difficulty and the temperature 101 and the pulse 140. I realized the severity of the disease and, also, that in reality the beginning of the first symptoms of the disease could be dated as far back as Friday December 18, so that there has been three and a half days elapsed since that time. I advised the family to have consultation and Dr. Lewis Schooler was called, and confirmed my diagnosis, and was of the same opinion as myself, that if anything would stop the ravages of the disease, it would be tetanus serum, and we even doubted the effectiveness of this treatment on account of the lateness of its beginning, there having been almost four days transpired since the introduction of the disease. I secured forty cubic centimeters of tetanus antitoxin or serum and at 4.30 P.M. gave subcutaneously four cubic centimeters, but not without first giving the patient chloroform inhalation to quiet the spasms produced by any noise or touching of the patient.

Perhaps it would not be out of place here to state that in using the serum I aseptitized the field of operation, as well as the Mulford syringe used, and was careful to not permit any air to enter the syringe or serum and, after using, covered the surface with aseptic gauze, retained with adhesive straps. At this time, the spasms were occurring seventy-five per hour when the patient was not under the influence of chloroform. I had taken the precaution to have the patient's bowels to move freely, after which gave food or cod liver oil, beef tea and egg per enema every six hours, and when the patient was unable to retain food given in this way, I resorted to feeding by means of absorption of olive oil and quinin, administered through the medium of a saturated cloth around the body, covered with oiled silk, as deglutition was impossible without aggravating the spasms, and the teeth being firmly set. Realizing that whatever effect I got from the serum would not be instantaneous, I gave hypodermic one-fiftieth grain physostigmin, with a half grain of morphin hypodermically, which was repeated every three hours, or as much oftener as necessary to control the spasms and produce some sleep.

December 22, at 8.30 P.M., I called and found no material change in the patient from the preceding evening, save the spasms were not quite so frequent, a fact which I accredited to the persistent use of the physostigmin. I gave at this time six cubic centimeters of tetanus serum, and in four hours, ten more, making twenty that had been given up to this time. After the last injection given of the serum the patient remarked: "My jaws feel more limber and my neck not so stiff." Believing that I was getting some results from the use of the serum, I determined to push it and secured another bottle of serum containing twenty cubic centimeters, and gave it in two administrations six hours apart, during and after which the patient seemed to be convalescing; the spasms now, instead of being seventy-five were not more than ten per hour, and even then not anything like so severe and we felt that there was some hope; but there being a question in my mind as to the advisability of using more serum and not being able to secure it even if I did, it was all that the case was given, and the patient seemed to be improving slowly with normal temperature and pulse of a 100 and respiration of 30, but somewhat irregular, due to the spasms. This condition of affairs continued without

any marked variation until Thursday morning, December 24, when there was a turn for the worse and the spasms were increasing in number and severity and the outlook was anything but favorable. I am satisfied that had I had forty cubic centimeters more of serum at my command, I should have made use of it. This, however, I did not have and all that was left to be done was to quiet the spasms with inhalations of chloroform and anti-spasmodics, which I did until the end came at 2 o'clock A.M., December 26.

My experience with tetanus serum in this case has been sufficient to convince me, beyond a doubt, that when it is used aseptically, plentifully and timely, we may expect good results from it, because in this case, even after four days had elapsed from the onset of the disease, the result from its use while being used and for a limited time afterward was entirely satisfactory and the result so marked that even the family and friends noticed the marked improvement in the case; the respirations were better, the deglutition became possible, but in a limited degree, and the heart's action was better and continued to be so, and the patient's intellect seemed to be improved; hence, I have no hesitancy in saying that there is a field of usefulness for tetanus serum in this dreadful malady and no physician should hesitate to give it a trial upon the least provocation. The experience that I have had with tetanus has fully aroused me to the importance of prompt and immediate action, and, in all cases where there is any danger of this malady, and whenever there is an injury to any part of the body that is liable to produce it, shall subsequently govern myself accordingly, and give the serum as the best known prophylactic treatment.

SURGERY ONE HUNDRED YEARS AGO.

AN HISTORICAL STUDY

BY DR. GEORGE FISCHER.

DEDICATED TO THE GERMAN SURGICAL ASSOCIATION.

TRANSLATED FOR THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

BY CARL H. VON KLEIN, A.M., M.D.

CHAPTER III.—AT THE UNIVERSITY.

(Continued from page 550.)

In respect to medical lectures the various universities differed greatly. In the Catholic schools the course covered for the most part the entire year; the lectures were largely public and their duration, as well as the text-books, were prescribed by law; as a rule the lectures were held in public halls. In the Protestant universities, on the contrary, the lectures lasted a half year, were not free and were frequently given in the houses of the professors. Teacher and student enjoyed unlimited freedom, in consequence of which most of the young men studied without system. Many students took too many lectures at one time, others began with practical study and neglected the theoretical. In order to fill their lecture rooms and also their purses the different professors encouraged the erroneous choice of the student. No wonder then that even in the best German universities the number of accomplished medical students remained comparatively small.

The learned gentlemen could not divorce themselves from lectures in the Latin language, and would in general accept no pupil who could not understand Latin. But most of the pupils failed in this knowledge; in fact it was an exception if a student could speak Latin. Finally the professors were obliged to

yield to the pressure of the students. When Frank became professor in Göttingen in 1784, his colleague, Heine, asked him to give his lectures in Latin. He did so. But after the first semester forty students declared to him that if he would lecture in German they would gladly pay him in advance, otherwise they would be obliged to forego his instruction, as they did not understand sufficient Latin. The professor contented himself with the mother tongue. This victory had its effect everywhere, and in 1782 in Austria German became the official language for lectures and Doctors' examinations. Emperor Joseph said: "The German is the true national language and mother tongue, in which medical prescriptions can as well be written as syllogisms and moral precepts in philosophy, and so forth." The custom of *dictation* prevailed almost everywhere. It had continued centuries after the discovery of printing, because most books printed on parchment were very dear and the professors were very lazy. Louis XIV. commanded the dictating of special note-books. While on the other hand, in 1780 two new chairs were founded in Paris, for anatomy and surgery, with the conditions that the lectures be given in French, gratis, and without the use of note-books. Everyone knows that this bad habit has not disappeared even in our time: the celebrated Schleiermacher once said of the dictating professors: "I do not perceive why the king should appoint people who ignore the discovery of printing."

The collections and libraries should have been valuable for instruction, which had in view rather a mechanical learning by rote, than a free development of the intellectual faculties. True, there were here and there extensive natural history collections, but they were scarcely moved from their places by the professors, seldom if ever used, and only admired by strangers. In France all collections were gratuitously opened to the public, but in Germany they were as inaccessible as the holy of holies of the Jews. Joseph II. bought the Goetz collection of entozoöns, excellent for that time, and presented it to the University of Pavia. Certain scholars possessed rich cabinets. Professor Günz at his death left some thirty skeletons, 437 dry specimens and 281 in alcohol. Ruysch in Amsterdam had an anatomic collection for which Peter the Great paid 20,000 guilders. Van Swieten presented his collection of anatomic specimens, which he had brought with him from Leyden, to the University of Vienna, and thus furnished the nucleus of an anatomic museum. The specimens, mostly injections, originated with Ruysch. Albin and Lieberkühn, and were valued at 20,000 guilders. When the naturalist, R. A. F. de Reaumur died in Paris in 1757 in his seventy-sixth year, his natural history cabinet, which he bequeathed to the Royal Academy of Science, was considered the most complete in all Europe: 6,500 guilders had been previously offered for it by an Englishman. In the year 1802 the Berlin professor of anatomy, J. G. Walter, possessed an anatomic museum of 2,868 specimens which he had collected in the dissection of 8,000 cadavers, during a period of fifty-four years, and this collection he sold to the King of Prussia. We will mention later the collections of W. and J. Hunter. The accumulating of a *library* possessed a peculiarly powerful charm which our time, in which the impulse for the ownership of books is so very weak, can not appreciate. A library was the pride of the cultured.

Twice a year, at Easter and Michaelmas, regular purchases were made; at those times the book dealer brought the newest publications with him from the Leipzig fair, and displayed them in his shop. That was an important time for the book lover; the shop became the center of literary discussion. There was also opportunity to buy old books, although the antiquarian book trade outside of Halle and Leipzig had attracted little attention. Among the physicians a few were noted for magnificent libraries. Günz left such a one, whose catalogue required sixteen pages; the Arabic, Greek and Latin physicians covered five of these pages and Hippocrates alone covered a whole page. After Heister's death the catalogue of his anatomic, botanic and surgical books showed 6,338 numbers, beside an herbarium of 98 volumes, 1,744 copper-plates and 470 surgical instruments, among them many of silver. According to a note by Börner, Heister's herbarium in the year 1725 consisted of sixty-six folios and over 6,000 plants; he is said to have preserved at that time many skeletons and specimens, the greatest collection of most beautiful anatomic and surgical instruments, about 1,200 books and over 200 volumes of theses. Joseph II. bought A. von Haller's large library for 2,000 Louis d'or and had it brought to Milan. Upon his departure from St. Petersburg in 1808, Peter Frank sold his books on account of the expense of transportation to the Crown for 2,000 rubles, and they were then presented to the University of Cassan. In the universities much was done for the libraries, especially in Göttingen. This was one of the richest and was equipped with the best catalogue. By reason of the close relation between England and Hanover, the influx of English literature was always very great; the newest and rarest works came to Göttingen as soon as possible after they appeared, as presents from George III. On the contrary, as Lessing complained in 1768, English works were much more difficult to obtain in Berlin than French works. Professors and students had free access to the Göttingen library. Almost 5,000 thalers, about one-tenth of the yearly income of the whole university, was received by the library, which, during the eighties, added about 2,200 volumes yearly. There were often disadvantages coupled with the lending of the books, at least Baldinger asserts that many Göttingen professors frequently borrowed from two to four hundred books at once and returned them every half year, but immediately borrowed them again, so that they retained the books as their own property for the rest of their lives. This abuse, together with the circumstance that the university library purchased no translations, moved Baldinger (1780) to found a medical reading circle for the students.

If we enter the circle of *professors* we find, as Gruner says in his almanac, many drones on the list. Young men who had scarcely finished their studies, and who had not yet shown the least evidence of their learning and ability, were given professorships simply upon recommendation. Marry a professor's daughter and you have the best prospect of becoming an academic teacher, was at that time an approved method. There were professors of chemistry who had a year before been apothecaries' journeymen, and a teacher of veterinary medicine who had shortly before officiated as a shaver of beards, and had never studied these sciences. Many of them never thought of changing their notes for lectures, and did not trouble themselves at all over the advancement of science. To

restrain the arbitrariness of the professors an order was issued at the Universities of Marburg and Rinteln in 1782 to arrange the lectures so that it would not be necessary to double the hours at the end of the semester. In this way opportunity was given the students not only to study the profession diligently, but to do some active work in the supplementary sciences, ancient and modern languages, mathematics, philosophy and history. At the death of a member of the faculty the very bad custom was usually followed of appointing in his place, the professor of an entirely different department; for example, a former anatomist lectured later on pathology or *materia medica*. J. J. Plenck was first professor of anatomy, surgery and obstetrics in Basel, then in Ofen; with a change of places he also changed sciences, and taught chemistry and botany in Joseph's Academy in Vienna. Hildebrand was professor of anatomy in Brunswick, then professor of chemistry in Erlangen. To many it was a definite object to read and write in various fields. In this way nothing of value could be accomplished, and if such men as Boerhaave could lecture with the greatest success in chemistry, botany and pathology, and A. von Haller in anatomy, physiology, botany and surgery, yet the teachers who could excel in various sciences were always exceptions. It was from early times a custom in German universities to have only two head professorships in medicine, the theoretical and the practical. The former included botany, chemistry, anatomy and usually surgery; the practical did not represent clinical instruction, but was limited to the exposition of special pathology, medical science and so-forth. Only in the course of the eighteenth century did the *professores anatomiae et botanicae* disappear from the high schools, and at the end of the century there followed the separation of the professorships of anatomy and surgery. The instruction itself was generally very poor. Even at the end of the century there was a professor of physiology and obstetrics, who, in order to display his literary knowledge, had great loads of books continually brought from the library and consumed nearly the entire time in dictating the titles of these books to his pupils. Another who was separated from his wife, entertained his hearers with domestic curtain lectures, which he seasoned with obscenities. Many of them did not trouble themselves as to whether their lectures were systematic or not. In the eighties, a professor of anatomy in one of the celebrated universities in Germany, began his course with a demonstration of the ductus thoracicus. The next day he showed the muscles of the neck, on the following the veins and nerves of the hand, and he consumed fully three hours with the N. phrenicus. When the students, because of his unsystematic course, sought other lectures he was very indignant, but he made no change (Schmidtman's Medicinal-verfassung). Meiners asserts briefly and conclusively that the practical instruction in medicine and surgery in most of the universities was only a farce; dissection was not taught, only in the first half of the century. Honors and money were so distributed among the German professors, that they often had too much of the former and too little of the latter. The Austrian professors for a long time enjoyed the title of excellency, till this abuse was abolished (1755) and they were then called *clari celeberrimi*. They were admissible to the table of gentility.

Later to them as well as to the matriculated doctors, and to the wives and widows of both, "was given by

judicial act of the magistrate, the use and possession of the honorable titles of Herr and Frau." Most of the professors of medicine were poorly paid; their incomes, much the same as a hundred years earlier, were not in proportion to the increased cost of living. In Austria, since the reformation of the Vienna University under Emperor Ferdinand I. (1533), they had not received more than 120 guilders; even the professors of surgery in 1537 had a salary of only 52 guilders. This little appears better when one reflects that these guilders were golden guilders, that is ducats, and that living in Vienna was so cheap that in the fifteenth century the medical faculty paid a yearly rent of about nine guilders for their house. A measure (two quarts) of wine cost in 1497 one pfennig, and a house, such as the beadle's house together with the prison, 100 guilders. The value of money and the necessities of life, compared with that of our time, make those 100 golden guilders worth 6,000 guilders of the present money. Van Swieten first increased the incomes of the medical professors of Austria, when, beside obtaining for them the title of royal councillors, he raised their salaries to 2,000 guilders; he even secured to the excellent scholars trained by him the triple income of an *indigène*. They had a special gratuity for the publication of a learned work according to the value of the work, and in 1791, by order of Emperor Leopold II., they received their income from real estate in order to secure them. The college fees for the philosophical and medical studies amounted to 18 guilders a year, and especially industrious students were even given free tuition. The Göttingen students paid five or six thalers for most courses, in the practical department ten thalers. The counts paid double these amounts. The anatomist, J. G. Walter, in Berlin, served the first three years without salary, then ten years (1764) as second professor with a salary of 240 thalers, finally fourteen years as first professor with a salary of 800 and 1,000 thalers. Hufeland was nine years medical director of the clinic at Jena, and like his colleague did not receive the least revenue, although he spent two hours a day in the clinic. When, about this time and at the same university, Schiller was "deluded," as he says, into becoming professor of history, he received no salary (1789). The five courts of Weimar, Gotha, Coburg, Meiningen and Hildburghausen combined did not have the means to pay one such professor as Schiller a salary. Only in 1790 the duke, "with lowered brows and an anxious face," gave him 200 thalers. Necessarily, a desire arose for new service; gold flowed freely as soon as one taught in various lines. Beireis, in Helmstadt, gave twelve lectures daily; later when he had "whetted" his tongue, only eight. A few professors divided their subjects so as to increase the number of paying students, haggled with the poor students about the price, and was satisfied with twelve groschen if they could not get more. Occasionally they even joined students' societies in order to get more hearers in that way. The result of these miserable conditions was eternal quarreling and strife among the teachers and the eagerness to better their finances through perquisites, the principal source of which was the graduation fees.

The clubs brought about social intercourse. In Göttingen, where A. von Haller complained that the professors did not get money enough to see, a club of some eighty members was formed in 1787, in which the professors, jurists, physicians and preachers of the city met one evening a week for friendly intercourse.

In foreign countries the professors usually enjoyed a high rank. Those of the University of Toulouse were knights (1776), and in Pavia the word "Don" was placed before their names. Russia gave them all the position of court councillors. The French professors were so well paid by the state that their courses were free, one paid extra only for chemistry and anatomy; in Nancy in 1779 the winter course in anatomy cost thirteen livres. The English hospital physicians demanded of the students a full purse, since they received no income from the state. In Pott's time, whoever attended the operations in Bartholomew's Hospital, as in most London hospitals, paid twenty-five guineas a year, eighteen guineas for a half year; if he adjusted bandages himself he paid fifty guineas a year, thirty-six guineas a half year. Pott charged for his practical course, which he gave once a week in the winter, five guineas. John Hunter gave free lectures in surgery to the surgical students of St. George's Hospital, but charged four guineas for a seven-months' private course in surgery, which he gave three times a week in an amphitheater in his home, built expressly for the purpose. Marshall's lectures in anatomy, physiology and surgery cost three guineas a half year; the same is true of Ev. Home's course in surgery, while he charged five guineas for his instruction in dissection. Hawkins earned so much in London that his estates alone yielded annually a net profit of £1,900 sterling. The Russians also paid well; Mohrenheim (1783) was called from Vienna as director of the Russian hospitals, with a salary of 3,000 rubles, and Professor Krackstedt, in the St. Petersburg Medical and Surgical Academy, was paid 1,800 rubles with a residence, wood, light and service. At the hospital in Stockholm, the physician and surgeon each received a salary of 3,000 thalers.

With the conclusion of study came the much desired Doctor's degree. We have remarked before that most German states prescribed three years' study of medicine; only in Austria, at first six years were required, under Joseph II. five, and finally four. The French under Louis XIV. had to study three years, under the republic four years. Pope Gregory IX. introduced academic degrees in the thirteenth century and the first "Masters" was created in Paris by his bull. The "Doctors" followed them. In the eighteenth century in Germany the graduation presented a very unpleasant picture; even at the end of the century it was attended with the most wanton abuses. "Like weaving, they ran off every year a certain number of pieces, that among the physicians often turned out worse than the worst rubbish; the title of Doctor had no longer any value because it had become a commodity which every one could buy for money as readily as a laced coat." (Frank, Tissot.) Every year a crowd of young men were made doctors, many of whom did not have more than the first principles of science. With unheard of frivolity they glided superficially from one science to another, and in examination, counted on the partiality, fellow feeling and self-interest of the professor. In short when the newly pledged Æsculapius settled himself to practice, then woe to him, who without discrimination, in blind faith in the fat letters of his diploma, "did not seek to protect himself against them as against a swarm of locusts." The faculties vied with each other in making the examinations as easy as possible, so that the students would not think of going elsewhere with their money. They even exempted

the candidate, on account of his well-known ability, from both examination and thesis. If we do not do it others will! Even at the young University of Göttingen some *in absentia* was given a degree. (1763.) The same abuse was practiced in France. Before the revolution testimonials alone was enough to secure the Doctor's degree. It was a practice with the French faculties to conform the examinations to the district where the physician intended to settle, so that the stupidest bungler could receive a diploma if he wished to practice among the peasants. Nothing was funnier than the method of becoming a surgeon. One bought from any prince for 1,200 livres the title of veterinary surgeon (*chirurgien de l'écurie*), and enjoyed thereby the right to practice surgery among men. Especially in France, at that time, the professions of physician, surgeon and obstetrician were followed with irresponsible light-mindedness. The seduction of gold was so great that many professors gave Doctor's degrees more cheaply than the artisans guilds gave their masterships. Although according to the statement of a Wolfenbüttel physician the fees for medical degrees in Vienna, in 1723, amounted to 1,000 guilders, this appears somewhat questionable, since it is certain that in 1753 the Prague medical students paid 95 guilders for the examination, 30 guilders for the thesis and 134 guilders for the degree. In Göttingen the degree of Doctor of Medicine cost 117 thalers and the certificate of the *Triennium Acad.* 12 thalers; in Marburg and Pavia 100 thalers. In Oxford and the other English high schools one paid seven times as much, 100 pounds sterling, for the Doctor's degree, and in France 1,000 livres. The periodicals of that time relate frightful stories of the trade in diplomas. Surgeons who could scarcely read German became doctors before they had submitted their theses. A shoemaker in Altona, named Menade, who had dabbled a little in medicine, applied to the University of Greifswald for the title of Doctor and presented the money. The president of the faculty took it, sent the diploma and wrote, or had some one else write, a thesis on shoemaker's pitch for him. When the matter became public the president was removed (1788). The abuse grew even worse. With the high-sounding title of palatine, easily obtained in the South German countries, was connected by imperial charter, the right arbitrarily to confer Doctors' degrees, to legitimize natural children, and so forth. The lords made use of this right to the greatest extent. Their agents traveled around and informed surgeons and apothecaries, that on account of their well-known merits, the lord wished to confer upon them titles, for which each must pay six pistoles. In this way entirely rude ignorant barbers became doctors. Even in 1806 and 1807 the University of Erfurt, which had an average of only 30 students in all departments, turned out 97 doctors of medicine, of whom 28 wrote a thesis, 69 did not.

The most shameful abuses arose in connection with the theses. It is scarcely to be believed that at many universities the professors retained the right to write theses for candidates and sell them. Authorities for the statement are Husoty (*Medic. Polizei*, 1786) and the imperially chartered *Reichsanzeiger*, which in numbers 169 and 170, in 1802, relates the following of this impious business: The student, who chose his opponents himself, had the Latin theses with questions and answers, drawn up by a master; both questions and answers he learned by heart, so as to give the

right accent to the Latin words. The thesis did not cause the least anxiety, since every university had a storeroom where one could buy these wares at all prices. But in order to avoid the thesis-dealers becoming known, and to protect the young doctor from the raillery of his comrades and of the public if this by-way should come to light, a number of physicians and philologists united for the establishment of a thesis factory. The works were gotten up from various stand-points, one, with respect to the university by which the degree should be given and the particular views of the professors there; again according to different theories, as following Brown, Reil or Hufeland and so on; finally according to price. The cheapest kind of thesis cost four pistoles; they contained a short, incomplete description of a disease, no learning and bad Latin. Every university supplied such as this. Then came a kind for eight pistoles; in these were a description and treatment of a disease, apparently complete, mixed with many quotations, but nothing original; the Latin was indifferent. These theses were suited to universities which had large libraries. The third kind cost sixteen pistoles, and handled questions of the day; they presented no new points of view, to be sure, but the Latin was good. Finally, the fourth and most expensive kind cost from twenty-four to thirty-six pistoles. New ideas (!), the newest terminologies, a description of pathologic varieties with the necessary drawings, a compact decisive diction as an indication of the energy and genius of the author, and Ciceronian Latin. Specimens of this kind seldom appeared, yet at that time Halle furnished a few. Any one who wished to become a doctor sent the price with the necessary postage, stating at the time from which university he wished his degree and according to which system he wished the thesis written. Prompt and good service and strict secrecy were guaranteed. They were always careful to have a considerable number of these theses in stock, from which one could take his choice. In the year 1802, the following subjects were offered: for Bamberg, "On the Insufficiency of the Brown System and Inadequacy for the true Physician;" for Göttingen, "On the great Usefulness of Medical Consultations," "On Scarlet Fever;" for Jena, "On the Uselessness of a Scholar's Reputation to a Professor of Medicine," "On the Necessity of rewriting all popular Papers, and adapting them to the Principles of the Excitation-theory;" for Halle, "On the Variation of the Brain-matter from its Normal Form and Substance;" and further, "A Review of all that has been done for Medicine and all its supplementary Sciences, since 1800, together with a brief Opinion as to whether the Labor has been of Value." Würzburg, Erlangen and Kiel were supplied in like manner. So much for the *Reichsanzeiger*.

(To be continued.)

Connection Between Diseases of the Eyes and Nose. Winckler has found that 50 per cent. of the children brought to the hospital for scrofulous affections of the eyes, were also affected with diseased conditions in the nasal passages. He emphasizes the importance of finding and treating both lesions promptly, as they are likely to spread and complicate each other. He considers the use of the galvano-cautery and of caustics dangerous, as he has known serious injury to result from them, and prefers surgical intervention, cutting out tumors, treating the catarrhal conditions with appropriate means and resorting later to blood reduction of the inferior turbinate bones, or whatever surgical intervention may be needed.—*Journ. de Sciences Méd. de Lille*, February 13.

PECULIARITIES OF THE SURGICAL DISEASES AND INJURIES OF THE NECK.

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(Continued from page 552.)

PECULIARITIES OF THE SURGICAL DISEASES, INJURIES OF THE LATERAL REGION OF THE NECK OR OF THE STERNO-MASTOID REGION OR CAROTID REGION.

Congenital malformations are represented in this region by the orifices of the branchial fistulæ, situated most commonly along the lower part of the anterior border of the sterno-mastoid; also by the congenital deformity of the sterno-mastoid, called hematoma of the sterno-mastoid, and congenital torticollis; also by the congenital atrophy of the same muscle. *Acquired malformations* comprise the various forms and varieties of torticollis and the deformities due to cicatrices. Cicatrices of the neck are most objectionable, especially when affecting the exposed parts.

Swellings of the region recognize the same causes, present the same forms and varieties as anywhere else.

Burns or frost bites present no peculiarity in the region of the sterno-mastoid, except when deep and reaching the sterno-mastoid or the underlying vessels and nerves.

Contusions or blows on the neck are always severe, but when striking the side of the neck over the jugular they are particularly severe and are comparatively frequent; they may cause a hematoma in the sheath of the muscle: they may cause paralysis or contraction of the muscle, producing a variety of torticollis; the muscle is sometimes ruptured, also the vessels and the nerves, these have a train of symptoms which will be described further on.

Non-penetrating wounds, i. e., not extending deeper than the muscles and glands, are not serious unless through becoming infected. Penetrating punctured wounds of the neck may be deep without injuring the vessels and nerves, owing to the elasticity and mobility of the jugulo-carotid vessels. Penetrating wounds of the external jugular, of the internal jugular and the carotid arteries are more serious injuries. They all may give rise to circumscribed or diffused hematoma. When this is of some size and stationary it must be aspirated or incised. When it pulsates and grows, it is because a traumatic aneurysm has formed and the wounded vessel, vein or artery must be ligated above and below the injured point. When the penetration is comparatively small the sac may be incised at once, after making as good a pressure above and below as possible. When the puncture is large and there is risk of the patient bleeding much before the proper ligatures are secured, a provisional loop ligature must be applied below the wounded point. When the wound or the swelling is very low down, enough of the sternum must be resected to reach the root of the carotid and the innominate, and apply there the provisional loop ligature. Considering the gravity of a possible terrific hemorrhage this advice is not too heroic: never ligate the common or the internal carotid unless it is the wounded artery, because of the possible effects on the cerebral circulation. It is only when the persistent search for the wounded point of the vessel has not succeeded that the vessel itself should be ligated in continuity; below

only, if possible; a ligature above whenever applicable should be applied to guard against recurrent distal hemorrhage. We must bear in mind that arterio-venous aneurysm often follow punctured wounds which have gone through the vein and the artery. Wounds of the vertebral artery in this part of the neck are more common in the canal of the transverse process. At the base of the neck the wounds of the vertebral are more grave than those of the carotid.

The diagnosis of this wound will be made only when upon cutting down through the extravasated blood, it is found that the carotid artery and the jugular vein are intact. Then, when the hemorrhage is profuse, it should be stopped by plugging with the finger or by packing, and a loop ligature should be applied on the subclavian or the innominate before proceeding farther; when the wound in the vertebral is located it should be tied above and below; if necessary, the transverse process should be cut away with the bone-nippers. These remarks apply also to the wounds of the deep cervical, the inferior thyroid, the superior thyroid, the lingual and the pharyngeal.

Punctured penetrating wounds of the base of the neck are almost all fatal on account of the impossibility of reaching the artery without fatal hemorrhage. Punctured wounds of the nerves of the region (recurrent, phrenic, pneumogastric, sympathetic, spinal accessory, cervical plexus) give rise to the symptoms of irritation of the nerves.

Non-penetrating incised wounds are only serious if the external jugular vein has been injured, because air may then penetrate into the veins. When the edges of the wounds lose their parallelism these may form a considerable hematoma. Incised wounds penetrating the sterno-mastoid and severing it incompletely are not so very serious.

Wounds dividing the sterno-mastoid muscle may curtail power of the muscle from lengthening, due to the cicatrization. When the muscle has been completely severed and the head is still, it is sometimes brusquely thrown to the other side by the contraction of the intact sterno-mastoid. In case of division of the muscle from operation this does not take place, because the other muscles have gradually become accustomed by the presence of the tumor to keep the head properly balanced. The severed ends must be strongly and closely stitched with strong catgut, and the head kept in proper position by a liquid glass bandage.

Incised penetrating wounds of the internal jugular are perhaps more serious than the wounds of the carotid, because of the danger of penetration of air. When the respiration becomes embarrassed the hemorrhage increases, just as in tracheotomy, where, as soon as the tube is introduced the hemorrhage ceases. These wounds are oftenest tearing wounds during the removal of tumors. Whatever be the cause, if the vein alone is wounded the blood is black and flows continuously. The first thing to do is to plug the opening to prevent the penetration of air; then make pressure above and below with the fingers, enlarge the wound and fill it with boiled water to prevent the possible penetration of air; then look for the wounded vein and ligate both ends. The proximal end is the most dangerous, because of the penetration of air and of the abundance of blood coming from the heart. When the compressing fingers are in the way or if their pressure is ineffectual, a provisional loop ligature should be placed around the internal jugular until

the wounded ends are ligated. When the wound is low down, it may be necessary to resect the sternum and place a provisional ligature around the innominate vein or the superior cava. Incised wounds of the superior thyroid, lingual and facial veins close to the internal jugular are almost as severe.

Incised penetrating wounds of the carotids give rise to profuse, even terrific hemorrhage. When the wound is large or when the hemorrhage is moderate but not at once attended to on the spot, it may be immediately fatal. A man will thus bleed to death in four minutes from the carotid, it is said. When the larynx or trachea is wounded the blood penetrating into them causes death also from suffocation. The hemorrhage is sometimes stopped by fainting if the wound is not too large. Upon reaching such a case the first thing to be done is to plug the wound with the fingers or to pack it quickly. Packing will stop the hemorrhage temporarily if the vessel is of any size above one-sixteenth of an inch. It is best and safest to enlarge the wound and attempt to ligate the two ends in the wound; if this causes too much bleeding a loop ligature must be applied as above described. If the bleeding has stopped of itself it must be borne in mind that it will almost surely return, and that it may do so when proper surgical assistance can not be procured and the patient may bleed to death; therefore, the case should be treated as described above for punctured wounds. Incised penetrating wounds of the root of the neck are almost all fatal on the spot. The same remarks as above apply here. It is sometimes difficult to recognize which vessel of the neck has been divided: spurting, however, is characteristic of arterial lesion; but the vein may be divided at the same time. When the vein and artery are simultaneously wounded, ligate ends of both. In all cases where clamping stops the bleeding and a ligature can not be well substituted, the clamp should be left in place thirty-six to forty-eight hours.

Punctured wounds of the nerves of the region (recurrent, phrenic, pneumogastric, sympathetic, spinal accessory, cervical plexus), give rise to the symptoms of the irritation of those nerves. Incised wounds of the nerves of the region (recurrent, phrenic, pneumogastric, sympathetic, spinal accessory, cervical plexus), are followed by the following symptoms: When the recurrent is wounded there is aphasia more or less complete. The section of the phrenic and pneumogastric on one side only is accompanied by respiratory and circulatory irregularities; they are not necessarily fatal, but it is a most serious complication. Park has shown that only about 50 per cent. of these cases are fatal. Complete wounds of the sympathetic are followed by atresia of the pupil, slight ptosis, congestion of the conjunctiva, headache, congestion of the side of the face (unless only stimulated): it produces mydriasis, pallor of face, protrusion of eyeball. Injury of the superior laryngeal nerve is sometimes very serious. When possible, the divided ends must be sutured with fine silk.

Penetrating or deep contused and lacerated wounds of the region do not expose so much to primary hemorrhage, but the suturing of the muscles, the ligation of the vessels and the stitching of the nerves can not be relied upon as safely, because of the sloughing which usually follows those wounds; for the same reason secondary hemorrhages are much more common and more grave. Penetrating or deep gunshot wounds of the region call for the same remarks, plus the frequent

penetration of the digestive and respiratory tracts and spinal canal with their possible complications; the presence of a ball or foreign bodies deeply lodged and unremovable in these wounds injures the vessels more frequently and seriously than the deep punctured wounds. Here less than anywhere else should search be made for the bullet. When, however, the wound is large, the finger may be introduced, and if the ball is felt it should be removed.

Poisoned wounds, stings, bites, etc., present nothing peculiar in this region.

Foreign bodies, represented by bullets particularly, may remain embedded in the tissues without giving rise to any serious trouble; a bullet may thus remain in contact with the large vessels without causing trouble, but not so with the nerves.

Rupture of the sterno-mastoid is the most common rupture of all the muscles ruptured; it has taken place after falls, sudden twists, violent muscular contractions. There is great pain, a depression on the course of the muscle, great hematoma; the head is often twisted by the action of the other muscle.

The treatment consists in placing the head in proper position, and immobilizing it in a liquid glass bandage. The rupture is usually partial; when complete the ends are far apart; it is well to cut down and stitch; otherwise a kind of torticollis may result from the lengthening of the muscle.

Neuroses are represented by the disease known as torticollis.

(To be continued.)

SOCIETY PROCEEDINGS.

Chicago Ophthalmological and Otological Society.

Regular Meeting, held at the Chicago Athletic Association Rooms, Feb. 9, 1897.

Dr. MONTGOMERY in the chair. There were fourteen members in attendance. The minutes of the last meeting were read and approved.

Dr. CASSIUS D. WESCOTT reported a case of

KELOID OF THE CORNEA.

In February, 1895, a baby 2 years old was seen with a disfiguring prominence on the cornea of the left eye. Parents, who were Scandinavians, gave the following history: Three or four days after birth the left eye became swollen and red and discharged yellow matter. No ophthalmologist was consulted until the cornea had become opaque. The mother says there was no change in appearance of eyeball for six months, and then the front of it began to grow and continued to do so for six months, and then ceased. Eye never seemed painful. The lids were never closed over the projecting eyeball.

From all appearances it seemed to be a case of total staphyloma with thickening and epidermization of the cornea, and an abscission was advised. But on examination, under an anesthetic, it was discovered to be a solid tumor. On examination of the specimen after abscission and evisceration, the cornea was found to have been perforated and the iris adherent throughout its entire extent, and that the cornea was uniformly thickened, measuring in the center nearly 8 mm. in thickness. The external surface was rough and the color that of the integument. The wound healed kindly, and several months after the operation the cicatrix was normal and the stump freely movable in the orbit. The specimen was placed in Fleming's solution and the hardened cornea examined by Dr. Hektoen, who made the following report: "The sections (30 to 40 microns in thickness) were stained with hematoxylin and eosin according to Van Gieson's method. Microscopically the anterior epithelial covering is somewhat, but uniformly, thicker than normal and the cells composing it are more flattened than usual, while those upon the surface have formed a relatively thick horny layer, so that the cornea is provided with a 'distinct stratum corneum.' In some places the lower layer of cells is of a brownish color, but otherwise the anterior epithe-

lial layer of the cornea is free from pigment, but the conjunctival epithelial covering present is the seat of a light brownish diffuse pigmentation.

"Bowman's membrane is not conspicuous, its place being taken by fibrillated material. Under a low power the substance proper of the cornea is seen to consist of a densely lamellated structure, the lamellae running parallel to each other, but are broader and irregular as compared with those of the normal cornea. Distinct fibrillated bundles run obliquely or transversely across the sections and often split into smaller bundles. Between the lamellae are irregular narrow spaces that seem to contain nuclei; the interlamellar spaces are larger and plainer in the posterior strata of the sections. The substance proper seems to be avascular. In thicker sections (10 microns) the lamellae are seen to be composed of fine and coarser fibrillae that interlace rather irregularly, and the interfibrillar and interlamellar spaces contain connective tissue cells with large flattened nuclei (corneal corpuscles). Their number is not increased. The posterior basal membrane is absent over one-half of the posterior surface of the cornea, its place being taken by lamellated material; the posterior endothelial layer is absent completely, and its place is taken by an irregular layer of yellowish and brownish pigment granules and masses of varying thickness; whether the brownish pigment is all enclosed in cells or not could not be determined. The diagnosis would be, hyperplasia of the substance proper of the cornea (keloid) with epitheliosis of the anterior surface and a pigment layer upon the posterior surface due to prolapse of the iris."

Dr. WESCOTT, after an extended search of the literature, was only able to find two cases which at all resembled this case. One reported by R. Simon in the *Centralblatt f. praktische Augenheilkunde*, 1882, page 193, the other by I. Szokalski, Warsaw, in the *Annales d'Oculistique*, 1865, page 209. He thinks the term keloid as applied to this case might be open to criticism. For histologic reasons it might perhaps be called a case of chronic inflammatory hyperplasia; but in its genesis it certainly resembles keloid.

Dr. LYMAN WARE reported a case of

PANOPHTHALMITIS FOLLOWING CATARACT EXTRACTION,

dacryocystitis being present at the time of the operation. The conjunctivitis and dacryocystitis were treated with nitrate of silver and other astringents without special benefit, and it was not until a solution of formalin, 1 to 5000, was used that any improvement took place. Five months after the patient was first seen a preliminary iridectomy was done on both eyes with good recovery, the eyes not being bandaged, and the formalin solution used three or four times a day. Two months later the cataract was extracted from the right eye. The wound was made at the sclero-corneal margin, coming out well back in the conjunctiva, making a good flap. The after-treatment consisted of washing the eye with a solution of formalin three times a day and having it covered with a wad of absorbent cotton soaked in the same solution. For the first two days the eye had all the appearances of making a good recovery. No pain was present and the wound was perfectly clean. On the third day the wound began to show signs of infection. The cornea soon became involved, panophthalmitis set in and the eye was totally lost. Under ordinary circumstances, Dr. Ware would not have ventured to operate on the cataract until several months had elapsed after the apparent cure of the dacryocystitis, but as the man had been blind so long, was old and feeble and thought he could not return again to the city and especially as the formalin solution seemed to control the dacryocystitis so well, he thought he was justified in making the attempt to restore vision.

Dr. A. B. HALE thought an operation for cataract should never be done if there was the least trace of dacryocystitis. In many chronic cases it was advised to excise the tear sac, the extraction being postponed until the wound had healed.

Dr. W. FRANKLIN COLEMAN mentioned a case of extraction where conjunctivitis, with muco-purulent discharge, was present, and yet a good result followed. A preliminary iridectomy was done, followed, in two weeks, by extraction.

Dr. EDWARD L. HOLMES had the same experience in similar cases.

Dr. HORACE M. STARKEY said that the only case of suppuration after cataract extraction in his experience happened in a case similar to that of Dr. Ware. The wound did well for 72 hours and then suppuration set in with destruction of the eyeball.

Dr. GRADLE asked if any member had tried obliteration of the tear duct with the galvano-cautery.

Dr. W. T. MONTGOMERY has closed the punctum with a hot wire. He thought that in cases of cataract extraction complicated with conjunctivitis a preliminary iridectomy should be

done, and he believed that there is much less danger of infection if the incision be made downward and with a conjunctival flap, followed by flushing the eyeball with boracic acid solution.

Dr. HOLMES asked the most recent method of destroying sac.

Dr. A. B. HALE thought the Kiel method gave the best results by cutting the sac out.

Dr. W. FRANKLIN COLEMAN enquired if any member present had tried Fick's method of chlorid of zinc injections into sac, thereby obliterating it.

Dr. A. B. HALE has tried it but stenosis resulted.

Dr. J. ELLIOTT COLBURN removed six sacs by the Kiel method with good results.

Dr. H. GRADLE has noticed that where the patient complains of lachrymation only when exposed to the wind, the chances of permanent cure are better than where the watering is continuous. In cases of stenosis he divides everything with the knife and does not depend on reducing stenosis by pressure.

Dr. W. T. MONTGOMERY has had similar experience to Dr. Gradle, in that the duct closes up immediately after passing probe alone.

Dr. W. H. WILDER presented a case of

PARALYSIS OF THE THIRD NERVE.

H. B., aged 25. First seen Feb. 19, 1896. Mother died at age of 26, of cancer. Patient contracted syphilis five years ago. Dec. 28, 1895, he first had diplopia, followed soon after by ptosis of the left upper lid, coming on suddenly without previous pain except slight frontal headache. At times there were attacks of dizziness. Examination shows paralysis of external muscles supplied by the third nerve. Pupils react to light and convergence and the patient can accommodate to $4\frac{1}{2}$ inches. R. V. 6-6; L. V. 6-9. No fundus changes. The lesion is probably in the nucleus of the third nerve, although it is uncommon for a nuclear palsy to be unilateral.

Not until this patient had reached a dose of 75 grains of potassium iodid, taken three times a day, was any effect seen on this syphilitic paralysis. Then power began to return to the levator palpebrae and as the dose was increased the superior rectus began to act; then the inferior oblique, inferior rectus and internal rectus, in the order mentioned. At present he is taking 160 grains of the iodid at each dose or one ounce a day. Dr. Wilder presented him chiefly as an illustration of the fact that the curative effects of potassium iodid are not exhausted with moderate or even with large doses, and to show what may be accomplished in syphilitic paralysis by the administration of heroic doses of the drug.

Dr. WILDER also presented the following case of

THROMBOSIS OF THE RETINAL VEIN.

Mr. E. G., 55 years of age, and apparently in perfect health, noticed on Friday, January 15, at about 1:30 o'clock, that the sight of the left eye had failed completely. There was no pain accompanying this trouble. When he was first seen by Dr. Wilder about thirty-six hours later, there was absolute blindness of the left eye. The pupil did not react directly to light, but reacted consensually and also to accommodation. Ophthalmoscopic examination showed pronounced edema of retina. The outline of the optic disc could not be distinguished. The veins were enormously distended and tortuous, filled with dark-colored blood, and had in places a sausage shape. The arteries were obscured in many places and seemed about the normal caliber, numerous hemorrhages were seen scattered throughout the retina. These appeared to be in the fibrous layer and were striated and frequently fan-shaped, in places covering the vessels. The vision of the right eye was normal with sph. + 2 D. The patient said he had kidney disease several years before, but an examination of the urine showed no albumin. There seemed to be a roughness of the first sound of the heart over the apex, and the second sound was accentuated at the base. At the present time he has slight perception of light downward to the temporal side. The swellings and hemorrhages in the retina have disappeared in a great measure; the veins have become smaller and have changed in places into white cords. These are seen best in the region of the optic disc. The arteries are also smaller than normal. It seems almost unquestionable that we have here to deal with a case of thrombosis of the central retinal vein.

Dr. CASEY WOOD presented a patient suffering from

PARALYSIS OF THE OCULAR MUSCLES DUE TO LEAD POISONING.

The patient, aged 49, a painter, had had lead colic five years ago, followed in two years by an attack of vertigo coming on suddenly one morning, and was then unconscious for half an hour and had pain through his head for two days, at end of which time he complained of diplopia, and in three weeks noticed that his left eye turned out. There is no history of

syphilis or injury to head. At the present time L. V. is 2 5; R. V. 2 3; both unimproved by glasses. There is complete left ophthalmoplegia externa, with the exception of the external rectus and possibly the superior oblique. Ptosis is most marked when patient is not fixing. Pupils react very sluggishly to light and accommodation. With the ophthalmoscope few fundus changes are visible, but the outlines of the papilla are not clean cut; it has a woolly appearance. Fields of vision in both eyes are decidedly contracted for white and colors. Dr. Sanger Brown reports that, with the exception of the oculo-motor pareses and optic nerve defects, there is nothing abnormal about his nervous apparatus. Dr. Arthur Elliott found urine and saliva practically normal and free from traces of lead.

Dr. J. ELLIOTT COLBURN presented a

CASE RESEMBLING NEPHRITIC RETINITIS,

in a boy, who when first seen had loss of vision in the right, with lowered vision in the left eye. Slight convergent squint has been present since early childhood. He had just recovered from typhoid fever when blindness set in. The ophthalmoscope showed characteristic whitish spots, with hemorrhages, as seen in retinitis of nephritic origin, although the patient has had no nephritis.

On motion of Dr. Colburn, the April meeting was set aside for the discussion of Muscular Asthenopia.

On motion of Dr. Wilder, the Secretary was instructed to try to obtain a place of meeting with better accommodations for the exhibition of patients.

C. P. PINCKARD, M.D., Secretary.

SELECTIONS.

Increase of Mortality by Cancer. The last report of the English Registrar-General sets forth in tabular form the facts regarding rising death rate by cancer for the ten-year periods ending respectively in 1870, 1880 and 1890. Throughout the entire period covered by the last three decennia the increase in mortality from cancer has been steadily progressive, the deaths referred to in this cause having been equal to the rate of 590 per 1,000,000 in the recent decennium, against rates of 384 and 468 respectively in the decennia ending with 1870 and 1880. If, therefore, the correctness of the published figures be accepted without question there is no escape from the conclusion that in the course of the last twenty years the mortality from malignant disease has increased by 53 per cent. Dr. Tatham, however, points out that the case is not quite so bad as would appear at first sight from the tables, and he emphasizes the fact that within the last six years alone the sum of deaths ultimately referred to cancer has been augmented by as many as 1,548 in consequence of the system of inquiry already referred to. These deaths have increased the rate of cancer mortality by 6 per 1,000,000. Apart from this, however, he thinks that the increase can not be held to be wholly real, but that a considerable portion of it may be accounted for on the assumption that the true nature of obscure cases of malignant disease is now more frequently recognized than was formerly the case, and that consequently the statements of the causes of death by medical men have latterly been made with greater precision than was possible in earlier years. Cancer mortality is known to vary widely in different parts of the country, but Dr. Tatham, having taken pains to ascertain the actual amount of variation in its local incidence, has clearly shown that the difference in the rates of cancer mortality at all ages can not be accepted as even an approximate measure of that incidence because of the enormous differences in the age distribution of the population in town and country. It is shown in the tables that cancer mortality is comparatively low among both males and females until after the 35th year of age; the mortality of a given place from cancer will, therefore, be largely dependent on the proportion of persons under and over middle age in the population. If, then, account be taken of the varying age and sex distribution of the local populations—in other words, if the cancer mortality among that part of a standard million of persons which is over 35 years of age be considered—it

will be found that the differences in the cancer rates of the various counties will be considerably reduced. To take a typical instance of this reduction: according to the crude rates Huntingdonshire showed a cancer mortality of 208, as compared with that of Durham, taken as 100; after this correction, however, the mortality of the first named county, as compared with the last, is only as 127 to 100. It is to be remembered, however, that while correction for age constitution reduces the difference between the cancer rates of the various counties it scarcely alters the relative position of those counties as areas with high medium, or low rates of mortality from malignant disease.

A Bacteriologic Study of Scarlatinal Diphtheria. The *British Medical Journal*, December 26, quotes von Ranke, in the *Münchener medicinische Wochenschrift*, October 20, on his researches as to the significance of exudative patches upon the fauces in scarlet fever. On 145 cases admitted to hospital in a period of two years, nearly ninety-two had more or less of membrane upon the tonsils; of these, eighty-nine cases were examined bacteriologically, and to these five other cases occurring in Munich, and also bacteriologically examined, were added, thus making a total of ninety-four available cases. The author discusses these cases under the following groups: 1. Cases admitted with scarlet fever and diphtheria and examined at once. There were sixty-seven such cases with six deaths. The streptococcus was found alone in 38.8 per cent., the streptococcus and diphtheria B. in 47.7 per cent., and the diphtheria B. in practically pure culture in 5.9 per cent. Thus the diphtheria bacillus was present in over 53 per cent. A negative result was recorded in 5.9 per cent. These cases are then compared with primary diphtheria. In 300, or 73.3 per cent. of 409 such cases the diphtheria bacillus and streptococcus were present, and in 75, or 18.3 per cent., the diphtheria bacillus in almost pure culture. Thus the diphtheria bacillus was found in 91.6 per cent., and the streptococcus alone in only 5.8 per cent. In the remaining cases the examination was negative. Thus the bacteriologic examination in scarlatinal diphtheria gives different results to that in primary diphtheria, but the fact remains that in Munich the diphtheria bacillus was found in more than half the cases of so-called scarlatinal diphtheria. The simplest explanation is that the scarlatinal angina predisposes to the diphtheria infection. The frequency of pure streptococcus pseudo-diphtheria is not due to the lacunar form of the throat affection. Of the six cases which ended fatally, the streptococcus alone was present in three, the diphtheria B. and streptococcus in two and the result was negative in one case. Descending croup existed in two cases, one with the streptococcus and diphtheria B. and the other with the streptococcus alone. 2. Cases admitted with scarlet fever but in which diphtheria subsequently developed. Here there were ten cases and all recovered. In one the diphtheria B. was found in almost pure culture, in seven the diphtheria B. and streptococcus and in two the streptococcus alone. This is different from the results in the first group, but the numbers are too small to base conclusions upon. It would seem, however, that the resemblance to primary diphtheria is great. 3. Cases with primary diphtheria in which scarlet fever developed later. Of these there were twelve cases and two deaths from pneumonia and nephritis. The bacteriologic examination resembled that in true diphtheria. It would appear as if scarlet fever were primary in these cases, the diphtheria being added during the incubation period of the scarlatina, and especially was this so in two cases. In spite of all precautions when the scarlet fever appeared in these cases the infection was conveyed to one or two other occupants of the ward. An incubation period of twenty-four hours in scarlet fever is possible, but is very rare. In every case of diphtheria careful inquiry was made as to whether there had been scarlet fever in the family, and when this was

the case the child was always placed in the observation ward. 4. Cases in which the infection with scarlet fever and diphtheria occurred in patients in hospital for other diseases. In two such cases the streptococcus alone was present. In the one fatal case there was a descending croup. Among his conclusions the author points out that considering the relative frequency of the diphtheria bacillus in the so called scarlatinal diphtheria, it is advisable to use the diphtheria serum in these cases.

How Sir Spencer Wells Conquered the Field of Ovariectomy.—The late Sir Spencer Wells may be said to have fought a giant when he entered the lists as an ovariectomist. Some faint notion of the fight that he dared to put up in this matter may be gleaned from an article in the London *Lancet*, January, a part of which runs as follows: In April, 1854, Spencer Wells, in company with his friend, Mr. T. W. Nunn of the Middlesex Hospital, assisted Mr. Baker Brown in his eighth case of ovariectomy. This was the first time that Spencer Wells had seen the operation performed, and its result, like that of six others of Baker Brown's first nine cases, was not encouraging. In discussing the case afterward Mr. Baker Brown remarked: "It's the peritonitis that beat us," for it was chiefly in the matter of after-treatment that the results of the operation form such a discouraging picture. Temporarily disheartened by his ill-success in seven out of nine cases, Mr. Baker Brown for a time abandoned all hope of introducing the operation, although he was in his own mind convinced of its reasonableness and ultimate utility. It was not until 1857, however, that Spencer Wells himself attempted the operation, and this he did contrary to the advice of his friend, Mr. Baker Brown, who nevertheless, assisted him. The result of his first venture was not encouraging, for he lost his case. He was not discouraged by this untoward beginning, but persevered, and in the following year his hopes were realized by the entire success of his second case. From that time forward the results obtained by him are a portion of the surgical history, not only of the century, but of all time. It is not only on account of his mechanical dexterity in a particular operation that Sir Spencer Wells deserves to have his name kept in honored remembrance. At the time when he turned his attention to ovariectomy the operation was so fatal as to be generally regarded as unjustifiable; and no common force of character was required to persevere with the operation. Feeling assured with the instinct of genius of the possibility of its ultimate success he says himself: "On taking up this subject as a matter of study and trial, just at the crisis when obloquy was the thickest and opposition the strongest, I felt that nothing but the most open frankness would carry conviction of success, or in case of failure justify the operation. . . . I therefore pledged myself to make known through the press all that I did and all that befell me." Sir Spencer Wells deserves the greatest credit both for having at that time the courage to make public his failures as well as his successes, and also for recognizing that only in such a way could it be hoped to establish ovariectomy as a justifiable operation. There can be no doubt that the large number of abdominal operations performed at the present day owe their inception to ovariectomy, and to Sir Spencer Wells belongs the credit, not of inventing ovariectomy, but of taking the principal share of the work involved in establishing that operation on a recognized basis. In 1857 he became lecturer on surgery at the Grosvenor Place Medical School, which eight years afterward became merged in the School of St. George's Hospital. Between the time when Spencer Wells first turned his attention to ovariectomy and the first occasion when he practically essayed it his energies were directed for the space of a year or more to a very different kind of work. Shortly after the war broke out in the Crimea he temporarily resigned his work at the Samaritan Hospital and his private practice and proceeded to Smyrna, where he became surgeon to the British Civil Hos-

pital there, as well as at Renkioi, whither he afterward proceeded. He saw a great class of injuries which were almost entirely new to him, and in the course of his work had the opportunity of attending to many abdominal wounds, experience which afterward proved most useful in his surgical work. He frequently stated in after years that it was during the war that he realized that the peritoneum would stand much rougher handling than he previously imagined, and it was this knowledge in great measure that reassured him in the operation and gave him a boldness which characterized his later work, and which results amply justified. At Renkioi he was associated with Dr. Parkes, who was one of his oldest professional friends.

Serum Diagnosis of Typhoid Fever.—At a meeting of the Society of Biology of Paris, Drs. Widal and Sigard communicated an improvement in their method of diagnosis. Till now the reaction by agglutination has been obtained by mixing fresh cultures of the typhoid bacillus with the serum of the patient under investigation. These bacilli when killed by heat lose their agglutinating power, and investigators have remarked that when the bacilli are destroyed with due care, whether by a temperature of between 57 and 60 degrees C., or preferably by adding a drop of formol to the culture, they preserve, even though dead, their property of agglutinating the serum of typhoid fever patients for as long as three months. Tubes can, therefore, be prepared with formol and preserved in the laboratories of hospitals, preventing the necessity of using fresh and virulent cultures—an innovation of considerable importance to general practitioners. The above information is supplied by the *London Lancet*. Drs. Wyatt Johnston and McTaggart, in the *Montreal Medical Journal*, March, refer to the fact that diabetic blood has been found by Block and by W. H. Park, to give a decided agglutination. They have examined two cases of diabetes which both gave perfectly negative results. Their latest investigations lead them to offer the following conclusions. The difference in reaction observed between typhoid blood solution and blood serum is not simply due to varying intensity, but to an alteration in the relative prominence of the agglutinative, paralytic and disintegrative phenomena which constitutes the reaction. The extent of this difference varies with the virulence of the culture, but the difference probably depends also on the presence of part of the specific substances elsewhere than in the blood serum. Blood solution has a greater capacity than blood serum for producing the disintegrative (bacteriolytic) changes described by Pfeiffer. Descriptions of this phenomena are conspicuously absent from the many recent accounts of the reactions with typhoid serum as observed in hanging drops. The paralytic effect is relatively more marked with serum than with blood solutions. Agglutination without stoppage of motion is more rapidly occasioned in virulent cultures by blood solution than by serum, and does not indicate existing typhoid. It appears preferable that for the dry blood method only attenuated cultures should be used. These have the advantage of being more easily kept in readiness than virulent cultures, and are less sensitive to changes of temperature. With the serum method virulent cultures give prompt results. Dried blood serum can be readily obtained and transmitted to the laboratory by pushing aside the edge of a blood drop which has clotted for a few minutes but has not dried, and collecting the serum beneath it on the tip of an ivory vaccine point, etc. This does not however give a quantitative result. For ordinary diagnostic purposes, the simplicity of the method as originally described does not require modification, provided attenuated cultures are used. A drop of the solution obtained from a dried typhoid blood drop, mixed with a drop of the culture, will give the reaction promptly, without any special attention to the degree of dilution. In order, however, to obtain the best results, it is well to dilute freely and especially to avoid having a sticky solution of syrup-like con-

sistency. In cases where the clinical type strongly resembles typhoid and where the serum does not give the typhoid reaction, a decided reaction with cultures of the colon bacillus may explain the symptoms. Results with the dried blood test have been very satisfactory, giving uniformly positive results with genuine and well marked typhoid cases, and not reacting with non-typhoid bloods when attenuated cultures were employed. Although the use of serum undoubtedly enables the results to be recorded and compared with greater scientific precision, we find that dried blood answers just as well for routine diagnostic work. The alterations in reaction, induced by very slight modifications of the manner of testing, help to explain differences in the results reported by experienced and careful observers. With the same blood and culture, the amount of dilution possible largely depends on whether plain bouillon, bouillon culture or water is used for diluting. Opinions also vary as to what should be regarded as constituting a reaction. Personally, we do not think that anything less than complete clumping and total arrest of motion obtainable by the dry as well as the moist test in a young attenuated culture, should be regarded as typical.

"Idiots Savants."—Dr. Frederick Peterson, in the *Popular Science Monthly*, December, 1896, defines the above expression, which comes to us from the French, as applicable to all such idiots, imbeciles, or feeble-minded, as exhibit special aptitudes of one kind or another, apparently out of proportion to their intellectual developments in other directions, and often remarkable as compared with similar developments or faculties in normal individuals. There are many cases of this kind recorded in literature, inclusive of those who are exhibited as musical prodigies, calculating boys and the like. Beyond the fact of the existence of such curiosities, little has been written in explanation of these phenomena. Their psychology and physiology are alike obscure. Precocity and an extraordinary power of the faculty of mental arithmetic have been frequently noted in idiots. This faculty consists entirely of excessive powers in simple calculation and is observed only in the congenital variety of idiots, imbeciles and degenerates. In idiots, in whom the "musical faculty" is well developed in contrast to their general intellectual paucity, it is not of a high order. It consists of a remarkable auditory memory, together with a power of expression by means of the vocal musculature or fingers, of the musical memories stored up in the brain. There is no spontaneous musical expression, no power of invention. This form of memory is not limited to music: it has often included sounds of other kinds. There is a hereditary element in some cases, in respect of this musical faculty. Examples of *idiots savants* with talents bespeaking disproportionate development of the visual centers, together with the power of reproduction by modeling, drawing or painting, are occasionally to be met with. Among idiots, imbeciles and feeble-minded it is not uncommon to meet cases with an aptitude for drollery and given to witty or humorous remarks and actions. The court-fools of Shakespeare and the "drolls" of other writers, are the type of this class of degenerates. Any quick witted imbecile or feeble minded individual in ancient times had no difficulty in securing a good livelihood, and sometimes even prosperity and fame. Under such conditions it became common for normal individuals to adopt the calling of the jester or buffoon, and these were known as "artificial fools." The author presents the following conclusions:

"The *idiots savants* are always among the congenitally defective, who usually have stigmata of degeneration. They are mere copyists in music, modeling, designing, or painting. Yet at the same time their talents stand out in strong contrast to their general feeble mindedness. As a rule the aptitudes are precociously developed and are frequently lost before reaching adult life. The physical basis of such talents must be a precocious perfection of the cerebral organization in certain areas, together with a true hyperplasia of tissue in such regions and a tendency to early degeneration. There must be an increased

number of cellular elements and sensory-motor combinations and associations in definite parts of the brain. Cases of misplaced aggregations of such tissues in the brain have been described under the name of heterotopia of gray matter, and it is possible that some such unequal distribution of the structures underlying psychological processes will be found to account for the presence of the extraordinary talents of *idiots savants*. It is questionable whether Heineken, the 'child of Lübeck,' should be included among any of the cases described here. He died too soon (at the age of four years) for the fact of mental weakness of any kind to be established; but his precocity made him the wonder of his time (1721-25). He knew the chief incidents of the Pentateuch at the age of one year, had mastered all of sacred history at two years, and was intimately acquainted with modern and profane history and geography and spoke French and Latin, beside his native tongue, at the age of three. Surely such precocity as this must have been due to extraordinary aggregations of gray matter in parts of the brain of a truly abnormal character."

PRAGTICAL NOTES.

Connection Between Aneurysms and Syphilis.—A comprehensive study of this subject in the *Annales de Derm. et de Syph.* for January by Prof. G. Etienne (thirty-eight pages), announces that 70 per cent. of 376 cases examined were found to have syphilitic antecedents, and this is a minimum proportion, as it is so difficult sometimes to detect traces of old syphilis. With most of the aneurysms the infection dated from five to twenty-five years. No histologic difference between the aneurysms of syphilitics and non-syphilitics was noted, with rare exceptions. Mercurial treatment is successful if the gummatous infiltration is still susceptible to absorption without leaving scleroma behind it, so that the tissues can resume their elasticity. When the lesion has advanced beyond this stage, specific treatment is ineffectual. The article concludes with the statement that aneurysms, therefore, with tabes and general paralysis, can be included in what Fournier calls "para-syphilitic affections."

Sulfonal in the Iasomnia of Melancholia.—Dr. Marcus Schnetzler, in the *Toledo Medical Reporter*, remarks that sleeplessness is frequently one of the most troublesome and obstinate symptoms with which the physician has to contend in the management of cases of melancholia. These patients are especially apt to yield to the seductive influence of such hypnotics as morphin and chloral, and to become confirmed habitués. For this reason these drugs, if used at all, should be employed with the greatest circumspection. In some of these cases certain non-medicinal measures, as warm baths, the cold douche, massage, exercise in the fresh air, will bring the longed-for sleep and should always be given the preference. There always remain, however, a fair proportion of cases in which a hypnotic is positively demanded, and for this purpose sulfonal is claimed by neurologists to be especially desirable. If properly administered in hot fluids, as milk or tea, one-half to one hour before retiring, it produces calm, refreshing sleep, resembling the normal, without the risk of inducing a habit or disturbing the nervous system. In the treatment of simple melancholia, the author advises administration of 15 grains sulfonal every hour until sleep is secured, and he also relies upon this hypnotic in cases attended with delirium in conjunction with veratrum viride and bromids. The author also emphasizes the value of hydiatic measures, as cold shower baths of short duration, especially in melancholia accompanied with stupor, where they will sometimes produce satisfactory sleep without the employment of internal medication.

Operative Cure of Otitic Phlebitis of the Lateral Sinus.—In the 118 operations on record, the more audacious the operation the larger the proportion of successes. Simple mastoidectomy resulted in 16 cures and 21 deaths: mastoidectomy with the sinus opened and washed out, 17 cures and 15 deaths: and lavage of the sinus combined with ligature of the jugular, 31 cures

and 18 deaths. Lambotte recently exhibited a patient cured a year before with a still more extensive operation. He first made a double ligature of the internal jugular in the neck, and resected the vein between them, fastening the upper end in the superior angle of the cervical wound. Then he ligated the transverse sinus as close as possible to the torcular Herophili, and consequently to the occipital protuberance. He then proceeded to the septic focus, and completed the ablation of the mastoid and antral osseous lesions, opening wide the sinusal cavity, removing all the peri-sinusal pus and the intra-sinusal septic products, and opening the jugular bulb infected by the antral veins, completing the operation by establishing jugular sinusal drainage for subsequent lavages twice a day. The isolation of the septic focus preceded the removal of the septic accumulations, to avoid dispersing septic clots. The operation could be performed in more than one sitting if the patient is very weak.—*Progrès Méd.*, February 13.

Permanent Stigmata of Epilepsy.—Mairet and Vires of Montpellier, state that a genuine attack of epilepsy can always be recognized by certain unfailing stigmata: 1, the increased amount of nitrogen and phosphates eliminated in the urine. The latter rise from 33 per cent. to 50, 60 and even 65 per cent.; 2, the diminished toxicity of the urine emitted immediately after the attack; 3, disturbances in the temperature. The temperature falls during the convulsion, the period of stertor and sleep, after which it rises rapidly, attaining and even passing the normal temperature, until the average temperature of the day of the attack is higher than the average of other days. The exceptions are when the attack is accompanied by agitation; in these cases the temperature rises instead of falling, and is higher than normal, with the same tendency to remain high afterward as above noted. Also when the sleep is particularly calm and prolonged, the temperature tends to return to normal, but does not rise above it and often does not reach the normal. These modifications are constant and enable a genuine to be differentiated at once from an attempt at simulation. There is also a permanent symptom of latent or pronounced epilepsy, with or without attacks, and even when there has been no attack for years, viz., the hypotoxicity of the urine, which is evidently a function of the neurosis. It also accompanies hysteria, but to a less extent. The toxicity is tested by injecting the urine into the vein of the ear in rabbits. In some cases of epilepsy as much as 480 c.c. per kilogram of rabbit were required to kill the animal, while 50 to 86 is sufficient with normal urine.—*Bulletin de l'Acad. de Méd.* January 26.

Typhoid Bacilli in Non-typhoidal Subjects.—Schneider, in the *Comptes de la Société de Biologie*, July, has examined soil, water and also fecal matter from non-typhoidal subjects in order to ascertain whether or no typhoid bacilli could be isolated from them. Elsner's medium was employed in all the experiments. There were made examinations from thirty-six specimens of water from different localities, of which eight were found to contain bacilli identical in their morphologic and cultural properties with the typhoid bacillus. They also presented the property of toxicity, and an animal which would usually succumb to their inoculation could be protected against them by a typhoid antitoxin. In two of the cases the water was taken from places in which typhoid was present and in five others typhoid had been present some months previously. Of the ten soil cultures which were made, the typhoid bacillus was found six times. In the fecal matter from non-typhoid subjects, a bacillus identical with that of typhoid was found in the stools of three patients not having typhoid and who had never had it. A negative result was obtained in five other cases. Of the eighteen organisms which are obtained from these different sources, twelve were pathogenic to animals, and a fatal issue could be prevented by the use of an anti-typhoid serum. The above experiments are of great interest

as bearing upon the etiology of typhoid and the fact that typhoid bacilli were found present in individuals healthy as far as the disease itself was concerned, shows not only the possibility of auto-infection but also the fact that unless certain conditions favoring the multiplication and ptomain-producing powers of the organism be present they are harmless.

Glutol in the Treatment of Burns and Wounds.—Thomalla reports that in burns glutol exhibits a most beneficial action. He employed glutol in old burns where the skin was broken. After removal of the scab, which is quickly formed, several times until there is not more suppuration, he allowed the scab to remain, and with very few exceptions effected a rapid and uncomplicated healing of the burns without leaving any scar. In one case of a burn upon the foot healing was less rapid because the patient kept at work and his shoe caused continual pressure and irritation of the wound. The reason why the scab may be allowed to remain over the burn after no more suppuration is feared, and therefore further decomposition of the glutol and liberation of the formalin is not necessary, is that the clean antiseptic wound heals more quickly under the protective scab than if the latter were removed at each dressing. He adds: In minor wounds I have often employed glutol, especially in such cases in which a bandage can not be readily applied, such as wound on the hands of workmen, who have continually to dip their hands in liquids, yet at the same time can not afford to give up work on account of the small wound. In such cases I dust the wound with glutol, and then apply collodion; over the collodion I dust another layer of glutol, and thus provide a wound with a firm impenetrable covering. When this glutol covering is removed after several days, the wound is found to be perfectly healed. According to these observations I do not hesitate to pronounce glutol as thy best antiseptic we possess in the form of powder, in which respect its complete freedom from odor must not be forgotten. *Therapeutische Monatshefte*, January.

A Radical Procedure in Follicular Tonsillitis.—Dr. Maxson recites his favorable experience in the use of caustic for the prevention of follicular tonsillitis. In so far as this treatment seems to go to the root of the matter it may with propriety be termed "a radical treatment." The method of the author has the merit of being devised with a view to thoroughness, a quality that we all know the value of when dealing with throat-affections. The author says: "A revention of follicular tonsillitis is desirable in at least two classes of cases; those occurring during an epidemic and also those where there are repeated attacks occurring about once a year. Those occurring only during an epidemic can be prevented by a mild aseptic throat wash, with or without the internal administration of benzoate of soda. The chronic cases, which are subject to frequent and repeated attacks, are very annoying to the physician and damaging to the patient's health. Such was my experience until I discovered and applied a treatment that I have lately found to be known and used by others, but which is not mentioned in any literature that I have access to. The treatment consists in destroying the contents of each follicle that is diseased in both tonsils. I think that the follicle is not destroyed, but the colonies of germs that make an abiding place in the follicles are destroyed. My custom has been to take a doubted piece of silver wire, such as is used for suture, and solder its free ends to a large wire; then dip the doubled silver loop into melted nitrate of silver, so as to make a small bead on its end, after withdrawing it from the melted silver salt. The silver wire is then bent half an inch from its distal end, so as to make an angle of forty-five degrees. This bead of caustic is inserted into each follicle to its bottom. The depth will vary from one-fourth to one-half an inch. One caustic bead will usually treat from one to two follicles. By means of several beads, all the follicles may be treated. This treatment is undertaken at

any time except when the tonsils are acutely inflamed. It requires one or two treatments to effectually prevent its return. I have used this treatment for eight or ten years, and found it entirely reliable. I know of no case that has not been given a very complete immunity, even when subject to attacks every two to eight weeks before treatment."—*Journal of Practical Medicine*, December.

Argentamin in Urethritis.—Dr. Ascher, of Buda Pesth, in the *Deutsche Med. Zeitung*, for January, records his experience in hospital cases, twenty-two in number, of gonorrhea, with this so-called "silver nitrate substitute." Argentamin is an ethylene-diamin-silver phosphate and has hitherto had its chief field in regard to conjunctival diseases. Dr. Ascher offers the following conclusions: 1. This drug is well tolerated in the posterior urethra in solutions of 1 to 1,000, or even 1 to 250. In the urethra anterior a solution of 1 to 1,000 is also well tolerated, but solutions of 1 to 500 begin to be unpleasant, patients complaining of burning for a quarter or half an hour after injection, especially in acute stages. Ascher therefore recommends the employment of solutions of 1 to 1,000 to 1 to 250 for the urethra generally, and of solutions of 1 to 1,000 or 1 to 2,000 for the urethra anterior. After employment of solutions in any degree of concentration the purulent secretion increases at first, but in the course of three or four days rapidly abates. 2. Argentamin is an excellent gonococci destroying agent. The gonococci disappear extraordinarily quickly from the secretions, even when a solution of 1 to 1,000 is employed, either by means of an Ultzmann instillator, or by means of a simple syringe, in ten to twelve days. Argentamin has a more rapid and positive effect upon the gonococci than all other antigonorrheics hitherto known. It surpasses even silver nitrate. It possesses considerable penetrative action. It is much cheaper than silver nitrate, and in the above concentrations neither stains the hands nor linen. In the author's opinion, however, astringents can not be entirely dispensed with; in many cases the scanty slimy discharge of the last stage can only be completely done away with by their use.

Congenital Spastic Rigidity.—This affection, also sometimes called Little's disease—so named after an English surgeon who, in 1882, first described it—includes both somatic and psychic defects such as are seen in a class of infants born before the full term. Dr. Collins, in the *Medical News*, February 6, takes up the subject chiefly with a view to throwing light upon the still obscure pathogeny and pathologic anatomy of the disease. He desires to bring out the fact that of late Van Gehuchten has been studying the subject to some purpose. That writer, whose contributions are to be found in recent issues of the *Journal de Neurologie*, discusses both the etiology and clinical aspects of the disorder. He points out that those authors who teach the occurrence of this condition in children born at full term with the aid of instruments are in error, at least in part. He believes that obstetricians are nearly in accord that the symptom complex of congenital spastic rigidity is commonest in children born prematurely; and it matters very little whether the birth be an easy or a difficult one. At this time of life the pyramidal tracts are almost wholly non-medullated and naturally, therefore, devoid of the ability to functionate. The first tracts to become medullated are those constituting the indirect motor pathway—the pathway through the pons cerebelli while the direct pathway—the cortico spinal fibers—are very much delayed in acquisition of myelin sheaths, and perhaps may never develop them at all. In its downward growth during the latter years of infancy, the tract of the cortico spinal fibers reaches first the upper and then the lower levels of the cord, those fibers destined for the lumbar and the sacral portions requiring the longest time to reach their destination. In accordance with this the rigidity and contracture disappear first in the face and head, then in

the upper extremities, and remain longest and perhaps do not disappear at all in the lower extremities. In short, therefore, the author contends that absence of the myelin sheaths of cortico-spinal fibers constituting the pyramidal tract is attended by the same clinical phenomena as degeneration of these fibers. In both conditions there is an absence of inhibitory action of these fibers upon the motor ganglion cells of the anterior horns, consequently the spasticity. If his claims are corroborated by other investigators, a very important step will have been taken for a satisfactory explanation of the pathogenesis of this condition, and possibly also for the prevention of its occurrence. If it be a developmental defect dependent upon premature birth, the prevention of the condition will simmer down to an obstetric problem, to wit: How can delivery be delayed until the period of complete fruition?

Lawson Tait on the Treatment of Uterine Myomata.—Mr. Tait writes in London *Lancet*, February 6, objecting to a statement that had been made to the effect that the Gynecological Society of England had for three or four years insisted that total extirpation of the uterus was the best treatment for these tumors. He says: "Those who gave utterance to this sentiment as that of the Society form, no doubt, an extremely important section of it; but it is equally certain that an important minority will not give their sanction to any such opinion. I think it probable, for example, that Dr. Bantock and myself could make a larger list of cases of myoma treated in various ways than all the other members of the Gynecological Society put together, but neither he nor I have made up our minds as yet definitely on the subject—at least, I can speak for myself. I have tried a number of cases of the so-called 'pan-hysterectomy,' and have a list much longer than any yet published in England, and I do not find that it commends itself to me in preference to Koeberle's method save in the one particular of being somewhat easier. Indeed, in those cases for which it is adapted I can not understand how an hour and a half or even an hour can be spent over it, unless the proceeding is much interrupted by unnecessary conversation. Its primary mortality, so far as my own work is concerned, is much the same as the clamp operation, but it is too early to speak positively upon this important point. As adverse arguments to the operation there are several points to consider, the first being that there is a distinct group of cases for which it is absolutely inapplicable, and these, unfortunately, are the cases which demand hysterectomy most of all—I mean the soft edematous myomata. In the tumors having uterine tissue at their base, firm, not given much to shrinking, and with vessels well-defined and separate, the operation can be easily applied. On Thursday last I operated for one of the former class of tumors, and started with the intention of trying the pan-hysterectomy, but found it absolutely impossible. It is, however, upon secondary results that the fate of this operation will depend, and I have seen already enough of them to make me suspect that it will be speedily discarded. The reason is the unfortunate effects of the ligature, a paper on which I published some time ago. In this operation the ligature is not dropped into a peritoneum, which speedily digests and absorbs it, but is pressed among tissue peculiarly apt to resent interference. Concerning the lower ligatures it must be borne in mind that they are placed with nothing between them and the cavity of the bladder but part of its denuded muscular and the whole of its mucous coats. These form but a slight protection against a dead ligature finding its way into the bladder. In addition to such an accident as this, three or four other forms of accident have already passed under my notice, namely, the formation of leakage from a ureter, leakage from the bladder and leakage from intestine, all incidents occurring long after the primary success had been obtained. Personally I have been now for twelve years patiently waiting for material upon which I could emphat-

ically express my opinions as to the complete and the best methods of treating myoma, but one thing after another has arisen to alter the opinions which I thought had been steadfastly established, and even yet I am obliged to refrain from writing fully on the subject. I think with the knowledge of this that the younger members of the Gynecological Society will refrain from the positive expressions of opinions which must be premature, and at least they will not pledge the whole Society to opinions against which many of their seniors certainly must enter an energetic protest.

Treatment of Malaria (Laveran).—Laveran always prefers to administer quinin in solution when possible, as pills become too hard to dissolve, powders are not transportable, the endermic method is painful, and while enemas are useful in the case of children, they are rejected by adults. The hypodermic method ensures good and prompt results. For this he recommends the formula: Bihydrochlorate of quinin, 5 grams; aqua dest. q. s. to make 10 c.c. One c.c. of this solution contains 0.50 grams. of the salt. Baccelli has used intravenous injections successfully, but they are not entirely inoffensive. The type of the fever should not modify the treatment, which should be as follows for an adult: For three days, 80 centigrams to 1 gram of hydrochlorate of quinin. The fourth, fifth, sixth and seventh days, no quinin. The eighth, ninth and tenth days, 60 to 80 centigrams of hydrochlorate of quinin. From the eleventh to the fourteenth day, no quinin. The fifteenth and sixteenth days, 60 to 80 centigrams. From the seventeenth to the twentieth day, no quinin. The twenty-first and twenty-second days, 60 to 80 centigrams of hydrochlorate. This is the usual formula, which can be modified to suit the circumstances. The same salt is given to children in the following proportions, divided into several doses during the day: Children of 4 and over, 30 to 40 centigrams; 2 to 4, 20 to 30 centigrams; 1 to 2, 10 to 20 centigrams; less than 1 year, 5 to 10 centigrams. In severe attacks we must not hesitate to administer quinin hypodermically to children. Quinin is borne better between the attacks and may abort them, but it is not necessary to wait until the fever falls. Maillot has well shown its great efficiency in continuous fevers. In very severe cases, 0.75 to 1 gram should be injected twice in the twenty-four hours. As the fever yields to the injections, the formula above should be followed. In pernicious attacks also, hypodermic injections should be made, and in the algid form, frictions, diffusible stimulants and injections of ether will be found useful to supplement the quinin. In attacks with coma, use counter-irritation, cold applications and drastic purgatives. Hydrate of chloral should be prescribed for delirium and in the case of alcoholics. Vomiting is combatted with champagne, effervescent drinks, and injections of morphin in the pit of the stomach. Diarrhea, with opium and subnitrate of bismuth. In bilious fevers ipecac and calomel should be administered, but not until after the quinin. All tonics are useful as they increase the resisting powers of the organism. Arsenic, iron and nux vomica render important services, in supplementing the quinin. Hydrotherapy is also useful, but the douche should be tepid and brief at first and the region of the spleen should not be douched at first at all, as a cold douche on that region has been known to induce new attacks. Change of climate is a powerful tonic for persons living in warm countries. In case of hyper-splenotrophy the use of counter irritants can be combined with the quinin, even the local cold douche, intrasplenic injections of 1 c.c. Fowler's solution 1 to 10, or of a 200th phenic solution. Electrotherapy (Botkin) injections of sterilized water (Nurri), and injections of ergotin have also been tried. Splenotomy has been performed, but he considers it contra-indicated. None of the substitutes proposed for quinin can take its place, and the sole objection to its use is that it is rather expensive. Preventive doses of 10 to 20 centigrams a day have given excellent results. The water in malarial districts should be boiled and filtered and taken preferably in the form of coffee or tea. Plantations of the eucalyptus, globulus and rostrata, have been found effective in reducing malaria in Corsica, Algeria and Italy.—*Progrès Méd.*, February 13.

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SATURDAY, MARCH 27, 1897.

AN UNUSUAL MANIFESTATION OF HYSTERIA.

Physicians who have had a wide experience with hysteric patients are apt to regard all other patients who come to them with an eye strongly disposed to discover hysteric manifestations, while on the other hand, those members of the profession who have not met with many such cases often overlook the possibility that obscure symptoms may be due to this strange cause of perverted functional activity. The common symptoms of hysteria as manifested in the various disorders of sensation and hemi-anesthesia are so manifest that they often lead even the careless physician to a correct diagnosis, but the more unusual types may well obscure diagnosis unless the physician is constantly on the lookout for their underlying cause.

Our attention has been particularly called to this matter by an interesting case reported in the *Journal des Praticiens* for Jan. 23, 1897, in which there was anuria due to hysteria, which is certainly not a usual symptom, and what is more important and misleading was the fact that there was fecal vomiting. In some cases of this character the fecal vomiting is simulated, but in this instance it seems to be really present. Among those who have reported feculent hysteric vomiting in authentic cases may be mentioned JACCOUD, RICARD, FOQUET, ROSENSTEIN, DE TULLIO, DESNOS, ANDRE and BRYANT. In the case which we have mentioned and which is reported by Hoorweg in a Norwegian journal, the greatest possible precautions were taken to prevent malingerer, because the

physician observing the case, believed it to be one primarily of simulation.

The case consisted briefly as follows: A woman of 26 years, unmarried, had since the age of 12 years manifested neurotic symptoms, palpitation and terrors; at the age of 15 years she was assaulted and maltreated by two young men and at this time had hysteric attacks which were frequently repeated. Menstruation was established at 16 years and four years afterward she developed hysteric paralysis and other neurotic manifestations. At 20 years of age she had hysteric attacks two or three times a day and at this time there began anuria accompanied by the vomiting of liquids with a urinary odor. Two days after this, fecal vomiting took place. From this time for the remaining six years similar symptoms continued. The general condition, however, was fairly satisfactory.

An examination of the patient revealed various hysteric stigmata, such as anesthesia, analgesia, ovarian hyperesthesia and similar symptoms. Thinking that the vomiting might be due to an accumulation of fecal matter in the rectum Hoorweg used injections of a pint of warm water, which was gently introduced and in about four to five hours afterward the patient vomited an abundance of liquid with a fecal odor. An examination of the liquid which was vomited and possessed a urinary odor, showed it to contain on analysis urea and uric acid, but on two days when the bladder was emptied by means of a catheter the liquid vomited was still abundant in quantity.

As we have already said, the closest watch was placed upon the patient to see that she did not deceive her observers, but finally the physician in attendance came to the conclusion that she was able to develop antiperistaltic movements. With the object of determining this point a rectal injection of starch water and bismuth was given. Immediately after the administration of the starch and bismuth by the rectum lavage of the stomach and rectum were performed. Five hours later the contents of the stomach contained starch but no bismuth.

The treatment which Hoorweg instituted in this case was faradization of the stomach and rectum, with what he claims good results. The psychic condition of the patient improved to a very marked degree and the serious symptoms were put aside.

We have mentioned this case editorially because we consider all cases which are particularly obscure in their manifestations as being worthy of notice, and with the gradual increase of the number of hysteric patients which we see in this country all such records are of value.

THE "REST IN BED" TREATMENT OF INSANITY.

Within the past few years there has been a considerable interest and some enthusiasm aroused in and numerous trials made of a method of treatment of acute insanity by compulsory rest in bed. The idea is not

a new one, it is as old at least as the fifth century, when it was recommended by CELIUS AURELIANUS, and it has been more or less advocated and practiced by alienists all through the modern period of psychiatry to the present. It is in the universal application of the treatment to all cases of acute mental disorder, and to a considerable extent in the appliances and details of the method that whatever novelty it may possess consists. Rest in bed has been a regularly recognized therapeutic measure recommended in nearly all treatises on insanity for acute cases with rapid failure of strength or notable symptoms of physical exhaustion and in some not so very recent works, indeed, it has been advised for all acute cases. That this has not been generally practiced has been due to the fact that the means that have hitherto seemed most applicable for the purpose were deemed more objectionable than the end was beneficial; the bed straps, the crib, the manual restraint by attendants, the wet pack and the sedative drugs, one or all of which seemed necessary at first sight, have been at one time or another referred to the reprehensible practices of physical or chemical restraint that only needed mention to be condemned. The tendency has been to allow the utmost freedom of movement and to check even destructive tendencies only by the the mildest measures, such as the use of indestructible fabrics, the diversion of attention to harmless activities, etc. It will be questioned by some, undoubtedly, whether the enforced rest in bed, though without many or all of the most objectionable features mentioned may not be after all a return swing of the pendulum to some extent toward the older methods of the past. There are probably few, if any, alienists of experience who have not used confinement to bed to a greater or less extent in what seemed to them appropriate cases, and they would have used it more were it not that there has been a justifiable prejudice against the coercion that seemed necessary to effect it. The apparatuses of cribs, bed straps, restraining sheets, were all devised or used as therapeutic measures to prevent the weakened and delirious patient from wearing himself out by his constant activity, and were based on the principle that an insane person is an invalid and needs physical treatment for this disorder. That the tendency was toward their abuse by their employment as simple trouble-saving appliances does not alter this fact.

That we have learned better ways of enforcing the needed rest upon the excited patient is certainly a great advance, but it does not do away with the possibility of even these methods being abused for the same reasons and purposes as were the former ones. The rest treatment, according to its advocates and those who have tried it extensively, prevents a great many unpleasant accidents that are likely to happen

when maniacs are kept on the wards, such as occasional exposures, removal of clothing, destruction and injury from other patients, and the need of seclusion in strong rooms, which is so often resorted to to avoid these, is done away with. This, nevertheless, does not make it any the less restraint when even the mildest forms of compulsion or drugs have to be employed to secure it, and it may therefore be counted as the most modern development of that much abused (in both senses) therapeutic method. This does not condemn it necessarily if it is really beneficial and sentimental considerations should have no great weight either for or against its employment. The non-restraint doctrine has apparently not been thus far employed to its prejudice of the bed treatment, though, as has been shown, it may be open to objections in this general line; on the contrary the idea of the maniac being handled by trained female nurses is captivating to many minds and it does appear this is more practicable, than has hitherto been supposed. It is fair to assume, however, that some selection is, at times at least, made of the cases, as it would be no more proper to put certain male cases under the care of females than it would to permit male attendants to care for similar female patients. It is a well-known fact that the presence of proper persons of the opposite sex has a certain restraining influence over most cases but this is not absolutely and invariably an efficient inhibition.

The really important question is, however, whether this method is a real advance in the therapeutics of insanity, or simply an improvement in the methods of meeting certain inconveniences without any actual curative effect in itself. In other words, is it a mere palliative or an actual curative measure. A recent writer, BERNSTEIN of Moscou, says, after a year's trial of the method in the psychiatric clinic of that city, that the one fact proven is that recovery is not more frequent and prompt under this treatment than under the older method, with all of its disadvantages. He admits that it controls the patients better and prevents disagreeable scenes and occurrences, and also that in this opinion he disagrees with others who have expressed the opposite opinion, but he but he quotes their own statistics in favor of his opinion. If he is correct the enthusiasm for the method in certain quarters is hardly justified, and it must be said that there is apparently a tendency toward conservatism in regard to the matter by other respectable authorities.

As a routine treatment the method can hardly be justified. A little consideration of the pathology of insanity would show this. Patients come to asylums in all stages of their disorder, and even acute cases may be past the point where the bed treatment would be beneficial. In some hypochondriac cases its influence might be directly detrimental, and in a general way we can not say that the somewhat mentally obtunding influence of absolute recumbency and quiet

tends invariably to mental restoration. AS BERNSTEIN remarks, more experience will be required to settle this question.

In conclusion, we can say that in the bed treatment it has been demonstrated we possess a means of assuring or at least increasing the quiet and order, and of avoiding many disadvantages in the treatment of insane cases in asylums. That it is ascurative, as claimed it is, is yet to be demonstrated. That it may be detrimental in some cases, especially when employed as a routine treatment, is not only possible but even probable. When its employment is carried on to the extent of "taking the troublesome cases off the other wards," as has been reported, it is open to the charge of being directly employed as a method of restraint and is open to whatever objections, sentimental or legitimate, may apply to such methods.

STATISTICAL INVESTIGATION OF SUNSTROKE.

The abnormal heat that prevailed over the eastern two-thirds of the United States during the last few days of July and first fifteen days of August, suggested to the Chief of the Weather Bureau the propriety of studying the subject of sunstroke, in so far as it is connected with and dependent upon meteorologic conditions. To this end, circulars were sent out to various hospitals and private physicians located in the affected region.

Dr. W. F. R. PHILLIPS, in charge of the Section of Climatology, has compiled and studied the different reports returned in reply to the circular letter, and his statistics and deductions, as given in the *Monthly Weather Review*, November, 1896, present several points of extreme interest.

From such sources as were accessible there were collected 2,038 instances of death during August, 1896, directly attributed to sunstroke. This falls far short of the actual number of deaths, and even figuring on the mortality of sunstroke as 16.6 per cent. (a ratio of death deduced from one of the statistical tables), the whole number of cases would be 12,277. However, the number of unreported milder degrees of sunstroke must have been enormous.

From a careful study of the tabulated investigations it was concluded:

1. That the number of sunstrokes follows more closely the excess of the temperature above the normal than it does that of any other meteorologic condition.
2. The number of sunstrokes does not appear to sustain any definite relation to the relative humidity, the maximum fatalities having occurred in one region with a relative humidity above the average, and in another region with a relative humidity decidedly below the average.
3. That although the absolute humidity was greatest during the maximum of sunstrokes, yet it does not appear that the variations influenced the number of cases.

Dr. PHILLIPS concludes that if it be taken into consideration that the maximum quantity of aqueous vapor in a given space is limited by the temperature of the vapor, and that the relative humidity is really not a simple meteorologic element, but an expression of a ratio that depends on both the aqueous vapor and the temperature, it would seem that the statistics here-in collected confirm the proposition that sunstroke is ultimately due to excessive atmospheric temperature. In other words, sunstroke will not occur unless the atmospheric temperature be much greater than that to which the individual is accustomed, no matter what may be the state of the other meteorologic elements.

As to the atmospheric temperature producing sunstroke, it was distinctly shown that both the personal equation, and the accommodation of the individual to average physical environment, or the climatic equation, are important factors to be taken into consideration. While a temperature of 82 degrees, or 13 degrees above the August normal in Boston, prostrated a number of persons and was fatal to some, the great majority of persons were unhurt by the excessive heat. Again, the climatic equation is shown by the fact that this same temperature was easily endured in New Orleans without sunstroke or any particular inconvenience. Hence each particular locality has for its native or acclimated inhabitant a special local range of sunstroke temperature.

Dr. PHILLIPS also argues that sunstroke becomes imminent during summer months, when the mean temperature of any one day, or of several consecutive days, becomes equal or nearly equal to the normal maximum temperature for the same period; and also that the liability to sunstroke increases in proportion as the mean temperature of the day approaches the normal maximum for that day.

As an argument for the reprobation of alcoholic beverages in hot weather, it is shown that in 140 deaths out of 841 cases in Table 2, of the fatal cases in which a definite history could be obtained, those using alcohol to excess constituted 60 per cent., those using alcohol moderately 30 per cent., and total abstainers 10 per cent.

As might be expected, all walks of life were represented in the reports, and the greater number of cases occurred among those engaged in occupations apparently requiring physical rather than intellectual effort.

THE FIFTY-FOURTH CONGRESS AND THE MEDICAL SERVICES.

The Fifty-fourth Congress of the United States took no action affecting the status of the Medical Department of the Army. Its influence was felt only in the appropriation bills. The Act making appropriation for the support of the Army for the year ending June 30, 1898 provides all that was called for

by the estimates of the Surgeon General in the case of the Hospital Corps, the Library and the Museum; but some economical tendencies were manifested in dealing with the other estimates. The Act makes provision for the purchase of horses for such members of the Hospital Corps on field service as may require to be mounted. The Library obtains its usual appropriation of \$10,000, to enable it to meet the literary progress of the year. Its increase during the past year compares favorably with that of any of the years of its history. A special effort was made to perfect the files of medical journals, foreign and domestic. The second volume of the Index Catalogue, including the titles under the letter "B" will probably be ready for issue about the end of May. The second volume of the First Series published in 1881 carried the Index well into the letter "C." Since then the titles under the first two letters of the alphabet have more than doubled. This shows the magnificent progress made during the past sixteen years. An estimate of \$12,000 for the continuance of work on the Catalogue was embodied in the Sundry Civil bill, which will no doubt be passed during the present extra session. For the preservation of specimens and for the preparation and purchase of new specimens for the Army Medical Museum, the sum of \$5,000 is provided. Special attention has recently been directed at the Museum to perfecting the series of specimens illustrative of the development of the human system. Roentgen ray photography has been prosecuted with excellent results as shown by the many fine skiagraphs now on exhibition. A small cut was made by Congress in the estimates for medical and hospital supplies, the reduction being from \$140,000 to \$135,000. For the construction and repair of hospitals the sum of \$75,000 was appropriated instead of \$100,000 desired, and for the construction of hospital stewards' quarters \$7,000 instead of \$10,000.

The estimates of the Surgeon General of the Navy were honored in their entirety by Congress: \$65,000 for surgeons' necessities for vessels in commission, navy yards, naval stations, marine corps, coast survey, etc.; \$30,000 for contingencies, as for expenses of examining boards, rent of rooms for various purposes, freight, express, telephone and telegraph expenses, etc.; \$20,000 for the Naval Hospital fund and some special appropriations for improvements at certain hospitals, as \$6,000 for the hospital at Chelsea, Mass., \$4,000 for that at Port Royal, S. C. and \$1,000 for the naval cemetery at Brooklyn, N. Y. An estimate of \$1,200 for two ambulances for use at naval hospitals also was approved.

No legislative action was taken to improve the status of naval medical officers and enable the Department to fill its vacancies. We pointed out the injustice of present conditions in our issue of Nov. 7, 1896. At the same time there are fifteen vacancies in

the Medical corps of the Navy; and there appears to be little desire on the part of young graduates to fill the vacant positions. We think this a mistake. Young men considering the merits of the National services should look at more than present conditions. The subject involves the service of a life-time and the possibilities of the future should be weighed as well as the actualities of the present. Improvement in the status of the naval medical officer is merely a question of time. New ships are being built, and they will have to be manned. The Navy is in progress of development. Its medical service will have to be increased and the young graduate who enters now may be floated upward into higher rank at an unusual rate by those who will enter after him.

THE ABUSE OF MEDICAL CHARITY.

The Medical Association of the District of Columbia has recently adopted recommendations intended to restrict the abuse of medical charity which has grown in the City of Washington, D. C., with a rapidity and malignancy which threatened the impoverishment of the general practitioner. These recommendations were printed in our issue of March 13, but as similar abuses are to be found in most of our cities, a few words of editorial comment appear desirable. "There is no profession" says the Ethical Code of the AMERICAN MEDICAL ASSOCIATION, "by the members of which eleemosynary services are more liberally dispensed than the medical, but justice requires that some limits should be placed to the performance of such good offices. . . . Some general rules should be adopted by the faculty in every town or district, relative to pecuniary acknowledgements from their patients; and it should be deemed a point of honor to adhere to these rules with as much uniformity as varying circumstances will admit."

Hospital and Dispensary boards of management seem to have lost sight of these requirements of the system of ethics of the profession, and as a result their annual reports present rose-colored statements of the amount of work done for the benefit of the suffering public. Much of this work, however, is done at the expense of the profession at large. Indiscriminate dispensary treatment keeps many a fee from the hardworking and poorly paid practitioner, and the pay wards of public hospitals, while adding to the financial resources of the institution, do not always add proportionately to those of the medical profession. Pay wards should be pay wards as well to the physician or surgeon in attendance as to the funds of the hospital. Were this the case, the hospitals would be restricted to their proper sphere, and family physicians would have less to say of their encroachments. The aims of the recommendations of the District of Columbia Medical Association are "to place a limit on the performance" of unrequited services, to sift

charity from its abuse, and to keep the hospitals from absorbing patients who are able to pay for medical or surgical treatment. Patients in private rooms in public hospitals are to be required to make proper payment to the physician or surgeon in attendance, as well as for their board and lodging. The seventh and eighth recommendations were drawn up with a view to protect medical members of the staff while insisting on proper remuneration in such cases; but incidentally they give moral and material support to the hospital staff in other matters. Whenever one or more members of the hospital staff resign or are dismissed, and the Association finds after due investigation that the resignation was based on just and sufficient cause, or that the dismissal was without such justification, "it is forbidden for any member of the Association to fill the vacancy created thereby."

Other local associations might profit by following the example of the Medical Association of the District of Columbia, and in doing so they would be carrying into practical effect the requirements of the Code of Ethics of the AMERICAN MEDICAL ASSOCIATION.

CORRESPONDENCE.

The Leprosy Conference.

NEW YORK, March 15, 1897.

To the Editor:—I send you the translation of a French circular which I have received from Dr. Ehlers, the Secretary-General of the Leprosy Conference. (Copenhagen). I add my reply sent to Dr. Lassar, a member of the Berlin Committee. Will you kindly publish these papers in the JOURNAL?

Very truly yours, ALBERT S. ASHMEAD, M.D.

COPENHAGEN, Feb. 23, 1897.

Sir and much Honored Colleague:—The conference against leprosy, which will take place in Berlin, in October, 1897, with the support and approbation of the German Government, proposes to itself to seek for information as exact as possible on the distribution and geographic extension of leprosy.

In the name of the committee on organization of said conference, I have the honor to ask you to help it in this work, and to do us the honor to procure us information as to the distribution and extension of leprosy, in the form of a general sketch of the distribution and extension of leprosy.

Your report is to be as short as possible (in German, English or French); we ask you to be kind enough to send it before the 15th of May, to Professor Lassar, 19 Karlstrasse, Berlin, N. W. It will be printed before the Congress, and will serve as a basis for eventual discussion.

I have to observe that we shall have also special correspondents for each country, so that we must ask you to give us only a general sketch.

Accept, Sir, and very honored colleague, the assurance of my high consideration.

DR. EHLERS, Secretary-General.

NEW YORK, March 15, 1897.

Dear Dr. Lassar:—I have to acknowledge the receipt of a letter from your Secretary General, Dr. Ehlers, by which I am invited to contribute a general sketch on the distribution and geographic extension of leprosy. In reply thereto I have the honor to observe that you will find about everything that I could say on the subject in my writings, some of which I sent you, with references to others which I did not send you. I do not see that there is any use of further talk about the distri-

bution and geographic extension of leprosy. All these things are on record, and nothing is easier for any person anxious to obtain some light on any subject connected with this question than to consult what all good libraries offer.

Allow me to express once more an opinion which I have declared during the last months very frequently: I do not believe in this Congress; its performance will be nothing else but a thrashing over of old straw, in which there is not a grain left. I hope you will pardon the frankness, or perhaps bluntness with which I express my feelings on this subject. I mean no offense, and I repeat only what I have declared, in and out of season, from the very first moment, when the question of a leprosy congress was mooted. In fact, it was Dr. Goldschmidt and I who first suggested it, but not in the form which it takes in your own project. We did not care for "information as exact as possible on the distribution and geographic extension of leprosy." What we wanted is expressed in one word, *isolation*.

Very truly yours,

ALBERT S. ASHMEAD, M.D.

West Virginia Law Amended.

PARKERSBURG, W. VA., March 17, 1897.

To the Editor:—In the JOURNAL of June 8, 1896, I gave a brief history of a suit for damages for malpractice, calling especial attention to the ruling of the trial judge, in denying the defendants from testifying in their own behalf in regard to any personal transaction or communication had with the deceased, whose death it was alleged, ensued because of malpractice by the defendants. The continuance of that history is, that the plaintiffs abandoned the case and allowed a decree of non-suit to be entered, thus ending the suit. The matter was brought up in the last meeting of the State Medical Society, held in Wheeling, June, 1896, and a committee appointed to ask the legislature to change the law, so as to allow a physician sued for damages arising from the death of a patient through alleged malpractice, to testify in his own behalf as to treatment used. This winter, through the efforts of this committee, aided by the counsel and votes of several physicians, members of the legislature, the law was amended. The act as passed is as follows: Section 23 of chapter 130 of the Code of West Virginia be amended and re-enacted to read as follows:

"Sec. 23. No person offered as a witness in any civil action suit or proceeding shall be excluded by reason of his interests in the event of the such action or proceeding or because he is a party thereto, except as follows: No party to any action, suit or proceeding, nor any person interested in the event thereof, nor any person from, through or under whom any such party or interested person desires any interest or title by assignment or otherwise, shall be examined as a witness in regard to any personal transaction or communication between such witness and a person at the time of such examination deceased, insane or lunatic against the executor, administrator, heir at law, next of kin, assignee, legatee, devisee or survivor of such person; or the assignee or committee of such insane person or lunatic. But this prohibition shall not extend to any transaction or communication, as to which any such executor, administrator, heir at law, next of kin, assignee, legatee, devisee, survivor or committee shall be examined on his own behalf, nor as to which the testimony of such deceased person or lunatic shall be given in evidence. (Amendment) Provided, however, where an action is brought for causing the death of any person by wrongful act, neglect or default, under chapter 130 of the Code, the physician sued shall have the right to give evidence in any case in which he is sued, but in this event he can only give evidence as to the medicine or treatment given the deceased or operation performed, but can not give evidence of any conversation had with the deceased."

Passed the legislature February 22, and signed by the Governor the same day, to go into effect ninety days from date.

As a statute stands in a number of States similar to the one from which our professional brethren suffered, and which has been thus amended, it would be wise for the profession to see that similar amendments be passed, so as to prevent any smart

lawyer raising this point, and any technical judge giving a similar ruling that would prevent the physician defendant testifying in his own behalf, in a suit for damages arising from death of a party from alleged malpractice on part of defendant physician.

There is another gratifying thing about the ending of this case in the fact that the profession had influence enough with our law makers to have them make the needed change.

Respectfully, W. H. SHARP, M.D.

The Insidious Advertisement.

PHILADELPHIA, March 20, 1897.

To the Editor:—Probably no one knows better than a medical editor that eternal vigilance is the price of other things beside liberty; and nowhere is vigilance more essential than in guarding against the schemes of the manufacturer of proprietary preparations. The JOURNAL, with its settled and well understood policy of refusing reading notices, offers an attractive field in which to spread advertisements disguised as regular scientific communications.

Many of the weekly medical journals of the Eastern cities and Europe, lend their aid to such schemes, some of them, perhaps, by inadvertence, others apparently with full intention. But this will not justify the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION in lowering its standard of requirements in the least. It is perhaps impossible to judge when the enlogry of a special preparation is entirely sincere on the part of a writer, whose judgment and originality may be unequal to his ambition to write: and when it is pure fake, gotten up for a fixed price, or in the hope that the wide circulation the manufacturer will give to reprints will prove a step toward fame (?) or fortune to the writer. But it really is not necessary to go into this question of motives. When an article shows marked enthusiasm for a new drug, the extended use of which will benefit a particular manufacturer, it must be regarded with suspicion, and if in other respects it seems of little importance the safe rule is to return it with thanks—thanks for the fact that we have not been caught by it.

It has seemed to me that in two or three recent instances good opportunities for indulging in such thankfulness have been missed, and that articles have appeared in the JOURNAL that are liable to bring a crop of such concealed reading notices regarding other patented or proprietary preparations. Of course it is very hard to refuse some member of the ASSOCIATION, who thinks he has discovered a good thing and wants it published in the JOURNAL, not recognizing that the source of his discovery was the plausible talk of the glib agent who left him the sample. This being the case, the members of the ASSOCIATION ought to make it as easy for you as possible to refuse such communications, by calling attention to them and expressing the general feeling through the columns of the JOURNAL. Even the vigilance of the editor will relax, or prove insufficient unless it is actively supported by the sentiment of the ASSOCIATION. Therefore I write to express to you my opinion of the articles in question, which need not be further advertised here, but which are named on the accompanying slip, and to ask others who notice what seem to be delinquencies of the sort, to pursue a similar course, and not to allow the unity and influence of the ASSOCIATION to be undermined by secret criticism and dissatisfaction.

Cordially yours, EDWARD JACKSON, M.D.

The Physio-Medical School?

NORTH EAST, PA., March 15, 1897.

To the Editor:—Can you give through the columns of your valuable JOURNAL a short history of what is known hereabouts as the physio medical school of the practice of medicine. I would like to know something as to its origin, wherein it differs

from the Regular, how many colleges it has, and as to what States recognize it as a *separate school*, and especially as to whether any State law names a physio-medical practitioner as one of the legal examiners for that school upon any State Medical Examining Board?

This may seem to be a long string of wants, but I am anxious to have it answered, as I see you are in the business of exposing humbugs.

The following is my reason for asking you for the above information. We have near here a physio-medical practitioner who has never been before our State Board, and is not registered. He has been cited before the Board, but refuses to go on the ground that there is no one on the Board of his particular school to examine him. The State Board notified him to cease his illegal practicing, but so far he has taken no notice of their warning. Our society has now taken the matter in hand and has him under bonds for court. He proposes to fight on the ground that his school is not recognized by the State, and hence he is not answerable to its law. He claims to have been before the Illinois Board and to be registered in Cook County. Hence my question: Has the Illinois Board a physio-medical man as one of its members, and is that school thus recognized by the State law? By giving a short history in the JOURNAL you will greatly oblige a subscriber.

B. H. PUTNAM, M.D.

A Revival of the Kansas Case.

MILWAUKEE, WIS., March 22, 1897.

To the Editor:—In your issue of the 20th inst., you speak of the "Kansas Hypnotism Case" and say that it was "one of the first in which the plea of hypnotic influences had been employed by the prosecution in the criminal courts." In the JOURNAL for June 8, 1895 (p. 903) you published a letter written by me in which the points discussed in the supreme court of Kansas were quoted and the law journal in which the case first appeared was named. It was then shown that the supreme court had nowhere, in its summing up of the testimony, mentioned the subject of hypnotism. Soon after the publication of this letter, some magazine, which I can not now recall, published an interview with the trial judge of the case; and he rather emphatically denounced the story that the plea of hypnotism was entertained by his court, and said that it was the work of a sentimental reporter. The only basis for the story was the fact that McDonald's lawyer in speaking of the influence that Gray held over him (McDonald) said: "This influence was so great that one might almost say it was hypnotic."

J. M. MADDEN, M.D.

Muscular Dystrophy.

PHILADELPHIA, March 15, 1897.

To the Editor:—I am desirous of learning of the occurrence of muscular dystrophies, including pseudo-hypertrophic paralysis, idiopathic muscular atrophy, Erb's juvenile (scapulo-humeral) atrophy and facio-scapulo-humeral (infantile) atrophy of Landouzy-Dejerine, in colored persons and especially in those of pure, unmixed African parentage. I shall be grateful to receive information from any one who has encountered or has knowledge of cases of this nature.

Respectfully,

AUGUSTUS A. ESHNER, M.D.

224 South Sixteenth St.

The Journal Train.

PURCELL, IND., March 20, 1897.

To the Editor:—Will you kindly state in next JOURNAL the exact date the JOURNAL Train will leave Chicago, over what road, the rate for round trip from there, time limit at Philadelphia, and must passage be engaged in advance for that train.

Very respectfully, MILTON McMURTRY, M.D.

ANSWER: The JOURNAL Special Train will leave by the Penn-

sylvania R. R., from Chicago, Sunday May 30. The rate is that of one and one-third on the certificate plan. This has been granted for all roads east of the Mississippi river, and application is pending for the reduction west. Passage should be engaged in advance. Efforts are being made to extend the time limit, but so far without success.

"The History of Medicine, Etc.," by William Hamilton.

MILLEDGEVILLE, IND., March 11, 1897.

To the Editor:—Could you tell me where a copy of "The History of Medicine, Surgery and Anatomy from the Creation to the Commencement of the Nineteenth Century," by Wm. Hamilton, could be found? and oblige J. S. SHIELDS.

ANSWER.—This work was published in London, 1831, by H. Colburn and R. Bentley. You will doubtless have to procure it through your dealer at second hand.

PUBLIC HEALTH.

The Plague at Bombay.—The total number of cases up to March 11 is 9,032 and 7,546 deaths have resulted. In the whole presidency, to this date, there have been 14,856 cases of the plague reported, and 12,204 deaths have been recorded.

Sanitation at New York Harbor Against the Plague.—The act providing a special fund of \$5,000 for Health Officer Doty's use at the quarantine station in New York harbor, and to provide the means of preventing the introduction of the plague into that port, has received the governor's approval and is now a law.

Family Epidemic of Non-Genital Syphilis.—A young girl was infected genitally and soon had a "bad mouth," which was communicated to her four brothers and sisters, who were all affected in and around the mouth. A child taken in to nurse was also infected and transmitted the infection to its mother *per mamillam*, thus infecting a second family, and an older child visiting the first family also infected its parents on its return home. Gebert, who reports the circumstances, adds that there may have been still further infection that escaped his observation.—*Cbl. f. Chir.*, February 6, from *Berl. kl. Woch.*, No. 41.

Physical Examination of the Proposed Bride and Groom. An ardent sanitarian is a member of the Texas Legislature this year, and he has prepared a bill that he thinks will greatly benefit his fellow-citizens. The bill, if passed, will revolutionize the marriage license system of the State. The intending groom must previously undergo a thorough physical examination at the hands of a competent medical practitioner in good standing, and be possessed of said physician's sworn certificate of physical soundness. The prospective bride must also have undergone a similar ordeal and a like certificate in her behalf must be submitted. Not only this, but both parties "to the contract" must file sworn statements attesting the fact that neither of them are subject in a hereditary way to any disease that might in like manner transmit tendencies thereto in their probable offspring. The county clerk must then satisfy himself that these "credentials" are perfect before granting the license to marry. Should he give it without having these evidences of "fitness" presented to him, he would be held criminally liable.

Fish Diet and Leprosy.—In the November issue of the *Sei-i Kwai Medical Journal* is published a translation of an article on the inoculation of leprosy by Dr. Hansen of Bergen, which introduces a new feature into Mr. Hutchinson's theory of the close connection of fish diet with leprosy. The author says: "I do not think that there is any choice given to the bacteria of leprosy as to localization, just as there is none in the tubercle bacillus. They develop wherever chance has deposited them

and wherever they find favoring conditions and no obstacles, for example, on the outside of the arm where there is little muscular movement. On the exposed portions of the body, oxygen retains and feeds them. The inoculation by insects can only be successful in these places: in others, circumstances are too much against them. An internal inoculation is also easily imaginable and even probable. Salt fish is eaten all over the world; raw fish is eaten only in some countries, like Japan. Fish, especially the carp, which is so general an alimentation in Japan, where it is eaten raw and even alive, feed on the larvae of mosquitoes, and may be suspected of communicating the spores of disease extracted by the insects from the exposed parts of diseased bodies. If not, however, spores, then the toxins of the bacilli. In reflecting, then, upon these points, I should be disposed to conclude that external leprosy inoculation means tubercular leprosy, and internal inoculation anesthetic leprosy." These observations are of much interest, and to leprologists generally they will probably be quite new. So far as we know, they afford a reasonable explanation of the fish-diet theory as a cause of leprosy, of which Mr. Hutchinson has been the staunch but almost only consistent advocate.—*London Medical Press*.

Professor Koch's Work in South Africa.—Professor Koch's investigation of the cattle plague in South Africa forms the subject of a recent article in the *Norddeutsche Allgemeine Zeitung*. One of the first places which he visited after arriving in the colony was the leper asylum on Robben Island in Table Bay, and he is said to have expressed his satisfaction with the general arrangements of the establishment, as well as with the bacteriologic work accomplished in the laboratory. The party included representatives of the colonial government, the German consul-general and several medical men. On December 3 he left for Kimberley, where the principal part of the work of investigating the cattle plague will be undertaken. He was accompanied by his assistant, Dr. Kohlstock, and also by Dr. Turner, a medical officer of the colonial government. It was arranged that a laboratory should be fitted up at a farmhouse about two miles from the town and whilst the requisite alterations were being made, Professor Koch went to Taungs, a town in the Kafir country about two hundred miles from Kimberley, where more than twenty thousand head of cattle have died from the epidemic, so that there was abundant opportunity of observing the disease, of performing necropsies, and of collecting morbid specimens. On December 8 the party returned to Kimberley, where the laboratory was then in working order, and eight animals were inoculated with infective material brought from Taungs. The inoculations were made in the mouth and nose, every precaution being taken to ensure isolation and to guard against any accidental extension of the disease in the Kimberley district. One of the inoculated animals very soon died with symptoms of cattle plague, and the pathogenic material obtained from it was used for the inoculation of a fresh series. Professor Koch is much pleased with the arrangements which have been made by the colonial authorities for facilitating his researches, and finds that everything has been done to render his visit agreeable. The foregoing particulars have only appeared in an ordinary newspaper; a far more detailed and satisfactory account of the cattle plague inquiry will no doubt be communicated to the medical press on the return of Professor Koch and his assistants. The German government has requested him to visit Bombay for the purpose of investigating the bubonic plague.—*London Lancet*, February 13.

Chickenpox is not a Trivial Disease. There are text books on the diseases of children that teach an unfailingly favorable prognosis for varicella and an absence of all complications and sequels. In the last twenty years, however, a certain number of grave cases, even those terminating fatally, has been recorded,

sufficient to call in question the correctness of the above teaching. That chickenpox is the mildest of all infections is undoubtedly true, but experience teaches that it is not absolutely harmless and trivial. The fact that the disease is so generally mild is apt to foster an over-confidence in the result, and to lead to a less careful supervision of treatment than is demanded by every infection, no matter how trivial its manifestations. In 1884, Henoch published four cases of varicella complicated with nephritis, one of which terminated fatally, and since then similar cases have been reported by many observers, including Hoffmann, Augier, Newski, Rasch, Rachel, Vichmann, Schwab, Hagenbach, Demme, Unger and Högyes. Högyes and Hagenbach each report a fatal case. Pesa, in an outbreak of twenty-six cases of varicella, noted nephritis as a sequel in two of them. Cassel records six cases in an epidemic of twelve occurring in Berlin, in which nephritis developed during the stage of vesication. Three of these cases died, one directly from the nephritis and the other two of pneumonia. These reports emphasize the importance of repeated urinary examinations in all infections, even in varicella. Jonathan Hutchinson (*Medico-Chirurgical Transactions*, vol. xv, 1892) was the first to call attention to a complication of varicella characterized by the development of gangrene of the skin at the site of the vesicles. He termed the condition varicella gangrenosa, and since the appearance of his paper numerous European observers have reported similar cases. At least four of them have been reported in America, one each by Woodward, Büchler, Spivak and Griffith. Dr. Griffith's case was complicated also with diphtheria and rubella, and is reported in the *University Medical Magazine* for August, 1896. Paralysis is a rare sequel of varicella. Gay (*British Medical Journal*, March 31, 1894) reports a case of peripheral neuritis following varicella, and a case of paraplegia of spinal origin is reported by Marfan. Boucheron (*La Presse Médicale*, Feb. 17, 1894) first drew attention to varicellous affections of the larynx, bronchi and lungs. "Certain cases," he says, "show that not only stomatitis, but laryngitis, bronchitis and broncho-pneumonia and, perhaps, even pleurisy may be of a varicellous nature." He narrates the history of a little girl who was seized with varicella and died about the twentieth day in consequence of laryngeal spasm. At the necropsy nothing was found to explain the spasm except vesico pustules on the laryngeal mucous membrane similar to the cutaneous eruption. Marfan and Hallé (*Revue Mensuelle des Maladies de l'Enfance*, Tome xiv, No. 1) report two cases somewhat similar. The first recovered after tracheotomy had been performed, the second died on the eighth day of broncho-pneumonia. The autopsy in the latter case revealed on the right lower vocal cord an ulcer the size of a lentil. The authors remark that the laryngeal lesion of varicella usually appears early, either at the onset or very shortly afterward. This fact is an aid in differentiating from laryngitis due to secondary infection, although only a bacteriologic examination can justify the exclusion of a coexisting diphtheria. Otitis media, noma and orchitis have been reported as following chickenpox. In addition to local complications, varicella occurring as a primary affection may, by lowering the resisting powers of the subject, invite the development of other infections: thus measles, rubella, diphtheria, scarlet fever and whooping cough have each been found in connection with this disease. *University Medical Magazine*.

Extra Pay for Health Officer During Epidemic.—When an epidemic of smallpox broke out in the village of St. Johns, Mich., in October, 1894, the board of health, being the trustees of the village, increased the pay of the health officer, one of its members, \$10 a day over and above his annual salary of \$100. The village audited, and presented to the board of supervisors of the county, a bill of expenses incident to the smallpox, which included among its items \$690 for sixty-nine days' services

rendered by its health officer at the increased compensation, which the board refused to pay. This was followed by the village filing a petition for a mandamus to compel payment. Counsel for the board of supervisors contended that the board of health could not fix the compensation of one of its members, and thus bind the county for the payment of the amount so fixed. And the supreme court of Michigan says, *Village of St. Johns v. Board of Supervisors of Clinton County*, Feb. 8, 1897, that it should doubt the power of the board of health to fix conclusively the amount of the claim of its health officer, did it appear that he took part, as a member of the board, in fixing his own compensation, and the board of supervisors were contesting the claim upon the ground that the amount fixed was excessive. But here it was agreed that the charges were reasonable for the services performed, and that the persons who were sick with the smallpox, and all others liable for their support, were unable to pay the same, or any part thereof. And while the health officer was a member of the board of health, there was nothing in the record to show that he took any part in the proceedings to fix his compensation. Under such circumstances, the court does not agree in the contention stated, but holds that the village was entitled to recover the amount in question from the county, and affirms an order granting the writ of mandamus. Moreover, while the boards of health of townships, cities and villages are required to fix and pay the ordinary services of the health officer, yet it is apparent, the court holds, that it was the intention of the legislature of Michigan, by the various provisions of the statute, to cast the burden upon the county for extraordinary services rendered to prevent the spread of contagious diseases, and for the care of indigent persons afflicted with such disease.

Tuberculosis and Health Department Regulations at New York.—

According to the *Medical Review* for February, the proposal of the health authorities of New York City to require reports of all cases of pulmonary tuberculosis, has excited much interest and comment among physicians as well as patients. We can not withhold our sanction of any means that is practicable for limiting the spread of this disease, and yet can sympathize with the general feeling among medical practitioners that their position as medical adviser should be carefully guarded by the authorities, who, notwithstanding their supreme authority in sanitary matters, are still public servants, and as such subject to the behests of the popular will to some extent.

"We firmly believe that all communications relating to house disinfection, isolation of private patients, vaccination of other members of a family where smallpox has appeared, taking of cultures in suspected diphtheria and reporting on the same to the family, should be done only through the family physician, and never under any circumstances by an employe of the Board of Health. In other words, the Department should be the consultant in all cases, and never assume to be the attendant. In that manner, and in no other, can the confidence of the rank and file of the profession be preserved, without whose coöperation the most necessary rules and regulations of the health officials can never be properly enforced. In any contest between the Board and the people the latter are sure to win, and such conflict must be avoided by a careful consideration of all phases of the question under discussion."

The above is of interest, as it is an editorial of a journal, one of whose editors is also prominent in the councils of the State Board of Health, and indicates the limit and extent of the support that the City Board of New York may expect in its fervently criticised campaign against tuberculosis. The New York County Medical Society will at its March meeting discuss a report on the same subject, and having a very similar tenor; it is believed that that Society will adopt the sentiments of the following report of its Committee on Hygiene:

"Realizing the need of proper measures to prevent the spread of pulmonary tuberculosis, and regarding it as an essential preliminary that all physicians be impressed with the importance of making an early diagnosis of the same by microscopic examination of the sputum, we earnestly recommend

that physicians avail themselves of the offer of the bacteriologic department of the Board of Health to make such examinations. We approve of the compulsory reporting of cases of pulmonary tuberculosis, if the inspectors are forbidden to visit or to have any communication with the patients without the consent of the attending physician, believing that the attending physician is capable of giving all the necessary instructions."

The *British Medical Journal* urges that "for the present a campaign of education only is in keeping with the temper of the profession; a marked disinclination exists on the part of many medical men toward any interference on the part of the sanitary authorities with their treatment of tuberculous patients. It must be borne in mind that medical practitioners have it in their power to render inoperative any procedure which meets with their general disapproval."

A "White City" for our Consumptives.—Dr. A. Walton, in the *Boston Medical and Surgical Journal*, March 4, holds that it is the duty of every one of the United States to have its own retreat for consumptives at some point to be agreed upon in the far West. "That it would be a simple matter to entirely stamp out pulmonary tuberculosis by the removal of all such cases to a dry atmosphere in a high altitude, no one who has ever visited Colorado, New Mexico or California can have failed to observe. The wonderful curative influence that high altitude has upon persons suffering from pulmonary tuberculosis is known to every well-read physician throughout the land. I have time and time again conversed with men of wealth, prominent in the affairs of Colorado and New Mexico, who only a few years ago were taken into that country in a condition of extreme emaciation, almost ready to die, suffering from the last stages of pulmonary tuberculosis. Today these men have not only gained health, but are robust, of large stature, giants in strength and strong in intellect. I would suggest that there be established somewhere in the State of New Mexico or Colorado a national home for consumptives. I can picture to myself a beautiful city—something similar to the former 'White City' of Chicago—where each State will have its State home. The population of this city, based on the present annual death rate of persons suffering from pulmonary tuberculosis, would be between 300,000 and 500,000 people. From conversation with prominent men in Massachusetts, where consumption is rampant, I am led to believe that the State of Massachusetts would infinitely prefer to have a consumptive State home some place where there was a possibility that at some time there would be an end to the enormous expense incident to carrying on a consumptive home within its own borders, where they now have such an institution, which is merely the last resting place of the persons who are received there. People do not go there to be cured; they are supported by the State until such time as death ends their sufferings. If it can be shown that after a certain period of time the expense of maintaining a State home in a section of country where, and under such conditions, a large percentage of those sent to the home will be cured, would not that be a better plan to adopt than the plan of establishing large hospitals within the limits of the State, which would become, under conditions existing here, the merest makeshift and in no way curative? I firmly believe that our national representatives would be perfectly willing to take this matter in charge—to allot or assign a certain number of acres of public land immediately adjacent to the foothills, say at an elevation of about 4,000 feet, at a point to be selected by a commission to be appointed by Congress. We have plenty of public land available for the purpose not far from the great trunk lines and within sufficient proximity to the foot hills of the Rocky Mountains to make the matter of irrigation perfectly practicable and with the expenditure of but little money, as convict labor could be employed in bringing the water down from the mountains, which has been done with one of the irrigating systems now being operated in Colorado. If the full import of this matter were properly placed before our national legislators there can be no question but that a commission would be appointed for the purpose of looking into the question and investigating the proper site for the establishment of such a national home. I believe there will be no difficulty in having this matter taken up and properly carried through, for it must appear perfectly apparent to every right-thinking man that we owe it to ourselves and to our families that we should protect ourselves from the possibility of infection from one of the most fatal of all diseases."

The "Cow Penitentiaries" of Large Towns and Cities; the Stable and Kind of Winter Garment.—Dr. August Richter is, we believe, the originator of the expressions "cow penitentiaries" and "cow dungeons" as applied to those miserable milk-producing establishments that infest the environs of nearly all large towns. Dr. Richter dwells at Williamsport, Pa., where the cow is reckoned a noble animal, having the right to cleanly treatment just as horses and babies. It is, he believes, largely because the cow is evilly treated that she takes on consumption. Dr. Richter, in *Public Health*, says: "Come with me, my friends, to the stable, which is, properly speaking, a *garment* for our domestic animals and should not only be protective but sanitary also. But how do we find them? The majority are deficient in light, ventilation and general cleanliness, with low ceilings, ornamented with abundant cobwebs, dust and rubbish. The whole interior is dark like a dungeon. Broken windows, nailed up ventilators and all the pure air that possibly could enter enters when opening the stable door. The air within such a stable is foul and stalling. In one of these 'cow penitentiaries' were crowded together over ninety animals, most of them full-blooded Holstein, all hanging in stocks or in movable stanchions for month after month, without an hour's release, without a handful of bedding, fed on decomposing glucose, refuse full of maggots. Every year some of these noble creatures perished from consumption, yet the ignorance and cruelty of the proprietor made no change in the treatment of his suffering herd. It is the ignorance of men and insanitary keeping of the stock that brings about consumption in cows. It is fallacious reasoning of farmers to think they can farm and run a dairy also; unless they have proper help they certainly will fail, for no man can serve two masters at one and the same time. The modern doctor is not asked so much what will cure a disease, but what will prevent it—which is the great study of the sanitarian. It has been demonstrated that all contagious diseases are preventable diseases, and therefore chargeable with criminal offence, whether they kill the human or the bovine family. Ask any one of the dairy men the question: 'How many cubic feet of pure air are required per hour for each cow for healthy respiration?' Can they answer the question? Certainly not; yet a child requires 3,500 cubic feet per hour for the healthy performance of that function. Think and reflect ye dairymen what damage you inflict upon the poor animals in filth-reeking, damp, low-bank barn, without a thought further than how many can be placed in the barn. How much milk can we strip from them? Verily, it is a wonder that all the animals have not become tuberculous, for almost two-thirds of the year they are forced to breathe foul air either in the stable or the barnyard. When will man learn to consider life in its true light? When will his mercy provide for every creature under his care a sanitary home? The stable for dairy cows should be cleared twice a day, morning and evening, unless the animals are kept under the shed in the barnyard during the day, when the stable remains clean. After a thorough morning cleaning of the stable every door should be opened and kept so for general floor ventilation; let the stable master apply over every wet spot in the stands and rear of them either air-slacked lime or gypsum to exclude the air from acting on the moist surfaces, for dryness prevents chemic action and the stable air will remain pure through one of the above applications. The stable work being done and every stand supplied with bedding, then let the currycomb and brush be thoroughly applied to every cow until their bodies are thoroughly clean. Cleanliness is as essential to the health of cows as it is to horses or human beings." Would that our female reformers and our anti-cruelty people might find an outlet for their energies in the protection of that noble and innocent female, the cow, which often treated more harshly than any human criminal, might be taken as the emblem of patience. The cow is unwittingly, therefore unwillingly, the dispenser of tuberculous milk to the human infant, innocent also; and this is a second call to duty to our would-be reformers to adjourn the question affecting the guinea-pig of the laboratory and men who expectorate, for that of those precious animals—the cow and the baby. But no, it may not be expected: they have laid out their course and will prefer to fritter away their time and strength on antivivisection bills and the like. Let us imagine for a moment that all the women of the land having taste and ability for public affairs should spend a part of their spare time in the inspection of cow stables, what good might not be done; how much of advantage to their own health and that of the human beings near to them, whose claims to their humane attention are not always scaled up to their deserts. The abolition of the "cow penitentiary" will possibly have to be effected without their aid and comfort.

ASSOCIATION NEWS.

Section on State Medicine.—Members of the Association desiring to read papers before this Section will please send in their names and titles of papers to Dr. Elmer Lee, Chairman, 103 State Street, Chicago, or to Dr. Louis Faugères Bishop, Secretary, 30 W. 36th Street, New York. The Section officers will be pleased to receive a few more papers before the completion of a very scientific and instructive program.

Section on Ophthalmology.—The following papers will be presented to this Section at the next meeting of the AMERICAN MEDICAL ASSOCIATION.

1. Address of Chairman, G. E. de Schweinitz, Philadelphia, Pa.
2. The Roentgen Rays in Ophthalmic Surgery, Howard F. Hansell, Philadelphia, Pa.
3. The Localization of Foreign Bodies within the Eye by Means of Roentgen's X-Rays. An Experimental Research. William Sweet, Philadelphia, Pa.
4. The Electro-magnet of Haab in the Removal of Pieces of Steel from the Interior of the Eye. J. E. Weeks, New York, N. Y.
5. Shot-grain Wounds of the Eye. Lewis H. Taylor, Wilkes-Barre, Pa.
6. Gun-shot Wounds of the Eye. Charles Stedman Bull, New York, N. Y.
7. Effect of Explosives on Eyes. John Chase, Denver, Colo.
8. In What Cases and When to Enucleate in Injuries of the Eye. John M. Foster, Denver, Colo.
9. When Evisceration is Preferable to Enucleation. J. C. Dunlavy, Sioux City, Iowa.
10. Implantation of a Glass Ball for the Support of an Artificial Eye and Mule's Operation for the Substitution of Enucleation of an Eyeball. L. Webster Fox, Philadelphia, Pa.
11. Experiments on Rabbits' Eyes to Obtain an Elastic, Unbreakable Vitreous Body after Evisceration of the Eyeball. Albert Pick, Hyannis, Mass.

Five ten-minute papers, the subjects suggested by the Executive Committee, and bearing the following titles:

12. Bacteriology of the Conjunctiva and the Best Methods of Preparing this Membrane Preparatory to Operations Requiring Corneal Section. Robert Randolph, Baltimore, Md.
13. Best Methods of Sterilizing Ophthalmic Instruments and Solutions of Myotics and Mydriatics. E. A. de Schweinitz, Bio-Chemie Laboratory, Department of Agriculture, U.S.
14. The After-treatment of Cataract Cases, with special Reference to the Use of Germicides. J. A. White, Richmond, Va.
15. Best Methods of Preparing Dressings for Cataract Cases and their Character and Composition. Casey A. Wood, Chicago, Ill.
16. Concerning Astigmatism following Corneal Section. Edward Jackson, Philadelphia, Pa.
17. Statistics of Cataract Operations, with Comments. Herman Knapp, New York, N. Y.
18. Cataract Complicated with Chronic Conjunctivitis. W. T. Montgomery, Chicago, Ill.
19. Treatment of Glaucoma with Special Reference to Iridectomy and Constitutional Measures. Dudley S. Reynolds, Louisville, Ky.
20. Massage of the Eyeball as a Therapeutic Measure in Glaucoma. George M. Gould, Philadelphia, Pa.
21. Secondary Glaucoma. S. D. Risley, Philadelphia, Pa.
22. Affections of the Eye Resulting from Profuse Hemorrhage. Harry Friedenwald, Baltimore, Md.
23. Angio-Myxoma of the Orbit, with Report of a Case. S. C. Ayres, Cincinnati, Ohio.
24. Some Cases of Orbital Disease. B. Alex. Randall, Philadelphia, Pa.
25. Abscess of the Orbit. J. F. Fulton, St. Paul, Minn.
26. Cavernous Tumor of the Lid with Extensive Conjunctival Involvement. G. Oram Ring, Philadelphia, Pa.
27. Melano sarcoma of the Conjunctiva, with the Report of a Case. A. R. Baker, Cleveland, Ohio.
28. Primary Sarcoma of the Iris. A Statistical Study, with the Report of a New Case. C. A. Veasey, Philadelphia, Pa.
29. Certain Anomalous Conditions of the Iris. W. Campbell Posey, Philadelphia, Pa.
30. Questions about Corneal Suppuration. H. B. Young, Burlington, Iowa.

31. The Use of Cauteries in Ulcers of the Cornea. B. L. Millikin, Cleveland, Ohio.

Five five-minute papers, the subjects suggested by the Executive Committee, and bearing the following titles:

32. The Surgical Treatment of Trachoma, with Special Reference to Expression and Grattage. John E. Weeks, New York, N. Y.
33. A Comparison of the Value of the Local Medicinal Measures in Treatment of Trachoma. H. V. Würdemann, Milwaukee, Wis.
34. The Present Status of Jequirity in the Treatment of Trachoma. W. Cheatham, Louisville, Ky.
35. The Treatment of the Complications of Trachoma, with Special Reference to Malposition of the Lid Borders. F. C. Hotz, Chicago, Ill.
36. The Hygiene of Trachoma and the Relation of Altitude and Climate to Its Development. Swan M. Burnett, Washington, D. C.
37. Ten Years with the Surgical Treatment of Trachoma. Harold Gifford, Omaha, Neb.
38. Observations on Trachoma. J. Elliott Colburn, Chicago, Ill.
39. Relative Frequency of Trachoma in Southern California. H. Bert Ellis, Los Angeles, Cal.
40. Hyperplastic Sub-conjunctivitis. H. McI. Morton, Minneapolis, Minn.
41. Credé's Method in Public Institutions. Lucien Howe, Buffalo, N. Y.
42. Value of Colored Test Glasses for the Detection of Anomalies of the Ocular Muscles. F. B. Eaton, San José, Cal.
43. A Combined Phorometer and Duction Indicator. A. E. Prince, Springfield, Ill.
44. Practical Points in Muscular Insufficiencies. Clark V. Hawley, Chicago, Ill.
45. Clinical Study of Hyperphoria, with Cases. John T. Carpenter, Jr., Philadelphia, Pa.
46. Amblyopia of Strabismus. C. M. Hobby, Iowa City, Iowa.
47. Amblyopia Exanopsia. A. C. Simonton, San José, Cal.
48. Amblyopia Exanopsia. Leartus Connor, Detroit, Mich.
49. Report of the Examination of the School Children's Eyes in the City of Minneapolis. Frank Allport, Minneapolis, Minn.
50. Asthenopia from Vicious Working Point. C. H. Thomas, Philadelphia, Pa.
51. Apparent distortion of Objects after Correction of Astigmatism. A. A. Hubbell, Buffalo, N. Y.
52. Lenticular Astigmatism. G. E. Dean, Scranton, Pa.
53. Studies in the Comparative Anatomy and Etiology of the Eye. Flavel B. Tiffany, Kansas City, Mo.
54. Horizontality of Vision in Relation to Certain Cranial Characteristics. George T. Stevens, New York, N. Y.
55. Observations with the Binocular Lens for the Examination of the Eye by Oblique Illumination. Edward Jackson, Philadelphia, Pa.
56. Congenital Opacities of the Cornea. Wendell Reber, Philadelphia, Pa.
57. Embolism of the Central Artery of the Retina. C. F. Clark, Columbus, Ohio.
58. Anomalies of the Retinal Pigment Epithelium and their Clinical Significance. Henry Gradle, Chicago, Ill.
59. Method of Employing Kangaroo Tendon in the Operation of Tendon Advancement, with Cases. John O. McReynolds, Dallas, Texas.
60. A Report of Thirty Cases of Cataract Extraction. Louis F. Love, Philadelphia, Pa.
61. An Improved Skiascope. J. Ellis Jennings, St. Louis, Mo.
62. Exhibition of a New Ophthalmoscope. John W. Crosby, Philadelphia, Pa.
63. Exhibition of Other New Instruments.

SOCIETY NEWS.

German Surgical Association.—The next congress of this Association will meet at Berlin, April 21 to 24. The addresses will be on Surgical Treatment of Gastric Ulcers, Use of the Roentgen Ray in Surgery and Operative Treatment of Hypertrophied Prostate.

American Medical Publishers.—The fourth annual meeting of the American Medical Publishers' Association will be held in Philadelphia, May 31, 1897 (the day preceding the meeting of

the AMERICAN MEDICAL ASSOCIATION). Members desiring to present papers will kindly send the titles of the same as early as possible to CHAS. WOOD FASSETT, Secretary, St. Joseph, Mo.

Medical Society of the State of West Virginia.—This Society will hold its thirtieth annual meeting at Charleston, W. Va., on Wednesday, Thursday and Friday, May 19, 20 and 21, 1897. All members are requested to prepare a paper and to send its title to the Secretary not later than April 24, so that the program can be completed in time. We should have a large meeting at the Capital City this year, as the Committee on Arrangements is doing everything in its power to make it pleasant for all. The usual reduced hotel and railroad rates will be granted. Program and further details will be sent two weeks before the meeting.

Missouri State Medical Association.—Present prospects are that the meeting of the Missouri State Medical Association, May 18, 19 and 20, is going to prove very satisfactory. The committees have all gotten to work early, which is a good indication. The Committee on Scientific Communications is already in receipt of titles in numbers and character sufficient to insure the program scientifically attractive. The Executive Committee are enabled to announce the following program, the details of which only remain to be completed. The Association will meet in St. Louis May 18, 19 and 20. All the first, the second and the third day until noon will be devoted to the scientific program. On the evening of the first day the Association will as a body attend a session of the Illinois Society in East St. Louis. On the evening of the second day the Illinois Society will attend as a body a session of the Missouri Association, after which there will be a banquet and reception. On the third day both bodies will adjourn and join a steamboat excursion on the river.

National Confederation of State Medical Examining and Licensing Boards.—The seventh annual meeting of this Confederation will be held in the small banquet hall of the Hotel Walton, at Philadelphia, Monday, May 31, 1897, at 10 o'clock A.M. The following program has been arranged: 1. Address of welcome by A. H. Hulshizer of Pennsylvania State Board of Medical Examiners. 2. Response by vice-president Reed. 3. Report of the committee on minimum standard of requirements. 4. Discussion and action thereon. 5. Report of the secretary and treasurer. 6. Annual address of the president. 7. Some practical experience with, and results of, the medical law of Pennsylvania. Wm. S. Foster, Pittsburg. 8. The need for exact information as to the equipment, methods and requirements of our medical schools. J. N. McCormack, Bowling Green, Ky. 9. Address by Prof. J. W. Holland, M.D., Dean Jefferson Medical College, Philadelphia. 10. Miscellaneous business. 11. Election of officers. 12. Adjournment.

The object of the confederation is to consider questions pertaining to State control in medicine and to compare methods in vogue in the several States; the collection and dissemination of information relating to medical education, and to consider propositions that have for their purpose advancement of the standards in the United States. A cordial invitation is extended to all members and ex-members of State medical examining boards, and to physicians, sanitarians and educators who are friendly to the objects named, to attend the meeting and participate in its proceedings.

Officers for 1897: President, Wm. W. Potter, New York; vice-presidents, Chas. A. L. Reed, Ohio; J. N. McCormack, Kentucky; secretary and treasurer, A. Walter Suiter, Herkimer, N. Y.; executive council, Jos. M. Mathews, Louisville; Wm. S. Foster, Pittsburg; Hugh M. Taylor, Richmond; Jas. M. Hays, Greensboro, N. C.

By order of the executive council.

WILLIAM WARREN POTTER, Pres.
A. WALTER SUITER, Sec'y.

Twelfth International Medical Congress, Moscow, Russia, Aug. 19-26, 1897. J. Klein, president; W. H. Roth, sec.-general.

American National Committee: J. S. Billings, M.D., New York; Frank P. Foster, M.D., New York; Claudius H. Martin, M.D., Mobile; S. Weir Mitchell, M.D., Philadelphia; Charles A. L. Reed, M.D., Cincinnati; George B. Shattuck, M.D., Boston; F. J. Shepherd, M.D., Montreal; George F. Shrady, M.D., New York; W. S. Thayer, M.D., Baltimore. A. Jacobi, M.D., 110 W. 34th St., New York, Chairman.

In a letter dated Moscow, February 14, the Secretary General, Prof. W. K. Roth, communicates the following facts for the information of the American physicians who intend to participate in the Twelfth International Congress which is to be held at Moscow from August 19 to 26. The transatlantic steamship companies refuse one and all any reduction of the usual charges. In their replies, most of which are couched in courteous language (the original are in the possession of the undersigned), they admit the existence of a trust, or contract or agreement, which prevents them from lowering their prices; a few are so polite as to express their regrets. Reductions of fares on Russian railroads are expected shortly. The French, Spanish, Swedish and Hungarian railroads promise a reduction of 50 per cent.; so do the Italian for a distance of 500 kilometers, less (down to 30 per cent.) for shorter distances. The Mediterranean lines (Messagerie Maritimes, General Italian Navigation Company, Austrian Lloyd) grant from 25 to 50 per cent. The undersigned chairman is not authorized to issue certificates of any kind in favor of congressists. He will try to ascertain, however, in which way their movements may be facilitated, and may receive a reply in the second half of April. Extracts of papers to be read before any of the sections ought to reach the Secretary General before June 1 in order to be printed in the preliminary volume. A special prospectus containing the final details referring to traveling, lodging, festivities, etc., is promised for a near future. It will be communicated at once to the medical journals, and to the press of the country.

A. JACOBI, M.D.

New York, March 10, 1897.

REPORT OF THE PRELIMINARY WORK ACCOMPLISHED BY THE SECTION ON SURGERY.

[Translated for the JOURNAL.]

In response to the invitation addressed to them by the Presidents of the Surgical Section the committee announce that the following persons have consented to deliver the addresses introducing the subjects on the program (see the JOURNAL, January 23):

Dr. E. Braatz, Königsberg, "Therapeutics of infected wounds." The subject, "Methods of treating malignant tumors without operating," especially the results of serum therapeutics, will be discussed without an introductory address. Prof. E. Bergmann, Berlin, "Cerebral surgery in cases of tumor cerebri and Jacksonian epilepsy." Prof. T. Tullier, Paris, "Surgery of the lungs, especially with regard to the formation of tuberculous cavities and pulmonary gangrene." Prof. Czerny, Heidelberg, "Therapeutics of cancerous strictures of the esophagus, pylorus and rectum. Success of the different methods." Prof. L. Ollier, Lyons, "Gonorrheal and syphilitic affections of the articulations." Prof. Dollinger, Buda Pesth, "Principles of the construction of bandages and protheses in tuberculous affections of the bones and articulations." (The subject as announced by the committee is: "Principles of the construction of protheses of the lower extremities in affections of the articulations, paralyzes, congenital luxation of the femur and after amputations.")

The following persons have expressed their desire to address the Congress on these subjects or join in the discussion: Dr. Credé, Dresden, "My silver treatment of wounds;" Dr. Kousnetzov, Charkov, "Methods of treating infected wounds;" Dr. M. Preobragensky, St. Petersburg, "Treatment of infected

wounds, based on experimental data"; the same surgeon "Conditions of infection of wounds and means to prevent them, with the present operative processes current in the clinics of Europe."

The communication on the third subject on the program will be presented at the meeting held in common by the surgical section and the section of nervous diseases. The first address will be made by Prof. Bergmann, as stated above. The second address will be by Prof. Oppenheim, Berlin, on behalf of the nervous disease section. Subject, "Failures in cerebral surgery occasioned by incorrect diagnoses." Co-rapporteurs, Dr. Adenot, Lyons, "Tumor of the cerebral convolutions, Jacksonian epilepsy, trephining, marked improvement"; Dr. J. Lucas-Championnière, Paris, "Treatment of Jacksonian epilepsy by trephining"; Prof. Sachs, New York, "Surgical treatment of epilepsy"; Prof. Tauber, Warsaw, "Cerebral surgery in cases of tumors and Jacksonian epilepsy"; Prof. Socin, Basel, will also join in the discussion of this subject. Dr. M. Fabrikant, Charkov, "Surgery of the lungs, principally from the standpoint of the formation of tuberculous caverns and of gangrene of the lungs." Prof. A. Ceccherelli, Parma, "Strictures of the esophagus, pylorus and rectum"; Prof. J. v. Iterson, Leiden, "Treatment of cancerous strictures of the esophagus, pylorus and rectum. Results of the different methods of treatment." Dr. G. Jastrebov, Charkov, "Syphilitic affections of the articulations." Prof. Lorenz, Vienna, "Non-bloody reposition of congenital luxation of the thigh, with practical demonstration of the process on an older child"; Fr. Robin, Lyons, "Correction of club feet, particularly in the adult"; the same surgeon, "Correction of Anchylosis of the thigh."

Others have signified their desire to present communications on subjects not included in the regular program. These communications will be heard after the discussion of the questions on the program, if time will permit. The names inscribed up to the present are the following: Dr. J. Lucas-Championnière, Paris, "Treatment of fractures with naturally mobile fragments, without complete immobilization and with immediate massage"; Prof. Zabludowsky, Berlin, "Remarks on massage-therapeutics in surgery, based on observations in the Berlin University Clinic"; Prof. A. Tauber, Warsaw, "Surgical treatment of cerebral hernias and spina bifida, with results"; Dr. Ferd. Schultze, Duisburg, "Treatment of lupus of the face with radical extirpation and transplantation of a flap (Thiersch)"; Prof. Dollinger, Budapest, "Further experience in subcutaneous extirpation of tuberculous lymphatic glands in the neck and submaxillary region"; Prof. Senn, Chicago, "On the uses of the omentum in surgery"; Prof. Roux, Lausanne, "On perityphlitis"; Prof. Djemil-Bey, Constantinople, "On the radical cure of hernia"; Prof. J. Lucas-Championnière, Paris, "Conditions for permanence of the results in the radical cure of hernia"; Prof. E. Bassini, Padua, "The results of my method of treating hernia and my experience"; Prof. O. Bloch, Copenhagen, "Resection of the renal substance for diagnostic purposes"; Dr. H. Milton, Cairo, "Demonstration of a large collection of vesicle stones and a communication concerning them"; Prof. Bottini, Pavia, "Treatment of ischuria, consecutive to hypertrophied prostate. Demonstration of a new accumulator and instruments for galvano-caustics"; Prof. Djemil-Bey, Constantinople, "Supra-condyle osteotomy." Others who have promised to participate in the work on the Surgical Section are as follows: Prof. Albert, Vienna; Prof. J. Ashhurst, Philadelphia; Prof. Duplay, Paris; Prof. Gussenbauer, Vienna; Prof. Lannelongue, Paris; Prof. LeDentu, Paris; Prof. Lennander, Upsala; Prof. Macewen, Glasgow; Prof. H. Morris, London; Prof. Ogston, Aberdeen; Prof. Péan, Paris; Prof. Rose, Berlin; Prof. Rydygier, Cracow; Prof. M. Schede, Bonn; Prof. Scriba, Tokio; Prof. Tillaux, Paris; Prof. Trendelenburg,

Leipsig; Prof. Watson, Boston; Prof. Watson Cheyne, London. According to the regulations adopted by the Committee of Arrangements, the communications introducing the subjects for discussion on the program, will be published in full and distributed to the members of the Congress, if received prior to May 1. After that date, to June 1, only abstracts of them can be published.

Acting upon the suggestion of Dr. E. Braatz, Königsberg, the Section of Surgery has decided to collect international statistics in regard to narcoses during 1896, and announce the results at the Congress. For this purpose every physician is requested to reply to the following questions: 1, number of narcoses made during 1896; 2, anesthetic agent with which the narcosis was produced; 3, number of deaths in consequence of the narcosis. Notices of this request have been inserted in the medical journals. Physicians will please forward their communications in response to these questions to the Secretary of the Section, Dr. F. Rein, not later than June 1, 1897.

Presidents of the Section of Surgery: Prof. A. Bohrov, Moscow, Powarskaja, "Maison Postelniko"; Prof. L. Levchine, Moscow, Wolhonka, "Maison Mihalkov"; Prof. Th. Sinitzine, Moscow, Wolhonka, "Maison Wojeikov."

Secretaries of the Section: Dr. F. Rein, Moscow, Malaja Dmitrovka, "Maison Schechkov"; Dr. S. Dérjuginsky, Moscow, Kalachskaja, Count Galitzin Hospital.

NECROLOGY.

FREDERICK W. BARTLETT, M.D., New York Medical College, 1854, an original Fellow of the New York State Medical Association, died at his home in Buffalo, N. Y.

CLARK WRIGHT, M.D., College of Physicians and Surgeons, New York, 1885, only son of the late Dr. Clark Wright, died in New York City, March 16. He was an active worker in the Vanderbilt Clinic and a Fellow of the New York County Medical Association.

SUMNER APPLETON MASON, M.D., University of Pennsylvania, 1868, died suddenly of an apoplectic attack at his residence in New York City, March 12, aged 58 years.

WILLIAM C. ROLLER, M.D., Jefferson Medical College, 1861, died suddenly at Hollidaysburg, Pa., March 11, aged 59 years. He was an ex-president of the Blair County Medical Society and at the time of his death was president of the local school board.

CHARLES PHYTHIAN, M.D., of Newport, Ky., died March 14, from tetanus, which developed from an attack of tonsillitis together with an alveolar abscess. Dr. Pythian was born in Newport in 1861 and graduated from the Medical College of Ohio in 1883, at which time he located in Newport and had enjoyed a large and lucrative practice ever since. The deceased leaves a widow, one child, and one brother, Dr. John Pythian, who is located in Newport.

MISCELLANY.

A Correction.—In a recent review of a book of Dr. R. Osgood Mason of New York on "Telepathy and the Subliminal Self," the name of the publisher through a typographical error was printed as Henry Holden Co., instead of Henry Holt & Co.

A New Medical Journal.—We have received a prospectus of a new medical journal from Biloxi, Miss., under the title of the *Medical Record of Mississippi*. The first number will be issued April 1. Dr. H. H. Haralson, the well-known quarantine officer, will be the editor.

Discretion Allowed as to Experiments.—Some discretion, the supreme court of Nebraska holds, in *City of Ord v. Nash*, Jan. 19, 1897, is conferred upon the trial court in receiving evidence

of experiments for the purpose of contradicting or corroborating other witnesses; and, in order to authorize the reversal of a judgment on account of the admission or rejection of such evidence, there must have been a clear abuse of discretion.

Should Appear that Expert Heard Testimony.—Where the opinion of an expert is asked upon facts not detailed in the question itself, but the witness is referred to the testimony of another for such facts, the supreme court of California holds, *Howland v. Oakland Consolidated St. Ry. Co.*, Dec. 31, 1896, that it should appear that the witness had heard the testimony.

Admissible Expert Testimony.—Evidence of opinion in respect to the probable duration of physical suffering or disability, given by medical experts, the supreme court of New Jersey holds, Nov. 9, 1896, in *Consolidated Traction Co. v. Lambertson*, is admissible, although based in part upon statements made by the suffering or disabled person relating to his past or present symptoms. And when there is physical injury, the court holds that damages resulting from the incidental fright may be recovered.

A Prolific Family.—An authentic case is described in *Memorabilien* for February, of a woman of 40 who had borne children eleven times; three times twins, six times triplets and twice quadruplets, and was again pregnant at the time of writing. It is not a recent case, but dates from 1808, although never recorded before in medical literature. The mother herself was one of a set of quadruplets and her husband had been a twin. Only three of her thirty-two children were still-born.

Right of Blind Person to Travel Alone.—A question on which there seems to be a scarcity of decisions is whether a person otherwise qualified may be rejected as a passenger for the sole reason that he is blind. It was litigated in the case of *Zackery v. Mobile and O. R. Co.*, where the supreme court of Mississippi decided, Feb. 1, 1897, in the blind man's favor, the one in question being admittedly not infirm, but robust, able to take care of himself, and to comply with the rules applying to passengers generally.

The Family Physician.—Bourneville renews an old suggestion that the family physician should have a "family note book" in which he records the medical history of the families in his charge. When it is impossible for him to respond at once to an urgent summons he should have a trusted assistant or have made arrangements with a second physician, who should have access to the books, under the seal of professional secrecy, and attend to the call until his superior is at liberty. In this way the family would not be kept waiting; much more intelligent attendance would be secured than from an outsider, hastily summoned, while the case would remain afterward in his hands.

The Statue of Pasteur.—The *British Medical Journal* announces that subscriptions in France and other countries for a statue of Pasteur now amount to more than \$50,000. Paul Dubois has been selected as the sculptor, and the site for the statue will probably be the space between the Rue de Médecins and the Luxembourg Gardens. More than \$100,000 has already been spent in the erection of statues of Pasteur in various parts of France. As an instance of the high regard in which he is held outside of that country, it may be mentioned that the municipality of the City of Mexico has given the name of Pasteur to the gardens situated in front of the National School of Medicine in that city. The Rush Monument Committee would be much pleased to record a similar showing in this country for the Rush monument. Those wishing to contribute will please send their contribution to the committee treasurer, Dr. Geo. H. Rohé, Sykesville, Md.

An Antiseptic Diet in Apples. A practitioner, in *Life and Health*, writes that the *fons et origo* of unsightly complexions is bad digestion, and we generally trace that to a bad liver.

One of the best remedies for a sluggish liver is cheap and pleasant. Dieting is the secret of the cure. The best liver regulator for persons of sedentary habits, and those are the ones whose complexions are muddy, is to be found in apples, eaten baked if they are not well digested when eaten raw. "I attended the pupils at a well-known boarding school, and among them was a country girl whose complexion was the envy of all her associates. I found that she was a very light eater at her meals, but she had a peculiar custom of taking a plate of apples to her room at night and eating them slowly as she studied her lessons. This was her regular practice. Some of the other girls in the institution took it up and I know, as a result of my personal investigation, that the apple-eating girls had the best complexions of any in the school."

Muetter Lectureship of the College of Physicians of Philadelphia.

The next course of ten lectures instituted by the late Prof. Thomas Dent Muetter, M.D., LL.D., on some "Point or Points in Surgical Pathology" will be delivered in the winter of 1899-1900 before the College of Physicians of Philadelphia. The compensation is \$600. The appointment is open to the profession at large. Applications stating in full subjects of proposed lectures must be made before October 1, 1897 to Committee on Muetter Museum. John H. Brinton, M.D., Chairman, N.E. Cor. 13th and Locust Street, Philadelphia, Pa.

Privileges allowed Sick Jurors.—Where one of the jurors was taken ill while the trial of a murder case was in progress, so as to necessitate the services of a physician, and on several occasions he was removed for a short space of time from the presence of the other jurors, the supreme court of Missouri holds, *State v. Schmidt*, Feb. 2, 1897, that this furnished no ground for a reversal of judgment, inasmuch as the juror was always in the charge of a deputy sheriff, who testified that on no occasion did he or any one else converse with the juror about the case.

The Roentgen Ray.—Dr. E. Bock suggests in *Memorabilien* for February that if letters are painted on a sheet of cardboard, afterward varnished and dusted with powdered metal, or the letters are made as gold leaf is applied, the Roentgen ray will throw their shadow through the opaque cornea of the blind, and if the optic nerve is still sound, the blind person will see the shadowgraph thrown on the retina. He urges experts to experiment in this line with persons who have lost their sight from opacity of the cornea, etc., and quotes Professor Eder of Vienna, as authority for its feasibility.

Radiographic Delineation of the Arteries.—Dr. Nathan Raw communicated to the Manchester Pathological Society a method he had adopted of skiagraphing the arteries. He said that when trying to examine a fracture which was enveloped in a thin plaster-of-paris bandage he found it quite opaque to the X rays. The idea then occurred to him that the vessels (arteries) might be reproduced in the skiagraph by injecting them with a somewhat similar substance. Accordingly when the next opportunity occurred he injected (postmortem) a solution of calcium sulphate and carmin into the femoral artery and then took skiagraphs of different parts of the body. He illustrated his remarks by exhibiting several pictures showing the arteries perfectly even to the most minute anastomoses. In fact, so opaque was the substance that the arteries actually showed through the bones. Dr. Raw also showed a large bromid print, 21 x 18 inches, of a child showing all the arteries injected.

New York Infirmary for Women and Children.—A gift of \$30,000 was received recently by the treasurer of the New York Infirmary for Women and Children, with the understanding that the name of the donor should be known only to the managers of the institution. The money was to form a part of the \$250,000 endowment fund that is being raised for the infirmary. It has lately transpired that the money was given by Mrs.

James Walker, who has hitherto shown her interest and more than once has befriended the infirm when the expenditures were exceeding the income. This is the second large gift the hospital has received within two weeks. The legacy of Miss Julia Cooper of \$25,000.

Vital Statistics of New York State in 1896. The *Bulletin* of the State Board of Health of New York for December, contains a supplemental report showing that the total number of deaths in 1896 amounted to 120,683, or 1,000 less than in preceding year. Delayed returns from certain districts, which should be taken into the account, estimated at 3,309 deaths, will raise the actual mortality to about 124,000, which makes the death rate for the year 19.00 per 1,000 population: that of 1895 was also 19.00; of 1894, 18.75; of 1893, 19.30; of 1892, 20.78; of 1891, 21.43; and of 1890, 19.65. There was an average daily mortality of 340 against 336 in 1895; 324 in 1894, and 340 in 1893. In the Maritime district there was the highest death rate: 21.50 against 21.20 in 1895; in the Hudson Valley district, 19.00 against 18.70 in 1895; in the other sanitary districts from 13.00 to 16.35, or much the same as in 1895. The largest death rate was in July, 23.35 and the smallest in November, 14.75, as reported in the *Bulletin*; the summer death rate was 21.35; the winter, 19.00; the spring, 17.88; the autumn 15.75. The infant mortality was the same as the average of years past, 34.5 per cent. of the deaths having occurred under the age of 5 years. In the summer months 41.1 per cent.; in the spring and fall, 30.5, and in the winter, 29.6 per cent. of the deaths occurred in early life. The zymotic mortality constituted 16.0 per cent. of the total deaths of the year, and caused 3 deaths per 1,000 population for the year. The percentages during several years past have been about 18.0 of the total deaths. Grippe was epidemic early in the year, and caused about 3,000 deaths. Typhoid fever caused 24.4 deaths per 100,000 of the population, the highest mortality being in the Hudson Valley and Southern Tier districts, 37.5, and in the Maritime district the lowest, 16.6 per 100,000 population. Diphtheria caused 71 deaths per 100,000 population, as compared with 78 in 1895, its highest mortality being in the Maritime district, and lowest in the West Central. Scarlet fever caused the smallest mortality in ten years; measles the highest, having been excessive for two years. Diarrheal diseases caused nearly the average of the past ten years, about 9,000 deaths. Consumption caused the usual yearly mortality of a little over 13,000 deaths, and a little more than 10 per cent. of the total.

Closing Exercises of the Army Medical School.—The third session of the Army Medical School, Washington, D. C., which began Nov. 4, 1896, ended March 12, 1897. The closing exercises were held in the hall of the Library of the Surgeon-General's office. Among the audience were many officers of the army with the ladies of their families, a number of naval medical officers and many of the members of the medical society of the District of Columbia. The president of the Faculty, Colonel Charles H. Alden in his opening remarks expressed his satisfaction at seeing so many of the friends of the school present on the occasion. He considered it needless to make any statement of the purposes of the school as this was now the fourth year of its existence. Its graduates and other medical officers who have received instruction in its laboratories are now scattered among the military posts in all parts of the United States so that its influence has become widely extended. The benefits accruing to the army from the instruction given in this school are appreciated not only by the medical corps but by all army officers. Any interruption to its work would, he considered, be felt as a distinct and serious loss to the service. During the past session the instruction has been conducted on the lines laid down in the orders organizing the school in 1893. The morning hours from 9 to 12 daily have been passed in the Path-

ological Laboratory, and the afternoon from 1 to 3 in the Chemical Laboratory. From 3 to 4 p.m., each day there has been a lecture on one of the following subjects by the professors of the respective branches. Duties of medical officers, military surgery, military medicine and military hygiene, there being a weekly lecture on each subject. Lectures have also been given on Military Law by Lieut.-Colonel Davis, Deputy Judge Advocate General; on Mental Diseases at the Government Hospital for the Insane; on the Army Medical Library, by Dr. Robert Fletcher, F.R.C.S., and on Parasites in Man, by Professor Stiles of the Department of Agriculture. Practical instruction in Operative Surgery has been given by the Professor of Military Surgery. On Saturday morning practical exercises in Hospital Corps Drill and First Aid have been conducted by the instructor in that branch at Washington Barracks, and in riding by Lieut. Herbert White, 6th Cavalry, at Fort Myer, Virginia. The class which was appointed last fall and which has now completed the full course of instruction is the largest that has been through the Army Medical School. Four other medical officers availed themselves of the laboratory instruction or of such parts of it as was practicable for them to take. Colonel Alden then expressed the gratification of the Faculty at the attention to duty, diligence and interest in the work displayed by the class. He held that the success of an advanced course of instruction does not depend on the teacher alone. The zeal of the student is an important factor. He was pleased to say that the class was not lacking in this regard. Its members went out from the school with the best wishes of the Faculty for their future health, happiness and success, and with the fullest confidence that they would acquit themselves honorably and be a credit to the profession, the corps and the school. Surgeon-General Sternberg then delivered the certificates to the student officers with some well chosen remarks. The names of the officers in order of merit were as follows: Lieutenants F. M. Kemp, C. R. Darnall, W. E. Richards, B. H. Dutcher, L. A. Fuller, G. A. Skinner, M. M. Cloud and L. P. Smith. The Surgeon-General suggested to them that as many advantages had been given to them during their course of study much would be expected from them hereafter. He urged them to continue their laboratory work as practical men, pointing out that the practical men of today are those who make use of the microscope and culture media and not those who claim the title merely to cover up their ignorance of recent advances in medical science and practice.

Dr. Samuel C. Busey, president of the District of Columbia Medical Society, followed with an address to the graduates. Dr. Busey recognized the selection of a physician from civil life to deliver the address on this occasion as giving expression to that comity and fraternal friendship which should exist in the profession. He congratulated student officers on the high standard of qualification they had attained, but reminded them that the chapeau, shoulder straps and sword which signalized their position in the medical corps of the army constituted no part of the equipment of the conscientious physician. He congratulated them that limited specialism has not invaded the medical corps although so common among young graduates in civil life. To this corps he looked with confidence to arrest the progress of decadence of general medicine which at present threatens its subdivision into as many limited and minor specialisms as can find adventurers with brains enough to capture the credulous sick. To enable the young officers to appreciate their high position he called attention to the fact that the laws enacted in forty-eight States and Territories to regulate the practice of medicine and prescribe standards of education which must be attained by every practitioner exempt the members of the medical corps of the government services from their requirements, thus acknowledging that the officers of these services have reached a standard coequal with the highest demands of the most advanced development. The medical staff

of the army offered many lines of special work and study with opportunities for original research and investigation afforded by changes of station and of duties which do not come to the plodding wage-earners among the ranks of the civil practitioners. Among the unsolved problems for study he mentioned specially those relating to the influence of climate, temperature and altitude and to topographic, meteorologic, electric and barometric conditions, to the products and geologic formations of soils and to the interchangeable and intercurrent conditions of such natural phenomena upon life, health and disease in military as well as in civil life. In this connection he made a lengthy reference to the meteorologic work done by army medical officers; to Beaumont's investigations on gastric digestion; to Howard's occlusive dressing in gunshot wounds of the lungs; to Otis' announcement of the practicability of enterorrhaphy in wounds of the intestines; to Letterman's organization for field ambulance service and to Sternberg's discovery of the micrococcus of pneumonia. Several fruitless fields of research were suggested. Pathogenic germs vary in virulence according to variations in many external influences which remain to be determined. The cause of the exacerbation of pain in maimed limbs and rheumatic joints coincident with the passage of storms is another subject of inquiry. So far we know nothing of the relation of argon to vitality. The life history of the plasmodium malariae outside of the body is also unknown, as is the causation of mountain fever. Dr. Busey then referred to the Library and Museum of the Surgeon-General's office as signaling and emphasizing the eminent distinction which the army medical corps has attained in military as in general medicine. He closed his address by urging harmonious coöperation in all the relations of professional life between army medical officers and their civilian brethren as coequals in all that pertains to the esprit de corps which should unite us in the common fellowship of a profession animated by noble aspirations to alleviate suffering, prolong and save life and broaden the scope of our usefulness for the good of mankind.

An inspection of the laboratories of the school closed the exercises and the session; but many of the audience had an opportunity of meeting Dr. Busey and thanking him for his scholarly address in the evening at a reception in the hospitable home of the president of the Faculty.

New York.

THE STATUS OF PHYSICIANS IN THE GREATER NEW YORK CHARTER.—At a recent meeting of the New York Academy of Medicine the following resolutions were adopted:

Resolved, That in the composition of the Board of Health by Greater New York there should be three commissioners appointed by the mayor, two of whom shall be practicing physicians of not less than ten years' standing at the date of their respective appointments.

Resolved, That the third commissioner should be a reputed citizen of Greater New York and thoroughly qualified by education and experience for the duties of his office.

Resolved, That the health officer of the port should be ex-officio member of the board.

Resolved, That the president of the board of police should be ex-officio member of the board.

Resolved, That one of these health commissioners should be designated as president of the board by the mayor in making the appointment.

Resolved, That in the opinion of this committee, it would be advisable to abolish the office of coroner and adopt a system in harmony with that now in vogue in Massachusetts, modified to suit exigencies that exist in Greater New York.

At another meeting in the future further consideration will be given to the matter, more especially to the power of the public functionary generally known as coroner. The duties of the office in question seem to be well enough defined, but the rather primitive politics of the East seem to tend toward putting the wrong men in the wrong places.

THE NEW BUILDING and improved hospital wards of the Home for Aged and Infirm Hebrews, West One Hundred and Sixth Street, was opened for inspection on Sunday, March 21. The home has about two hundred inmates, and as they come to end their days there, the place in its character must of necessity partake of both a hospital and a home.

THE VIABILITY OF THE BUBONIC BACILLUS.—Dr. E. H. Wilson, Chief of the Bureau of Bacteriology in the Health Department of Brooklyn, N. Y., after referring to the experiments of

Kitasato and Yarsin, relates that he obtained his bubonic cultures from Xarian of China through Dr. W. F. Arnold, U.S.N. His subjects were guinea pigs, mice and rabbits. The thermal death point according to his claim, which seems to be satisfactorily maintained by abundant experimentation, was to be fixed at 60 degrees C. (or 140 F.). The materials of different absorbent properties which Dr. Wilson used were cover glasses, pieces of filter paper and small bits of wool blanket. The investigations have been most complete and tend to fortify the conclusions: 1. The thermal death point of this organism is one or two points higher than that of the majority of pathogenic bacteria of the non-pyogenic variety. 2. Differing widely from cholera, sunlight and desiccation can not be relied upon to limit the viability of this bacillus under commercial circumstances. 3. Rags, mails, ballast and general merchandise coming from infected ports should be subjected at either the port of departure or the port of entry to a thorough system of disinfection. Experiments in regard to the effects of chemic disinfectants have been made in the laboratory only with carbolic acid. It has been found that an exposure for two hours to a 1 per cent. solution of carbolic acid sufficed to destroy the life of the bacillus. This observation has subsequently been confirmed by Kinyoun.

Cincinnati.

THE ANNUAL REPORT of the Ohio State Board of Medical Registration and Examination has just been submitted to Governor Bushnell and it shows that 6,701 certificates were granted to physicians on the basis of graduation, and 119 applications rejected; 665 certificates were issued to practitioners of ten or more years and 174 of this class rejected. The total receipts were \$38,468.06, of which \$16,202.92 was expended. After July, 1899, no diplomas will be recognized if issued by colleges requiring less than four years' study and four courses of lectures of at least twenty-six weeks each. The medical colleges of this city which were declared not to be in good standing were the Hygeia Medical College, American Eclectic College, Physio-eclectic College, Curtis Physio-medical College, Medical University of Ohio and the American Health College. The Board recognized 144 colleges in the United States and Canada as in good standing. In Cincinnati and immediate vicinity 756 physicians were registered.

THE UPPER MAUMEE VALLEY MEDICAL ASSOCIATION held its regular semi-annual meeting at Fort Wayne, Ind., March 9. The following are the officers: President, Dr. G. W. McCaskey, Fort Wayne, Ind.; vice-presidents, Drs. C. S. Williams of Columbia City, Ind., and C. B. Reid of Van Wert, Ohio; Secretary, Dr. Kent K. Wheelock of Fort Wayne, Ind.; treasurer, Dr. H. A. Duemling, Fort Wayne, Ind.

A COMPLIMENTARY DINNER is to be given to Dr. P. S. Conner on the evening of March 26 to commemorate the closing of his fiftieth consecutive session of medical teaching. Dr. Robert Carothers of Newport has charge of the arrangements.

DR. FRANCIS DOWLING of this city is preparing for publication a monograph on "The Great Ophthalmic Surgeons of the First Half of the Nineteenth Century." The work will be composed of a series of eight essays, which were prepared by the Doctor about two years ago.

THE OHIO STATE BOARD OF HEALTH has started a systematic and searching investigation as to the value of antitoxin in the treatment of diphtheria. A request has been sent to all physicians throughout the State to furnish the Board with the number of cases of diphtheria seen by them during the year together with the number treated with the antitoxin and the results.

AT THE MEETING of the ACADEMY OF MEDICINE March 15, Dr. J. M. Withrow reported the results in thirty-five cases of abdominal sections and Dr. Charles A. L. Reed read a paper on the "Sequelæ of Cholelithiasis." The question was considered in respect of the influence of gallstones in the causation of both local and systemic conditions. Under the former head were considered cancer of the liver and gall tract, sclerosis of the ducts, perforation of the bile passages, multiple abscess of the liver and other conditions; under the latter were considered cholemia, anemia, septicemia, etc. The article will be published in full in the JOURNAL.

Washington.

DONATION TO THE EMERGENCY HOSPITAL. Mrs. Senator Harsh has donated an X ray outfit to the Emergency Hospital. It is one of the latest models.

THE GROSS ITEM DISALLOWED IN THE APPROPRIATION BILL.—The appropriation of \$500 toward the expenses of unveiling the bronze statue to the memory of the late Samuel D. Gross, in the Smithsonian grounds, was lost by being stricken from the appropriations bill in conference.

NATIONAL MEAT INSPECTION.—The first official order issued by Secretary Wilson, of the Department of Agriculture, concerns the exportation of beef to foreign countries and provides: "That from and after March 15, 1897, all beef offered for transportation to European ports, whether fresh, salted, canned, corned or packed, being the meat of cattle killed after the passage of the act under which this order is made, shall be accompanied by a certificate, issued by an inspector of this department, showing that the cattle from which it was produced were free from disease, and that the meat is sound and wholesome, and in order that it may be determined whether all beef exported to European ports has been so inspected and found to be wholesome, it is further ordered, that the meat of all other species of animals exported to such ports, which for any reason does not bear the inspection stamps of this department, shall be packed in barrels, cases or other packages, which are legibly marked in such manner as to clearly indicate the species of animal from which the meat was produced. Meat which is not so marked, and which is not accompanied by a certificate of inspection, will be classed as uninspected beef, and will not be allowed exportation to European ports." No clearance is to be given to any vessel having on board such meats until the provisions of the order are complied with. Until otherwise ordered, certificates will not be required with beef exported to other than European countries.

PRESIDENT MCKINLEY AT THE EMERGENCY HOSPITAL.—President McKinley called at the Central Dispensary and Emergency Hospital on the 9th instant, to see a personal friend who had been brought there with a fracture of the leg. He was very much pleased with the institution and its usefulness.

SENATOR GALLINGER CRITICISES THE ACTION OF THE CONFERENCE COMMITTEE.—When the Conference Committee made its report to the Senate on the appropriation bills for the District of Columbia, expunging certain amendments which should have been retained, Senator Gallinger said: "Before the question is taken on concurring in the report, I desire simply to emphasize an observation I made the other day concerning the burial ground at the Washington Asylum, the so-called potter's field. I notice that the Senate conferees receded from the amendment which I had inserted in the bill providing for a crematorium. I am not going to argue the question this morning, but I wish to repeat that there is here in the District of Columbia, in the capital of this great nation, a condition of things existing such as I apprehend can not be found in any other great city perhaps in the civilized world, and some remedy ought to be provided at the earliest possible moment, so that this reproach will not be laid at our doors. I regret that the conferees on the part of the Senate surrendered the amendment, especially so without providing at least for the purchase of additional ground for the burial of the indigent and pauper poor in the District of Columbia. There is one other matter concerning which I simply want to make a single observation, and that is the provision I had inserted that any legally licensed physician may attend private patients when they occupy pay rooms in any of the public hospitals in the District of Columbia. I think that this must be the only city in the United States in which public hospitals exist, getting contributions from the public fund, where pay patients are refused the privilege of having their own physicians. I believe there is only one hospital in the District where that condition of things exists. The medical profession have insisted, and very properly have insisted, that these restrictions should be removed and that physicians should be allowed the same privileges here in that respect that they are allowed in the other great cities of the country. I simply desire to say that I regret the conferees on the part of the Senate have felt constrained to surrender that amendment, because it is a very proper one and one that ought to have been kept in the bill; but I take it that the Senate conferees had to surrender something; that this is a compromise measure, and they are very earnestly desirous of reaching a conclusion and

agreement. So I find no fault concerning their action, except to say that I feel sure such a provision will in the near future be incorporated in the District of Columbia appropriation bill and that this restriction, which ought not to exist, will be removed." Senator Gallinger is always deeply interested in all medical matters of the District, and has been a true friend to the local profession in the matter of the important medical legislation which has passed Congress during the recent session and become laws.

APPENDICITIS.—The note on differentiation of appendicitis in our last number, page 555, should have been credited to the *Medical Record* of Nov. 21, 1896. The Italian notice did not mention its American origin and the original escaped our attention.

THE PUBLIC SERVICES.

Army Changes. Official List of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from March 13 to 19, 1897.

First Lieutenants, Champe C. McCulloch, Jr., Frederick P. Reynolds and Madison M. Brewer, Asst. Surgeons, are ordered to report in person to the president of the examining board appointed to meet at Ft. Leavenworth, Kan., for examination for promotion.

Brigadier-General George M. Sternberg, Surgeon-General, and Lieut.-Col. David L. Huntington, Deputy Surgeon-General, are detailed to represent the Medical Department of the Army at the Twelfth International Medical Congress, to be held in Moscow, Russia, August 19 to 26, 1897.

Major Curtis E. Munn, Surgeon (Benicia Bks., Cal.), is granted leave of absence for one month.

Capt. Paul Clendenin, Asst. Surgeon, is transferred from Ft. Warren, Mass., to Key West Bks., Fla., to relieve Capt. Jefferson R. Kean, Asst. Surgeon, who is transferred to Ft. Warren, Mass.

Capt. George McCreery, Asst. Surgeon, ordered to Ft. Warren, Mass., for temporary duty in addition to his present duties.

A board of officers to consist of: Major Henry McElderry, Surgeon; Major John M. Banister, Surgeon; Capt. William F. Lippitt, Jr., Asst. Surgeon, is appointed to meet at Ft. Leavenworth, Kan., on Tuesday, April 13, 1897, at 10 o'clock A.M., for the examination of such officers of the Medical Department as may be ordered before it, to determine their fitness for promotion.

Navy Changes. Changes in the Medical Corps of the U. S. Navy for the week ending March 13, 1897.

Surgeon T. C. Craig, detached from the marine rendezvous, New York, and ordered before retiring board March 16, then home and await orders.

Asst. Surgeon R. G. Brodrick, detached from the "Constellation" March 16 and ordered to the New York navy yard March 17.

James C. Pryor, commissioned as Asst. Surgeon from February 27.

Surgeon H. E. Ames, detached from the "Detroit" and ordered to the "Cincinnati."

Surgeon D. H. Bertolette, detached from the "Minneapolis," ordered home and granted three months' leave.

Surgeon N. H. Drake, detached from the "Cincinnati" and ordered to the "Minneapolis."

Asst. Surgeon G. C. Hubbard, detached from the "Cincinnati" and ordered to the "San Francisco."

Change of Address.

Bullington, Travis A., from Balter and Park Av. to 304 West Chestnut St., Louisville, Ky.

Fueller, Wm., from 4704 State St. to 4701 Calumet Av., Chicago.

Morgan, E. A., from Morow to 402 new Powers Building, Decatur, Ill.

LETTERS RECEIVED.

Alvis, R. H., Ardmore, Ind. Ter.

Barry, T. T., Pope, Tenn.; Beatty, U. K., Pine Ridge Agency, S. D.; Baruch, Simon, New York, N. Y.; Brinkerhoff, W. C., Chicago; Benedict, A. L., Buffalo, N. Y.

Crippaige, G. O., Moberly, Mo.; Carpenter, J. G., Stanford, Ky.; Cullen, G. L., Cincinnati, Ohio.

Dewey, C. O., Polo, Mo.; Daniel, J. B., Atlanta, Ga.; Driver, W. E., Norfolk, Va.; De Schweinitz, G. E., Philadelphia, Pa.; Davis, N. S., Jr., Chicago.

Frazier, Mattie, St. Louis, Mo.; Fassett, C. W., St. Louis, Mo.; Foster, G. W., Georgetown, Texas; Fleming, C. K., Denver, Colo.

Gotham Co., The, New York, N. Y.; Grisham, J. W., Blackland, Miss.; Green, Geo. W., Battle Creek, Mich.; Gladson, M. M., Hord, Ill.; Gilcreast, J. E., Gainesville, Texas.

Henderso, Geo. S. (2), Holcomb, Ill.; Hare, H. A., Philadelphia, Pa.; Judd, W. H., Janesville, Wis.; Johnson, H. L. E. (2), Washington, D. C.

Keen, W. W., Philadelphia, Pa.

Marshall, John, Philadelphia, Pa.; Montgomery, E. E., Philadelphia, Pa.; Morgan, E. A. (2), Decatur, Ill.; Madden, John (2), Milwaukee, Wis.

Mulvane, G. J., Topeka, Kan.; Malster, R. M., Omaha, Neb.; Mulbury, F. S., Brooklyn, N. Y.; Melsaacs, Isabel, Chicago; McCandless, John C., Chicago.

Nordhoff, Josef, Sofia A., Washington, D. C.; Norwich Pharmacal Co., Norwich, N. Y.

Pearse, H. E., Kansas City, Mo.; Priestley, J. T., Des Moines, Iowa; Pacific Electric Co., La Crosse, Wis.; Pressey, A. J., Grand Rapids, Mich.

Parker, W. T., Groveland, Mass.

Reed, C. A. L., Cincinnati, Ohio; Robbins, Charles Fern, Winona, Minn.; Rotter, Chas. F., St. Louis, Mo.

Stueber, F. G. Lima, Ohio; Stoner, Geo. W., Stapleton, N. Y.; Stearns, Frederick & Co., Detroit, Mich.; Smart, Chas. (2), Washington, D. C.

Vraus, Leon, St. Louis, Mo.

Van Note, W. B., Lima, Ohio.

Wilson, A. C., Youngstown, Ohio; Wyckoff, R. M., Brooklyn, N. Y.; Wingate, U. O. B. (2), Milwaukee, Wis.; Wilbur, C. T., Kalamazoo, Mich.

Warner, W. R. & Co., Philadelphia, Pa.; Williams, R., Desoto, Ill.; White Rock Mineral Spring Co., Chicago; White, W. R., Providence, R. I.

Zook, E. W., Dunlap, Ill.

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No. 14.

ADDRESS.

MEDICAL AND SURGICAL EXPERT TESTIMONY.

President's Address delivered at the Third Annual Meeting of the
American Academy of Railway Surgeons, held at Chicago,
Sept. 23, 24, and 25, 1896.

BY JOHN E. OWENS, M.D.

CHIEF SURGEON OF THE CHICAGO AND NORTHWESTERN, AND ILLINOIS
CENTRAL RAILWAYS, CHICAGO, ILL.

Medical and surgical expert testimony is frequently so unsatisfactory and useless to the attorney, who seeks for truth; to the judge, whose desire is the administration of justice; so subversive of the dignity and good name of the medical profession, and yet so helpful to the unscrupulous lawyer, who duly thrives and fattens at the expense of his client, that the subject must surely be worthy of your earnest consideration. As the matter now stands, it is too often a farce, and some of our ablest and most conscientious attorneys, being strongly impressed with its inutility in many cases, and disgusted with the senseless wrangle which instructs neither judge, the bar or the jury, are much inclined to get along without it. Does it not bring discredit to the medical profession that experts and medical attendants, on the side of the plaintiff, testify along certain lines, and that those on the side of the defendant so often give testimony diametrically opposite in character? Let me remind you that there is no justification whatever for this state of things in our text books, which set forth in unmistakable terms the symptoms, pathology, prognosis and treatment of the various injuries and diseases of the human being.

A physician who has gained more or less knowledge of an injured person is summoned to testify as to the facts in a case as an ordinary witness. Before his services as such are dispensed with, he is almost always put in the position of a medical or surgical expert, and his opinion is asked on certain points in the case, in this capacity. Particularly if he is a man of limited experience, or of no experience in the matters in question, he is flattered because appealed to before the court, jury and others, to give "his" opinion as an expert. It is seldom that such a witness loses sight of himself and endeavors to base his answers on those principles which guide all of us at the bedside. Usually the less experienced, the more emphatic and positive is the expression of "his" opinion. This pride of opinion often leads him to set the teachings of the books at defiance.

Questions which seek to draw out the individual opinion, are as a rule, in bad form, and particularly so if the witness lacks that experience which enables him to make a proper application of the principles and practice of medicine and surgery—experience which leads the way to correct conclusions.

A brakeman either fell or jumped from the top of a

moving freight train. The palpable injuries consisted of contusions and abrasions of the nose, left shoulder, wrist, thigh and right side of the chest. The patient ran a mile, chased a steer that escaped from one of the cars, and was on his feet for six hours. He reported at the surgeon's office the following day. Recovery from the injuries above named were speedy, but he continued to complain of illy defined pains in the right side of his chest extending to the epigastrium. A physician testified that the patient undoubtedly suffered from chronic and permanent inflammation of his solar plexus: that he could not be fooled as to the existence of pain; that the solar plexus "is something you can't be fooled on;" that the patient would keep the inflammation of the solar plexus the balance of his life. He further testified that he thought he had seen another case of inflammation of the solar plexus, but did not want to swear to it; that he never saw a case of this nature described in the most comprehensive work. And yet, on this notoriously inadequate data, derived from a patient who furnished essentially subjective evidence, a most emphatic and positive diagnosis was made, and the prognosis was formulated with equal emphasis.

Dec. 31, 1891, an engineer weighing 212 pounds, jumped from his engine to avoid a collision. He came under care immediately, and in five days went home. His injuries consisted of severe contusions of left hip and arm and of scalp wounds, the latter of which healed by first intention in a few days. Suit having been entered, in about three years the case came to trial. The evidence presented by the plaintiff's physician went to show that a marked varicosity of the veins of the left leg was produced by this accident, and that this condition was fully developed in two weeks. The physician who testified had been engaged in practice for twenty-six years. The varicosity was marked and well developed below the knee, and several veins in the same condition reached the saphenous opening. The history of the case, while the patient was under my care, did not record injuries to the leg below the knee, nor was there any complaint that directed our attention to the veins. My fault here was in failing to examine all parts whether complained of or not.

One must feel certain, however, that were this development of veins possible in fourteen days, complaints would have been inevitable. My testimony was to the effect that the development of varicose veins above noted was not only not possible in two weeks, but was not even so at the end of four months. There is nothing in the pathology of this condition, with its dilatations, sacculations, and ruined valves that could justify such a conclusion. He prescribed for the patient three months. The doctor further testified that this patient having previously received "an injury," followed by a difficulty in passing water, containing sediment and possessing a strong odor,

and having obstinate constipation, probably suffered from concussion of the spine, and that if numbness of the leg existed concussion of the spine was certain; that said concussion was progressive and permanent. What would be thought of this emphatic diagnosis of concussion of the spine, should an effort be made to maintain it, on such data, before one of our medical societies? Moreover, this patient had been hunting, and had been running his engine for three years and upward. The examination of this witness continuing, he stated that he would advise a patient suffering from an injury to the spinal cord, or a concussion, to work as a locomotive engineer; and that it would not be very injurious, but that he did not know of a man suffering from such an injury of the spinal cord who was able to work on his engine, almost constantly, except this plaintiff. The treatment would seem to parallel the diagnosis. When this gentleman was asked if he found any of the authorities consulted by him, citing a case where varicose veins appeared in three or four weeks after a jar, answered that the authorities were very reticent on that point. So much for individual opinion. The thread of error, which ran through this case from the first, naturally lead the attorneys to submit this question to a professor of surgery: "Assuming that on December 31, the left leg was as healthy as the right, and that at that time he jumped from an engine, running at a high rate of speed, and received severe bruises extending down his left side, from the hip to the foot, and in front of the leg on the joint, and that, between two and four weeks, varicose veins began to show themselves, and have been gradually growing worse, what would you say was the cause?" Answer: The injury. There was no distinction made here, you will observe between bruises and ecchymosis. How to dispose of "assumptions" in medico-legal practice is perhaps not for us to determine. Certainly nothing is assumed in pathology, but assumptions are notoriously common in the court room. Many, if not all of us, must be firmly convinced that there is no claim, however absurd, no assemblage of symptoms however unique and unmeaning, and widely at variance with principles and practice as set forth in our text books, and taught in our best colleges, but that doctors can be found who are not only willing, but who do actually, by testimony, endeavor to establish. As the matter now stands, it is extremely easy to secure such favorable witnesses by the use of the attorney's drag-net. The most absurd claim in this way may be established in the courts. Let me cite another case which has not yet come to trial, but one which the medical attendant believes in and is ready to support, namely, the claim of a woman, the mother of nine children, who suffered a falling of the womb, fully one-half of the organ being external to the vulvæ, and accompanied by a cystocele, and said to have been caused by a collision, in which the patient was thrown against the front seat, and then backward against the seat upon which she had been sitting. It is maintained that this condition, in the degree above named, required only two weeks for its development. Many of you have doubtless observed that the evidence presented by the defendants, in cases of personal injury, is in no material degree essential, as evidenced by the attitude of the jury in their verdict. Judge William H. Francis in the following words reminds us of this state of things (*Medico-Legal Journal*, March, 1896): "In the verdicts of juries against corporations, a feel-

ing of prejudice is almost universally acknowledged, and the attorney for the plaintiff feels reasonably certain of gaining the case provided it goes to the jury." "The expert testimony of the experienced railway surgeon is often regarded as of less weight than the testimony of the plaintiff himself." We all know how unique are the symptoms and the details of complaints made by the patient of his sufferings and feelings in cases of personal injury, and often, how much these vary from anything found in the literature of our profession. I have more than once closely watched juries in personal injury cases and have noted the interest taken in plaintiff's testimony, and the toleration, rather than interest, that was manifested toward the witnesses of the defendant. It would seem to me that such juries, perhaps unwittingly, owing to the deep-rooted prejudices against railways, have two objects in view, namely, first to hear the plaintiff describe his or her sufferings, and the supporting testimony of medical and surgical experts. Second, to determine as speedily as possible the amount that should be paid. The evidence, to show the fraudulent nature of the claim and the exaggeration of the symptoms is but little considered. Besides, one may imagine the tumult in the mind of the honest jurors when the doctors on one side make certain statements, and those on the other offer testimony of a diametrically opposite character. How can we expect the most intelligent juror to harmonize these conflicting statements and arrive at a just conclusion, to say nothing of a juror who may be less intellectually favored? What is the natural result? Rather than to take the chance of doing an injustice to a presumably injured person, the verdict is rendered in his favor, often for a large amount. The experienced honest medical and surgical expert, in many instances, with a full knowledge and appreciation of all the facts, concludes that the verdict was rendered solely for the purpose of punishing the corporation. I have been interested in trials where witnesses were so questioned as to bring out very little information for the use of either side, and the court itself was but little if any benefited by the medical witnesses. The unbiased truth would be best for all sides, but there is no certainty whatever of securing it under the methods now in vogue in this and in other States.

The science and administration of justice in cases of personal injury, require the consensus of opinion of the medical profession as set forth in our text books, and not so much the private or individual opinion of the witness. These text books should be used more frequently in the courts, not as is usual for the purpose of entrapping the witness, but as an aid to the witness and to the court, just as legal authorities are employed. Opinions that materially vary from them should not be accepted.

In 1889 a girl 14 years old, the victim of a crossing accident, suffered a fracture of the collar bone as well as two or three scalp wounds. The patient was conscious, but in a highly nervous state. Several months after the accident a piece of loose bone was removed from the clavicle. About this time twitchings of the hands, arms and left side were observed. The day following the operation the patient had a series of convulsions. These convulsions were seen daily the following week, and continued a month. There were jerkings of the limbs, rigidity and alternate relaxation followed by a similar seizure, after which she got up, declaimed, sang songs, whistled, and then from exhaus-

tion fell over in a state of quietude. Her physician had known her to hiccough for three hours. The abdomen became tympanitic in a marked manner. Any excitement easily caused a renewal of the attacks. She had smaller seizures, such as stiffening of arms and legs. Hystero-epilepsy was diagnosed. In addition to the symptoms just noted, there existed left hemianesthesia, impairment of color sense, contraction of the field of vision of the left eye, loss of the sense of smell, and those of taste and hearing on the left side. There was no perceptible difficulty in walking, but she could not use the left hand as in washing cups, etc., longer than ten or fifteen minutes without dropping something. There was no biting of tongue or frothing of the mouth; no coma. A needle thrust into the left side, arm or leg was unfelt. The sizzling of the galvano-cautery could be heard and the vapor therefrom seen, but the result was absolutely negative. She could taste sugar with the left half of the tongue, but not with the right. The tick of a watch could only be heard when placed against the left ear: grasp of left hand was normal. She seemed to delight in trying to mislead, and her mind was in a fickle and uncertain state. She had never menstruated. This condition lasted until the time of the trial, during which she was seized with a violent convulsion in court, and was carried out screaming. The physician in attendance testified that the symptoms would be permanent. Others testified that were the patient removed from the family, freed from morbid curiosity of which she was the object, and of the unnatural solicitude that was lavished upon her, with a very little medicine, in six months, she would probably recover. A gynecologist testified that if she remained well for two years, marriage would be safe. In this case, so very interesting in many respects, we find one opinion as to the permanency of the affection, and others promising recovery with proper treatment. We think that the consensus of opinion of the profession is in accord with the latter prognosis.

Judge Abram H. Daily remarks that "surgeons of humanity and love of fairness are advancing in importance to the railroads," and I may add, likewise to the injured. The only prejudice that exists against railway surgeons is to be found amongst quack lawyers. Not long since my assistant and myself, several days after an accident, visited a patient at the request of a company, for the purpose of taking charge. We were met at the head of the stairs by a stalwart fellow who stood guard and informed us that he had instructions from the attorney not to allow any railway surgeons to enter. In this way, the case could be nursed along, and the demands on the railway company could become more extravagant. Note an additional extract from Judge Daily's paper: "The attorney who is guilty of making use of false evidence in a court of justice should not only be debarred from further practice, but subject to a criminal procedure." As railroad surgeons, our responsibility to the injured is in no sense diminished by the fact that we are employed and remunerated by railroad companies. Our first aim must be the faithful discharge of our professional duty to the patient.

I have never been called upon by the railways with which I am connected to perform the services of a claim agent in any sense, and I have moreover never encouraged this on the part of any of our surgeons. All that I have insisted on is a faithful discharge of professional duty to the patient, and a fair and honest

report of injury and disability, if any. Any activity in the direction of a settlement of claims has been the subject of grave and adverse criticism by the court, and the surgeon is thus brought into disrepute, and the profession proportionately degraded. "In venturing an opinion as to the nature and extent of the injuries of the patient under our charge, we will be held to the exercise of a high degree of skilled knowledge as well as integrity by the courts."

It is most remarkable that all of the States of the Union have not passed a law permitting, where desirable, a physical examination of parties who lay claim to injuries and seek compensation for the same. The position so often taken by the attorneys for the plaintiff, even after their client has been subjected to the study of one or more of their own doctors, is that it is disagreeable, indelicate and against the wishes of their client, and if a woman, that modesty forbids further examination, and that they themselves object to it. May we not with propriety ask who gave the plaintiff's medical witnesses and examiners a monopoly of delicacy, morality and of that gentleness and propriety that must characterize every physician in his relation to his patient, or to the patients of others? It must be quite right that both attorneys and patients, or either, should have the privilege of objecting to certain examiners, but it is not just or conducive to the administration of justice that a physical examination be denied the attorney for the defense when desirable. The new law passed in New York compelling plaintiff to submit to a physical examination in damage cases, settles the question of giving that right to plaintiff exclusively. The plea that it would outrage delicacy or modesty is not a valid objection.

In regard to the law permitting examinations, other States should follow, and there is no State in the Union where this law is so much needed as in Illinois, where quack lawyers are so numerous and so ravenous; and where, so far as I am aware, there is no restraint whatever put on them by the bar association, and little or none by the courts. The Fellows of this Academy should use their influence in this direction.

The courts desire an accurate ascertainment of facts. In personal injury cases, the erroneous conclusions and wrong theories set up by certain doctors and fanned into a flame by attorneys, seriously clog the wheels of justice. The plainest and best sustained opinions of the honest medical and surgical expert are too often misinterpreted by the attorneys as evidenced by their cross-examination. No science is so frequently called upon by the courts for evidence, and the physician should be one of the most satisfactory witnesses, but such is notoriously not the case. It might be expected that he would see nothing but the truth and established facts in connection with the matter subjected to him, but the hopeless conflict of medical testimony tells a different story and nullifies that which, under other methods, would be a desideratum. Among the causes for the present condition of the matter now under consideration may be mentioned the present method of securing expert medical and surgical experts; ignorance, dishonesty, partisanship, pride of opinion, want of preparation and the skill displayed by certain attorneys in bringing about a conflict of medical testimony in

¹ Duty and responsibility of the Attending Physician in cases of railway surgery from a Lawyer's stand-point by Judge Abram H. Daily, (Medico-Legal Journal, March, 1896).

order to weaken the evidence that may be unfavorable to the two sides respectively; a failure to appreciate the fact that *no one* is competent to testify as an expert in *all* departments of medicine and surgery. The witness employed as an expert should have the proper qualifications. Clark Bell says, "An expert is one who has made the subject on which he gives his opinion a matter of particular study, practice or observation, and he must have a particular special knowledge upon the subject concerning which he testifies."² Suggestions have been made for remedying this evil as for instance the following:

"A court should be authorized by law, or by agreement of parties, to appoint a commission of one or more disinterested and unbiased physicians to investigate the medical questions in concert, and make a report or testify as to the findings." "Every facility for investigation should be afforded by the parties." "If the parties should not agree, the court should seek to appoint only those of the highest reputation in the vicinity." "The position would be an honorable one, and the conclusions would be honest."

It has also been proposed, that, by an act of legislature, the judges of the various courts be permitted, yearly, to elect a Board of Experts in each department of the medical sciences, paying the same out of city or State funds, so that when expert testimony, relative to any subject is required, that particular board of experts should by order of the court convene to discuss the same from a scientific stand-point, and investigate by chemic and physical analysis. Either side might retain scientists to conduct examinations, but the testimony of such scientists should be confined to the board of experts, and after such testimony is submitted and the board of experts has finished its investigation, the report handed to the court by such board should be considered expert testimony. Finally whether this would be best or not, I am not prepared to say at this time, but certainly some laws should be enacted through the operation of which the dignity of a scientific profession will be upheld, and medical and surgical expert testimony be entitled to the respect of the judiciary and the honorable members of the bar.

ORIGINAL ARTICLES.

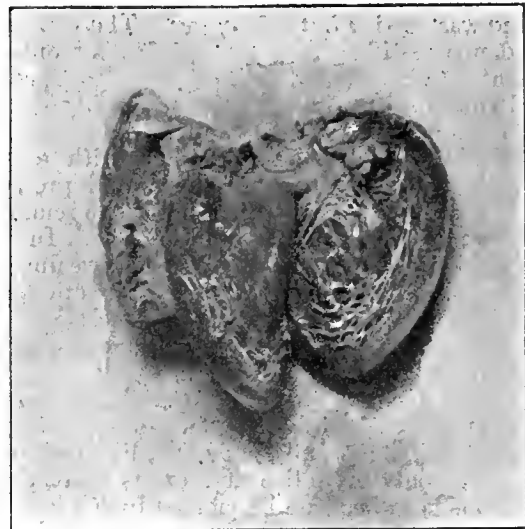
A CASE OF ACUTE VEGETATIVE ENDOCARDITIS WITH ABSENCE OF HEART MURMUR—NECROPSY.

BY JAMES W. WALKER, M.D.
ILLINOIS EASTERN HOSPITAL FOR INSANE,
KANKAKEE, ILL.

The interest attached to the following case lies in its rarity as a clinical observation, the value in the frequent and carefully recorded examinations throughout the greater portion of the course of the disease, and in the postmortem findings. Osler, writing of malignant endocarditis, says, "In some instances the most careful examination has failed to discover a murmur" and further "Even on examination there may be no murmur present. Instances are recorded by careful observers, in which the examination of the heart has been negative." DaCosta writes, "Nor is what has been said of endocarditis invariable. If the question be asked 'Can endocarditis occur without a blowing sound?' it must be answered in the affirmative." It is not difficult to understand why the minute

vegetations frequently met at autopsy, giving the surface of the valve a roughened appearance, may not give rise to adventitious sounds, but the absence of murmur in a heart where the vegetations become large enough to fill the aortic orifice is a problem not easy of solution.

R. W. age 23, male, was admitted to Cook County Hospital, Chicago, to the service of Dr. Sintzel, July 14, 1894. Family history good. Past illnesses included the diseases incident to childhood, rheumatism, and malaria when he was nineteen. Two weeks prior to admission he had an acute attack of gonorrhea, which was soon followed by headache, malaise, epistaxis, chills and diarrhea, becoming progressively worse until he was bedridden. On admission he was very weak, had headache, diarrhea and some abdominal tenderness. Physical examination showed poor nutrition, mental clearness, eyes and tongue negative, lungs negative, heart tones strong, clear and regular, liver dulness from sixth rib to within one inch of umbilicus, spleen not palpable, temperature 103.3 F. pulse 84, urine acid, sp. gr., 1015, no albumin, no casts. I believed it to be a case of typhoid fever. On July 18, the urine contained albumin but casts were not found.

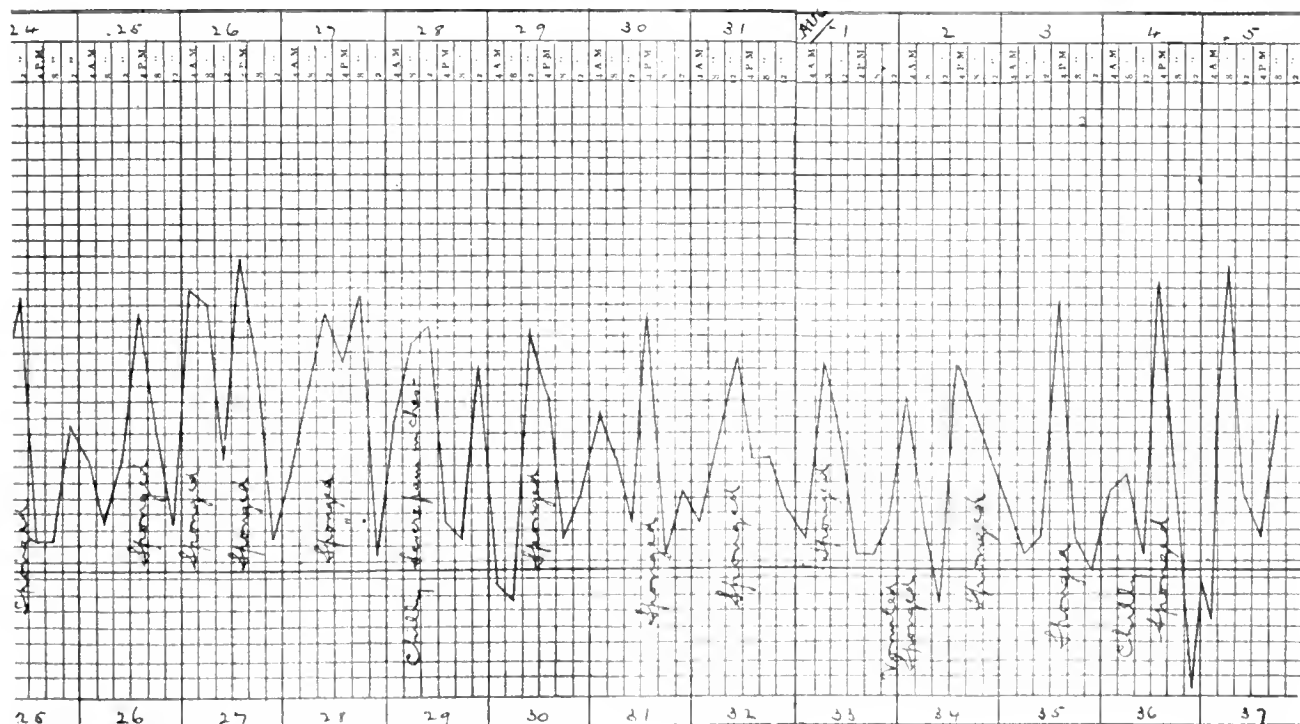
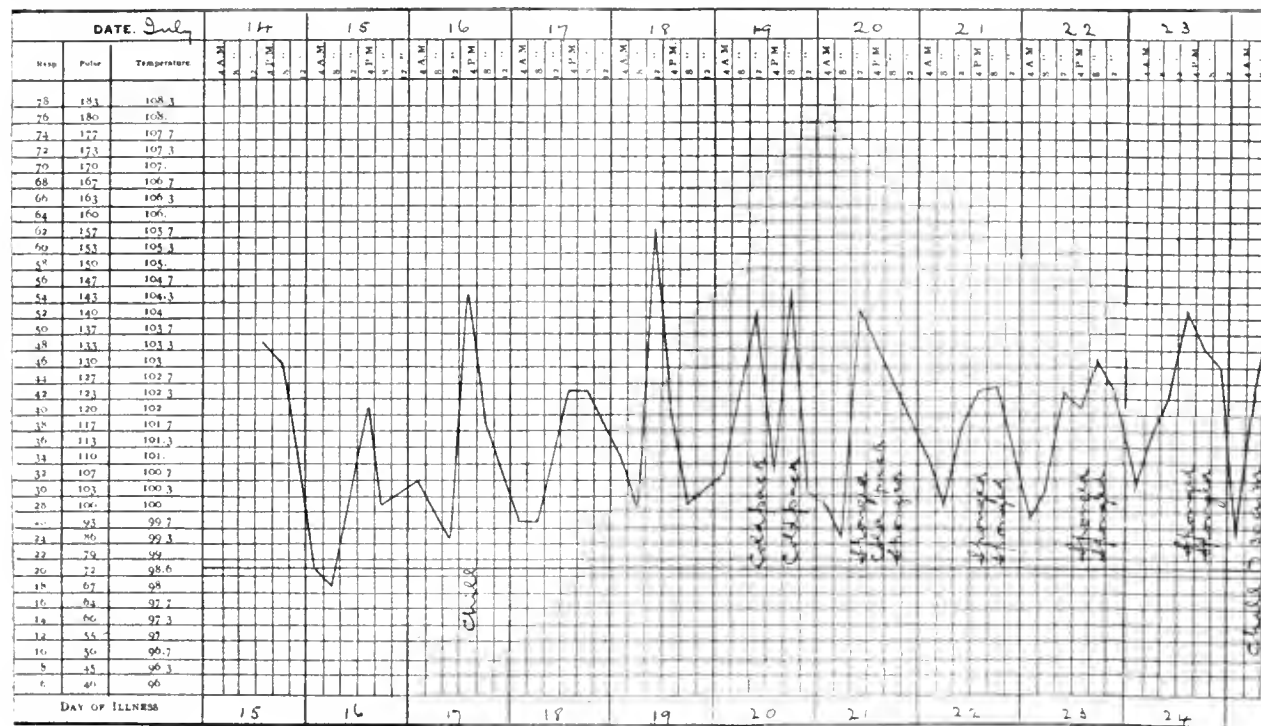


The sickness ran an atypical and uneventful course for two weeks; typhoid seemed improbable and no diagnosis was made. The temperature was irregular, the pulse increased to about 100 per minute, the patient grew weaker and lost all appetite for food. His heart was examined carefully and frequently, under favorable conditions, during the time he was in the hospital, by Drs. A. R. Edwards, H. M. Richter and myself without any adventitious sound being heard at any time. On July 28, two weeks after admission, he complained of pain in his chest. By August 1, the heart had become exceedingly forceful, so much so that pulsation was visible in the small arterioles all over the body; no increase in the area of heart dulness; cyanosis of extremities; dyspnea; dulness over the right side of the chest posteriorly and a few rales; no delirium; temperature 103, pulse 116. These symptoms continued with increasing intensity until August 4, when the pulse was terrifically strong. The day following it began to lose this quality and weakened to about normal force, increasing in frequency. Respirations 48 per minute.

² The Medico-Legal Journal, December, 1893, page 307.

At this time there existed the physical signs of fluid in both pleural cavities. By evening his face became pinched and cold, respiration rapid and shallow, pulse thready, 158 per minute, delirium developed, speedily followed by death. During the last few days the heart was examined at least twice a day.

heart, the anterior and left posterior cusps were found to have large masses of soft, friable, nodular vegetations depending from their ventricular surfaces, the right posterior cusp being unaffected. The other valves were normal. Endocardium showed yellowish mottling. Myocardium rather firm. The spleen



An autopsy was made on the day following death in the presence of Drs. R. LeCount, E. H. Ochsner and H. M. Richter, with the following findings: Pericardium smooth and shining; heart about the size of owner's fist, weight 350 grams; the aortic orifice filled with a foreign mass. After opening the

weighed 370 grams, and at its upper border was a firm dark-red wedge-shaped infarct 3½ em. long and 2 em. across the base, which was peripheral. The left kidney showed an infarct at its lower border 15 mm. by 6 mm., with a bright red zone surrounding it. Straw-colored fluid in both pleural cavities. Conges-

tion of both lungs. One calcareous nodule in the upper lobe of right lung. Ecchymosis in mucous membrane of intestine. Congestion of liver.

Diagnosis. Acute vegetative endocarditis. Infarct of spleen and left kidney. Hydrothorax. Pulmonary, splenic and hepatic congestion. Healed tuberculosis of lung.

Bacteriologic examination of the vegetations was not made, the presumptive etiologic relation of the gonorrhea was therefore not demonstrated.

HEMORRHAGE FROM THE STOMACH.

A Clinical Lecture delivered in Rush Medical College.

BY HENRY M. LYMAN, A.M., M.D.

PROFESSOR OF THE PRINCIPLES AND PRACTICE OF MEDICINE.
CHICAGO, ILL.

You have recently had an opportunity for seeing a number of cases in which hemorrhage from the stomach was the most prominent symptom. The case before you completes the series in which were displayed several varieties of the accident. Let us briefly review the more typical forms thus presented before proceeding to the consideration of the present example.

In the first place I will ask you to recall the facts in the history of the young man whom you saw a few weeks ago. Twenty-two years of age; the son of a vigorous, athletic father and a delicate, nervous, anemic woman, he inherited the joyous appetites of the one and the over-sensitive organization of the other. After a fortnight of attendance upon political meetings and active exertion in behalf of the candidates for office in his ward, he lost his appetite, became feverish, vomited repeatedly through the whole of one night, and in the morning was alarmed by the discovery of numerous streaks of blood in the mucus that was ejected from his stomach. This brought him to the clinic, where he told you that he was suffering with headache and epigastric tenderness; and you all had a sight of his thickly coated tongue and woe-begone countenance. We were able to reassure him, however, and in a few days he was quite as well as usual.

Let me also remind you of the tall and bony Scotchman whom you heard relate his experience of vomiting blood. He had not felt well for a long time, yet he was able to continue work, until one day it seemed to him as if a little stream of warm water were trickling through his body. This was soon followed by a sense of epigastric fullness and pressure, presently followed by nausea and vomiting. He threw up numerous large clots of blood, sufficient in quantity to fill an ordinary washbowl half full. Next day he voided at stool a large amount of black fecal matter which was largely composed of partially digested blood.

Then you saw a pale young woman who still retained a plump and well-rounded figure, but whose clear, white countenance was marked by deep lines of anxiety along the naso-labial folds. She gave us a history of long-continued gnawing pain in the epigastric region, culminating, at last, in copious vomiting of blood. Entering the hospital, she was treated for gastric ulceration and made a good recovery.

At one time, also, we had in the hospital a fatal case which you did not see—an elderly gentleman who had long been ailing and was suspected of a cancerous disease of the stomach. But the gastric juice

always yielded a fair quantity of free hydrochloric acid, so that it seemed more likely that he was the victim of senile degeneration of the various organs connected with digestion. One day he began to vomit blood, and continued to vomit clots or dark venous blood for several days and finally died from exhaustion. The autopsy revealed no inflammation nor ulceration, but the veins of the lower portion of the esophagus were in a dilated and varicose condition, permitting a continual diapedesis of blood into the cardiac portion of the stomach.

I once knew a gentleman, about 35 years of age, who was very fond of hunting and who became infected with malaria while duck shooting in the autumn. He had several severe hemorrhages from the stomach—probably also from the duodenum—before his recovery. Twelve or fifteen years later he was again prostrated with vomiting of blood, and died after a lingering illness of several months. The autopsy revealed a chronic, contracting inflammation of the liver.

In another instance I was called to see a young woman who was shut up in a dark room on account of hysteric photophobia and other characteristic symptoms. She had ceased to menstruate and every month vomited blood instead. She, however, recovered and took a husband shortly afterward without any untoward consequences.

I once saw a child, about eighteen months old, suffering with purpura hemorrhagica, who vomited blood, and also voided it with the urine and feces. The same thing is occasionally witnessed during the course of scarlet fever, measles and other infective diseases.

On another occasion I was called to a young man who had been struck by a piece of wood, flying from a machine in which it had been revolving at a high rate of speed. He was in great pain, vomited blood and died within twenty-four hours. The autopsy showed a rupture of the substance of the liver, and a severe contusion of the anterior wall of the stomach.

The patient to whom I wish to direct your attention this morning is a man, 54 years old, admitted a week ago to the hospital. He is emaciated and pale, without any discoloration of the skin, which, you see, is everywhere of a clear whiteness. His cheeks are sunken, his expression is that of pain and anxiety. He tells us that for many years he has been subject to attacks of painful indigestion; that they became more frequent and that for the last ten months he has continually experienced pain and discomfort in the epigastric region. His lungs present no evidence of disease, the heart is rather small and its pulsations as he lies in bed are from 100 to 120 beats per minute. The liver is decidedly reduced in volume and the spleen can hardly be discovered by percussion. Subcutaneous fat has almost entirely disappeared; the lymphatic glands in the groins are numerous and enlarged to the size of a bean. There is considerable epigastric tenderness and a decided sensation of resistance is experienced when the fingers are pressed into the space below the xiphoid cartilage. The same region is quite dull on percussion, though the cardiac end of the stomach yields a clearly tympanitic resonance. The gastric juices, withdrawn through a syphon tube, are very acid, but yield no free hydrochloric acid. In short, we have evidence sufficient to justify the diagnosis of a cancer of the

stomach. I desire, however, to show you a quantity of matter vomited by the patient a few hours ago. There is about a teacupful of slimy liquid, which has deposited nearly one-third of its volume in the form of a dark-brown, rusty colored paste that in many respects resembles the grounds of a coffee pot. This contains blood corpuscles in all stages of disintegration, broken down epithelium from the stomach, blood pigments, yeast cells, and other microbic organisms; it represents an actual hemorrhage in which the blood escapes slowly from the vessels, and is partly digested before it is discharged in the act of vomiting.

You are now in a position to recognize the fact that many causes may operate to occasion hemorrhage from the stomach. Let us review them in tabular form:

Mechanical injuries.

Chemical erosion with acids, alkalies, etc.

Heat, as when very hot substances are swallowed.

Inflammation and ulceration of the stomach.

Carcinoma of the gastric walls.

Varicosity of the gastric veins, with or without cardiac disease.

Aneurysm and rupture of the gastric arteries.

Hepatic disease and obstruction and stagnation of blood in the portal vein.

Hemorrhoidal or menstrual suppression.

Pregnancy, violent vomiting, excessive parturient effort.

Nervous derangement, hysteria, parietic dementia.

All of the so-called infective diseases, including the malarial class.

Blood diseases, such as pernicious anemia, scurvy, purpura and hemophilia.

Mineral poisons, arsenic, phosphorus, causing fatty degeneration of the vascular walls.

Auto-intoxication, such as occurs in uremia and cholemia.

Tubercular disease of the spine or other neighboring organs occasionally causes abscesses that erode the gastric wall, and thus produce hemorrhage. Sometimes an aneurysmal sac may burst into the stomach and thus excite vomiting of blood.

Gastric hemorrhage occurs among women more frequently than among men, for the reason that its most common cause—ulcer and disturbance of menstruation—are usually encountered by the female sex. Children seldom exhibit the phenomenon, except in the form of melena neonatorum, which is sometimes witnessed in the case of newborn infants.

I must now proceed to warn you that mere expulsion of blood does not by any means warrant the diagnosis of gastric hemorrhage; there are other sources from which blood may enter the mouth. Bleeding from the posterior nares, pharynx or fauces is often sufficient to cause copious expectoration of blood, and sometimes enough may find its way down the esophagus to excite bloody vomiting. In the same way blood from the air passages may reach the stomach and there arouse the act of emesis. But careful examination of the cavities in question, and observation of the quality of the blood will soon clear up the diagnosis. Sometimes, in certain cases, there is vomiting of dark brown or rusty-colored matter that maybe incautiously mistaken for the coffee-ground discharge of cancer, but a microscopic examination will reveal the absence of blood corpuscles, and may sometimes detect the presence of bismuth, iron or other preparations which darken the contents of the alimen-

tary canal. It is hardly possible that a physician could be deceived by the presence of wine, coffee, beet juice, cherries, red raspberries or other coloring matters in the evacuations from the stomach. Greater difficulty would be experienced in cases of malingering, where the patient had swallowed the blood of an animal and vomited it for the purpose of deception. Observation in confinement and the absence of all symptoms of real loss of blood, such as pallor, faintness, debility and tardy convalescence, would, however, be decisive against actual hemorrhage.

Hemorrhage from the stomach is not often fatal, but I have seen patients reduced by it to the last extremity before the cessation of bleeding. In cases of chronic ulceration of the stomach the patient is usually enfeebled and pale in consequence of repeated losses of blood and malnutrition. Sometimes these sufferers appear to be plump and in good flesh, but this appearance is due to imperfect oxidation through impoverishment of the blood. The red corpuscles are not sufficiently numerous to convey sufficient oxygen to the tissues, and the nutriment of the body is therefore largely converted into fat. Hemorrhage is sometimes the direct consequence of a fatty degeneration of the vascular walls in cases of chronic anemia.

Though not often a direct cause of death, the occurrence of gastric hemorrhage is to be deplored, by reason of the profound exhaustion and tardy or incomplete convalescence that follows. In every case of gastric hemorrhage it is important to ascertain its underlying and predisposing causes, so as to guard against its recurrence. This is especially important in toxic and infected cases, including malarial cachexia. During an attack of hematemesis the patient should remain in the recumbent position, and if he becomes faint the head should be depressed by raising the foot of the bed. He should swallow small pieces of ice, an ice-bag should be laid over the seat of pain, which, in round ulcer of the stomach, is usually very definitely circumscribed, and half a drachm of purified liquid ergotin should be given every six hours by hypodermic injection. If faintness and collapse are imminent, the ordinary restoratives should be employed, mustard externally, enemas of whisky and water and the hypodermic injection of a drachm of a 10 per cent. solution of gum camphor in olive oil. The patient should be nourished for several days by rectal feeding, nothing being introduced into the stomach but ice and a little iced milk. When there is reason to believe in the existence of an ulcer, olive oil may be given in half-ounce doses as often as they can be tolerated. When there is no inclination to vomiting, styptics may be cautiously administered, but their utility is considerably restricted by the fact that they so often excite nausea and violent retching. Among the most valuable of these agents are tannic acid, dilute sulphuric acid, acetate of lead with opium, the solution of the persulphate of iron, fluid extract of hydrastis, oil of turpentine and Merck's stypticin in doses of one grain every two or three hours. A favorite domestic remedy is alum whey, prepared by the addition of a teaspoonful of alum to a pint of milk, which is then gently heated till coagulation takes place. The whey should be strained away from the curd, and drank cold in doses of an ounce every hour or two. Whatever is given should be administered in small quantity, frequently repeated, so as to avoid vomiting.

When hemorrhage is dependent upon malarial poi-

soning, quinin should be given in large doses, fifteen to thirty grains a day. If not tolerated by the stomach, it may be given by rectal enemata. In desperate cases the propriety of transfusion of blood may be presented for consideration. But experience shows that this remedial measure only too often serves to revive a bleeding that had merely subsided so long as the veins were empty. Better results have been obtained from the hypodermic injection of one or two pints of a salt solution of the strength of three-quarters of 1 per cent., or three and a half grains of salt to the ounce of distilled water. This solution may be very easily injected into the loose areolar tissue in either flank of the body, whence it is rapidly absorbed into the lymphatic vessels.

A PROPOSED TREATMENT FOR CONSUMPTIVES.

BY H. T. TILLOTSON, M.D.

CHICAGO.

Since Koch's discovery of the tubercle bacillus, and its manner of communicability, there has resulted in the medical profession, and latterly in the laity, efforts for public defense against infection. The means primarily adopted by the profession, were for the relief of the individual, as cod liver oil, hypophosphites, creosote, sulphureted hydrogen, Koch's tuberculin, and many others, all of which have been demonstrated practical failures in the treatment of pulmonary consumption. These failures have caused the laity, as city and State governments, to contemplate isolation. Modern isolation is again developing the hospital character, with a pesthouse tendency. Compulsory isolation creates a true pesthouse, to prove as unsatisfactory as prior examples, in dealing with this disease. So-called isolation is a misnomer. A befitting appellation is aggregation, and will be so used in speaking of institutions for consumptives. Voluntary isolation or aggregation is public or private. The public institutions are patronized by the poorer class, supported and controlled by the public, and necessarily located in or near cities. If not positively injurious, they are certainly of little value as curative agents, and could as well be called poor houses.

The private institution is much better, and known under various names, as homes, sanitarium, hotels, springs, etc. They are patronized by the financially fortunate. They are located in all parts of the country, taking advantage of all available climatic conditions and giving accommodation to all diseases, the only requisite for admission being the price.

Modern isolation means an aggregation of tubercular individuals, under one roof or in one colony, in all stages of the disease, causing a constant series of re-infections among the inmates, delaying recovery or rendering it impossible. It is a recognized truism that pulmonary tubercular cases are dangerous to inmates of general hospitals, and are denied admission. Is it logical to collect these infected individuals between four walls, to become a constant source of danger to each other and expect them to recover?

A striking example of irrational methods for public preservation from infection is the late contention in Boston, over the site of a Free Home for Consumptives, under municipal auspices. It was proposed to erect a cheap, faulty, brick building 60 x 100 feet, 4 stories, on Quincy street, in a residence district. The inevitable result will be a germ factory with a prolific

out-put. It will remove perambulating patients from nature's remedies, sunshine, free air and exercise, to place them in a veritable culture medium, or incubating oven, with questionable fresh air, administered in medicinal form and doses; with sunshine a rarity, a decrease in tissue resistance and leucocytic activity, and increase in mortality. Here is neither public preservation nor so-called isolation, but simply aggregation, exhibiting a clearly defined determination to defend the public at the expense of the inmates. Such institutions may be profitably used as a last home for hopeless cases only, and should be located in suburban districts. All tubercular aggregations, whether in city or country, should be condemned as improper or perilous for walking cases who may be benefited or recovered by climatic treatment.

Another and very important objection to aggregation is "mental infection." By mental infection, I mean the acquisition of a saturnine mentality, whereby a primarily favorable case becomes unfavorable by association with other invalids, giving ready credence to idle gossip, the daily comparison of symptoms, resulting in unfavorable comments; some make constant use of the clinical thermometer, shaking down the mercurial column with professional dexterity. Their daily sedentary life and habits compel their brains unceasingly to dwell upon their infirmity, subjecting them to foolish fears and apprehensions and erroneous interpretation of trivial transitory symptoms.

These invalids repair to some health resort with the expectation of relief by water, air or some other invisible means. They sit around the hotel office or town, impatiently waiting for the expected relief, which is delayed by reinfection; become despondent, which frequently initiates collapse. Many remain but a short time in any one place, producing a floating, shifting, tubercular population, found principally throughout the west and southeast. They patronize the railroads and hotels, leaving infection possible in all directions. The mental condition of female patients frequently become highly distressing from association, gossip, or ennui.

These strong objections to aggregations of consumptives were revealed to me forcefully while a member of such colonies, in the capacity, of invalid, resulting in some definite conclusions and suggestions for improvement. The substitute for isolation or aggregation may be divided into three classes, the first, a private boarding house or cottage plan, offers a much nearer approach to isolation, and avoids many of the evils of large institutions. The next, a still more promising plan, with almost true isolation, is the ranch life. Thousands of ranchers throughout the arid west will give a comfortable home to invalids, supplying the necessary sterile surroundings, exercise and climate. There should be but one invalid permitted on each ranch. Board and lodging are nominal, no more than eastern rates. Many find employment on stock ranches, because unable to afford residence at a hotel or sanitarium, and are greatly benefited thereby. The third class may be known as "camping" parties, and offers greater inducements than all others. A dry climate being the accepted standard, it is necessary to look southwest or west for it. A dry climate means a great diminution in vegetation. Often absolute deserts greet an outraged, esthetic eye, especially when exhibiting a vigorous sandstorm.

Many of the profession have found serious objection to western plains as an asylum for consumptives,

because sandstorms occur. I believe they are no particular detriment. The sand and fine atmospheric dust is sterilized by sun and pure air, and carries no infection, unless occurring in a large town or city. The thirsty, hungry soil greedily devours all moisture from sputa and other contaminating material, and the almost constant sunshine does the rest. The dry climate permits almost indiscriminate out-door exposure, without deleterious effects. The temperature is equitable as any to be found.

Form a party of four to eight invalids under the supervision of a physician, employ a cook and drivers, purchase all necessary paraphernalia, and leave the towns to lead a nomadic life under canvas, with diversions of hunting and fishing, sure to relieve the mind of morbid occupations, supplying sufficient compulsory exercise to stimulate a wholesome appetite and a rapid improvement in all symptoms, in all reasonable cases. The expenses of such a trip of four or five months will be no more than ordinary western hotel charges, and much less than expenses at some sanitariums and resorts. Much more could be said on this subject of a practical nature.

The dangers of aggregations caused me to adopt the camping plan, resulting in recovery in four or five months. I prolonged my outdoor life, through choice, for over two years. I rented a common farm-wagon and team, and made an extensive trip in western New Mexico, sleeping on the ground at night, preparing my own meals, hunting and fishing when opportunity presented, obtaining constant occupation driving, care of horses and other necessary duties. My next trip was also in a wagon across southern Chihuahua and Durango, Mexico, where our hardships were sometimes pronounced. The following winter was partly spent in the saddle near the summit of the Sierra Madra mountains. The summer of 1894 was devoted to the saddle and wagon, in northern California. The following spring and summer occurred my last wagon trip, from West Port on the Pacific Coast, across California, Nevada, Idaho, the Yellowstone National Park, to Cinnabar, Montana. By this plan I was enabled to move my sanitarium daily; every night found me on sterilized ground, never infected or host to tubercle bacilli, a plan compelling me to seek health instead of waiting for her to seek me. I enjoyed to the fullest extent nature's panorama, revealed in daily sections, and the pleasurable excitement of plentiful hunting and fishing, sound sleep and a ravenous appetite. The almost perpetual sunshine, dry air, high altitude, unavoidable exercise and exhilaration were the components of the prescription, causing my own recovery promptly, permitting my subsequent residence in Chicago in the best of health.

This is a prescription eagerly and rapidly assimilated, greatly desired by the healthy, and positively curative in others.

6301 Yale Street.

A FEW INSTANCES OF THE USE OF PROTONUCLEIN IN CONTAGIOUS AND NON-CONTAGIOUS DISEASES.

BY WESLEY G. BAILEY, M.D.

PEKIN, ILL.

This comparatively new substance has played an important rôle in the armamentarium of the up-to-date physician for at least eighteen months or two years. These two years have conclusively proved that

protonuclein has come to stay, as its action is not ephemeral; for certain diseases are not the terrors either to the minds of the laity or profession since its introduction. To be practical, it is necessary or usual to illustrate one's points by the citation of cases. We will present a few for your consideration:

Case 1.—Female, aged 5, presented every feature of the clinical aspects of true laryngeal diphtheria (Klebs-Loeffer), which was proven by microscopic diagnosis. This child had been ill three or four days before the physician was summoned: that foul odor so characteristic of the disease permeated the atmosphere of the whole house. Little did the writer think that this child's life could be saved, so livid were the lips, swollen the neck and stertorous the breathing. The vigorous use locally of the *protonuclein special powder* was immediately ordered every half hour: previous to the local use of protonuclein, this little patient could not swallow anything, was fast becoming comatose, and was with difficulty aroused sufficiently to allow the perfect administration of the remedies. After several insufflations of the powder, and during a violent coughing spasm, immense pieces of false membrane were thrown out: at this time the internal use of the 3-grain tablets every three hours was commenced. From this time on our patient made a rapid, uneventful recovery.

Case 2.—Female, aged 24, multipara. This case also gave every indication of true Klebs-Loeffer diphtheria, tonsillar and pharyngeal (diagnosis confirmed by culture and microscope). This patient also had chronic Bright's disease, from which she suffered periodically with general edema, etc. Several months previous to the attack of diphtheria, she had suffered as mentioned, and was placed upon the 3-grain protonuclein tablets for three or four months, which was considerable time after the general dropsy had ceased. This patient now thought herself nearly well and discontinued the use of the tablets as above, when she was suddenly stricken with diphtheria: this was several weeks after the discontinuance of the protonuclein tablets. Strange to say, this case, though an adult, was nearly asphyxiated on account of the turgid mucous membrane; just at this time we were summoned in haste: protonuclein again scored a signal victory, after thorough and vigorous use locally and internally. Though on any treatment such a patient could scarcely be strong and well again, yet inside of two weeks our patient was up and attending to light household duties. In this family were two small children, aged respectively 2½ and 4, who were constantly about the room and even slept in the same bed with their mother (the diphtheria case), both before and after the diagnosis was made. We immediately administered to each child a 3-grain tablet of protonuclein every three hours, and they did not contract the disease.

Case 3.—Klebs-Loeffer diphtheria (microscopic diagnosis), male, aged 23. This was a mild case, and under the control of the special powder locally and 3 grain tablets internally, made a complete recovery in eight days.

Case 4.—Streptococcus diphtheria (diagnosis by microscope): male, aged 7. This child has had since its second year similar attacks two or three times yearly. After a thorough application of the special powder locally and 3-grain tablets internally, we recorded a "good recovery," and now, though two years have elapsed since, there has been no return of the disease.

Case 5.—Female, aged 33, primipara, has usually had from one to two attacks of streptococcus diphtheria yearly for a number of years, until the last invasion of nearly two years since; was treated the same as Case 4.

Many more cases of both varieties of diphtheria could be cited, but these given are sufficient to explain our procedures. The beauty and immense value of the above methods in treating diphtheria is, firstly, you can begin exhibiting your remedy at once and be assured it will do no harm: hence, several hours of valuable time is not lost in waiting for a bacteriologist's report, besides, protonuclein will certainly cure both varieties of the scourge, barring possibly bad complications already in progress when the treatment is instituted.

In eczematous affections, or any epidermic (common) disease except scabies, due to an organism, there is in our opinion nothing equal to the external and internal treatment with protonuclein, and occasionally when the case demands it—the hypodermic exhibition of the special powder (locally and hypo-

dermatically we always use protonuclein special powder in varying strength). No cases of the above varieties are cited, because their histories are all too well known; we have treated many such, and all successfully but one, and it was an old chronic case, of eczema from rhus poisoning, and did not continue the remedy long enough to decide for or against it.

One case of tubercular dermatitis came under my care: it was treated with daily inunctions (25 per cent. lanolin ung.) and hypodermic, daily, injections of ten to fifteen minims of the standard solution (10 grains special powder to drachms 1 of aqua dest., at 98 degrees F.) and a 3-grain tablet every three hours internally; after several weeks' treatment the diseased surface became smaller and smaller and healthy spots could be seen surrounded by the diseased tissues. At this time we lost sight of the case.

In chronic Bright's disease protonuclein is, therapeutically, without a peer in the opinion of the writer; eleven cases have been treated with it in our experience, and while we know the inevitable end of such cases is an untimely death, yet we are certain that in a number of instances, life has not only been made easier, by insuring more nearly perfect tissue metamorphosis, but actually prolonged by its use extended over a period of many months. We respectfully ask each physician reading this to calmly think what "more nearly perfect tissue metamorphosis" means to a sufferer from chronic Bright's disease, and then ask himself if this can be performed as well with any other remedy.

In tubercular joint affections we have used protonuclein in but one case, and that has the following history: Mother died of pulmonary tuberculosis, and maternal grandfather though meeting death by an accident was in the last stage of phthisis pulmonalis; paternal grandfather died of tubercular phthisis; child, a male, at the time of the first exhibition to him of protonuclein, was 5½ years old, this was two years ago; at 2 years of age the patient had scarlatina followed by infantile paralysis of the left thigh and leg, subsequently tubercular hip-joint and ankle disease developed in the affected leg: protonuclein in 3-grain tablets was given every three hours together with cod-liver oil. Early in the spring of 1896 the hip and ankle required operative measures, and was accordingly referred to Dr. J. W. Hairgrove of Jacksonville, Ill., for operation; Dr. Hairgrove has kindly furnished us with his notes while the case was in his care. We append them below:

"L. A., entered May 22, 1896. Operation under ether narcosis, May 25, followed by but slight shock. Tuberculous abscess extending around the ankle curetted and through gauze drain inserted. Large abscess on the inner anterior aspect of the thigh opened and curetted, counter opening over the head of the femur and through gauze drain inserted. After-treatment was antiseptic irrigations through and through with gauze packing. Temperature ranged about 99.5 preceding and for some time after the operation.

"On June 14, was noted some swelling around the ankle. It is evident that some irritation still exists about the epiphyseal ends of the tibia and fibula. However, nothing operative was done until July 7 so that the patient might have an enjoyable holiday on the 4th of July.

"At the operation three incisions were made about the ankle, some curetting but no pus was discovered. The discharging fistula at the thigh was widened to improve drainage and packed with gauze. Henceforth the discharge rapidly decreased and the patient went home on July 23.

"During the whole course of treatment he took protonuclein and cod-liver oil.

"I regret that I am unable to give more definite notes of the case. While there was no tubercle bacilli discovered at any

time, we must remember how difficult it is to find them in thin pus; it can generally be done by the most patient and exhaustive effort only."

[signed]

J. W. H.

The little fellow is now plump and hearty, no swelling or tenderness of ankle or hip, and though the affected leg is some inches shorter than the other he can use the short one to support his weight without difficulty; he is attending public school and is anything but a picture of tuberculosis.

We claim that such results are unattainable without protonuclein. We further wish to say the child has not taken cod-liver oil for six months, but has been constantly on protonuclein.

Three cases of scarlatina have lately been under our care and throughout the disease were given nothing but protonuclein, with the exception of a simple diuretic on two days only. Two of the cases were light, the other developed a severe cervical lymphadenitis, which under the vigorous use locally (in throat) and tablets internally, was rapidly disappearing, when, at this time we left directions and ceased to make visits; we learned from the grandfather that the mother of the child ceased the insufflations when our visits ceased; the gland again rapidly increased in size and was opened several days later by another physician. In this same family were three other children and four adults, who were immediately put upon one 3-grain tablet every three hours; none of these last seven people mentioned contracted the disease.

We can not help commenting that no better prophylactic in acute infectious diseases is known; and, further, that the scope of usefulness to which protonuclein can be put is almost unlimited.

HOW CAN WE INCREASE THE THERAPEUTIC RELIABILITY OF MEDICINAL AGENTS?

BY E. MARK HOUGHTON, M.D.

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"Without pharmacologic knowledge, the application of remedies must ever be attended with the greatest uncertainty." As a pure science, pharmacology has taken rapid strides during the past few years; but to the physician, by elucidating the manner in which the functions of the various organs of the body may be influenced by the therapeutic agents at his disposal, it has given the greatest gain. Empiricism is disappearing, and ultimately we shall realize the hope of the centuries and medicine may justly claim a position among the exact sciences.

It is not my purpose to show what pharmacology has done in the past, but to call attention to some of the ways in which the science may be of still further service in the future. A physician may be ever so well versed in therapeutics, but if his prescriptions are filled with inert drugs, or drugs varying in strength, his efforts may be useless, or even dangerous. In the past the pharmacist has greatly aided our efforts by improving the preparation of the various remedies. But the time will soon come when he should be held responsible not only for the chemie and botanic purity of his preparations, but also for the physiologic activity of those important medicinal agents which can not be standardized by chemie methods.

I hear some one say this is impracticable, since pharmacists have not been properly educated to carry

out this work; besides, the expense is so great that they can not afford to do it. True, but today nearly all pharmacists buy the bulk of their preparations from some large manufacturing house, which can afford to employ a properly qualified person to make the examinations. Since the retail pharmacist can not do this testing, we should see to it that he supplies to our patients the preparations of some house that does determine the pharmacologic properties of its products. Or, where the retailer prefers to make his own tinctures, fluid extracts, etc., he should obtain his supplies of crude material from such houses as are willing to guarantee the activity of their drugs. It is much more important to the physician that he have a physiologically active preparation than an elegant pharmaceutical preparation. The ideal preparation is the one that possesses the properties of activity and elegance in the highest degree.

Probably to the physician the most important duty of the pharmacologist in his relation to the manufacturing pharmacist is the examination of the crude drugs and active principles before they are made up into fluid extracts, tinctures, pills, etc. Only those crude drugs and active principles should be tested physiologically which can not be assayed by chemic means. But there are quite a number of the most important medicinal agents that the chemist must at present pass, without testing, as no characteristic reactions have been worked out for them. Examples will best illustrate this point. As is well known, ergot, the sheet anchor of the obstetrician in so many hours of peril, loses much of its activity in a comparatively short time after being harvested, and if kept under certain conditions may soon become entirely inert, or if the crude drug was good when it came to the manufacturer the menstruum used may have been such that the more important constituents were left in the improperly exhausted drug; consequently the physician is never quite sure whether the preparation he carries in his obstetric bag can be relied upon to aid him in stimulating an exhausted uterus in a difficult labor, or in checking a much-dreaded post-partum hemorrhage. How much better it is for all concerned to test the ergot physiologically, rejecting the drug if found inert. Then, to complete the precautions, the finished product should be again tested to make sure that it shows the active properties manifested by the crude drug.

Out of twenty-seven samples of crude Indian cannabis, of excellent physical appearance, recently examined by the writer, only thirteen proved to be active when administered to animals; and of a large number of preparations tested, at least one-half were inert. Is it any wonder that physicians have come to believe that hemp is one of the most unreliable of drugs? Or that we occasionally have alarming symptoms following its administration? Digitalis leaves and strophanthus seeds are other good illustrations, and many other examples might be cited if space permitted.

The demand for the active constituents of vegetable drugs is prompted by the physician's desire to administer his potions either in small doses per os or with the hypodermic needle. But many of these active principles, glucosids, alkaloids and others, have thus far eluded the analytic chemist in his attempts to identify them and determine their purity. Since the chemist can not, the pharmacologist ought by all means to examine them before they are made up into preparations for the physician. Neglect this precau-

tion and the manufacturer may, perhaps, obtain a lot of inferior or worthless stock, contaminated possibly by some decomposition product or foreign substance whose action is directly antagonistic to that desired. Of four samples of strophanthin recently tested, three of which were supposed to be chemically pure, there was found such wide variation in activity that one was ninety times as fatal to animals as another. The strength of the remaining two varied between the above limits. No two samples were even approximately the same in strength. What a chance for a sudden, fatal termination of an apparently improving heart case!

Perhaps the most important work of the pharmacologist in relation to medicine is the investigation of new remedies. Synthetic chemistry has developed so rapidly during the past few years that new compounds for medicinal use are constantly being brought to the notice of the medical profession by traveling men, who strive to induce the physician to use the latest hypnotic, antipyretic, etc., promising him that the result will be most gratifying. But it behooves the honest physician to beware of using new remedies until something is known of their physiologic action. When he ascertains the functional changes brought about by the introduction of the drug into the animal economy, he can rationally begin the use of the remedy in his practice, with considerable promise of success.

The examination of medicinal plants for active constituents is greatly facilitated by physiologic testing of the residues obtained by chemic manipulations. By chemic means we can not tell whether a substance crystallizing in an alcoholic extract of a plant is the active constituent of that plant, or whether the amorphous substance dissolved by ether is the principle sought, but we can tell by physiologic methods when we have a substance representing the activities of the crude drug, whether it be crystalline or amorphous--which is the fact of real importance to the physician. Only a few years ago one of Germany's most renowned chemists isolated a beautiful white scillein, which was supposed to be the active constituent of squill. But since then it has been found to be entirely inert, and that the really important constituent of squill is a brown resin-like substance possessing in a very marked degree the characteristic action of the digitalis group.

Heretofore it has been the custom of manufacturing houses, when dealing with a new plant believed to possess medicinal properties of value, to make a fluid extract or some other preparation of the crude drug, and send it out to clinicians, at great expense, in the hope that it might prove of value. How much better it is to have the physiologic properties of the plant examined at the outset! If found to be inactive, the drug may be rejected, thus saving a large item of expense to the manufacturer and much disappointment to the physician and his patient; while if the plant is of value and the physician knows what its effects are upon the various organs of the body, he can use it intelligently, with a good prospect of success. Then, too, human beings are not so recklessly experimented upon, the lives of a few animals being jeopardized in place of so many patients. We can never analyze the action of a drug on the various organs of the human body with such precision as we can on the lower animals, but clinical knowledge obtained after we have a right conception of the physiologic action of the agent used is of very great importance in determining the value of a given remedy.

Until a few years ago nearly all the work done in pharmacology was carried out in the laboratories of the universities of Europe. Recently several leading universities of the United States have fitted up laboratories for the investigation of pharmacologic questions, and for giving the students practical instruction in the action of the more important remedies upon the various tissues of the animal body. To the University of Michigan belongs the credit of being the first institution in the world to give a laboratory course of instruction in pharmacology to undergraduate medical students. Undoubtedly this is a movement in the right direction, and will add to the ranks of the profession year by year men who are anxious to use only those drugs whose physiologic action is known. While we can expect the college workers to add greatly to our knowledge of the action of new drugs and explain the pharmacology of the old ones whose action is not clearly understood, we can not expect them to do the systematic routine work necessary to prevent the manufacturer from unconsciously placing on the market poor or worthless preparations. Neither can the manufacturer rely upon their aid to assist him in materially improving his methods of preparing of his fluid extracts, pills, tablets, etc., a work which demands at each step the careful scrutiny of a practical chemist, frequently supplementing his tests by pharmacologic reactions and not allow the manufacturer to go on year after year, sacrificing physiologic activity to pharmaceutical appearances, as has frequently been done. It should be possible for the workers in a manufacturing concern to work shoulder to shoulder with the colleges, and the result will surely be for the advancement of science and the well being of humanity.

We can not expect too much at first, as very little work has yet been done on quantitative methods of determining the physiologic activities of drugs by reactions on animal tissues alone, and we can never expect the results to be as exact as those of chemistry, but we can expect that a great deal may be done to lessen the uncertainty attending the administration of some of our most important medicinal agents.

COD-LIVER OIL A TIME-TESTED REMEDY.

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If cod-liver oil has been able to maintain its position as a remedial agent from a time "beyond which the memory of man runneth not to the contrary," its present popularity certainly has not resulted from any lack of sharp and sustained controversy. While the literature commending its utility in a wide variety of disorders is very copious, there has likewise been an abundance of articles, papers and discussions, which contended that cod-liver oil was merely a therapeutic fetiche; that it possessed no virtue that did not likewise reside in all forms of food fat; that it was no more readily assimilable than good butter; that, indeed, it was a positive bane to the patient in its loathsome taste, its disturbance of digestion, its provocation of biliousness, etc.

In my opinion these dissenting views constitute a most erroneous and deplorable heresy. Quite apart from the colossal volume of clinical testimony which bears witness to the real, genuine and positive utility of cod-liver oil in all wasting diseases, my own expe-

rience in practice sustains the view that cod-liver oil is an agent of incontestable value when intelligently, perseveringly administered. And yet such therapeutic heresies are far from being an unmixed evil. They stimulate thought. They arouse the physician out of any propensity toward routine-prescribing. Our most cherished convictions are all the better for an occasional assault, since we are thus led to examine our ground, weigh our evidence, review the basis of our belief, and place on a substantial foundation of reason and experience the views which we formerly accepted on tradition or authority.

Manifestly, the wide-spread employment of cod-liver oil has not been restricted by the assaults to which I have referred. Not alone in phthisis, but also in a wide category of other disorders, cod-liver oil continues to render substantial service, and beyond doubt it will continue to prove one of the most efficient remedies at the prescriber's command, despite any lack of unanimity on theoretical grounds.

It is commonly supposed that the general employment of cod-liver oil dates from the publication of Professor Bennett's great work in 1841. This is an error. Professor Bennett did, indeed, lend the weight of his authority to a *revival* of cod-liver oil, but it had been previously used in England in the treatment of phthisis; and long before it had been recommended for the treatment of scrofulous and rheumatic diseases. As early as 1771 Dr. Percival had introduced cod-liver oil as a remedy for chronic lithiasis, and it was employed for this purpose at the Manchester Infirmary during a number of years. The fishermen of Norway have from a remote period used it both externally and internally for rheumatic affections. Other investigators soon demonstrated that this remedy enriches the blood, multiplies the number of red corpuscles and produces an incredible increase in weight—an increase which is frequently out of all proportion to the small amount of oil ingested.

The value of cod-liver oil in phthisis pulmonalis is too old and widely known to need comment. Nelligan remarks in his work on *Materia Medica*, "I do not think I am asserting too much for it when I state that its use has to some extent removed tubercular consumption from the list of incurable diseases." Thousands of practitioners will bear out this remark, and a lesser number will join with this author in the regret that the conspicuous success of cod-liver oil in phthisis has caused the profession to lose sight of its utility in chronic rheumatism.

Desiring not to dwell unduly on the diverse applications of this familiar remedy, I content myself with the statement that cod-liver oil is productive of very great service in the treatment of many forms of neuralgia, tuberculous abscesses and chronic arthritis, rickets, strumous ophthalmia, obstinate cutaneous disorders, in chronic ozena, otorrhea and ophthalmia. Among other affections, I lay particular stress on anemia, from whatever cause, and on the obstinate constipation of infants. Brilliant results are occasionally obtained in the tubercular affections of children, especially in glandular enlargements.

For the surgeon cod-liver oil has its greatest value in tubercular affections in association with the indicated surgical treatment of the case. It is an agent which has a curative influence in tubercular disease. Not as a specific, but simply from its ability to increase the body fat, which as Butler says, is a normal and necessary constituent of the body. It is the fuel used

to supply force, and those tissues and organs which are the most energetic require the most fat. The proportion of fat in the body must be maintained in order that the various cells of the body may possess sufficient vitality to withstand by physiologic resistance the encroachments of disease and the invasion of pathogenic microorganisms. Energy is certainly what is wanted by the cells in tubercularized tissue. In tissue infected by tubercle bacilli there is a struggle between the bacteria and the body cells; a struggle which, unless the diseased tissue is eradicated by operative procedure will end in victory for the bacilli and a progressive disease or a victory for the body cells and a cure. If the bacilli exercise their specific properties, the cells of the infected granulation tissue will undergo coagulation necrosis, caseation and liquefaction. If the fixed tissue cells are able to withstand the influence of the bacteria, they can win the battle either directly by destruction of the bacilli by phagocytosis (in which they are aided by the leucocytes), or the cells which have become more or less atypically embryonal under the influence of the bacilli may undergo fibrillation and the infected granulation tissue develop into cicatricial tissue, and a cure be accomplished by encapsulation. A remedy to be of service in tuberculosis must either destroy the essential cause of the disease, the tubercle bacilli, or aid the body cells in their struggle by inhibiting the pathogenic powers of the bacteria or stimulating the body cells to increased power of resistance. All local treatment (short of complete eradication of diseased tissue by operative measures) acts in one or more of these ways. Rest, iodoformization, ignipuncture, injection of chlorid of zinc solutions, Bier's passive congestion, etc., all owe their value to their inhibiting or destroying the bacilli or stimulating the cells to increased power of development or both. Cod-liver oil acts in aiding a spontaneous cure by supplying energy to the body cells in this most important struggle.

The guiding fact in the administration of cod-liver oil should be its indisputable influence on the processes of nutrition. Hence, whenever deficient or disordered nutrition prevails, cod-liver oil is presumptively indicated. Bennett regarded the agent as a stimulant to the lymphatic glands and vessels, increasing the activity of the capillary system; and "by its action on the former the process of assimilation is facilitated and the appetite increased. The quality of the blood is thus improved and the different organs of the body become better nourished and receive more *turgor vitalis*."

It is my firm conviction that much of the dissatisfaction which we hear expressed respecting cod-liver oil is due to neglect of certain simple, practical, yet indispensable precautions in its administration. I know of no remedy which is more likely to disappoint those who trust to it, unless they are careful in respect to its quality and purity, the dose and the time of giving.

Dose.—This should rarely exceed a tablespoonful twice or thrice daily. Larger quantities either derange the stomach or liver, or else some of the oil passes, unabsorbed, by the bowels. Indeed, I should counsel the patient to begin on a teaspoonful dose, two or three times a day, increasing the quantity very slowly as tolerance is manifested. Impatience or undue haste in this respect is bound to defeat its own purpose.

Time of administration.—This varies with different patients. The rule is: Take the oil just before or just after eating. Many declare that the most suitable time for them is in the middle of a meal. Others, again, suffer no annoyance from doses administered midway between meals.

Quality.—The best and purest oil should be obtained, since the inferior oils are offensive in odor and taste. I thoroughly approve of a good emulsion when the microscope shows that it contains the *entire oil* in finely divided globules, and when I am satisfied that the percentage of oil claimed by the maker is present in the emulsion. Emulsification, moreover, forms a necessary step in the digestion of the fat, and the ready-made emulsion reduces the burden of labor devolving on the enfeebled digestive organs. The product which has given entire satisfaction in my practice, and to which I pin my confidence, is the egg emulsion of cod-liver oil. This product does not deteriorate, is most satisfactory in taste and flavor, and contains, by volume, full 40 per cent. of the entire oil. The absence of gum arabic, Irish moss, or the other emulsifying agents commonly used, is assuredly not the least of its advantages.

I have no faith in the so-called wines of cod-liver oil, containing, not the whole oil, but an extract of the alleged alkaloids. As urged by Professor Winter, cod-liver oil is a most complex body. Its beneficial properties reside in the aggregate of its constituent elements, and it is a piece of cruel jugglery to proffer a patient a part in lieu of the whole. The deception pointed out by Professor Hare—the entire absence of cod-liver oil from some of the advertised emulsions—merits the severest reprobation of the profession. There should be a fixed standard for emulsions, and the physician should have some positive assurance that the percentage asserted on the label is actually present in the contents of the bottle.

SLOUGHING MYOMA OF THE PUERPERAL UTERUS.

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The controversy so long waged as to whether myoma uteri is a cause or an effect of sterility recalls the proverbial query—"which came first the hen or the egg." Undoubtedly in not a small percentage of cases sterility antedates the appearance of myoma, but that this is not the rule will appear in the statistics reported by Playfair and Allbutt, who found in 2,035 cases of myoma uteri collected by Schroeder, Wenkel, West, McClintock and others absolute sterility in 621 cases or about 30 per cent., a percentage fully double that of the average sterility in women. Then again we have the statistics of Wenkel and Süsserott,¹ who reported ninety-nine cases of women with myoma uteri who gave birth to children with an average of 2.8 children to the mother or a little more than one-half the average of children to the mothers of that locality. These statistics would seem to justify the statement made by Hermann J. Boldt² that "We usually see it noted that sterility is an etiological factor, but the correct statement would be that fibro-myomata are conducive to sterility." In the experience of Mathew D. Mann³ sterility is more fre-

¹ Inaug. Dissert., Rostock, 1870.

² Clinical Gynecology. Keating and Coe. Page 561.

quently the cause of the new growth. He writes: "I think it will be found that the larger number of fibroids and myomas occur in women who have either born no children or have only born one or two and these at a period remote from the occurrence of the tumor." He gives as his reasons for this anomalous tendency on the part of the uterus that during pregnancy the uterus has the power of rapid increase in size. If this inherent disposition to grow is not afforded an opportunity by the event of pregnancy it may then be manifest in an irregular atypical growth.

Fortunately it is a comparatively rare event for pregnancy to complicate myoma uteri. This is particularly true of the submucous variety, because of the mechanical interference by the growth and the almost uniform presence of chronic endometritis which together with the new growth makes an unfavorable nidus for the development of the ovum. This is true in a lesser degree in the interstitial and to a still less degree in the subperitoneal myomata.

The effect of myoma upon pregnancy largely depends upon the size and location of the growth. Submucous myoma whether large or small constitutes a serious complication of pregnancy by interfering with the expulsion of the fetus and placenta, by causing irregular uterine hemorrhages, by the frequency with which such growths become infected resulting in general sepsis and by bringing about premature labor and abortion. The same to a lesser degree may be said of interstitial myoma. Subserous growths rarely become infected, do not usually cause hemorrhages and when small may not influence the course of pregnancy or labor, but when large and rapidly growing they may seriously interfere from increased intrapelvic and intra-abdominal pressure and by causing irregular uterine contractions. Pozzi quotes 53 per cent of mortality in pregnancy complicated by myoma. On the other hand it is of interest to note the influence of pregnancy upon uterine myoma. Little or no increase in the size of the growth may be observed during pregnancy, and atrophy even to complete disappearance of the tumor is known to take place during the time of puerperal involution. However, it is the rule for the new growth to rapidly increase in size during the development of the gravid uterus. This increase in the size of the tumor is due to the hypertrophy of the essential cell elements of the growth, which is an analogous process to the physiologic hypertrophy of the gravid uterus, also to the edema caused by the obstructed blood supply of the growth. The myoma together with the gravid uterus may tax the accommodation of the abdominal cavity to the utmost. When the tumor becomes fixed in the pelvic cavity it may prevent the abdominal evolution of the uterus. Such an incarcerated tumor sometimes rises spontaneously into the abdominal cavity permitting pregnancy to progress without further interference. Further it is sometimes possible to dislodge the growth by bimanual manipulation. *Myomata are liable to infection after abortion or labor.* This predisposition is accounted for by the low vitality of their tissues rendering them especially susceptible to bacterial infection. This is particularly true of submucous pedunculated myomata. The gangrenous process begins in the periphery of the growth and invades the interior. Orthmann³ performed an unsuccessful laparotomy upon a case of sloughing fibroid following abortion in which the

gangrenous process involved the entire thickness of the uterine wall, causing general suppurative peritonitis. The dangers from sepsis are much greater in the presence of submucous myomata because of the difficulty in delivering the placenta, which is so frequently retained, many become infected and in turn infect the new growth. The mortality of cases of infected myoma complicating pregnancy is so great where there has been no surgical interference that it becomes the duty of the attending physician in such cases to hold himself in readiness to resort to operative measures at the first intimation of infection. Such measures should always consist in the enucleation of the infected growths where possible, the complete removal of all retained products of conception and the sterilization of the uterine canal with antiseptic intrauterine douches. As a last resort the uterus and infected tumors must be sacrificed. Of 597 cases of uterine myoma complicating pregnancy collected by Staveland 220 died, a mortality of 37 per cent. and of this number 15 per cent. aborted with a mortality of 12 per cent. How many of these myomata were sloughing is not known. From these statistics we might justly infer that in all cases of myoma uteri complicated by pregnancy the safest procedure would be to induce abortion. By so doing the growth will be prevented from increasing in volume as it commonly does in pregnancy, the serious complications of labor will be avoided and the liability to infection will be reduced to the minimum if abortion is induced within the first three months of pregnancy. As argument against this radical prophylactic measure may be mentioned first, the occasional disappearance of uterine myoma after pregnancy; Pozzi writes of a case in which he observed a myoma increase to double its original size during the course of pregnancy; labor progressed normally and was followed by complete disappearance of the growth; second, the frequency with which they in no way interfere with the course of pregnancy; third, tumors which are so fixed in the pelvic cavity and of such size as to appear to offer a formidable resistance to the development of the gravid uterus and to the process of labor will sometimes spontaneously or by bimanual manipulation rise into the abdominal cavity and no longer interfere with pregnancy or labor; fourth, the results of operations upon the septic puerperal uterus have not been encouraging even in the hands of our best operators. The following case occurred in the service of the writer while resident gynecologist of the Cook County Hospital.

A negress about 30 years of age was brought to the Cook County Hospital in the patrol wagon. She gave the history of having a criminal abortion performed upon her a few days previous. She was then in the fourth month of pregnancy. Two days later she had a chill followed by a rapid rise of temperature which continued to increase to the time of admission to the hospital. On examination after admission the pulse was 140, temperature, 103 degrees F.; there was an offensive, bloody, opaque uterine discharge; and the abdomen tender to pressure and tympanitic. Chloroform was given for the purpose of making a bimanual examination and of exploring the uterine cavity. The curette was introduced with difficulty because of the tortuous uterine canal made so by the presence of two submucous myomas bulging from the left uterine wall into the uterine cavity. The placenta was found retained and sloughing. A portion of it was removed by the curette, it being impossible to remove all because of the obstructing fibroids. The uterine cavity was then irrigated with 1-4000 bichlorid of mercury solution followed by sterilized water. An attempt should have been made to enucleate the fibroids through the vagina after which the uterine cavity could have been thoroughly emptied and disinfected, but the patient refused to have further operative interference. Accordingly nothing further could be done than to

³ American Gynecological and Obstetrical Journal for April, 1896.

⁴ Centr. f. Gyn., 1886, p. 737.

give frequent intrauterine douches and supportive remedies. Three days after admission to the hospital one of the fibroids was spontaneously expelled; it was about two inches in diameter and gangrenous. The expulsion was followed by a chill and rise of temperature. Two days later a second and smaller fibroid was expelled spontaneously and again followed by a chill and rise of temperature. The abdomen became enormously distended. In the delirium which rapidly followed the patient asked that an operation might be performed but the pulse was now too weak and rapid to be counted; and collapse was soon followed by death. Postmortem findings included a large soft uterus; the locations of the submucous growths were marked by sloughing cavities extending deep into the wall of the uterus. There was double pyosalpinx and general suppurative peritonitis. The streptococcus was found in the uterine wall, the pus tubes, peritoneal cavity and thrombosed pelvic veins.

In this case, had the patient not interfered the early enucleation of the submucous myoma might have permitted of the thorough evacuation of the uterine cavity and the prevention of sepsis, and certainly had a timely hysterectomy been performed life might have been saved.

For the purpose of emphasizing the gravity of such cases a résumé of the report of a few selected cases will be presented.

M. D. Mann⁵ of Buffalo, reported a case of a woman 35 years of age who was pregnant for the first time after several years of married life. She came under Dr. Mann's observation in the second month of pregnancy, she was then suffering from a rapidly growing fibroid. She was advised to wait two months and if by that time the growth had increased in size to any great degree abortion would then be performed. At the end of the time dictated the patient returned with a much enlarged tumor; abortion was induced, the growth so distorted the uterine canal as to make impossible the delivery of the placenta. No operative measures were permitted by the husband or patient. On the second day symptoms of sepsis developed and continued with increasing severity until the tenth day when permission was given to operate. Accordingly an abdominal hysterectomy was performed. There was removed a large gangrenous subserous pedunculated fibroid together with several submucous and interstitial fibroids which distorted the uterine canal and prevented the escape of a portion of the placenta which was still remaining in a gangrenous condition. Death resulted in twenty-four hours.

Dr. Mann reported in the same paper a second case in which abortion occurred in the fifth month of pregnancy. Multiple fibroids were present, the placenta was removed with difficulty but not until it had become infected. After the removal of the sloughing placenta the uterine cavity was irrigated with bichlorid of mercury solution and packed with iodoform gauze. Three weeks after the abortion a sloughing fibroid was seen extruding from the cervix into the vagina. A hysterectomy was advised but before this could be accomplished gangrene of the lungs intervened. A thoracoplastic operation was made by Dr. Roswell Park, but death soon followed. In this case there was no pelvic or general peritonitis and the appendages were not affected.

Dr Jacob Frank⁶ reported a case of pregnancy complicated with uterine fibroids in which abortion was performed between the fourth and fifth month. The placenta could not be delivered because of an obstructing submucous myoma. Later the placenta was spontaneously expelled but not until symptoms of sepsis had existed four days. Intrauterine douches were

given, but the temperature remained high. The uterine secretions became fetid, an abscess formed and opened through the abdominal wall and through this opening there was extracted a sloughing fibroid. Recovery was slow, but complete.

CONCLUSIONS.

1. In the majority of cases uterine myoma is the cause and not the result of sterility.
2. Uterine myomata complicating pregnancy are especially liable to infection.
3. The gangrenous process begins in the periphery of the tumor and invades the interior of the growth, and may penetrate the uterine wall.
4. Myoma uteri of the gravid uterus usually grow rapidly.
5. Submucous, less frequently interstitial myoma may so distort the uterine canal as to render impassible the delivery of the placenta; such growths should be enucleated when possible, the retained placenta extracted and the uterine cavity thoroughly sterilized and packed with sterilized gauze.
6. If the growths can not be enucleated and symptoms of sepsis do not yield to antiseptic doses no time should be lost in performing hysterectomy.
7. In every case of abortion or labor complicated by myoma the attending physician should be on his guard for the first indication of sepsis and in event of septic infection operative interference is imperative.

A CASE OF PYOSALPINX IN A YOUNG GIRL, WITH SPECIMENS AND REMARKS ON SPECIAL SURGICAL TECHNIQUE.

Read before Section on Abdominal Surgery, Obstetrics and Gynecology, Second Pan-American Medical Congress, Mexico City, Mexico.

BY HENRY L. E. JOHNSON, M.D.

A Vice-President of the Second Pan-American Medical Congress; late President of the Clinico-Pathological Society; late Vice-President of the Washington Obstetrical and Gynecological Society; Professor of Gynecology in the Medical Department of the Columbian University; Professor of Gynecology in the Post-Graduate School of Medicine of the District of Columbia; Director of the Gynecologic Clinic in the Central Dispensary and Emergency Hospital; Consultant to the Woman's Clinic, etc.

WASHINGTON, D. C.

I have the honor of presenting for your consideration an interesting case of pyosalpinx in a young girl, for the relief of which laparotomy was performed one year ago. Miss ——— consulted me in the early part of November of last year, giving the following history of her disease, the cause of which is quite direct:

She was white, single, 19 years of age, and had always enjoyed good health, the present being her first serious illness. Family, social and moral history excellent. In August, 1895, she visited the sea-shore, where she bathed daily. When she was over-heated from walking on one occasion she entered the surf, which was rather cold, during the first day of a menstrual period, remaining two hours, and while there she was taken with violent uterine tenesmus and pain in the lower portion of the abdomen, particularly in the right inguinal regions. The flow ceased suddenly and did not reappear during that month, but the pain and suffering continued to the time of operation, three months later. From Sept. 5, 1895, she had a constant and excessive uterine hemorrhage, frequently passing clots of large size. She lost flesh and had for two months more or less fever in the afternoons. The pain, flow and consequent prostration made her practically an invalid.

⁵ American Gynecological and Obstetrical Journal for April, 1896.

⁶ Annals of Gynecology and Pediatrics, Vol. IX, page 140.

Examination:- The patient showed decided effects from hemorrhage and was very weak and thin. The abdomen was distended, extremely sensitive on pressure over ovarian regions, while marked induration or masses could be detected through the thin abdominal walls. The external genitals were normal, hymen intact, which required rupture before digital exploration could be made. The uterus was small and anteflexed, the cervix was small and cone-shaped, with a pin-hole os, through which a bloody discharge was flowing. On either side of the uterus large, irregular fluctuating masses were detected, and the diagnosis of cystic degeneration of both ovaries with pyosalpinx was made.

Laparotomy was performed on November 13 and the previous diagnosis was confirmed. Both tubes and ovaries were firmly adherent in a mass of omentum, intestines and exudate. The adhesions were separated and the tubes and ovaries enucleated from their bed and removed. No injury to the bowels occurred. The pelvic cavity was sponged dry and the abdominal incision closed with interrupted silkworm-gut sutures, without drainage. Convalescence was uninterrupted and uneventful. The patient has had no return of pain or flow and has since enjoyed perfect health. The abdominal incision is firm and strong; no hernia or uterine prolapse or displacement has followed the operation. The specimens from this case are herewith presented.

Where pelvic masses are small or well defined I advise removal by laparotomy, but where pus has escaped, forming a pelvic abscess with the usual extensive bowel adhesions, etc., the better treatment is evacuation per vaginam with irrigation and gauze packing. When laparotomy is performed a small gauze pad should be placed below the tubes before excising, to catch any discharge and prevent its coming in contact with the peritoneum or intestines, and the uterine end of each tube touched with the actual or thermic cauter, or pure carbolic acid, to destroy any germ or bacillus which may be located outside of the portions included in the ligatures.

In all gynecologic abdominal operations, I adopt the following procedure: Thorough asepsis in every detail. Restricted liquid diet for at least three days preceding operation, and thorough purging or salting with sulphate of magnesia for two days previously. On the day of the operation I direct five grains of calomel with soda administered by the mouth early in the morning, and one hour before anesthetizing I have administered two ounces of sulphate of magnesia in water. The initial purging empties the intestines and causes the bowels to flatten and collapse, thereby obviating the annoyance from distension. The calomel and magnesia, which are administered before the operation, produce peristalsis and an early evacuation following the operation, thereby restoring the intestinal circulation. As soon as this is accomplished, the distressing symptoms of colic and vomiting, which cause the patient so much suffering and the physician annoyance, is obviated. I generally try to secure an evacuation of the bowel during the first twenty-four hours, and when this does not follow from the calomel and magnesia, I have a stimulating enema administered, consisting of one quart of hot water, two ounces of sulphate of magnesia and half an ounce of spirits of turpentine. Under this treatment the colic above referred to will never occur. Opiates I never used, and nothing is given by the mouth until the

bowels have responded, except teaspoonful doses of hot water at intervals of half to one hour to relieve thirst, after the effects of the anesthetic have disappeared. If thirst is a distressing symptom, notwithstanding the administration of hot water by the mouth, a pint of hot water is administered by enema.

To prevent prolapse or displacement of the uterus, I always stitch the anterior and posterior edges of the broad ligament together, drawing the anterior surface of flap very short and tense, and include by a suture or ligature the round ligament on each side, which has been previously drawn out and rendered tense. This keeps the uterus in the normal anterior position. I have never had prolapse or displacement follow an operation and I believe it will rarely occur, where this method is practiced. I remove the abdominal sutures as early as the fifth or seventh day.

1402 L Street N. W.

CANCER OF THE RECTUM.

WHAT HAS MODERN SURGERY ACCOMPLISHED IN ITS TREATMENT?

Read before the Chicago Academy of Medicine, January 8, 1897.

BY JAMES P. TUTTLE, M.D.

NEW YORK.

(Concluded from page 585.)

THE OPERATION.

It must not be assumed that every cancer of the rectum is operable by, or demands the same method. The procedure which will enable us to remove the tumor thoroughly in the least possible time and with the smallest degree of shock should be the one selected in each individual case. The elements in the production of shock consist in the length of time the patient is under the anesthetic, the size of the incision and the hemorrhage incurred. The exhaustion which follows the operation will depend largely upon the amount of surface left to granulate, and from which suppuration will necessarily take place. It is most important therefore to leave as small an area of such surface as is possible in every case. When the tumor does not involve more than the lower inch and one-half of the rectum, it may be easily dissected out from below without disturbing any of the bony floor of the pelvis. In such cases the Cripps, or Allingham operations, supplemented by the bringing down and suturing of the extremity of the gut to the margin of the anus, whenever possible, is the most advisable method. Rapidity is of the utmost importance in these operations in order to avoid hemorrhage, as it is impossible to catch and tie the different vessels as they are cut. The utmost familiarity with the anatomy and the relation of the parts, and boldness in the operator, are necessary for success in these methods. When the tumor extends for two or three inches up the rectum, excision of the coccyx will afford abundant space for the removal or resection of the diseased area. Above these limits the Kraske operation, or some of its modifications, will generally be necessary. Operators are divided in their opinions with regard to the advantages of these different modifications, some holding that the original Kraske is superior to all others, while many believe that the osteo-plastic operation is the rational scientific and most successful method. Between the Kraske, Hochenegg and the Kocher operations there is only a difference in the amount of bone removed, and we should always select that one which,

allowing sufficient space for operation, destroys as little as possible of the bony floor of the pelvis. Of the osteo-plastic operations the Walker, Levy and Billroth-Rehn-Rydygier methods are the most important. The first case operated upon by the Kraske method in this country was that by Willy Mayer, reported in the above tables. Since that time a great many operations have been done upon these lines, but the most of them more or less modifications of the original method. My own experience has been confined to the osteo-plastic method, and I shall here describe the technique of the operation as I have performed it in six cases. The patient is prepared for the operation by the daily administration of laxatives for three or four days previous to the operation. Intestinal antiseptics is carried out by the administration of naphthalin and salol $\text{aa gr. x to xx, t. i. d.}$, and the daily administration of high enemata of boric acid solution when possible. The parts are prepared for operation with all antiseptic precautions, and after the patient is etherized the rectum is thoroughly irrigated with a 1-5000 bichlorid solution. The patient is laid on his left side in the Sims position with a firm pillow underneath the hips, the legs being well flexed. An incision is then made about one-half inch from the right margin of the sacrum, beginning at a point opposite the third sacral foramen, and extending down to the tip of the coccyx. This incision is carried boldly and at one stroke, through the sacral and coccygeal ligaments into the cellular tissue posterior to the rectum. Whatever hemorrhage occurs is checked by pressure with gauze in the hands of an assistant. The rectum is now rapidly detached from the anterior wall of the sacrum by the fingers and gauze is stuffed into the space thus made in order to check the hemorrhage and avoid wounding the gut when the bone is cut across. A transverse incision is now made from the upper limits of the first incision across the sacrum and thoroughly down to the bone. The sacrum is then rapidly cut through with a chisel, and the flap formed is turned outward to the left side, giving thus a full view of the pelvic cavity and affording ample space for all manipulations. At this point it will become necessary to clamp the middle and perhaps the lateral sacral arteries, but all bleeding in the skin wound will generally have ceased through pressure. The detachment of the coccyx from the insertion of the sphincter and levator ani muscles will cause the bony flap to fall back easily and well out of the way. A fold of the gauze should now be laid over the rough end of the sacrum in order to avoid wounding the hands of the operator or the gut when it is dragged down. Careful examination is now made of the gut and the extent of the tumor upward clearly elicited. If by any chance the tumor should be found to have involved such organs or tissues as would render it inadvisable to remove the same we may, at this point, desist from further operation, restore the parts to their original position, and will have done the patient little damage. The next step in the operation is to dissect off the tissues surrounding the rectum and free it from all attachments above the upper limits of the growth, and as far as is necessary to bring it down to the point of proposed attachment. If the peritoneum has to be opened, it is better to cut the lateral folds with scissors and, where the meso-rectum interferes with bringing the gut down sufficiently, a long bladed clamp should be applied to it as close to the sacrum as possible, and it should be cut off as far away from the gut as can be, in order to

avoid wounding the superior hemorrhoidal artery, and thus interfering with the blood supply of the gut below. The application of this clamp is a precaution rather than a necessity. Having freed the gut from its higher attachments as much as is necessary to bring it down to the point desired, the peritoneal cavity should be walled off with iodoform gauze or sewed up, the gut should be clamped across or tied just below the point at which it is proposed to cut it off. A second clamp or ligature should be placed a short distance below this, and the intestine cut through between these two. Both ends of the incised gut should be cauterized with pure carbolic acid, in order to destroy any septic material which may exude from them, and they should each be wrapped in iodoform gauze to protect the other portions of the wound. The lower segment should now be rapidly dissected out, and this can be done with almost no hemorrhage, as the chief blood supply has been cut off by the clamp above. Where the anus is removed, some bleeding will take place from the middle and inferior hemorrhoidal arteries, but not of any alarming amount. If the tumor does not extend to the anus, and there is a healthy area of mucous membrane between it and this aperture it is advisable to resect the diseased portion and make an end to end union of the parts. If the lower portion of the rectum is so much involved that the preservation of a sufficient amount of gut for the attachment of the upper segment is found to be impossible, it is advisable to remove the whole growth, dissect off the mucous membrane from the margin of the anus, invaginate the intestine through this aperture, and suture it to the surrounding skin. The external sphincter when left should be well stretched, or even incised in order to prevent any obstruction to the free passage of fecal matter. Where it is impossible to preserve the sphincter we may yet be able to leave the levator ani muscles, and they will be of great assistance in the establishment of fecal continence. After the intestine has been sutured either to the lower segment or to the skin about the anus, I invariably pass one or two anchoring sutures through the meso-rectum, and the skin at the margin of the posterior wound, in order to remove as far as possible any tension which may come to bear upon the lower stitches. As to the peritoneal wound I have sutured it twice with catgut, and walled it off four times with iodoform gauze; and can really see no advantage of one method over the other.

The clamp upon the meso-rectum can be removed at the end of the operation, and a small strip of gauze packed into the space in the hollow of the sacrum. The bone flap is then restored to its position, and maintained there by silkworm gut suture passed through the skin and peritoneum, at intervals, throughout the transverse incision. The rest of the wound is left unsutured and the ends of the gauze, which wall off the peritoneum and fill up the sacral space, are brought out at its lower angle. Where it is impossible to bring the gut down and attach it to the lower segment, or to the anus, it may be sutured in the lateral wound, or treated by the Jaemell-Willems method referred to above. (*Centralbl. f. Chirurg.*, May 13, 1893.) By this method there is very little blood lost in the operation. Indeed, I have frequently seen more during an ordinary operation for hemorrhoids or an extensive fistula. In the last four cases I have done, there has not been more than four ligatures used in any one.

The questions of the advisability of end to end

sutures, the application of the Murphy button, the suturing of the peritoneal wound, the closing of the sacral incision and the preliminary colostomy, arise in this operation as in all others for cancer of the rectum, and must be settled by a wider and larger experience than that of any one operator. I have detailed the technique as practiced, with but one fatal result in six cases, and that, apparently, from a personal idiosyncrasy.

Suturing the gut.—In the cases in which reports have been made with regard to suturing the gut, the statistics show the following: 40 cases sutured, 4 deaths; 29 cases not sutured, 7 deaths, a mortality of 10 per cent. in the former, and 20 per cent in the latter, just twice as great.

Sterlein reports: 26 cases sutured, with 6 deaths; 26 not sutured, with 10 deaths.

These results correspond with my own, and I think we may conclude that suturing is safer as well as the most logical procedure. The Murphy button has been employed in only three cases that I have been able to find. In one the result was favorable and in the other two not, non-union occurring in one and death in the other, but not on account of the button. There being no peritoneal covering to the distal segment of the gut, and the thickness of its circumference being so unequal, it does not appear to me that this is a suitable place for the application of this ingenious instrument.

Preliminary colostomy.—A number of prominent surgeons have lately advocated colostomy as a preparatory operation for excision or resection. I have been unable to obtain any reliable statistics on this point, but those which I have show no marked decrease in the mortality or other great advantage.

In cases where the stricture is so close that the intestine can not be properly emptied, it would probably add greatly to the safety of the operation, and where the tumor has extended too high to be outlined by the finger, it would lead to a more certain opinion as to whether or not the tumor was a suitable one for excision. This information, however, could and should be obtained by the use of the sigmoidoscope before beginning the operation, except where the contraction renders the introduction of this instrument impossible. Otherwise it appears to me as substituting three operations for one in patients the conservation of whose strength is of paramount importance.

Limitations.—Before the development of the Kraske method, it was generally conceded that all cancers, the upper limits of which could not be reached by the index finger, were inoperable by excision. These cases were consigned to an unalterable fate, and their sufferings alleviated by such palliative methods as were at our command. When asepsis and antisepsis were still unknown to the profession, the invasion of the peritoneum was considered unjustifiable, and in cases in which this was necessary lumbar colotomy was considered our only resource. Since these improvements in the surgical art, however, we no longer place these limitations upon the operation. We have learned that other conditions have more influence in the limitation of our operations than the extent of the tumor upward into the gut. We may almost say that the distance which the cancer extends upward puts no limitations upon the operation. Ten, thirteen and twenty inches have been removed, and all of the cases have made excellent recoveries. Almost the entire sigmoid has been removed, in one case, the end of the colon clamped

off, and an inguinal anus established at the same sitting with an excellent result. It will be seen by a careful study of the above tables, that the mortality has only slightly increased in proportion to the amount of the intestine removed. The real limitations of the operation consist:

1. In the physical condition of the patient. Age does not seem to contraindicate it so much as would be expected. Old people in good health seem to stand this operation well, and recurrence is in inverse proportion to the age of the individual. Stout and phlegmatic individuals, with weak and flabby hearts, and whose kidneys are not in the best of order, are not favorable subjects for any surgical operation, much less for such a formidable one as this, which necessitates an anesthesia of one hour or more. Two of Dr. Gerster's fatal cases were of this character, and he frankly admits that this physical condition was the cause of death rather than the operation itself. The careful elimination of such cases as these would bring the mortality from this operation down very much.

2. In the length of time which the tumor has existed at the time the operation is to be done. Those cases in which the symptoms have existed for upward of a year have, as a rule, resulted in a high mortality and rapid recurrence of the disease, whereas those which have been operated on within six to nine months from the appearance of the symptoms have given a low mortality and a comparatively small percentage of recurrences. After cancer has existed in the rectum for a year or more, we may expect to find dissemination and metastatic deposits in the liver and elsewhere in the body. But we must not date the existence of cancer from the first symptoms. In this region carcinoma is generally due to the transformation of ulcer, adenoma or other benign growth into the malignant. With such facts in view, we would hesitate to advise an operation for the removal of the tumor after a well established history of malignancy for over a year without the most searching and patient examination of the case.

3. In the extent to which the tumor has involved the surrounding tissues about the rectum. If the bladder, the ureter or the urethra are involved in the neoplasm, the operation offers little if any encouragement to the patient. The vaginal wall, the uterus and its appendages may be involved, and yet, if they are moveable with the tumor upon the surrounding tissues, they may be all removed *en masse* with fair prospect for recovery, although for such a formidable operation the patient should be in excellent physical condition. The adhesion of the tumor to the sacrum may be due to inflammatory products or to involvement of the periosteum, or the bone itself. In the former condition it would offer no contraindications to the operation, while in the latter, the probability of a rapid recurrence would deter us from operating, in a majority of cases. The mobility of the tumor, therefore, is the most important symptom upon which we have to base our conclusions as to whether a tumor is or is not operable. Where the growth is movable upon the surrounding tissues, and can be dragged down from above to a considerable extent, without traction upon the bladder or the pelvic organs, the fact that our finger fails to reach its upper limit should not deter us from expecting a favorable result from operation. Transgression of these limitations easily accounts for the high death rate from this operation among continental surgeons.

Sequences.—The dangers of this operation may be divided into those of the operative, the post-operative and the remote period. In the operative period we have to be prepared for:

Hemorrhage.—In the tables furnished there are one death from this cause direct and three from anemia, which may have been caused by hemorrhage, in 259 cases. In my own experience it has been the least troublesome feature of the operation. The chief source of blood supply to the parts is through the inferior mesenteric or superior hemorrhoidal artery, and if this is temporarily compressed the dissection may be done with very little bleeding. So far as that from the gut is concerned when it is cut off, there is frequently not enough bleeding to indicate a satisfactory circulation. Twice have I cut the gut off, the second and even the third time, before I found a sufficiently active circulation to assure me that it would not slough. There is much more danger from this than from hemorrhage.

Adjacent organs.—Injury to bladder, ureter or small intestine may occur during this operation. Where the disease is so extensive as to involve these organs in the growth, extirpation rarely proves of any benefit and should not be undertaken. Under other circumstances, the operator who is well posted in his anatomy will rarely have any such accident. If, however, through anomaly of position, any of these organs should be wounded, they should be repaired at once. The few cases in which such accidents have occurred give us no reliable statistics. They are accidents which may, but are not likely to occur. Thus far, all the cases in which the ureter has been injured have proved fatal, so far as my researches show, and the greatest care should be exercised to guard against this accident.

Injury to the peritoneum is spoken of by Moulouguet (*Bull. et Mem. Soc. Chir.*, Paris, 1894), as an accident of the operation, but it appears to me to be a part and parcel of it. One should not enter this cavity recklessly, but when the radical removal of the tumor demands it, we should not hesitate to do so.

Injury to the seminal vesicles.—Even their complete removal has been found necessary in this operation. No bad results have so far been attributed to it, but it is easy to imagine that if the patient should have a gonorrheal vesiculitis, injury to these organs might infect the whole wound. Such a contingency must be kept in view and provided against.

Injury to the urethra in the male and the vagina in the female have frequently occurred. Their immediate repair has generally been followed by good results, however. A good sized sound kept in the urethra and the finger of an assistant in the vagina when separating the rectum from these parts, will generally enable us to avoid these accidents.

Nerves.—Injury to the sacral plexus or the third sacral nerve is spoken of by the French writers as an accident of this period. There are some remote sequences which would lead us to believe them. Too high section of the sacrum, too wide dissection of the gut, or too much tearing and pulling in the operation may result in this injury. Clear, clean cut dissection is better than dull in this operation. As will be seen from the remote sequences these nerve lesions are of no great moment, as their results are almost always temporary and can confidently be expected to disappear.

POST-OPERATIVE PERIOD.

Retention and suppression of urine.—The former is quite a frequent occurrence, in this as in all rectal operations. It is generally temporary although Boeckel and Jaennell have reported cases which lasted one a fortnight, and one, a month. The condition is identical with that which follows a simple operation for hemorrhoids and is due to the same cause, namely, spasm of the sphincter vesicæ produced by the reflex irritation from the rectal wound. It is absurd to attribute it, as Moulouguet does to destruction of the hypogastric plexus, and Morestin, to a medullary stricture due to cutting of the sacrum. There is no foundation for such reasoning in fact and the condition is easily accounted for in a simpler way. Suppression of urine has been the cause of two deaths from this operation. Shock and the prolonged etherization were probably the cause of the suppression, together with possibly some obscure nephritis before operation.

Secondary hemorrhage.—Morestin says this occurs when the inferior mesenteric artery is cut, because it retracts greatly. It occurs to me that such a vessel would bleed at once and not secondarily. This could only happen when the gut was not sutured as in the latter case the vessel would almost surely be held by the threads. The general oozing is sometimes considerable but I have never seen it alarming.

Pain.—After the third or fourth day the patient suffers very little pain from this operation. If the bowels are controlled and the wound is not irritated by fecal discharges, morphia is rarely necessary.

Suppuration.—This necessary feature in the majority of these operations may be greatly limited by careful dressing. The later it develops and the less profuse it is, the more rapidly will it cease and the sooner will the wound heal over. A solution of ichthyol 10 per cent. in glycerin has served me better for this purpose than any other. Prolonged and excessive suppuration may lead to exhaustion or to amyloid disease and hence it requires the closest attention. Perfect drainage of all the parts, putting the patient on his feet as soon as possible to assist in this and to relieve pressure on the wound, are important adjuncts in the treatment which must be carried out in the most antiseptic manner.

Sepsis.—Local or general sepsis may develop any time after the operation. It manifests itself generally in the peritoneum at first and may occur at once or several days after the operation. It may be active and virulent or obscure and resembling shock. Because there is no tympanites we should not conclude that peritonitis is absent. In the cases reported it was the cause of death in eight instances. I have already stated my own views as to its cause, and having escaped it in my operations thus far, I feel justified in reiterating this opinion axiomatically. *Keep the fingers out of the rectum, and do not open the gut until the peritoneal cavity has been closed.*

Necrosis of the bone.—This result of the Kraske method has occurred a number of times, but it has never seemed to present any serious complications. The non-union of the bones may take place and the fragments may be eliminated in their entirety after the osteo-plastic operation. Immediate suture of the bones has not proved satisfactory to those who have practiced it. The preservation of the soft parts attached to the bone is the only method to guard against this complication.

Gangrene.—Bardenhauer, Manoury, Boeckel, Terrier and Leprevost have all reported cases of this post-operative complication. The first four attribute theirs to deficient circulation. Leprevost accounts for his three cases on the theory of nerve lesions. Morestin makes a logical division of the subject into 1, gangrene from ischemia; 2, gangrene from sepsis; 3, gangrene from nervous origin.

The local anemia or hemostasis is without doubt the most frequent cause of this complication. The practice among some operators of cutting off the meso-rectum close to the gut, is very likely to cause it, as the superior hemorrhoidal artery is included in the folds at this point, and if that vessel is cut off, all the gut below will necessarily slough. Leprevost makes the strange assertion that section of the nerves will prevent this gangrene.

Pulmonary, nephritic and cardiac complications occur in the post-operative period in this as well as in all other major operations. They present no unusual manifestations, and we will not discuss them here.

Fistula.—Fistula is a very frequent sequence in resection. It comes from the point of suture through the lower angle of the sacral wound. There were four of these in the private cases reported above and two in my own patients. One was sewed up twice but the operation failed. They all healed, however, under simple local treatment.

REMOTE SEQUENCES.

The remote and more or less permanent sequences of this operation remain to be considered.

Incontinence of feces.—Where the sphincter and levator ani muscles are removed, it is not to be expected that the patient will retain any considerable control over his bowels. If the wound is left to granulate and the gut is not sutured to the skin, a cicatricial contraction will occur which may, in a manner, fulfill the function of the muscles removed. But unless this is done, or some such method as that of Gersuny or Willems-Jaennell is introduced, incontinence is likely to supervene. If the anus shall have been made in the sacral region the fecal passages may be controlled by a truss on the order of that introduced by Hoehenegg. In the cases which I have reported, there were sixteen cases of complete incontinence, twenty-two of partial incontinence, and in the remaining the functional action of the parts was either satisfactory or not mentioned. The incontinence was generally referred to gas and liquid stools. This sequence therefore, is not so much to be dreaded as is generally supposed and with the methods for its prevention at our command we may expect it to grow less and less frequent.

Prolapsus.—There have been a number of cases of this deformity following the operation for extirpation. Morestin saw four cases, but none in which the wound had been allowed to heal by granulation. Ricard reports a case, which, he says, was due to rupture of the cicatrix soon after the operation. Stertrin reports 1 case in 25, Paul 2 in 14, it is not mentioned in Czerny's 109 cases and Finet collected 21 cases in his collection of 341, 19 of them being in cases with sacral anus. This sequence of the operation is a most logical one when we consider that the passive supports of the rectum, the peritoneal folds and the fibrous bands which hold it from above are all cut, stretched or destroyed.

Bergher reports a case occurring after an operation for extirpation, in which the anus had been formed at the upper angle of the sacral wound. This case was cured by an unusual form of colopexy, the meso-sigmoid being sutured transversely to the promontory of the sacrum. The result in this case was most gratifying, and indicates the method to be pursued in future instances of this deformity, although it by no means settles the position in which the bowel should be sutured.

Prolapsus of the uterus has been observed as a result of this operation, but, so far as I can learn, it has never occurred except where the coccyx and part of the sacrum have been removed. The osteo-plastic operations will effectually prevent the occurrence of this deformity. Suppuration of the sacral canal, Morestin says, may occur much oftener than is supposed, as, in the one case autopsied there was no indication of this condition in life.

Neuritis of the sacral nerves and temporary anesthesia of the perineal area have been described by Jaennell and others, but this writer says he does not think they ever occur in aseptic wounds and, so far as my experience goes, they rapidly and permanently disappear.

Stricture.—Contraction of the caliber of the gut is a necessary sequence in perineal excision where the parts are not sutured together. It also occurs in excision and resection where the circular suture has been used. It is a deformity easily prevented, not difficult to cure, and productive of so little inconvenience that it should not be considered in deciding for or against the extirpation of cancer.

CONCLUSIONS.

From these statistics we may draw the following conclusions:

1. Cancer of the rectum can be cured in over 10 per cent. of the cases.
2. The mortality from the radical operation, though still considerable, is not alarming, and is decreasing with every year's experience.
3. The radical operation prolongs life on the average over 100 per cent.
4. As a palliative measure, excision is far more successful and beneficent than any other measure.
5. The sequences, though numerous, are not at all intolerable and should weigh little in our considerations when it is a question of so serious a disorder as cancer of the rectum.

And thus we answer the question "What has modern surgery done for cancer of the rectum?" It has cured it, conquered all its disgusting features and relieved its pain, doubled and more the lease of life, and at comparatively small risk has given to the hopeless hope, not timorous and vague, but well-founded, and which grows stronger and more confident every day they live without recurrence.

DISCUSSION.

Dr. JOSEPH B. BACON.—I was much pleased with Dr. Tuttle's paper, because it is an educational contribution, and one that we are in need of. It brings the statistics of operations for cancer of the rectum up to date. He has given us a great many practical points and has shown us how we may avoid danger in performing this operation. My experience with operating for extirpation of the rectum has been confined to six cases, five for cancer and one case of stricture of the rectum. All the cases were operated upon by the Kraske method. Of these six cases I lost one, the patient dying from shock. Most of the cases occurred in young people, and recent statistics show that recurrence is much greater in young people. In some of them the disease has recurred within six or ten months from the time

of the primary operation, up to a year and a half. The longest period that any of the cases have lived after the extirpation of the carcinoma has been twenty-one months, and this case was the most serious one of the lot. It required a more radical and severe operation. The fact that this patient lived twenty-one months, thoroughly convinced me of the importance that we should never do a colotomy for cancer of the rectum, except in those very severe inoperable cases where it is done to prolong life. Two of the patients who lived for six months after the operation, doubted my diagnosis, and I was glad to have them do so, because they felt so well and free from any symptoms of recurrence for months. One case was free from the disease for more than a year and a half and he was thoroughly convinced that my diagnosis was wrong. He lived at least one year in perfect happiness, while a colotomy would have been a reminder to him every hour that he was doomed. So I am fully convinced that I shall never resort to a colotomy except in severe cases as a last palliative resort.

With reference to the osteoplastic operation of Dr. Tuttle, I have never done it. My cases have been such that I thought it necessary to remove the anus and the rectum and always stitch the end of the gut up into the upper sacral wound, but I can readily see that the operation as modified by Dr. Tuttle, is excellent, in that it leaves the parts in a more normal condition, with better support to the rectum afterward, and does away with the immense amount of cicatricial tissue which follows the usual operation.

The point he has made of loosening and bringing down the rectum from above to its limit before opening the gut, is very good. In those cases where the anus is to be removed with the rectum and the gut stitched into the upper end of the wound, it is my plan to use the Murphy button, with a large gum elastic tube and unite the ends of the gut, doing an end-to-end anastomosis, approximating gut and tube. By this procedure we can carry the feces into a basin of water under the bed and we are able to prevent infection of the wound after the operation, for a few days. By this time the peritoneal cavity is closed. I regard it as an important point.

The statistics of the Doctor's operations are very favorable indeed, as compared with those we usually see given for this operation. It is an important operation and one that has come to stay. I believe that cancers of the rectum will be treated as successfully, if not more so, than the average case of cancer of the uterus.

A word or two with reference to the sequelæ of the operation. I have had only one case of prolapse of the bowel, from the sigmoid down to the artificial anus, and this was very annoying to the patient. The must have been a prolapse of three or more inches of the bowel, but the case was quite advanced when I operated, and there was no hope of prolonging the patient's life more than a year at most and so I did not do a secondary operation to prevent the prolapse, but used a truss pad and compress.

Dr. JOHN B. HAMILTON.—I have been very much interested in Dr. Tuttle's paper. I have had such cases of this kind as fall to the lot of the general surgeon. I have completed the operation five times and abandoned it once. The cases have been operated upon at the Presbyterian and Marine Hospitals of this city. I agree in the main with the conclusions of the author of the paper. I wish to say in reference to the statement made by the essayist, that age seems to be no bar to the operation. One of my most successful cases was that of an old woman over 70 years of age, a Scandinavian, operated on at the Presbyterian Hospital last year, and she was still alive at last account. In fact, she was so old that I hesitated very much to undertake the operation, but the patient and her friends were anxious that it be done, which was the principal reason for my undertaking it. I was agreeably surprised to find how easy it was to separate the rectum from the fascia, and as the sphincter was involved in the carcinoma in that case it was not possible to bring the gut down and stitch the end. But I brought the gut out at the wound, removed the coccyx and sewed the end into the incision. I might say a word or two as to the technique of the excision of the coccyx. I do not think it is necessary to use a chisel, unless the surgeon is obliged to excise a part of the sacrum. A stout knife will separate the coccyx at the sacral joint or the first coccygeal joint with ease, the flap turned down, and the surgeon can sew directly through the bone, just as he would do in any osteo-plastic operation, in sewing the trochanter, and the like.

In another case there has been a recurrence of the disease. The patient was operated upon about two years ago, and I understand now is at the point of death. She lives at Joliet. In this case the operation had been practically condemned, on account of the fact that the carcinomatous growth extended to the posterior wall of the vagina, but a strip of the posterior

wall of the vagina was removed, when I made the usual operation and she made an excellent recovery. I was able to bring the gut down and stitch the ends together, saving the sphincter. In this case I made an osteo-plastic section of the coccyx and sewed the parts together. The wound closed, except at the lower angle, where I inserted iodoform gauze and it healed nicely. The woman supposed herself entirely well a year after the operation, but there has now been recurrence.

The case I abandoned is an instructive one, and the man is still alive (January 1897) at the Marine Hospital. Last June I undertook the excision of the carcinomatous rectum in this patient, who was a sailor of about 35 years of age. I suppose this case bears directly on the paper, because the Doctor considered cases inoperable where there was dragging on the bladder. I could detect no dragging on it by the usual method of manipulation. But still when I began to separate the tissues from the rectum I found it so firmly attached to the posterior wall of the bladder that I considered it impossible with safety to the patient to extirpate it. I then made an inguinal colotomy, packed the wound with gauze and let it alone. The man was still alive a few weeks ago. The pain from which he had suffered was very acute and seemed to be entirely relieved by the operation, although he suffered a great deal of exhaustion and some shock immediately after the operation and remained in bed for about two months.

I have lost one patient from shock. This was a stout man, 65 years of age, a farmer from Iowa, and seemed to be a perfectly healthy and hearty looking man. He was rather too fleshy to be considered a good subject for operation. This case simply bears out the statement made with regard to this class of patients. The man died on the third day after the operation, although it was performed without the slightest difficulty. I was able with my fingers to separate all of the tissues about the rectum from the carcinomatous growth and made a complete excision. That, too, involved the sphincters, and I stitched the cut end into the upper wound. The patient began to sink after the operation: the temperature fell, and the pulse rate was diminished. He finally died in spite of all that could be done for him, and death was attributed to shock. It is the only death I have had in this series of cases.

One word with reference to Dieffenbach. I think the Doctor discredited his statistics. I think those of us who have had occasion to look into the literature of surgery of seventy-five years ago will be surprised to find what wonderful results Stromeyer and Dieffenbach attained in plastic surgery and how great they were in their operations. In 1847 a book was published by Valentine Mott entitled, "Mott's Travels in Europe and the East." Valentine Mott stated that he visited Dieffenbach, and he said (I believe I recall the phrase exactly) he had never in any part of the world seen such a successful spectacle of surgical tailoring as he saw in Dieffenbach's hospital. So Dieffenbach can be credited with being abreast of his time, and Mott placed him at the head of surgeons of his day in Europe in plastic surgery.

In all of my cases excised specimens were sent to the pathologist of Rush Medical College and the diagnosis confirmed.

Dr. J. B. MURPHY. There is very little that I have to say in addition to the most excellent paper which we have had from Dr. Tuttle on this subject. He has taken up and indeed covered every point of interest in the line of technique up to the present time. My experience in this class of cases is very limited. It includes two perineal operations with resections with the button, one perineal operation with resection with the suture; three Kraske operations, two with the button and one with suture of the intestine at the upper angle. The primary operation was with suture with resection by way of the perineum, and recovered. There was primary union of the wound in the two operations where the button was used. The button passed in one on the ninth, and the other on the eleventh day. One of these operations was done three years ago, on a lady 62 years of age. There has been no return of the growth, and no stricture. The other was a resection for an annular fibrous stricture, probably specific, four years ago, with no return at present writing. The Kraske operations with the button have not been so flattering, but they are about the same as with the suture, and the reason for that is, that we have the same conditions of circulation governing the edges of the flap, regardless of the method which we use in approximation. In the first Kraske operation with the button, I retained the sphincter, resected a number of inches of the bowel and was still able to approximate it. The button escaped behind through the fistula and the fistula healed. The second operation was an implantation of the rectum at the upper angle of the wound, in which I had to remove the sphincter and all the bowel below, brought the bowels out and sutured it to the skin. In the third operation with the button, the button also escaped

through the fistula behind. There was, however, union of the bowel, and there is a small fistula. The operation was performed during my service at the Alexian Brothers' Hospital. The patient is in good condition, has control of his bowels, although there is a slight leakage. The bony part of the operation I did differently from Dr. Tuttle. I made an incision from the tip of the coccyx up the sacrum, took bone forceps and split the coccyx and sacrum as high as desired, made a transverse division of the base of the sacral flap on one side, then a similar division on the other, fracturing the bone between both, and turned out an osteoplastic flap on each side (illustrating). When the operation was complete I put it back in position and used silver wire suture with which to close the entire flap.

In the first button operation, there was at the time of operation enlargement of the liver. I was convinced that we had a secondary carcinoma at the time to deal with, and so informed the patient, but regardless of it, he expressed the desire to be operated on. I operated on him and he died four months after, from secondary carcinoma of the liver. The condition of the circulation of that portion of the bowel which the Doctor mentioned, is the most important point in connection with rectal operations. When we cut off the mesorectum, shall we cut it close to the bowel or some distance from it? I have not made a study of the circulation at that point in the bowel, but from what Dr. Tuttle has said in his excellent paper, we should cut it some distance from the rectum. That is just in accordance with the circulation of the small intestine as I have demonstrated it. You may cut the mesentery, as long as you do not cut close to the intestinal wall in the mesentery. If the parallel vessel is preserved in the small intestine, you may cut off five inches of the mesentery without the slightest danger of necrosis taking place at the line of union. But if you cut off that vessel which supplies the collateral circulation, you will have necrosis. This matter came up a short time ago in "Approximations of the sigmoid with suture and with the button." I investigated the matter because there were a number of cases of failure of union, and I found that the mesentery was cut off too close to the bowel, and with the suture there was quite a percentage of cases of necrosis of the margin of the intestine. They called it gangrene, which is an erroneous term. It is a pressure necrosis combined with ischemia. It should not be called gangrene, because gangrene carries with it usually, but not necessarily, the idea of infection. Let us use ischemia necrosis or pressure necrosis in the place of gangrene. If we can in our operations on the sigmoid and rectum get primary union after suturing, then we shall have advanced a wonderful step. With the suture we expect to have contraction, probably less so in the cases I have mentioned, where we have end-to-end union with the button. Regardless of the percentage of recoveries in these cases, I must say that when I have finished a Kraske operation I am glad it is over. I would rather do several laparotomies than one Kraske. But the results are primarily good, and we should congratulate specialists in this line of work. The results are promising. I feel that every patient who has a carcinomatous growth of the rectum should be encouraged to have it completely extirpated, and not have an artificial anus. In that one point I feel that we as a body should congratulate Dr. Tuttle for the great emphasis he has placed upon it, and the importance his work will have in future operations on this portion of our anatomy.

Dr. ALEXANDER H. FERGUSON.—I am pleased to have been present this evening and to have listened to Dr. Tuttle's very valuable paper. It proves, first of all, that the Kraske operation has come into the surgical field to stay, although a great number of surgeons condemn it. That it has its place in surgery has been shown by the careful statistics the Doctor has collated. It shows that in at least a small percentage of cases a cure can be looked for, and that in a large proportion of cases relief is afforded and life prolonged. These are great gains for surgery in cancer of the rectum. My own experience has been rather limited in operating for cancer of the rectum. Before proceeding to briefly give my experience, I must congratulate Dr. Tuttle in not recommending the extensive operations that we read about in German literature. We are told in some of the cases that the urethra, the prostate, the base of the bladder, and goodness knows what all, have been removed, with a final report that function has been perfectly restored in some of them. It is impossible to conceive that such operations could take place, not at least in America. I have not performed a Kraske operation. I have been rather chary to remove those very high cancerous growths, although I should not hesitate to do so now, according to my ideas of the limitations of the operation. I think it very important to bear in mind that if the peritoneum is judged to be involved that the operation should not be done, and particularly if the disease has

extended to the other viscera, as already intimated. My experience has been confined largely to the low operations, four in all, with one death. The first case died. In this one I removed about two and a half inches of the lower end of the bowel, including the anus, bringing down the bowel and suturing it to the skin. The patient died on the sixth day, from general septic infection, not from peritonitis, which I attributed to possibly too much suturing and infection at the time of the operation. That was some time ago.

My other three cases recovered without a return of the disease, as far as I know.

In the second case, bearing in mind a possible infection, I removed the coccyx, split the anus and sphincters, which were not implicated, backward, and sutured the anterior portion of the gut to the skin, leaving the posterior portion open for drainage. Infection is more liable to travel posteriorly than in any other direction, and I thought by getting an open wound posteriorly and continuity anteriorly I would be more liable to have union by first intention anteriorly and proper drainage posteriorly to prevent infection. And the result was good. The amount of bowel removed above the sphincter was over two inches.

In the other two cases I removed the sphincters, extending upward fully three inches. I did not attempt to bring the bowel down, but removed the coccyx and allowed it to granulate. They did well. The infection was very intense in my first case, which led me to believe that if I had gotten exsiccation instead of absorption things might have been better, consequently I resorted to the use of gauze saturated in glycerin, with iodoform, as a packing, in the manner that the essayist has recommended. Glycerin hardens the tissues and it is hygroscopic; we get a flow externally and it prevents absorption. I have used it extensively in other parts of the body with the most happy results.

Dr. J. R. PENNINGTON.—My experience with operative treatment of cancer of the rectum has been quite limited. I removed two and a half inches of the rectum, including the sphincters, in one case and the patient died from sepsis. I saw a patient five or six months ago who had been operated upon by a most eminent surgeon and pathologist for cancer of the rectum. Regardless of the character of the growth removed by the surgeon, when I saw the patient he was suffering from the effects of tertiary syphilis, plus the results of the operation. When we remember how prevalent syphilis is, and that the connective tissue surrounding the rectum is a very favorite place for development of syphilitic gumma, is it not reasonable to suppose that some of the rectal tumors diagnosed and treated as cancer of the rectum are not cancerous, but syphilitic gumma? I would advise in all cases where there is the slightest element of doubt as to the diagnosis, that vigorous antisyphilitic treatment be resorted to before operative interference.

Dr. JAMES G. KIERNAN.—Cases were cited by Dr. Tuttle illustrating predisposing factors to complications of interest from a neurologic standpoint. Even supposing no meningitis had been found in the case reported, the operation itself would be sufficient to produce, in certain constitutions, mental disorder.

Several years ago, I called attention to the fact that the psychoses resultant on drugs, febrile disorders, and surgical procedures had a close resemblance. The existence of mental disturbance after surgical procedures was regarded as a settled fact by Ambrose Paré in the sixteenth century. Billroth points out that under the title "*delirium traumaticum nervosum*," the older surgeon described mental symptoms which made their appearance after surgical operations. The symptoms usually were great motor agitation, visual and auditory hallucinations and excessive loquacity. Especially the psychosis was of a stuporous type. Still more rarely, the symptoms were of a very violent type. The patient generally made a rapid and complete recovery. Exceptionally, death resulted from the delirium, and still less frequently the patient remained permanently insane.

These symptoms were ascribed to various causes. In the philistine epoch, precedent to the advent of the antiseptic era, these symptoms were generally ignored with that sublime contempt for all phenomena, except the mere operation which marked the philistines who dominated surgery. With the advent of antiseptics greater attention was paid to detail, the patient's general condition was taken into account and reports of mental disorders became more frequent in the literature. These were charged to antiseptics, as at one time they had been charged to anesthetics.

The attempt to prevent trophic changes by cutting the sacral nerve is certainly not justified by experimental neurology. There is another factor which has some bearing of interest from a diathetic standpoint. A patient suffering from the initial stages of parietic dementia has a tendency to bowel vaso-

motor disturbances. Given a patient in that condition who is the subject of rectal carcinoma, there would be predisposition to gangrene.

Dr. HENRY T. BYFORD—I have only had two cases of excision of the rectum. In one patient I did a perineal section and the patient lived over a year. In the other case the cancer was quite high up and I attacked it through the vagina. This patient died of shock. I made a transverse incision in the posterior vaginal wall a short distance below the cervix, pushed my finger into the connective tissue, exposed the rectum, pulled it down as far as necessary, closed the peritoneum, cut out the diseased area and stitched the proximal end of the gut into the transverse incision in the posterior vaginal wall, first securing, however, the distal end of the rectum from hemorrhage by inserting some superficial catgut sutures. After stitching the rectum into the vagina, I closed the remainder of the vaginal incision so that the bowels evacuated themselves through the vagina. The tampon which had been put into the connective tissue was brought out through the anus. My idea was, if the patient had survived, to close up the vagina and establish a communication between it and the little portion of anus, thus making the vagina take the place of the lower rectum. In a woman with relaxed tissues it is easy to get at the rectum in this way, and I found I could operate with considerable facility.

Dr. W. X. SIDDUTH—I have under my care at the present time a case of cancer of the sigmoid flexure in which I have not advised operation for the same reasons as those taken by the essayist, but am treating it symptomatically. It is a case of long standing, although only recently presenting carcinomatous tendencies. The disease has now involved the structures to such an extent as to cause stricture, but the stricture, by methods of relaxation and by suggestion, has been overcome, and the patient is now in a fairly good condition. That is all I expect to do for the patient along that line.

The essayist mentioned the use of analgesics and narcotics to control pain in those cases where on operation is not advisable, and I will also say that many of these cases can be reached by suggestion better than by drugs. Pain is not a condition *per se*, but the perception of an injury. The injury may exist, but it is perfectly possible to put a patient in such a mental state that his latter days may be fairly comfortable without the use of narcotics that are apt to induce a drug habit. That is the only bearing suggestion would have in the treatment of these cases. It makes the last days of the patient comfortable without endangering his moral condition.

Dr. W. A. EVANS—Dr. Kiernan has suggested that I say something on the pathologic side of carcinoma of the rectum. We have two forms of carcinoma of the rectum, one of which is spread from the squamous epithelium of the anus, and the other which is developed from the cylindric glands of the rectum proper. Carcinoma of the rectum arising from squamous epithelium is one of the forms of squamous epithelioma. It is easily within reach and controlled by operative interference. The carcinomas that spring from the cylindric glands, and for which this treatment was advised, are difficult of diagnosis, as well as difficult to control. We are told that the growth is carcinomatous when the epithelial cells penetrate the membrana propria or the basement membrane of the gland tube. In ordinary squamous epithelioma, this is a proper rule to follow. In cylindric carcinoma, however, we may not find that the epithelium has penetrated the basement membrane of the gland tube. It is very easy indeed for an adenoma to become carcinomatous, and adenoma is to be looked upon with a great deal of suspicion. We find undoubted malignant adenomas in which there is no breaking of the basement membrane by the epithelial cells. We are accustomed to say that an adenoma has become malignant, under those circumstances, when it has grown through the muscularis mucosa and into the submucosa. I have seen cases in which the gland tubes have grown into the submucosa, and these tubes were perfectly typical. They have then penetrated the muscular layers as bands of epithelial cells without any definite arrangement, and then appeared on the outer fibrous coat in a definite, typical, glandular arrangement. Referring to the remarks of Dr. Byford, the difficulty in the uterus lies in the fact that there is no limiting membrane. There is a limiting membrane to the gland tube, it is true, but there is no limiting membrane between the lymphoid structure which we call the mucosa of the uterus and the underlying muscular tissue, and it is difficult to say just when the degree of penetration of the sublying structure has gone far enough for one to say that the growth is malignant. Undoubtedly, in all forms of carcinoma the epithelium reacts to some form of irritation. The epithelium in carcinoma is simply carrying out its life tendency as nearly as possible under its new circumstance. The irritation is the thing, but it is undiscovered.

As the matter now stands, an opinion based upon structural arrangement is subject to the same limitations as opinions based on the effects called symptoms, while the epithelial arrangement generally follows well marked lines, it does not necessarily do so, and therefore there are cases undoubtedly malignant in which we do not find, by the microscope or the gross examination, physical expressions that are recognized as expressions of malignancy. These forms of glandular carcinoma form metastases very much more frequently than do the carcinomata that are due to squamous epithelium, because of the fact that the malignancy consists of this growing into the underlying structures, and the arrangement of the epithelium in gland tubes is a normal growing into the underlying structures, and therefore, the easier it grows down under pathologic conditions. Whereas in squamous epithelioma we are dealing with epithelium which always covers, which has no capacity to do otherwise, and which when it goes down lines a lymph tube. Its tendency to remain on a surface limits very greatly its malignancy. Carcinoma of the rectum gives rise to secondary infections in the sacral glands, and the operation that has been suggested by Dr. Tuttle is one which attacks the disease directly in the line in which we expect infection to travel, and it therefore exposes to view the channels of danger in this disease.

Dr. TUTTLE (closing the discussion): Mr. President and gentlemen: I thank you most heartily for this free discussion of my paper, and I am gratified to find the unanimity with which my conclusions have been accepted. I have been particularly glad to hear from those whose reports of cases I have not seen in print and to find that their experiences do not differ very much from the average experiences of those whose cases I have reported. I am glad that Dr. Murphy has taken the view he has of the important point in the technique. It is the point with regard to hemorrhage. I have always taught, since I have done this operation the first time about six years ago, that this was the essential point in the technique which I followed, that of cutting the mesorectum away from the gut. That has not been any happy accident, but it is due to some forty or fifty necropsies that were made with regard to establishing the location of the inferior mesenteric artery as it is in that part of the body, and I find in all of the cases that it hugs closely the wall of the gut itself in the peritoneal fold, the so-called mesorectum and mesosigmoid. The leaving of that vessel intact is the most important point in the prevention of gangrene and sloughing.

Another point which I did not insist upon in the paper was with reference to the prevention of fistulae. I am perfectly confident that the majority of fistulae which have occurred in cases of end to end suture are due to obstruction to the passage of fecal matter at the lower end of the bowel, and that if we will remove that obstruction, so that the fecal matter may come down and pass out easily without any resistance at the anal margin, it will not bring tension to bear upon the sutures and break them loose. With that point in view I have in the last four cases made a complete section of both sphincters, cut them clear through, and stretched the anus well before I sutured the gut; I believe that has been the cause of my success in the last two cases of end to end suture in which I have no fistula and perfect union.

I want to correct Dr. Hamilton with regard to the remarks made by him concerning Dieffenbach's operation. In my paper I simply quoted authorities upon rectal diseases with regard to Dieffenbach's report of absolute cures. I think if the Doctor had read the reports of Dieffenbach's thirty-two (?) cases with an absolute cure of thirty, and no recurrences after five or fifteen years in the thirty cases, he would himself have some doubt as to whether all of these cases of Dieffenbach were cancer, or whether he obtained such good results. I can not conceive how a man with the methods in use at that time could have gotten such excellent results, with no fatal cases and only two recurrences. I simply state this because it is not in keeping with the results of any other surgeon of the present or past generations.

With regard to the osteoplastic feature of the operation, it seems to me the method which Dr. Murphy speaks of is more destructive to bone tissue and more liable to be followed by necrosis, and I can not see that it gives us as good an operative field as the method which I have advised. The method I spoke of is done very quickly, within two minutes from the time you begin the operation you have the bone flap out with full view of the whole part. I have seen no case of necrosis following this procedure and there has been firm union in every case, and the anesthesia and hyperesthesia which follow occasionally soon disappeared and the patients have absolutely no unfavorable symptoms or bad results from this part of the operation.

I want to refer here for a moment to a paper which happily

came into my hand after I had written my own paper. First, a student in the College of Medicine of Paris, seems to have had the same idea of working up this subject that I did and I might say here that most of my paper was prepared with the intention of reading it last year at the meeting of the AMERICAN MEDICAL ASSOCIATION. In July last Finet read his paper in which he collected 311 cases from the work of German, French, and some few English surgeons. The mortality, as I have said with regard to the continental surgeons, is considerably higher than that which I have reported, due to the fact that the surgeons over there do not limit themselves to the removal of growths that do not affect the adjacent organs. They take out everything that is connected with the cancer. As Dr. Ferguson has said, they take out the bladder, urethra and ureters, and subsequently report that the functions are all normal, or nearly so. I do not believe these operations are justifiable.

I am not here to speak of my own cases particularly. I have operated eight times for cancer of the rectum, and have had recurrence in one case, and one death. To my mind the operation has reached that stage of assurance with regard to a cure, that if the patient is operated upon at the proper period the results in most cases will be successful, and it seems to me it should be the moral obligation of every physician and surgeon to examine the rectum of every case which presents intestinal symptoms and to advise that man without hesitation that if the cancer has not existed over nine months to have it removed immediately.

I thank you, gentlemen, most cordially for listening to this thrice-told tale.

SURGERY ONE HUNDRED YEARS AGO.

AN HISTORICAL STUDY

BY DR. GEORGE FISCHER.

DEDICATED TO THE GERMAN SURGICAL ASSOCIATION.

TRANSLATED FOR THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION
BY CARL H. VON KLEIN, A.M., M.D.

CHAPTER III.—AT THE UNIVERSITY.

(Continued from page 600.)

A similar secret traffic was carried on in England; at least it is known that John Brown, to earn his daily bread, at first translated theses into Latin, and later wrote them, charging for the latter ten guineas and for a translation five guineas.

Is our own time free from this fraud? Without doubt the great bulk of it was abolished, through the promotion system, although only twenty years ago some of the German universities had the reputation of conferring the Doctor's degree for money, upon presentation of a thesis, without troubling themselves as to the author. During my own studies a certain dentist wished to become a doctor and had a clever thesis written, which he submitted to a philosophic faculty. It was sent back to him because they could not credit the author with so thorough historic knowledge. Thereupon a chemist wrote for him a thesis on a platinum or other combination. That worked; a doctor's diploma followed, and probably the author of the work wears to this day the gold watch chain presented to him by the dentist. In 1874 the "Philadelphia university" conducted a regular traffic in Doctors' and Masters' diplomas! They maintained in England a well-paid agent, who anonymously advertised the Doctor's degree in the newspapers. A Berlin medical assistant received from him the following letters: "Dr. P. F. H. Van der Vyver, Jersey, England, June 5, 1874, to Mr. F. in Berlin. I have the pleasure of informing you that I am the agent of the trustees of the American University at Philadelphia, which is one of the most celebrated in the United States. I can supply you with a parchment Doctor's diploma from this university, issued in your name, in the Latin language, upon payment of the total fees and expenses, amounting to 160 Prussian thalers. Anticipating your reply by return mail

I will upon request give you further information." There is appended to this letter a request that it be privately circulated among the students and candidates, and the last lines contain the following remarks: "It is very important for those persons in Europe whose wish to obtain any degree from our university without being personally present, to take note that they should impart their desire to Mr. P. F. H. Van der Vyver, Doctor of Law, Jersey, England. Philadelphia, July, 1873." This American swindle, which lasted several years, appears to have been vigorously suppressed after a suit had been vainly prosecuted against it for two years. The value of the Doctor's title has depreciated considerably by reason of these cheap doctors. How little weight is given today to the title of Doctor of Medicine appears from the fact that after the national trade regulations had made the permission to practice medicine independent of the Doctor's degree, out of 314 approved candidates in medicine in Prussia in 1874-75, 125 had not obtained a Doctor's degree.

The administrations could no longer close their eyes to these irregularities. Maria Theresa commanded (1753) that candidates be examined with greater attention and without any favor, "that the public may be given able practitioners, well trained in the science of medicine, and the life of patients not be entrusted to an untrained physician for the lowest price." In Prussia (1725), beside graduation those seeking permission to practice were required to finish a course in anatomy and to elaborate one case, in the Latin language; later (1789), an examination in the German language was necessary. Then greater severity was enjoined upon all the Prussian faculties, failing in which, they must forfeit their graduating fees. The matter did not rest with this admonition; the young doctor was required to undergo a second examination before he was allowed to practice. The Prussian state-examination (*Staatsexamen*) originated in 1798, in which each candidate must go through a course of anatomy, medicine, surgery, clinics and pharmaceuticals before the examination commission in Berlin. The examination lasted from eight to ten weeks and cost twenty-eight thalers. Hufeland was loud in his praise of this regulation. He said that if many universities were less negligent about examinations and the conferring of the Doctor's degree this precaution in regard to graduated physicians would not be necessary; but, unfortunately, this title, once so honorable, appears so no longer, and the whole graduation has degenerated into a mere formality. The theses became, generally, worse. In 1726 the medical faculty was requested to take care that not so many grammatical errors appeared in the theses, so that they would not be criticised by foreign faculties.

Austria under Joseph II. in 1785, did away with theses entirely and substituted for them a practical examination. (At the same time the degree of Master of Philosophy for medical studies was abolished.) This order, copied in Mainz, was maintained only about two years, till 1810, and the theses were again introduced in the empire. Everywhere in Europe they had to be written in Latin. This pedantry, which has not yet entirely disappeared, was first opposed in America, where the University of Pennsylvania Medical Department gave permission in 1790 to compose the theses in either Latin or English. In the same year graduation theses appeared in the modern languages.

The ceremonies at examinations and graduations were very much modified, in comparison with earlier times, but they were everywhere very much of a masquerade. In Austria, until 1784 the candidate, quaking with anxiety, wore a black velvet mantle of especial cut and a round, queer-shaped hat, which had once been black, but which was usually faded by the perspiration of the candidates, just right for the head of a harlequin. The examination developed into a pleasant *déjeuner*, for which the candidates who were examined together arranged. Fine wines and pastry were there in abundance and sufficient to refresh professors and students. The former grew more indulgent, the latter more assured, all stiffness vanished. The Prague professors were forbidden these feasts after 1753. A ducat pressed into the hand of the botanic gardener secured to the candidate the specimens of plants which were submitted; as a precaution they were supplied with a paper upon which the necessary symbols were written. The faunulus had previously whispered in the ear of the student upon what points the master expected to examine him (*Reichsanzeiger*, l. c.). In Pavia (1787) the affair was conducted as follows: If the candidate had, after two years' study, passed his examination in the philosophic courses, then in order to become a Doctor he was given a written and oral examination by seven professors of medicine. First he had a little conversation with reference to the public exercises, then followed a two hours' examination. If he passed, the beadle called into the next room where candidate waited with his friends, "approbatus." The candidate entered and thanked them with a bow. On the following day was the written examination. Shut up in a room of the university building, he must answer two questions, for which he was allowed two hours' time and a certain number of books from the university library. When the time was up he read his paper aloud, and went out. Again the examiners balloted as to whether a second *approbatus* should be called. Then the dean specified a day for the graduation; but previously the thesis must be prepared, which, if approved, was printed and three days before the graduation was posted in the university building. The day came, on which the candidate defended his thesis, in which professors or doctors, as he chose, opposed him. The judges clapped their hands and he rose. Then sounded for the third time the "approbatus," the trumpeters standing below, blew their horns and thus announced the victory to the crowd. The candidate approached the bishop, heard the confession of faith and kneeling took the oath that he was a catholic. Then the dean came forward from his chair, addressed the honoratissimus or doctissimus candidate, embraced the fortunate one and gave him the Doctor's kiss. Amid the blare of the trumpets the Doctor's cap was placed upon his head.

Men were intolerant enough to make the conferring of the Doctor's degree dependent upon *religious belief*. The most of this fell upon the Jews. One Dr. Schülte in Cleve wrote in 1745 under the name of J. H. Sagittarius, a work in which he sought to prove: 1, that the graduation of a Jew as Doctor of Medicine was against the Christian religion, and was a dishonor to the science of medicine; 2, that the Jewish medicine was infamous and not to be suffered among Christians; 3, that a Christian could not allow himself to be treated by a Jewish physician without com-

mitting a great sin. Finally in the year 1784 the medical faculty in Jena, which for a long time had been allowed to announce as doctors only students of the Augsburg confession, received permission to admit Jews for study and for graduation. In Austria bigotry weighed like an incubus upon the state. Not alone because there in 1726 the Jews were first permitted to employ Christian physicians, barbers and obstetricians, and the Jewish apothecaries could sell no medicine to Christians and the Jewish surgeons could treat no Christian, upon pain of the severest punishment; not alone because even Protestants were oppressed in unheard-of ways when they were permitted to study medicine but not to be graduated as doctors, but even the conscience of Catholic physicians and patients were shackled. Doctors and professors were obliged in 1777 to take the sacrament on Holy Thursday, and to call the attention of any patient who aroused suspicion in anyway, to the sacrament, not delaying later than his third visit. If the patient hesitated to have the sacrament administered, then the physician was obliged to discontinue his visits, if he did not wish to lay himself liable to severe punishment, even to forfeit his license. Up to the reign of Joseph II., with which the sun began to shine upon the empire, only Catholics could become doctors, because they were obliged in their oath to swear by Mary's immaculate conception and by the saints. As the Protestants did not consent to this they acquired only the title of licentiates or master. Joseph II. abolished (1785) everything pertaining to graduation which had a religious bearing, and allowed the confession of faith as well as the oath of obedience to the Pope to fall into decay. From that time on any Protestant could be graduated without condition and was required to take only the usual Doctor's oath. In Vienna, Jan. 24, 1789, a Jew, Beer Joss, first received the Doctor's title.

In order to practice, an Austrian had to be graduated from a native university and if he received his degree from Vienna or Prague he had the right to settle anywhere in the whole monarchy, while those graduated from other universities could practice only in the province where they received their degree. They, together with their children, as well as the accredited surgeons, bath-keepers and apothecaries, were exempt from military service in the empire, in the second half of the century.

The medical faculties of Germany today do not care to know much about *women doctors*, and most of them, with the exception of the Swiss, exclude from their lecture rooms the wandering women students, most of whom are Russians. But a hundred years ago the sentiment was different. The daughter of the Quedlinburg physician, Leporin, was instructed in medicine from her youth up. She attended Halle regularly as a student in the medical department in order to hear the lectures, and was recommended by the king of Prussia to the faculty there for graduation. Meanwhile her marriage with the deacon, Erleben, delayed the examination. She passed it with honor, and on the 12th of June, 1754, was made Doctor in Halle. Her thesis treated: "Quod nimis cito ac jucunde curare sapius fiat causa minus tutae curationis." At her graduation Dorothea delivered a Latin address, took the usual Doctor's oath, and thereupon received permission to practice. Until her death she pursued her practice in Quedlinburg, and won the utmost confidence of the people. In the highest cir-

cles also there were found learned women; the Duchess von Württemberg publicly opposed the Tübingen professor, Mauchard, in a disputation of an hour's length. At this time in France they went even a step farther; the medical faculty in Paris chose the learned Countess von Voisenon as their president, something which had not happened even there before, and she took the place of honor amid general applause. In the beginning of our century two women of the family of Siebold became doctors. Regina Josepha, the wife of Damian von Siebold, received the degree of Doctor of Obstetrics from the University of Giessen, in 1815. Her daughter Charlotte, after taking the prescribed studies, under Osiander, passed the examination in Giessen in 1817, wrote a thesis, "The Conception Outside of the Uterus," and after a public disputation received the degree of Doctor of Obstetrics. Her reputation became so great that she was called to London in 1819 on the occasion of the birth of the present queen.

No study in the university interests us more in respect to surgery than *anatomy*, since this, as the basis of surgery, must exercise the greatest influence on its development. From antiquity down, the great reverence of the people for the bodies of their deceased relatives and friends has been an almost insuperable obstacle to the dissection of human bodies; indeed Boniface VIII., who became pope in 1294, imposed excommunication as a punishment for dissecting. Although in the year 1315, for the first time in Italy, cadavers were publicly dissected, and the brightest men battled against the foolish prejudice, yet all to no purpose. Therefore, anatomic instruction was retarded for centuries in its development. In Vienna in the year 1404, the first anatomic dissection of the body of a man was conducted by the Master Galeatus de Saneti Sophia, in the city hospital, and lasted one week. Physicians and laity were admitted. An admission fee was collected and given to the faculty, who purchased a new seal with the money (an ox's head and beside it St. Luke with the open book). It was twelve years later when Vienna witnessed the second anatomic dissection, and it was not until the year 1452 that the rector and consistory permitted the dissection of a woman's body. As cadavers were so difficult to obtain, they used swine and sometimes dogs. So all the great anatomic discoveries of the sixteenth and seventeenth centuries were made only on animals. The dissection of swine (which at the end of the fifteenth century were bought by the Dean of Vienna for 17 pfennigs), prevailed in German, French and Italian universities. It is known that Vesalius, who with his own hands robbed the churchyard or had his pupils do it, sometimes supplied his need with dogs, and (1536) a professor of anatomy in Paris had not during his whole life dissected a human body, but had used a great number of dogs and swine. The great taste for painting and the high development of this art did more for the study of anatomy than all ancient literature. It is known that Michael Angelo removed the skin from the bodies of men and animals in order to study the position of the muscles; this is also true of Raphael and da Vinci, who drew muscles and bones. Unfortunately, the prejudice of the people persisted. When Professor Rollink, in Jena in 1629, asked for the cadavers of criminals for dissection, the people were so wrought up that they stoned him on the street, and the poor culprits before their execution, out of fear of the anatomic knife, tearfully implored the single favor

that they should not be "Rollfinked," that is dissected. The frenzy of the people continued the same at the beginning of the eighteenth century; they attacked the anatomists in Lyons and Berlin, and persecuted the professors to the point of death, for the people were under the delusion that they dissected the bodies of living men. A. von Haller had obtained an exhumed cadaver in Paris and in his preparations he was discovered by some over-curious person, who had made a hole in the wall in order to see what was going on in the room. The police being notified, Haller could only save himself from the galleys by flight. He relates that the chemist Beccher was obliged to flee from Würzburg because he had opened a cadaver. Even in the sixtieth year, the prejudice was so great that Professor Kaltschmidt, in Jena, found it necessary to set the university seal upon a cadaver when it was received, because otherwise the students dare not touch it for fear of being considered dishonorable. For the same reason they sent the syndic, or the professor of anatomy, to the place of execution, in order to seal the bodies immediately after death.

There were anatomic amphitheaters in Germany, in many cities, outside of the universities, and these served for the instruction of the barbers. Halle was the first German university to which such an institution was annexed. Upon the advice of Holtzendorff, Berlin received from King Frederick William I., in the first year of his reign, 1713, its amphitheater, which was used in the winter for the training of military surgeons and for anatomic lectures and demonstrations, and in summer for surgical instruction. Under the leadership of the Society of Science—the present Academy of Sciences—it rose so rapidly that in the second half of the century it was among the best in Europe. Its collection of anatomic specimens was very considerable, and contained the skeletons of the two largest soldiers of Frederick William I.: all mis-born creatures in the whole country had to be sent to the anatomic amphitheater in Berlin. Hanover followed in 1716, where in connection with the collegium anatomico-chirurgicum, an anatomic chamber was opened which received the bodies of criminals. When a cadaver came in (in the year 1721 only four in number) a public announcement was made inviting the laity to participate in the instruction. The fee for each dissection was twelve mariengroschen, for all together, two thalers. If the dissection was upon a female cadaver the price was increased because of the greater crowds; it cost twenty-four groschen to see the uterus and fetus of a woman who had died pregnant. The Austrian government took the initiative in the improvement of anatomic instruction and commissioned the faculty to deliberate as to how opportunity could be created for the young doctors, students and obstetricians to get better practice in "anatomic and surgical operations;" whereupon the Vienna faculty in 1718 recommended the erection of an anatomic amphitheater, together with a theatrum chemicum and a hortus botanicus. However, a special professor was not appointed, but the supervision of the anatomic amphitheater was committed to the professor of theory. Not until 1739 was the first chair of anatomy founded in Vienna. An anatomic amphitheater was dedicated in Breslau in 1745 and in Dresden in 1748, upon the founding of the collegium medico-chirurgicum. At the opening of the last named amphitheater, when the body of a decapitated woman was the subject of demonstration, the crowd of spectators was so extraordi-

narily large that on the following day the demonstration was repeated for ladies, when some did not shrink even from touching the cadaver. Hamburg built an anatomic amphitheater in 1771.

During the whole century the German medical schools experienced a *great scarcity of cadavers*, in so-much that many had at their disposal only three or four in a year. This was owing to the prejudice among the people, the lack of hospitals, and the abolishment of the death penalty under Joseph II. and Catharine II. The circumstance that many criminals were sentenced to hang for a long time on the gallows, or to be buried under it, that some suicides were dissected by the authorities, increased the calamity. So few cadavers came to hand in Göttingen that A. G. Richter, as professor of surgery, instead of demonstrating his operations on them, is said to have illustrated the various incisions by the only method at hand, mostly with the shears and a piece of paper properly cut, and his amputations with a large turnip. Among the students there was naturally great distress. Their student days passed away and in winter they scarcely saw one cadaver, so that there remained to them only the atrocious method of exhuming the cadavers in the stillness of night, with or without the knowledge of the gravedigger. It was a misfortune for them if within the neighborhood of the university, from time to time, at least a few men were not beheaded. Abo, Finland, was especially celebrated in anatomy on account of its wealth of cadavers. There all persons who held lands under the crown, or enjoyed pensions, must bequeathe their bodies at their death to the anatomic amphitheater. The scarcity of cadavers has not ceased even in our time in many of the smaller universities; for as late as 1866 the laws in Mecklenburg-Schwerin were broadened in order to supply the University of Rostock with more cadavers. Charts had therefore to be used as substitutes, and the farther back in the century one goes the more closely does he find anatomic instruction limited to an elaboration of the anatomic charts of Vesalius, Fallopius and Eustachius. Later came the incomparably beautiful plates of Albin, on the bones and muscles, Haller's copper-plates of the arteries and Mascagni's lymph vessels. Meckel had illustrated the nerves, Zinn the eye, Scarpa the organs of hearing, and W. Hunter the phases of pregnancy. As a complete atlas, the only thing which they had at that time were the plates of Eustachius of the sixteenth century—the first anatomic copper-plates which we possess. After these had been regarded as lost for a hundred and fifty years, the pope presented them to his body physician, Lancisi, who first made them public (Rome, 1714). The best edition was prepared by our countryman, Albinus, who republished the plates after two hundred years, having had them redrawn. In 1793 Loder began to publish a large new atlas of the entire human body.

As early as the first half of the century different measures had been taken to provide against the scarcity of cadavers. The government of Saxony ordered in 1716 that the bodies of all criminals in the vicinity of Leipzig, executed by the sword or drowned in a sack (*Säckung*), should be furnished to the dissecting room at the cost of the faculty, and that all such bodies within a radius of four miles from Dresden should be supplied to the anatomic amphitheater in that city (1752). These regulations were extended to cover also the bodies of those who had hanged or drowned themselves, or died in prison; on the con-

trary, the bodies of paupers who had died in hospitals, were given only for the purpose of sections and not for complete dissecting. The abuse of allowing the bodies of hanged malefactors to rot, by which the whole neighborhood was tainted, was still very widespread until measures were taken to prevent the stench and to send the bodies to the dissecting rooms. Berlin had (1719) the bodies of the criminals, suicides and paupers, and later those from the Charité at its disposal; beside all these from within a radius of three miles, the dissecting room in Göttingen (1736) received the bodies of prostitutes and their illegitimate children. In the Vienna anatomic amphitheater they were somewhat negligent. One tried to throw the work on to another. When in 1742 the administration complained to the faculty that in that year not a single anatomic public demonstration had been given, although there was no lack of professors, demonstrators and substitutes, they excused themselves with the reason, among others, of a lack of cadavers. Immediately there came a royal order that all who died in the Burgher Hospital, Beckenhäusel, and St. Mark's Hospital, together with all the bodies of criminals executed in Vienna and its vicinity, should be delivered gratuitously to the university. This decree was in 1749, through Van Swieten's petition, extended to all the hospitals of Vienna, and it became their duty, in a dearth of malefactors, to supply the bodies of all paupers for anatomic and surgical operations; the city magistrate, under whose direction the public hospitals stood, protested. This kind of decree of the state was of the greatest importance in view of the mania of the people, and served to dissipate their mistaken ideas.

From foreign countries also there came a fresh stimulus. This consisted in the enormous progress of the natural sciences in France, which some thirty years before the revolution was made by all classes. The spread of the movement was at that time so rapid that the sciences were considered an essential groundwork of a good education, and entirely superseded the old classical studies. You would seldom find anyone in France who understood Greek, but all the lecture rooms of the physiologists and chemists in Paris were full. When A. Petit opened his anatomic lectures in 1768 the amphitheater was overcrowded. The sessions of the Académie were so popular in 1779 that after a few years the number of admittance cards had to be diminished. Even gentlewomen hastened there in order to have the composition of a mineral or the discovery of a new salt demonstrated. Whatever came from Paris was imitated in Germany. No wonder then if soon after, in the year 1780, the Duke von Weimar called Professor Loder from Jena to give at court an anatomic demonstration concerning the brain, and the Duchess von Weimar journeyed to Jena especially to attend a clinic demonstration on some children in the anatomic amphitheater. Perhaps Goethe's influence was a factor in the movement. When crowned heads occupy themselves with that kind of amusement, it can not fail to have a favorable reaction upon the people.

The prejudice against dissection was not less strong in England than in Germany, and there it was held over the criminal to sharpen his penalty. In the year 1779 it happened in London that two young physicians who had bought a cadaver to dissect it at home, had their windows broken open at night and them-

selves denounced as hangman's servants: a third had his house attacked by the mob and scarcely escaped out of it with his life. In spite of the great number of executions in London, not enough cadavers were to be had, so they were surreptitiously stolen from the graves and with great secrecy sold to the anatomists. The dissection could be performed publicly only on the bodies of murderers, which had been supplied to the College of Surgeons and were to be used for the lectures. The usual price for a cadaver was from two to five guineas, sometimes even more, because those who exhumed the bodies were in danger of being caught. (Anatomic specimens were enormously expensive; in 1785 at the auction of the Surgeon Hawkins three lymphatic glands injected with quicksilver, and an almost complete mounted skeleton which J. Hunter bought, were sold for eighty-five guineas.) In Edinburgh the prejudice against dissection appeared even stronger than in London, and scarcely a single cadaver a year was available, so that the instruction in preparations was almost discontinued. The younger Monro is said at one time to have given one hundred and twenty-four lectures over one single cadaver! On the other hand the University of Leyden and above all, Paris, were more fortunate; the hospitals were obliged to furnish so many cadavers to the latter university that anatomy could be studied to excellent advantage. The students there demonstrated and prepared the muscles in turn. Copenhagen obtained in 1736 an amphitheater for anatomy, with the cadavers of the fortress laborers and other prisoners. Moscow obtained a similar one in the year 1764.

Pathologic anatomy, as well as descriptive anatomy, suffered limitations through the prejudice against dissection. The rulers in Europe indeed set a good example by allowing the bodies of their own relatives to be opened. The Italians seldom opposed dissection and although the intelligent Germans and French followed them, there remained among the German people, to the end of the century, a strong prejudice, which the physicians combatted in the newspapers. Thus Baldinger thought many otherwise very intelligent officers would not have fought in the Seven Years' War and most of the soldiers would have run away if they had supposed that after their death their bodies would be dissected. The soldier would rather allow himself to be trampled by horses on the battlefield than to allow the dissection of his body. Exceptions were few and were found mostly among the more or less intelligent regiment commanders, although permission was given to make dissections in the Prussian field hospitals. Among the Austrians the physicians were obliged to dissect important cases, to report concerning them to the recording surgeon and to send specimens to the Medico-Surgical Academy in Vienna. In Russia the Greek Catholic and the Hebrew families never gave permission for dissections, therefore in the hospitals at St. Petersburg and Wilna only the bodies of those of other religions were available. Even as late as the last half of the century, many women died in the third or fourth month of pregnancy from simple retention of urine and no physician was able to discover the cause of this trouble. Sections first taught that the flexion of the uterus caused this trouble, which has since been remedied by mechanical means. Pathologic collections were somewhat rare. When Peter Frank was a teacher in Bruchsal he made such a collection for the

surgical school there, and later also for the public hospital in Vienna. Joseph II. bought for 30,000 guilders a collection of the most beautiful wax specimens of the human body, from the famous Abbé Felix Fontana and the anatomist Mascagni in Florence, had it brought to Vienna on mules and presented it to the Medico-Surgical Academy. In Austria in 1811 every medical and surgical institution of learning was obliged by law to establish a pathologico-anatomic cabinet and the professor was bound to prepare specimens. The growing popularity of dissections in the last decades contributed greatly to progress in pathology and surgery, because it made clear the nature, seat and origin of many diseases hitherto not at all understood.

The anatomists paid almost no attention to the practical needs of the surgeons. As this history has previously mentioned, there existed in Germany in the eighteenth century not a single text book in surgical anatomy, except the work of J. Palfyn, which appeared in Dutch in 1718 and was translated into German in 1760. The first complete, although very brief work of this kind, is said to be the Handbook of Frederick Rosenthal, published in the year 1817. This is incorrect, in so far as the Hanover physician, Otto Just Wreden, wrote a surgical anatomy in the year 1736, which I believe was the first in Germany. The full title of this forgotten and unimportant book is "Brief and clear instruction in the parts of the human body, with respect to their structure and position and also their functions; what concerns the solid and the fluid parts and also the soul. Dedicated to the best interests of surgery. Hanover, second edition, 1743." Wreden was director of the anatomic room in Hanover and instructed the surgeons. He served as field physician with the royal troops on the Rhine, and there in his leisure hours he wrote that book whose second part he called "Anatomy in particular," because everything which had no relation to surgery was left out of it. Wreden saw how difficult it was for the surgeon to find his way in anatomy and how even the best among them made erroneous diagnoses because, although they understood the separate muscles, they did not know their position with respect to one another. He published the descriptive anatomy first and gave 140 pages to a topographical description of the human body; at the end the physiology followed.

Under the conditions above described an exhaustive study of anatomy was not to be expected of German students. For the most the proper method was lacking, there was little opportunity to prepare specimens and they relied principally on charts. There was scarcely any idea in Germany of the useful application of anatomy to the practical sciences, so that not only was the groundwork lacking to the students in surgery, but even the fertilizing kernel of this science was extracted. In the first half of the century conscientious surgeons, by reason of their lack of anatomic knowledge, scarcely trusted themselves to perform the simplest operations. Partly in consequence of this fact many life-saving operations were neglected in the great German hospitals. It was the itinerant mountebanks who considered the most difficult and delicate operations as their peculiar heritage and although they sometimes murdered the people, yet, all things considered, they were in a certain measure justified as operators.

(To be continued.)

SELECTIONS.

Deep Lesions Produced by the Roentgen Ray. It is seldom that an issue of the *Bulletin* of the Johns Hopkins Hospital does not contain at least one paper of unusual merit and originality. The current issue has for its *pièce de résistance* an admirable illustrated article on the effects of the X-ray upon osseous structures by Mr. T. C. Gilchrist, Associate in Dermatology at the Hospital. The author finds 22 recorded cases of superficial effect, but his own is the first in which the deeper effect of the X-ray have been demonstrated by a radiograph. His patient, a male, was an X-ray operator, the eruption or dermatitis occurring on the dorsal surface of the right hand, wrist and lower fore arm, after frequent and long continued exposures. There was hyperemia and swelling of back of hand, inflammation of hand and fingers: the integument became dark brown in color and later exfoliated. There was no pain at first, but later the pain was so severe as to cause the patient to stop his work. There were aching, shooting and throbbing pains. The bones of the hand were very tender on pressure, particularly the first phalanges of the index and second finger and the carpal bones. The movements of the hand became so limited that it was practically useless for some weeks. Sensation was also much impaired, but after exfoliation occurred it recovered again, but only gradually. Recovery of all the lesions has been very gradual indeed.

The photographs have revealed what has never been observed before, viz., a distinct osteoplastic periostitis, and probably an osteitis, particularly of the first and second rows of phalanges of the index and second fingers, also of the heads of metacarpal bones of the same fingers, and judging from the symptoms, even of some of the carpal bones.

This then accounts for the severe symptoms, the aching, throbbing and shooting pain which prevented sleep. The density of these bones also has been increased, showing that even bone tissue has been effected.

A complete demonstration is thus afforded of the powerful, piercing character of the X-rays, and the severe, painful symptoms which have been described by other observers are probably due to the inflammation of the periosteum, and possibly the bone, besides the softer tissues.

This inflammation has also extended into joints, which would explain the loss of movements, and pain, when they could be used later.

As the result of these observations, it proves that the X-rays are even more powerful than have been generally thought, that the deleterious effects can in some cases be quite serious, and that the cutaneous manifestations are not the most severe of the lesions, but those of the deeper tissues, and particularly of periosteum and bones, being more severe.

He consulted with Professor Ames, Associate Professor of Physics in the Johns Hopkins University, who, after reviewing all the facts of the case, kindly wrote as follows concerning the present theory of the X-rays:

"The radiation in an 'X-ray tube' may be divided provisionally into three classes: ether-waves, which may have wavelengths from 150 to 800 mm. approximately; kathode rays, which undoubtedly are streams of matter, electrically charged; X-rays, about whose nature there is no conclusive evidence at the present time. If the walls of the tube are thin enough and of suitable material, all these radiations will emerge and pass into the surrounding air. It is a matter of doubt if the kathode rays observed outside the vacuum-tube are the same as those inside; but the inner ones undoubtedly cause the outer ones. There is no evidence that X-rays carry with them particles of matter, or that they directly cause a stream of particles; in fact, all known facts seem to point to the belief that they are ether-waves of extreme shortness."

It will thus be seen that the opinion expressed here does not make it possible for the X-rays themselves to produce such deleterious effects as have already been described, but Dr.

Ames mentions the fact that the kathode rays are undoubtedly streams of matter electrically charged. Here then we have some possible grounds for the theory that the lesions may be due to the entrance of particles (platinum in our case) into the injured tissues, and that the kathode rays which accompany the X-rays may be the cause of the trouble, and not the X-rays themselves.

On clinical grounds there is considerable support for this, at first sight, improbable theory. If the lesion extends at all deeply, it leads to the formation of ulcers, which are extremely intractable, and they may be due to irritating particles still present in the tissues.

We do not think that the possibility of injury ought to deter one from using these wonderful rays in surgical work, because only a few have been affected out of thousands who have been exposed to them. By keeping, as Thomson says, some distance away from the rays, injurious effects will hardly follow their use, and when the exposure is for a short time, unless, as may happen in all other diseases, idiosyncrasy plays a prominent part.

When the hand is viewed two or three times near a new Edison bulb, through a tungstate of calcium screen, after four or five minutes a tingling sensation is distinctly felt throughout the dorsum of the hand: this symptom lasted for ten or fifteen minutes and passed away without any further results. It occurred to him that X-ray operators and experimenters should expose to the rays the palmar surface of the hand, which is protected by a much thicker horny layer, rather than the back of the hand, which is much less protected.

In conclusion we would strongly advise all X-ray operators and experimenters who develop any special idiosyncrasy, to abstain from their use if they find that the slightest deleterious results follow an exposure to them.

Nodal or Bursal Pain.—In *Guy's Hospital Gazette*, January 16, Mr. Golding-Bird treats of this subject, showing that antiseptic surgery has effected a reduction in the number of cases, as well as in their duration. Pain, he remarks, is always the most important element in the case, from the patient's point of view: but we all know it is a subjective, not an objective one; not a fact, but a feeling. You can not dispute facts, but you can dispute a pain in a number of cases. There is no doubt that the patient's personal equation largely enters into the question. Many people seem to have no "inhibitory" power over their feelings: consequently it has been the fashion to class such cases together as "hysteria," whether the subject be male or female. I consider that antiseptics have helped to alter this state of things, and the use of them has given "hysteria" people their character again: for the surgeon, without risk, explores the seat of pain, and at times drops upon a cause he never suspected. A. B., female, aged 30 years, nurse from a provincial hospital, was last year a patient in Guy's, suffering a great deal of pain in her hip without obvious cause. She was not of the hysterical type. Cases such as this are common in general practice, and one must be carefully on one's guard against thinking too lightly of them. The history of this case was that four months before admission the patient had entered a room during the night while a portion of the flooring was raised for repairs. She had fallen with one leg through the floor and had bruised her hip severely. She went on with her work, but at last persistent pain made her seek hospital treatment. Her hip was flexed, she had spasmodic pain in thigh, and had to take morphia. There was no limitation of movement. When first seen as out patient the diagnosis of hysterical hip was given, because passive movements became greater in amplitude when the patient's attention was diverted, and because nothing objective could be discovered. Patient was examined a fortnight later by the surgeon, who confirmed the diagnosis so far that the movements were all perfect, and this

thought arose: Is this an exaggerated case which would only be cured by substantial damages paid into court? For when you suspect that a patient wants to take himself into court you should be exceedingly careful, and may discount some of his statements. In this case there was nothing wrong with the joint, and no swelling over it. It is true that there was a certain amount of tenderness in the groin, but this was totally unconnected with the movements of the hip-joint. The great trochanter was not thickened, but on its outer side I hit upon a tender area of the size of a half-penny, which was exquisitely painful and gave a creak on rubbing. This left no doubt in my mind, and I diagnosed bursitis under the gluteus near its insertion. The treatment available was either counter-irritation or operation. The latter method was chosen, and making an incision over the tender spot, I entered the bursa, which was found to be large and spread out under the gluteus maximus. This was scraped out and irrigated with perchlorid and closed up again. Immediate union was obtained and patient was entirely free from all pain and seemed on her discharge quite cured. With regard to the question of connection between bursal and local or nodal pain, it is interesting to note a point on the history of osteomata, which, as you know, are found commonly on the long bones, as the tibia and femur in positions corresponding to the epiphyseal lines. A boy will be brought up exhibiting an osteoma, which his mother will declare has only existed for four or five days, whereas it is more likely to have been present as many years. On manipulation, you will probably get the characteristic creak on rubbing the top of the boss. Whenever a bursa becomes developed on a prominence pain begins synchronously, but osteophytes may grow from the femur under the vastus internus, and may attain a very large size before there is pain; and this, when it comes, is either due to over-stretching of fascial coverings and the appearance of a bursa. Counter-irritants will have only a temporary effect in these cases, and the best treatment is to cut down and remove the tumor.

PRACTICAL NOTES.

Contraindications for Trional.—L. Kämpfer states that patients with cancer who have reached an advanced stage of cachexia, are unable to bear the usual dose of trional (1 gram), which produces distress, pain, cardiac palpitations, and acute agitation, amounting to delirium in some cases and continuing all night.—*Semaine Méd.*, February 17.

Concentrated Tincture of Iodin for Cavities.—Dr. A. Ricci has been using a tincture of iodine much stronger than that usually employed: (1 part metallic iodine to 5 parts alcohol), in the treatment of the cavities left after operations on glands, bones, articulations, etc., and announces that he has found it exceedingly effective in promoting healthy growth of the tissues.—*Semaine Méd.*, February 17.

The Sclerogenic Method Applied to Tuberculous Osteoarthritis.—Ziématzky combines Lannelongue's injections of chlorid of zinc with Bier's bandage, and has been very successful with them in the early stages of tuberculous osteoarthritis, when asepsis is easy. More advanced cases are not adapted to the treatment.—*Presse Méd.*, March 3, from *Rev. de Chir.*, No. 8, 1896.

Ott's Method of Recto-vaginal Exploration.—Two years of this method have convinced its author of its extreme value and he therefore recommends it again to the profession. The middle finger is inserted in the rectum and the index of the same hand in the vagina. The combination of these fingers with the other hand on the abdomen, enables the parts to be explored with great accuracy.—*St. Petersburg Med. Week.*, No 1, 1897.

Expectorant and Soothing Potion. Syrup of ipecac, 8 to 10

grams; syrup of tolu, 20 grams; potassium bromid, 1 gram; brandy or rum, 20 grams; lipden-water, 75 grams. One teaspoonful every two hours. This potion is rarely nauseating and never acts as an emetic. The amount of ipecac should be decreased to 5 grams for children, and the alcohol and bromid should also be diminished according to the age.—*A. Espagne, Semaine Méd.*, February 10.

Method of Determining the Amount of Deafness.—We notice in an exchange that a simple means to determine the amount of deafness is to insert a tuning fork in the mouth of a Y-shaped tube and place one of the branches in your ear, and the other in the ear of the patient. The tuning fork is then struck, and the one that ceases first to hear its vibrations tells when they become inaudible to him, while the other notes the length of time until he ceases also to hear them. If the physician has tested his ear previously with normal persons and others, he knows exactly his own hearing capacity and whether it belongs to the category of good, medium or bad, and uses this for his standard.

General Bath after Operation on the Pleura, to Wash out the Cavity.—Dr. Seemann places his patient, after operating for empyema, in a general bath for ten to fifteen minutes, thus allowing the pleural cavity to be thoroughly cleansed by the washing it receives from the water drawn in and expelled with each breath. The water is first boiled and then cooled to 34 or 37.5 degrees C., and the tub and the skin of the patient made aseptic beforehand. The lavage is much more complete and the patient not so exhausted as with the usual methods.—*Semaine Méd.*, February 17.

Oxygenated Water in Vomiting of Pregnancy.—The usual dose is 5 to 30 grams of the oxygenated water (10 volumes of oxygen), diluted with any liquid that does not alter the composition, and sweetened with sugar or lemon syrup to disguise its astringent and metallic taste. To arrest the vomitings of pregnancy, a teaspoon and later a tablespoon of the oxygenated water is added to a liter of water and taken as a beverage with the meals. The effect is rapid, but somewhat inexplicable.—*Gaz. Méd. de Liège*, February 18.

Imperfect Assimilation in Infants.—The combination of yolk of egg and olive or cottonseed oil made into an emulsion is found very useful in cases of rickets or chronic malnutrition in infants. The emulsion can be made as follows: olive oil, c.c. 60; glycerin, c.c. 30; yolk of one egg. Make an emulsion, and add one-half minim of creosote to each dram. Occasionally it is better to use a smaller amount of creosote when this agent is not well borne by the stomach. A full teaspoonful of the emulsion is given three times a day after feeding. The preparation seems to be readily tolerated, even when the stomach is irritable.—*Practitioner*.

Dulcin for Diabetics.—Dulcin (paraphenol-carbanid, discovered by Bellinblau of Warsaw), is 250 times sweeter than sugar. It is perfectly harmless in the doses in which it is given to diabetics as a substitute for sugar, and numbers of diabetic patients have been using it over a year to their satisfaction and benefit. The taste is more like sugar than the taste of saccharin. It is a crystalline powder, dissolving at a temperature of 173-174 degrees; in 800 parts of water at 15 degrees; in 50 parts of boiling water, and in 15 parts of 90 per cent. alcohol. The maximum dose for a patient has been 0.75 gram, administered in pastilles of 0.025 milligrams, equal to 5 grams of ordinary sugar.—*Journal de Méd. de Paris*, February 7.

Venesection and the Simultaneous Introduction of an Equal Amount of Saline Solution.—The reports recently presented at the Paris Académie de Médecine of the cases of uremia, pneumonia, cerebral rheumatism, pyelitis and severe hemorrhage arrested, and patients saved at the brink of death, by the withdrawal of 600 to 1000 grams of blood from one arm, while an equal amount

of Hayem's solution (7 grams sodium chlorid and 7 grams sodium sulphate to the liter of water), is introduced into a vein in the other arm, read like miracles. The saline solution evidently confers increased coagulability upon the blood, to which its effect in arresting hemorrhages is probably due.

Effect of the X-ray on the Central Nervous System.—Some interesting experiments are reported from Russia, that tend to show that the X-ray has a quieting effect on the central nervous system. A frog was placed in a small wooden box on which the ray was directed, while the control frog, in a similar box, was protected from the ray by a sheet of lead laid on top of the box. It even counteracted the effects of strychnin, as no traces of intoxication were noticed in the frog after the administration of 0.04 milligrams, and exposure to the ray, while the control frog was found in tetanic convulsions. Half an hour's exposure before administering the strychnin rendered it possible to increase the dose, without intoxication.—*St. Petersburg Med. Week.*, No. 1, 1897.

New Five-minute Process to Sterilize Water.—Bromin added to water will kill all the pathogenic germs in it in five minutes, and the addition then of ammonia will neutralize the bromin. Schumburg, who makes this announcement in the *Deutsche Med. Week.*, of March 4, has tested the process 200 times with river water at Berlin, to which germs of all kinds had been added, including cholera and typhoid germs. He uses 0.2 c.c. of the following solution: Water, 100; bromin, 20; potassium bromin, 20, for each liter, and then neutralizes it with an equal amount of 9 per cent. ammonia. The water is then perfectly clear, the taste is scarcely altered at all and the amount of bromin salts remaining in it is so small—0.15 per liter—that they do not affect the taste nor health. Marsh and other water containing ammonia requires a little more bromin to counteract it. He recommends the process as rapid, effective and cheap for sterilizing water for drinking in the army and on board ship in unhealthy localities and for medical and surgical purposes.

Nitroglycerin in Angina Pectoris.—Schott of Nauheim, in the *Therapeutische Monatshefte*, has found that: 1, nitroglycerin acts best in pure angiospastic forms of angina pectoris, not so well in cardiac pain due to aortic aneurysm, and is often of no use at all in the pure motor neuroses of the heart; 2, its action on different people can never be predicted; 3, if toxic symptoms appear after a small dose, it is best to discontinue the drug altogether; 4, if no toxic symptoms appear, gradually increasing doses can be given safely; 5, the form of administration is important, as Schott has found it to be most active given in a liquid medium, and combined with tinct. capsici, spir. rect., and aq. menth. pip.; 6, it acts surprisingly quickly and its action is generally at its height after two or three minutes; 7, it is generally necessary, when several small doses are without effect, to give larger doses. In some cases a single large dose acts best; 8, it is certain that much more than 1 mg. (1-65 of a grain) can be given as a single dose.—*British Medical Journal*.

Success of Itrol in the Treatment of Gonorrhea.—"Werler" announces that fifty cases treated by him with itrol (citrate of silver) were relieved of the tormenting desire to urinate, and the urethritis gradually healed, with none of the complications that usually accompany it, such as abscesses, cystitis, epididymitis, etc., and even chronic cases were arrested by it and strictures thus prevented. He also reports surprising improvement in cases of chronic cystitis, after lavages of the bladder with itrol. He commenced with weak solutions (0.025 to 200), kept in a colored bottle, and injected four times a day, increasing the strength of the solution to 0.03 and 0.04 per 200. The patient is instructed to urinate before he makes the injection, which he is to retain several minutes in the urethral canal.

Werler adds that the itrol exerts its bactericidal power into the depths of the mucosa, and that he considers it superior to any other known treatment for gonorrhea, including nitrate of silver, potassium permanganate, argonin, argentamin, etc.—*Presse Méd.* from *Dermat. Ztsch.* Nos. 5 and 6, Vol. iii.

Clinical Examination of the Pregnant Woman.—Several pages are devoted in the *Presse Méd.* of March 3, to a study of this subject by E. Bonnaire, *Accoucheur des Hôpitaux*. Among the questions to be asked we notice the age at which she first walked, the profession (washerwomen are subject to edema, others to lead-poisoning, etc.), tuberculous and syphilitic antecedents, bearing in mind that pregnancy has a tendency to arouse and aggravate old diathetic conditions. When there were troubles in walking in early childhood, examination of the skeleton becomes important on account of the presumption of rachitis. He describes the technique of inspection, palpation, auscultation, vaginal and rectal exploration, ascribing importance to each in their turn and mentioning that the bladder and rectum should be empty. When the woman is very obese, certainty can be secured by lifting the uterus *en masse* with the finger on the cervix the second or third month. A non-pregnant uterus is *light*, lifted in this way.

Bicarbonate of Soda as a Dressing for Purulent Wounds.—A Russian military surgeon, N. V. Gueorguievsky, accidentally discovered in the course of treating a severe phlegmon of the index and palm of the hand, that a compress wet with a 2 per cent. solution of bicarbonate of soda will arrest pain and suppuration almost immediately and lead to complete cure. He considers its action more effective than any other antiseptic, including iodoform, phenic acid, etc., in the treatment of purulent wounds. Whenever he suspended it to resort to iodoform, or any other treatment, the suppuration recommenced, to be arrested again by the resumption of the magic compress, as his patients called it. He first incises and cleans out all the pus and then applies the compress to the cavity and surrounding parts.—*Semaine Méd.*, March 3.

Flessinger's Treatment of Dyspepsia with Injections of Warm Water, Etc.—The "motor dyspeptic" takes a couple of injections of warm water, $\frac{3}{4}$ liter in each, and retains them fifteen to twenty minutes, an hour before dinner and supper. After the meal he reclines on a sofa and practices gymnastics of the abdominal muscles for twenty minutes, by raising himself slowly to a sitting posture and then slowly reclining again two or three times in succession, resting a minute or so, and repeating, thus exerting strong tension on the muscles. A general feeling of invigoration results: the tonicity of the muscles of the alimentary canal is increased, especially those of the stomach, as is shown by the almost immediate evacuation of gases. If there is acid fermentation the patient drinks beside, in small gulps, a series of three glasses of hot water, twenty minutes apart, sweetened or with an infusion of chamomile, vervain, orange leaves, fennel or anise. The tongue clears off and dinner is taken with relish half an hour after the last glass. The hot water is useless in motor dyspepsia alone, but is exceedingly efficacious in case of stasis and acid fermentation, and also in "hyperchlorhydrie."—*Gaz. Méd. de Liège*, February 18.

Simple Method of Measuring the Arterial Pressure. If the hand is dipped into quicksilver, the pulse can be felt in the fingers. As the arm is further submerged, the sensation of the beat of the pulse rises along the arm until it is felt above the wrist. V. Prey has applied these facts to scientific measurement of the arterial pressure, and states that greater accuracy can be secured in this way than with the sphygmograph. As the hand is submerged into the quicksilver, there is a certain point where the pressure of the blood within and of the mercury without, exactly balance each other. At this point the circulation is arrested and the pulse-wave reflected back. If the hand is inserted into the quicksilver to the tops of the meta-

carpal bones, hand and arm extended and held as vertical as possible, the pulse is felt in the ungual portion of the middle finger and the length of the middle finger represents the height of the column of quicksilver which holds the arterial pressure in equilibrium. The hand is exposed to an even pressure all over, and the vessels are thus less liable to external disturbances than with the sphygmograph, and the test also involves a larger extent of surface.—*Cbl. f. Phys.*, January 9.

Diagnosis of the Location of the Placental Attachment by External Palpation. Tribondani has been studying this subject at the Clinica Ostetrica of Pavia, where he is first assistant, examining the uterus of the patients immediately after the expulsion of the fetus to confirm his diagnosis made from external palpation beforehand. He announces as the result of his experience that the location of the placental attachment can be accurately determined by the following indications: 1. It is attached to the posterior wall if the tube and round ligaments are found on the anterior surface of the uterus, converging toward the top; if the anterior surface is rather flat, and if the beat of the fetal heart, the parts of the fetus and its movements, can be clearly distinguished from the front. 2. It is attached to the front wall if the tubes and the round ligaments are found on the sides of the uterus, parallel to its vertical axis, if the anterior wall is very convex, and the fetal heart and movements, and the fetus itself, are not easily distinguished from the front. 3. When the placenta is attached to the fundus, the latter is remarkably convex, almost hemispheric, and the points of attachment of the tubes and ligaments are much below its edge. 4. When the placenta is attached to the side wall, the uterus is very prominent on that side, and the attachments of the uterine adnexa are found much higher on that side.—*Gazzetta degli Osp. e delle Clin.*, February 7.

How to Avoid Taking Cold.—The *fin de siècle* toilet is not complete without rinsing the mouth and spraying the nasal passages and the throat with an antiseptic solution night and morning. By these means the upper air passages are kept in an antiseptic condition, unfavorable to the development of germs, and disease is prevented. G. Lemoine in the *Nord Méd.* of February 15, states that numbers of persons by these simple precautions have passed through the winter and rainy spring without once catching cold, although they had previously been extremely sensitive, and troubled with severe colds much of the time. He recommends to rinse the mouth with a glassful of 50 grams Labarraque's solution mixed with 1 liter of water, or the following: Thymol, 0.50 gram; alcohol 20 grams; water 1 liter. With an ordinary toilet atomizer the nasal passages and upper part of the throat should be thoroughly sprayed with some solution like the following: Phenolsalyl, 0.50 gram; chlorid of sodium 3 grams; distilled boiled water 500 grams. He adds that the teeth should be well brushed, and the fingers never put in the mouth or nose. A few menthol drops should be carried in the pocket and dissolved in the mouth occasionally. He concludes with the remark that a friend of his has always succeeded in breaking up a cold in the early stages, by taking during the first day four to six capsules or pills of essence of turpentine in addition to the rinsing or gargling and spray, with a glass of purgative water the next day, followed in a few hours by a 0.50 centigram of quinin.

Leucocytosis in Diphtheritic Infection.—A. Filé announces that leucocytosis is always associated with diphtheritic infection, its intensity proportionate to the severity of the infection. He has always found it more pronounced in cases of diphtheritic croup than in more throat diphtheria. The leucocytosis increases with the progress of the disease, reaches its height at the crisis and disappears as convalescence supervenes. The degree of leucocytosis is almost always in direct proportion to the extension of the false membrane, and does not depend upon

the age of the child nor upon the temperature. Neither is there any relation between the degree of the leucocytosis and the presence of other microbes in cases of mixed infection, but on the other hand, when the diphtheria is complicated by pulmonitis, the leucocytosis is more marked. The graver the infection the greater the increase in the number of polynuclear leucocytes. During protracted convalescence the number of mononuclear leucocytes in the blood increases notably, showing its renewal. The old leucocytes while retaining their shape, do not stain, or do so slowly, showing their lack of vitality. Eosinophilous cells are almost entirely absent in the leucocytosis that accompanies diphtheria. Injections of antitoxin produce hypoleucocytosis in half an hour, followed by hyperleucocytosis, at its highest point five to six hours after the injection and decreasing in the twenty four hours following, without reaching the point it had attained before the injection. In fatal cases the leucocytosis persists intense to the end. The number of leucocytes is probably not an indifferent factor in the production of immunity. Healthy children inoculated with the antitoxin, as a preventive measure, have a slight leucocytosis after the injection, returning to normal in twenty-four hours. Non-diphtheritic anginas are marked by hypoleucocytosis, and this fact may serve to differentiate them, at an early stage, of course before the injection of any antitoxin.—*Gaz. degli Osp. e delle Clin.*, January 10.

Sclerogenic Treatment of Hernia (Lannelongue).—The treatment of hernias with injections of chlorid of zinc has passed beyond the experimental stage and its success is now definitely established and is destined to revolutionize the treatment of inguinal hernia. The patient remains in bed eight to ten days after the operation and is then dismissed absolutely cured, with no further need of bandage or truss. The operation is so simple that it can be performed by any careful practitioner, and it is applicable to all cases and all ages. A witness describes a recent operation of the kind performed by Professor Lannelongue in his service at the Hospital Trousseau, the patient a lad of 14, affected with right inguinal hernia. The operation, watch in hand, lasted four minutes and a half, including the professor's explanations. The patient put to sleep, which is not strictly indispensable, and the toilet of the region performed, hair shaved, etc., the operator convinces himself that the hernia is absolutely reduced and orders his assistant to place his finger on the internal inguinal ring in such a way as to protect completely the peritoneal cavity. He then finds the cord as it enters the internal inguinal ring and holds it in his left hand, so that he can operate inside and around it without injuring it. The Pravaz syringe is taken in the right, filled with a one-tenth solution of chlorid of zinc (always the same in these sclerogenic injections). The needle is inserted perpendicularly to the pubis and carried down to the surface of the bone, when the point is deviated toward the under side of the cord and there, in the fibrous tissues surrounding it, five drops of the solution are injected and the needle is withdrawn. The same process is repeated three or four times each side of the cord, the points for the injections previously marked with a dermatographic pencil if necessary. The ring is thus girdled with a row of eight to ten injections, and thirty to forty drops of the solution are injected. The first injection is made in the upper abdominal wall on the upper edge of the pubis, toward the pubic spine, in the internal ring of the inguinal canal between the pillars. The second is made a little lower on the pubis about one centimeter from the first, and the third still lower toward the origin of the descending branch of the pubis. Three other injections are made inside the cord, which is pulled out of the way with the left hand. The needle is again inserted as far as the bone, still avoiding the cord, and its point is again deviated in such a way as to make the injection behind the cord in the fibrous tissue immediately in front of the periosteum. None of the liquid finds its way into the peritoneal cavity owing to the pressure of the assistant's finger, who realizes the importance of his task, and there is nothing more to be done but to apply a moist aseptic cotton tampon. The region of the injections is dressed with a compress of iodoform gauze, cotton and an aseptic bandage. Eight days in bed, suppression of the bandage and the child is definitely cured of his hernia. There is no cord to be avoided in females.—*Journ. de Méd.*, February 14.

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SATURDAY, APRIL 3, 1897.

THE ANTIVIVISECTIONISTS AGAIN.

On March 22 last Mr. GALLINGER of New Hampshire (Ecl. Med. Inst. of Cincinnati, Ohio, 1858 and New York Homeo. Med. Coll. 1868) introduced a bill in the United States Senate (S. 1063) for the further prevention of cruelty to animals in the District of Columbia, which was read twice and referred to the Committee on the District. This is the same bill as S. 1552 of the Fifty-fourth Congress which was reported favorably by Mr. GALLINGER from the District Committee of the Senate May 26, 1896, but which failed to obtain consideration during the short session.

The soft hearted and well meaning but narrow minded agitators of the Humane Society recognize from the manner in which the subject was handled last year in the sub-committee of the Senate, that they possess a friend at court, and there is no doubt that every effort will be directed during the sessions of the present Congress to have their bill brought before the House of Representatives with the stamp of the Senate's approval. The bill prohibits all experiments in the public schools and exhibitions to the general public. It prohibits vivisection of vertebrate animals without anesthetics, excepting inoculation experiments, tests of drugs or medicines, and during the progress of recovery from tests of surgical procedures. It requires experimenters, officers of the United States and of the District of Columbia excepted, to procure a license from the Commissioners of the Dis-

trict, and to make reports to the said Commissioners. The President of the United States is to appoint four inspectors, to serve without compensation, to inspect all places where experiments are carried on in the District, and to report to him from time to time the result of their observations, which should be made public by him.

The Senate Committee embodied in its favorable report of last year many extracts from absurdly exaggerated accounts of the observations made by sympathetic and horror-stricken members of the Humane Society in the laboratories of Paris and other European cities, and urged legislation to put an end to such atrocities in the District of Columbia. All the arguments in favor of the bill were couched in language that would be warranted only by the acknowledged or proved existence in the District of abuses to be remedied by its provisions. To such arguments is evidently due the support of many well meaning men, like the village doctor in Northern New York who humbly petitions Senator McMILLAN "to use his influence for the bill now pending to restrict the barbarous and useless practice of vivisection in the District. The practice is brutal and brutalizing to all concerned in it," etc. To similar assumptions or insinuations, or to intentional misstatement of the intent of the bill, is no doubt due the support given to it by the signatures of many notable persons in the District. A committee representing the scientific societies of the District considers that these signatures, gathered by lady canvassers in two days' time, can hardly be regarded as "the deliberate judgment of the distinguished jurists, clergymen, army officers, and others who attached their names to the petition." Indeed it is known that many who affixed their signatures were led to believe that the main object of the bill was to prevent vivisection in the public schools.

These scientific societies claim that there is no abuse of the right to experiment on living animals in any of the laboratories of the District. They invite investigation, and suggest that justice to themselves and to the biologists of this country required the Senate Committee to determine the existence of abuses prior to recommending legislation which would place honorable and humane men before the world in the character of fiends, whose cruelties required Congressional action for their restraint. The AMERICAN MEDICAL ASSOCIATION, at its meeting in Atlanta, May 7, 1896, protested against the passage of this bill or any modification of it "unless it shall first be shown by an impartial investigation that cruel and unnecessary experiments are being performed in the District of Columbia, and that existing laws do not provide suitable punishment for cruelty to the domestic animals." Medical men could smile at the sentimental outpourings and sensationalisms, the ignorance and mental limitation of the members of the Humane Society

but for the fact that such agitators may do much to retard the progress of medicine. It is asserted that no advance has been made in medical knowledge in the laboratories of the biologists; that biologic experiments have retarded rather than advanced abdominal surgery; and that the only value possessed by the antitoxin of diphtheria is a commercial value to those who deal in it. Memorials and protests from all the medical and scientific bodies of the country have already fully answered all the arguments adduced in behalf of the bill; but irrespective of these, the testimony of Mr. DABNEY, Acting Secretary of Agriculture, of itself ought to have sufficed to file the bill away with the records of the forgotten past. He pointed out that the bill, while ostensibly local legislation, would affect principally the work of the Executive Departments, and particularly the investigations of the Department of Agriculture. He explained how impossible it would have been, under such restrictive legislation, for the Bureau of Animal Industry to have done its work in suppressing pleuro-pneumonia which some years ago was so fatal among cattle, or in preventing the Texas fever which so demoralized the cattle interests of the West. "Are the vital interests of agriculture in the whole of the United States to be made subservient to the demands of an over-zealous and intolerant local society, which appears incapable of taking a broad and liberal view of the subject?"

But for the intervention of the friend at court such testimony on the part of a high Government official would have immediately quieted the harmful and unnecessary agitation. As the formal protest of the AMERICAN MEDICAL ASSOCIATION has been passed over by the Senate Sub-Committee, we earnestly suggest to individual members of the ASSOCIATION to meet legislation restrictive of progress with all their personal influence in the Senate itself; for, should S. 1063 receive an affirmative vote, the field of agitation would be extended to the legislatures of every State; and a cry for absolute prohibition would be raised in England, to be echoed and re-echoed afterward by the over-zealous and intolerant faddists of the United States.

FELONS AS PHYSICIANS.

A recent editorial in a daily paper discusses the question of the moral qualifications that should be demanded of the practitioner of medicine, taking as its text a late decision of the New York court of appeals. A statute enacted two years ago disqualified any one who had been convicted of a felony from the practice of medicine. An individual indicted under this law pleaded in defense, first that his conviction antedated its passage and that, further, the law was unconstitutional in that it prevented him from earning his livelihood in a recognized legitimate profession. The defendant was convicted, appealed the

verdict and the case was carried up to the court of last resort, where the decision was affirmed. The court held that the legislature could properly prohibit any one from practicing medicine who had been convicted of a felony before or after the passage of the act, and that the law was altogether constitutional. In the language of the editorial which probably embodies the substance of, or is quoted from, this decision:

"The preservation of the public health is one of the highest functions of the government, and the legislature may undoubtedly provide the mode by which, in its judgment, the public health may be best protected. One of these modes is the safeguards thrown around the practice of medicine, such as learning and character. The legislature may and should require that those who practice medicine shall be persons of good moral character. The most delicate and important duties are entrusted to physicians. They are admitted into the family circle, become cognizant of the most important and sacred family secrets, are permitted to administer powerful drugs and have the responsibility for and care of the lives, the health and the welfare of its members. It is only individuals of the highest character that should be intrusted with such privileges, and it is perfectly competent, therefore, for the legislature to prohibit criminals and felons from entering such a profession."

It is perhaps well that there should be a legal sanction thus given to a certain moral or legal rating for our profession. It is also a fortunate thing for the public that, as a rule, regular physicians have a high ethical and professional standard, and whatever their private lapses in some points of moral conduct may be, they seldom, or indeed almost never, violate the trusts placed upon them. The medical profession, it can be safely said, stands as high as regards its sense of right and honor, and its practical application of the same, as any, not excepting the military and the clerical professions, and there is as little need, on the whole, for enactments of the nature of the New York law, as could possibly exist with so large a class, in which inevitably some black sheep must occasionally be found. It is only on account of these, fortunately rare, exceptions that it can have its utility, but that these occur there is ample evidence. It is not very long since that, in the writer's own knowledge, an ex-convict was successfully practicing in one of our inland cities as a regular physician, and he continued to do so until a second conviction for a new offense consigned him again to the penitentiary. It is only just to say, however, that in neither case, it is believed, were his crimes for which he was convicted, directly connected with his medical practice; though a habitual criminal and probably belonging morally and physically to that class of degenerates, he still had a spark of the professional honor of the profession to which, though as a sort of a pariah, he belonged.

There is, however, a large class of men, known to every one, and who are popularly estimated as physicians, for whose benefit such a regulation as this New York law would especially be of value. Unfortunately,

they too often escape the penalty for their misdeeds, either by successful concealment of their misdoings or by failure of the courts to convict, and go on flourishing on the profits of their crimes. Still, such a law would occasionally settle one of them, and its moral effect would be good on the class as a whole. It would be only one safeguard, but it would prevent the possibility of what has repeatedly occurred, viz., the return to their old practices of once convicted abortionists and blackmailers. The rarely possible instances where such a law could work hardship, as in case of persons wrongfully convicted, could be easily met by special legislation if necessary, and this would be in its way the most thorough and satisfactory vindication. It is true that there may be on the statute books some laws under which physicians could be convicted for no actual or intentional crime—a paper, for example, was recently read before a New York medical society which demonstrated that almost any physician could be found guilty under the law of manslaughter—but this danger is not a very imminent or probable one, and need not give any concern to an honest medical practitioner.

As a measure for the protection of the medical profession, and still more for the protection of the general public, such a law prohibiting convicted felons from passing themselves and practicing as physicians, is eminently desirable and should be extended to other communities and commonwealths than the State of New York, where alone it seems to be now effective.

SKIN ERUPTIONS CAPABLE OF CAUSING ERRORS IN DIAGNOSIS.

There is probably no more frequent source of error in diagnosis, for the physician who sees a case for the first time, than the presence or development of lesions of the skin resulting from the presence of disease in other portions of the body or due to the administration of certain remedies which are not suspected of being the cause of the lesion or which may not be known to have been exhibited. Two papers dealing with this important subject have recently appeared in current medical literature, one by Dr. FRANCIS PACKARD, which was published in the *Medical News* for Feb. 20, 1897, under the title of "Scarlatiniform Eruptions following Operations for Traumatism," and the other by Dr. GUIRAUD of Bordeaux in the *Archives Cliniques de Bordeaux* for January, 1897. Some editorials dealing with the same subject have also appeared in recent numbers of *The Therapeutic Gazette* and in *Pediatrics*. The paper of Dr. PACKARD, as its title indicates, deals solely with the scarlatinous rash associated with various forms of trauma and in it is discussed the question as to whether such a rash is a sign of true scarlet fever or only a dermal inflammation, that is, an eruption due to the absorption of some toxic material from the site of the wound. While it is true that patients suffering from trauma-

tism may develop a scarlatiniform rash as a result of a coincident or early infection by the poison of scarlet fever, it seems to us most probable that the great majority of these cases are not true infections with this disease, but simply evidence of septic infection or the results of the ingestion or absorption of drugs which are capable of producing skin manifestations. This is by no means impossible and probably occurs far more frequently than is usually suspected, for cases are on record, in large numbers, in which a roseolous rash has followed the application of such surgical dressings as contained iodoform, corrosive sublimate, carbolic acid or arnica, and it is a well known fact that other drugs are capable of causing similar dermal changes. Thus VEIEL has reported a roseolous eruption following the use of bromid of potassium, this eruption usually invading the skin of the lower limbs, and it is also well known that copaiba may produce a roseola of the skin of both the upper and lower extremities which is often accompanied by febrile movement. That there are nevertheless some cases of so-called surgical scarlet fever which are really due to the infection by this disease, is proved by the fact that we have, as PACKARD points out, numerous cases on record in which the patient has not only presented symptoms of scarlet fever himself, but has in addition communicated it to others.

This proper conclusion is practically that which has been reached by STIRLING in his article published in the *St. George's Hospital Reports*, for 1879.

One of the most interesting cases of true scarlet fever complicating a surgical operation is that which was reported in 1891 by LLOYD, in which the eruption appeared in a patient who had been subjected to the operation of trephining. This case gave rise to an epidemic. Such individual instances, however, by no means prove that scarlet fever after an operation is a manifestation of the disease produced by this cause, for patients already infected by scarlet fever are doubtless admitted to hospitals because of some acute surgical condition and naturally develop the eruption after operation has been performed.

It is an interesting fact, however, that in the great majority of cases of so-called surgical scarlet fever the patient is usually very young. Thus in seventy-two patients quoted by PACKARD the average age was 6 years and 4 months.

Passing on to a consideration of the other skin eruptions, it is of interest to note that GRELLÉTY, DUMAS, BOURARD and several other French clinicians have reported cases of scarlatinous erythema following the external application, or the internal ingestion, of quinin, while others have seen erythema, acute eczema, urticaria and lesions by no means so common following the use of this drug. It is a noteworthy fact that these eruptions have usually appeared upon the face and have been brusque in their development

and in their rapid progress to full intensity. Further than this, all the drugs which we have named so far, as capable of producing a scarlatinous eruption, have also been quoted as having caused desquamation after the acute stage of the eruption has passed by. Turpentine applied externally, and used internally, has caused similar eruptions.

GUIRAUD concludes in his paper that very frequently the eruptions which are caused by drugs are limited to the face or, if not to the face, at least to the breast, and that sometimes the swelling may be sufficiently great to resemble erysipelas. Only when the amount of the drug which is ingested is very large are these eruptions, in his opinion, apt to extend over the entire body, and he thinks that the absence of general systemic symptoms in the majority of cases should aid us in the differential diagnosis between exanthems due to drugs and infections. In his opinion by far the greatest number of drugs capable of producing skin affections are the various balsams.

ANOMALIES OF THE MAMMARY GLAND.

Anomalies of the mammary gland furnish some very interesting evidence in favor of the Darwinian theory. These structures are now looked upon as simply a collection of modified sebaceous glands like the sebaceous glands found so abundantly in other parts of the body. CHAMPNEYS and DUVAL have shown that there is but little difference between sebaceous matter and milk. It seems probable that after the primitive stage of hermaphroditism ceased both sexes yielded milk, and that the male assisted in suckling as there were many young at a birth then. Later on, possibly from the number of young growing smaller, the males ceased to perform this function (DARWIN, "Descent of Man"). In the lowest class of mammals, the monotremata, the mammae are developed almost as much in the male as in the female. "On the whole," says DARWIN, "we may doubt if the additional mammae would ever have been developed in both sexes of mankind had not man's early progenitors been provided with more than a single pair."

Several varieties of abnormalities are met with. Amazia or entire absence of the breast may be noted first; this is excessively rare and is generally met with in connection with defects of the sexual organs or of the chest wall, such as absence of the pectoral muscles, etc. Nearly all the cases on record have been found in the female. A typical case is reported by Dr. WYLIE (*Brit. Med. Jour.*, Aug. 4, 1888) in a girl of 21. From the accompanying illustration in that journal, it may be seen that there is no trace of anything resembling mammary glands. In animals with mammae one or more may be non-developed, and in man only one may be absent. However, this is almost as infrequent as complete amazia.

As a rule, the left breast is slightly larger, on

account of the more frequent use of it in right-handed women. It sometimes happens that one or both sides are much smaller than normal, even smaller than the male gland and useless for suckling. Such a condition, called micromazia, is somewhat rare also. MCGILLICUDDY (*Med. Record*, Oct. 10, 1891) figures a unilateral case of this variety.

Congenital absence of the nipple, athelia, may be found in one or both breasts. The gland itself is not involved, so there may be abundance of milk, yet the patients can not nurse their children. In those lower forms, the monotremes already alluded to, there are no nipples, the milk escaping through ducts in a shallow depression of the skin. As we ascend in the animal scale we find the sides of this depression rising, until finally we have a complete mammillary outgrowth or nipple. Polythelia is also seen less rarely; the nipple may be bifid or the gland may have two separate nipples on the same areola, or one or more nipples, each with its own areola.

The condition of polymazia or supernumerary mammae is most frequently observed. According to BRUCE (*Jour. Anat.*, xiii, p. 425) of 315 persons of both sexes 7.6 per cent. had supernumerary mammary structures. HANSEMAN tabulates 262 cases, of which the female furnished the greater number. AMMON (in WIDERSHEIM, "*Der Bau des Menschen*") states that of 2,189 army recruits he examined, supernumerary mammary structures were found in 66; in 62 there was one extra and in 4 two extra.

Two is the smallest number of mammae met with normally in the group of mammals as seen in man, sheep, goat, horse; the cow has four, often six, the dog seven to fourteen. CUVIER states that the more numerous the glands are normally the more liable they will be to numerical variation. There is usually some relation between their number and the number of young at a birth; as a rule the mammae are twice as frequent as the number of young.

The position of the mammary gland is of interest. In the lower classes it is in the inguinal region (hoofed animals, whales), in the higher (elephants, apes, bats, man) it is pectoral, in the rest it occupies the whole abdomen. The change from polymasty to bimasty can be seen even at the present day in the lemurs. In these animals the inguinal teats are functionless and clearly degenerating, while those in the pectoral region are fully developed (WIDERSHEIM). As these creatures are strictly arboreal in their habits it is much easier to carry their young at their breast than lower down.

In man supernumerary mammary structures are almost invariably found on the front of the trunk at spots located on two imaginary lines drawn from the normal nipples and converging at the pubes, thus following the course of the internal mammary and deep epigastric arteries. Over 90 per cent. are thus located

(LEICHTENSTERN, VIRCHOW'S *Archiv*, LXIII, 222). If the redundant structures are below the normal they are thus internal to them, if above (which is rare) they are external. It is very rare for them to be found elsewhere, though MCGILLICUDDY mentions one on the thigh. It seems probable from a synopsis of the recorded locations of these redundant structures that man at one time had seven pairs of mammary glands and that the present pectoral pair corresponds to the fourth. In polymazia the normal pair is always in its proper position, no matter how many accessory structures are present.

As regards their functions they seldom reach the degree of perfection met with in the normal glands; milk may be secreted in greater or less quantity, but owing to the absence or imperfection of the nipples it is but rarely available. Of course they become most apparent during lactation, and like the normal glands become atrophied during the menopause.

Cases are sometimes described as axillary mammaræ or the "axillary lumps" of CHAMPNEYS. These are very rarely aberrant growths, but are due to processes of the mammary gland growing round the edges of the pectoral muscle becoming nipped off and wholly or partly separated. This emphasizes the necessity of cleaning out the axilla in operations for cancer of the breast.

Are these supernumerary organs more liable to malignant disease, like the undescended testicle which, as is well known, is very liable to carcinoma? The question is partly answered by ROGER WILLIAMS ("Diseases of the Breast," 1894). Of fifty cases of fibroadenoma seven originated in supernumerary mammary structures; of 132 cases of cancer thirteen originated in these structures.

The largest number of excessive mammary structures met with is in a case of NEUGEBAUER, a woman who had eight supernumerary breasts and nipples besides the normal pair. AMMON found six extra structures in a man of 22 years. *En passant* it may be stated that the Egyptian goddess Isis and Diana of Ephesus are represented with many breasts, symbolic of fruitfulness. ANNE BOLEYN, in addition to hexadactyly, is said to have had three breasts, which gave Henry VIII. an excuse for putting her to death.

Gynecomazia or enlargement of the male breast is generally unilateral. It may occur at any time of life but it is usually seen at about the age of puberty. The enlarged glands sometimes secrete milk and gynecomazia is frequently accompanied by defective sexual organs.

Diffuse hypertrophy of the female breast on the contrary is generally bilateral, and is caused by increase in the normal structures of the gland. This condition is decidedly rare. One of the most typical cases on record is related by Prof. JOHN B. HAMILTON (JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, March 9, 1895). In this case the two glands weighed no less than fifty-two pounds.

CORRESPONDENCE.

Autopsy, Necropsy, Necroscopy.

WASHINGTON, D. C., March 26, 1897.

To the Editor:—On page 571 of the JOURNAL is a paragraph in regard to the words autopsy, necropsy and necrotomy, as used to express the act of making a postmortem examination. The objection to the word autopsy is very properly stated, since it does not express the idea intended to be conveyed. As the word necrotomy simply means the cutting of a dead body, it also lacks in explicitness. But the word necropsy is a sort of corruption of necroscopy, which means (from νεκρός, a dead body, and σκοπέω, to examine) just what it says, and is therefore the word to use. It has the advantage of stating in one word what otherwise requires at least three.

The objection to the use of the word autopsy in this connection has led many writers to use simply the words postmortem examination, as in the translation of Virchow's classic work; and one of the latest, that of Hektoen of Chicago, 1894. The word necroscopy was used as far back at least as Ouelly, Paris, 1833; and Newth has a Manual of Necroscopy, London, 1878.

I have used necroscopy myself for many years and would be glad if the word, unabbreviated, might be brought into common use by physicians. Yours truly,

Army Medical Museum.

D. S. LAMB, M.D.

ANSWER.—We think our distinguished correspondent is in error as to the derivation of the word necropsy. It is not a contraction, but a literal use of the words νεκρός, "a corpse," and ὄψις, "a view." The word is also used in French and German. In those languages the term "necroscopy" is also used; but as Americans are just now engaged in cutting superfluous letters in orthography generally, it would seem a pity to use the longer word as Dr. L. suggests.

A Radical View of the Advertising Business.

MINNEAPOLIS, MINN., March 27, 1897.

To the Editor:—The short letter of Dr. W. S. Fullerton in the JOURNAL of March 13, it seems to me, touches on a subject of the greatest importance, but one in regard to which, unfortunately, medical practitioners are too indifferent.

I refer to the too common habit among manufacturing chemists of first introducing their goods to the regular profession in an ethical way, and after a time spent in such introduction and in obtaining testimonials from certain members of the profession, advertising the remedy in the secular press in the most unblushing manner for the benefit of the general public.

Scott's emulsion and Vin Mariani are two of the most notorious examples of this breach of faith with the profession, but it seems that during the past year the evil is growing, and that even heretofore reputable manufacturers are boldly advertising their goods to the public, at the same time that they cultivate the favor of the medical men in their accustomed way.

After noting your correspondent's strictures in regard to Messrs. McKesson & Robbins, I examined *Harpers'* and *Century* magazines and *The New York Independent* with the following results:

Harpers': Vin Mariani, one-quarter page. Buffalo lithia water, two pages. Eisner & Mendelson Co., Johann Hoff's malt extract, one page. Pabst malt extract, one page. Schieffelin & Co., Peter Moller's cod liver oil, one-quarter page. Scott's emulsion of cod liver oil, one page.

Century: Mellin's food. Schieffelin & Co., lycetol Bayer (cure for gout); somatose. Buffalo lithia water, again two pages. Eisner & Mendelson Co., Carlsbad salts, one page. Scott's emulsion, one page.

New York Independent and several other religious papers show the same advertisement of Moller's cod liver oil.

Now, it does seem that there are enough manufacturers of

pharmaceutic preparations to choose from, without lending our countenance to such methods and their exponents.

It seems probable, also, that quite a number of the firms named above would, if forced to choose between the patronage of the general public and that of the profession, prefer the latter.

Ought not the profession to discriminate sharply between manufacturers, and decline to prescribe anything made by houses which descend to the methods of the patent medicine men to push their goods upon the public?

J. CLARK STEWART, M.D.

Infection by Communion Cups.

PHILADELPHIA, March 25, 1897.

To the Editor:—May I be permitted to seek, through your "Correspondence" column, some information in a matter in which I am deeply interested, and have been from its inception, namely, the sanitary communion cup?

I would esteem it a great favor and personal kindness if any member of the profession throughout the United States would answer on the following points: 1, locality of church or churches using the individual communion cups; 2, denomination; 3, when adopted; 4, number of communicants—approximate; 5, if possible, and the respondent is a member of a church in which the individual communion chalices are in use, the undersigned would also like to have a brief expression of opinion as to the success of the new method, and what objections, if any, were urged against its adoption, whether pastoral or congregational? Very truly yours,

H. S. ANDERS, M.D.

Sequelæ of Measles.

(IN ANSWER TO DR. STIMSON'S QUERY.)

NEW YORK, March 25, 1897.

To the Editor:—In 1619, attention was called by Sennert as to the occurrence of arthritis as a complication of scarlet fever and measles, and almost all the specific fevers.

At the present day the frequency with which this complication occurs is universally recognized.

Dr. Samson is of opinion that the importance of measles as a predisposing cause of endocarditis has not been sufficiently taken into account, and he is inclined to assign to that fever a share in the predisposition of articular rheumatism. Those who possess a rheumatic tendency are most liable to suffer from rheumatism when attacked by scarlatina or measles.

Yours truly, GHISLAIN DURANT, M.D.

PUBLIC HEALTH.

Barbers Should be Compelled to Boil their Instruments.—Why not? asks the *Union Méd. du Canada*, commenting on a recent case of staphylococcus infection contracted by a physician in the barber's chair. Why should there not be a municipal regulation to that effect?

Prophylaxis of Phosphoric Necrosis. This subject has been receiving much attention in France lately. All are agreed that the best method of prophylaxis is the suppression of the use of white phosphorus in the manufacture of matches, but as this seems to be practically impossible at present, it is considered that rigid enforcement of measures requiring forced and abundant ventilation and the selection of workmen free from any lesion of the mouth, will be sufficient.

The Results of Modern Progress in Hygiene are strikingly shown by the decrease in the mortality in armies. In 1870 the mortality in the French army was 11 per cent.; in 1896 it had fallen to 5.29 per cent. The deaths from typhoid fever were less by one half and from smallpox have dropped from 127 in

1876 to 2. According to recent regulations an apparatus for sterilizing water by steam under pressure, mounted on wheels, is to be kept at headquarters, and sent at once to barracks threatened with an epidemic.—*Presse Méd.*, March 3.

To Regulate the Sale of Food, Drink and Medicine.—State Senator Revell of Chicago, has introduced to the Illinois legislature a bill intended to regulate the manufacture of baking powder, patent medicine, breadstuffs, the preparation of spices, pepper, coffee, tea, and other articles of food. The bill provides for the appointment by the governor of an inspector of all articles of food, drink and medicine. He shall appoint a corps of assistants to assist him in his work and it shall be his duty to condemn such articles if they are found to contain anything injurious.

Precautions Against the Possible Spread of the Bubonic Plague.—At the present writing France seems to be in the lead regarding sanitary thoroughness, inasmuch as particular attention is given to the regulation of the Mecca pilgrimages and a consequent over-crowding of the various sailing vessels, together with all the conditions growing out of the excretory surroundings belonging to all improvised camping grounds. England on the other hand, has been charged with too much indifference by reason of her valuable commercial interests in the Baltic region. In our own continent the State of New York appears to feel the national responsibility, since Health Officer Doty during the present month has received information from his appointed agent in Egypt that vessels arriving at the Suez Canal from India have been duly visited, that the precautions taken in Bombay are improving in adequacy, and that from the recent investigations in Bombay of Rogers Pacha, Inspector-General of the Sanitary Department of Egypt, it is to be inferred that there is no likelihood of the plague reaching Egypt.

Expose Illinois Towns to Smallpox.—The *Chicago Tribune*, March 29, says: Springfield, Ill., March 28.—[Special].—Dr. Scott of the State Board of Health today received a message from Chicago stating that a number of smallpox suspects were on their way from New York to points in Illinois. The suspects were passengers on the steamship, *Southwark*, which arrived in New York on March 26. There was a well developed case of smallpox on board, and many of the passengers were exposed. After disinfecting the clothing of the passengers, it appears that the New York Marine-Hospital authorities allowed them to go, and twenty-six of them are on their way to this State.

A number are bound for Chicago, and the following are passengers for other points in Illinois: August Martens, Kewanee; Tanna Keyenga, German Valley; Florence Nilass and F. Weltkamp, South Peoria; Lups Mendert, wife and child, German Valley; Mrs. K. Delayk and daughter Florence, Anne Kreiler, and Katherina Kupfer, Peoria; Emil Ettinger, Aurora; John Heischberg, Rose Hill; Nicholas Olinger, Sycamore; Marie Nittenbove, Angelus Lamens and wife, and Leo Dlamers and brother, Sheffield; Charles Martens, Rock Island; Paul Mary and three children, and Victoria Muller, East St. Louis. Dr. Scott sent telegrams to the points where the passengers are expected, and notified the local health authorities to look after them. In speaking of the policy of Marine Hospital authorities in permitting smallpox suspects to leave New York, Dr. Scott said: "In view of the fact that there is so much smallpox in Mexico, Cuba, and in the far East, it occurs to me that the precautions taken by the Marine Hospital-Service are inadequate. Over twenty people who have been exposed to the disease are sent out to Illinois, and the first notice of the fact comes two days later. In the meantime they may have developed the disease and spread it all the way from New York to Chicago. The chances are that these people will have reached their destination and embraced their friends before the local authorities have an opportunity to detain them. The carelessness with which people from infected districts are examined was well illustrated the other day. A Pullman porter with smallpox traveled all the way from City of Mexico to Chicago, where he was taken to the hospital. He had been waiting on

and coming in contact with passengers all along the line, and two cases have since developed as a result of his coming into the State."

Peoria, Ill., March 28.—[Special.]—A telegram was received tonight by Mayor Allen warning him that Anne Kreiler, Katharina Kupfer and Mrs. Weltkamp were headed for this city after being exposed to smallpox. The Mayor at once ordered the erection of a temporary pest-house in the upper end of the city, near the work-house, and sufficiently far away from all other buildings. It is being constructed tonight and the force of officers has been increased at the depot. As soon as the women arrive they will be taken to the place and kept there until all danger has passed.

Medical and Bacterioscopic Care of Dairies.—We have before us notes regarding two exemplary milk supplies, one in Denmark and one in New Jersey. Some of these notes, that must appeal to medical men and city dwellers generally, may be summarized thus: The Copenhagen Milk Supply was inaugurated in 1878 by the late Dr. Panum, one of the leading Copenhagen practitioners. The fact that the founder was a physician was not accidental, but reflects clearly the original purpose of the company, which has been preserved unimpaired to the present day, the attempt to improve the health of the city by furnishing a quality of milk that could with safety be recommended to children and invalids. The commercial element is kept severely in the background, the profits being limited to 5 per cent. The milk is obtained at present from about fifty farms having a total of about five thousand cows. The greatest precautions are taken to prevent any possible contamination of the milk. Every fortnight the cows are carefully examined by a veterinary surgeon attached to the company, who also reports on the general hygienic condition of the farms. The head dairy woman regularly visits the farms to examine them with regard to cleanliness, especially during milking, the cooling of the milk, etc., and an inspector sees that all instructions are followed. The Danes are nothing if not thorough. Special attention is paid to the so-called children's milk, the highest grade, of which over 60,000 analyses are made every year. All the milk is passed through filters, from which the children's milk passes immediately into bottles which are then sealed. Pasteurized milk is also furnished, both pure and mixed with water and sugar at different strengths ready for use. The danger of contagion is guarded against by a method that must be as effective as it is humane. Whenever any one connected with the company discovers that he or any member of his family is taken sick with a contagious disease he is removed from his work, and unless an attempt at concealment has been made, his full pay continues until his return. In this way it is to every one's advantage to give immediate notice of what, as a rule, entails serious loss. The working force at the time of the strike consisted of about two hundred men and women and over a hundred boys. A valuable feature of the administration is a committee of two prominent physicians who act as an advisory board, their services being rendered without any compensation. The model American dairy, of which we would briefly treat, is known as the Fairfield Dairy, in "the Oranges" of Essex County, New Jersey, and its product is known as "perfected milk." It was also founded in 1878 by Mr. Stephen Francisco. He began with only thirteen cows, and from the outset absolute cleanliness was insisted on, and great care was taken in all the details connected with the milking. In 1892 the physicians of Essex County instituted a search for a dairy that would meet all their requirements for the production of pure milk, and Mr. Francisco willingly signed the contract. Since that time the milk has been periodically examined by experts and certified to by different physicians of Essex County. The two large barns are situated on high ground, well ventilated and drained. The cows are kept in a sweet and clean atmosphere, groomed morning and night, and treated kindly. They are examined twice a month by a veterinary surgeon, who reports on the health of each, and if one be found to be

affected by any disease whatever she is immediately removed. Great care is taken in selecting the cows, their antecedents being rigidly looked into. The Jersey and Holstein breeds predominate. In the milking absolute cleanliness is the first care. The milkmen are provided with freshly washed white suits every day, and are not allowed to touch the cows until they have washed their hands and cleaned their nails. The udders are also carefully washed and the milk is then drawn into covered pails, through a small sieve opening. The milkmen are lodged and boarded on the premises, simple and healthy in their habits, and are visited weekly by a physician to prevent any sickness remaining undetected. As soon as milked the milk is gathered into large cans and sent by an overhead wire to the dairy, a building several hundred feet from the barns and near a never-failing spring of purest water. When received there the milk is quickly strained again and falls over a series of metal tubes, through which ice-cold spring water is continually forced, cooling the milk. It is then bottled and covered with ice until delivered to the wagons. In the dairy the same carefulness is observed. The bottles are all washed three times and subjected to a pressure of twenty-five pounds of steam. The pipes and tanks through which the milk passes are scalded with steam just before they are used; so the chances for germ-life to be introduced into the bottled milk are reduced to a minimum. The theory is that the bacteria in milk causes it to sour, and by taking every precaution to prevent contamination, the milk can be kept sweet much longer than is usual. In 1893 twelve bottles of milk were sent across the ocean on a Cunard liner, and brought back, a period covering twenty days, and one bottle was kept ten days longer, and in both cases the milk was found to be perfectly sweet when opened.

Voluntary Notification of Tuberculosis.—In the *Sanitary Inspectors' Journal*, January, Dr. Arthur Newsholme, Medical Officer of Health of Brighton, England, outlines the official measures of prophylaxis against tuberculosis that may be operated in the absence of a compulsory notification of cases of that disease. "In Brighton we at once disinfect all rooms occupied previously by phthisical patients, when requested to do so by the doctor or the relatives, or apart from this when we hear of them in any other way. The information thus received is, however, as yet very limited. No local authority has hitherto secured powers to include phthisis among the diseases to be compulsorily notified to the medical officer of health. My own views are fairly well expressed in a resolution by myself and unanimously passed at the annual provincial meeting of the incorporated Society of Medical Officers of Health in August, 1893: 'That the Society of Medical Officers of Health while accepting the view that phthisis is an infective disease, in the prevention of which active hygienic measures should be taken, think it premature to recommend the compulsory notification of a chronic disease like phthisis. They are, however, of opinion that it is incumbent on medical officers of health to take such steps as may secure, *a*, the voluntary notification of cases of phthisis by medical officers of public institutions and such medical practitioners as agree that precautionary measures are desirable; *b*, the adoption of such precautionary measures, including the disinfection of rooms, as can be arranged in conjunction with the family practitioner.' Much good, apart from the notification of cases of phthisis, may be done by acting upon the weekly death returns. In Brighton every death from any form of tubercular disease is fully investigated. At the same time as the information is obtained the following informal notice is served, and the thorough cleansing and washing of the sick room and its contents enforced: 'Sir, or Madam. In connection with the death from . . . registered as having occurred at No . . . , allow me to draw your attention to the important fact that consumption is chiefly communicated from one person to another by inhaling the dust of the room previously occupied by the patient. Hence it is most important that the house should be thoroughly cleansed and all trace of dust removed, wet cloths being used for this purpose. I beg to advise that the following works are necessary in order to prevent the risk of similar cases arising

in the same house, viz.: 1, to strip the wall paper and burn it in the same room; 2, to thoroughly wash the ceilings and floor and walls of the room; 3, to wash all bed linen and other articles in the room, and expose the bedding, pillows, etc., out of doors for several hours in bright sunshine. Yours obediently, Medical Officer of Health.' The spray of a solution of perchlorid of mercury (1 in 1,000) has in some cases been used in lieu of stripping off wall papers and whitewashing, but I am not yet able to speak from wide experience as to the relative merit of this method of dealing with such cases. The above measures of disinfection and cleansing may appear to partake of the nature of locking the stable door after the steed has been stolen. But it must be remembered that such action tends to minimize the dangers necessarily associated with this disease to other members of the same family as the deceased, or possibly to the members of another family moving into the infected house. Furthermore, there is the educational value appertaining to such measures, which impresses the public mind and gradually instills into it the necessity for continued precautions. That the danger of phthisis being communicated from one member of a family to another is not imaginary is shown by the following sample cases: A man, aged 38 years, died, during last year, of phthisis. He came from Portsmouth in 1892 already ill, where in 1891 his wife had died of phthisis. A woman aged 40 years died of phthisis. She had been married twice, both husbands having died before her of phthisis. The order of events in this case was probably that she acquired phthisis from her first husband and gave it to her second husband, in whom it ran a more rapid course than in her. A married woman, aged 42 years, died of phthisis. Her first husband died of phthisis in another house. There are several instances like this. A man aged 47 years died from phthisis in October, 1894, after an illness of several years. His daughter, who helped to nurse him, died in January, 1895, from phthisis. At another house four children of the same family died in succession of phthisis, namely, a young woman aged 23 years in January, 1891; a girl aged 16 years in August, 1891; a young woman aged 22 years in August, 1892, and a boy aged 16 years in November, 1894." If the narration of cases like the preceding produced a fear of living in the same house with consumptive patients, serious and unnecessary hardships to invalids would result. Assuming that simple precautions are taken, there is little or no danger of infection. What is necessary is that all expectoration should be at once burned, or a spittoon used containing a strong solution of carbolic acid or corrosive sublimate. Pocket-handkerchiefs should not be used for expectoration. Furthermore, the state of personal health is an important factor in the production of consumption. Attention to this, along with simple means of disinfection and cleanliness, removes the danger of communication of consumption.

BOOK NOTICES.

Lectures on the Treatment of Fibroid Tumors of the Uterus. By FRANKLIN H. MARTIN, M.D., Professor of Gynecology, Post-Graduate Medical School of Chicago, etc. Pp. 174. W. T. Keener Co., Chicago, 1897. Price \$1.00.

The book is divided into ten lectures. The first lecture treats of the anatomy, histology, etc. It is of course impossible to give a complete treatise on these subjects on eleven pages. Many important questions, for instance, the recent work on the adenomyomas of the uterus, are not mentioned at all. In lecture two the symptoms are described tersely and clearly, the diagnosis and differential diagnosis are discussed with much attention to detail. The third chapter contains the medical treatment and gives an exhaustive review of remedies which may or may not be of influence on uterine fibroids and on the conditions produced by them. Lecture four is devoted to ergot. The indications, methods of administration, duration and results of this treatment are discussed. The theories of the peculiar actions of ergot, and all the expectations built on these theories, are mentioned, but when it comes to results the author quotes old authorities. Though the ergot treatment is called "one of the meritorious relics of pre-surgical days," it is not to be understood that the author has the kind of reverence for this relic

which would prevent his turning toward more modern powers. Lecture five gives a condensed description of the practical use of electricity. As the name of the author is lastingly connected with this work, it is highly interesting to read a concise statement of his experience with this treatment. After a short description of the necessary paraphernalia, the more or less mysterious, unexplained or unproved effects claimed for the electric current are enumerated. Lecture six gives a very complete description of the operative treatment of fibroids. Preparation and after-treatment of patients are also discussed in this chapter. Lecture seven gives a review of the brilliant results accomplished by the author's well known operation of vaginal ligation of the broad ligaments. The history and technique are described and the latter illustrated by drawings. The indications are fully set forth and the prognosis defined. This is followed by the description of thirteen cases operated by this method between November, 1892, and February, 1895. Complete records of the cases, with the remote results, give a clear insight into the nature of the cases. It may be well to mention that the operation, though minor as to its performance, is by no means limited to small or incipient growths. In at least five of the cases the condition of the patient must have appeared desperate before this operation was performed. The results are extremely gratifying, as not only the troublesome and dangerous symptoms (hemorrhages, pain, pressure symptoms) have disappeared, but the tumors themselves have markedly decreased or disappeared. These results are so good that it is probable the operation will grow in popular favor, which it fully deserves in consequence of its comparative simplicity, the absence of danger from it, and its excellent prognosis. In the same lecture some minor operations for fibroids are described, removal of pedunculated fibroids (submucous), of cervical fibroids, curettement for the endometritis accompanying fibroids. The author does not favor enucleation of submucous fibroids of any considerable size if their principal bulk is buried in the wall of the uterus, and regards hysterectomy as more satisfactory in such cases. The operation of enucleation of submucous or intramural fibroids by laparotomy, which is a great success in such cases, is not mentioned in this or in any other chapter. Lecture eight, removal of the uterine appendages. The history and theory of this operation, its failures and the much restricted indications are described. The technique of the operation in simple cases, as well as in cases complicated with disease of the appendages, is outlined. The question of drainage is treated in a practical way. The author's results as given are brilliant: Sixty-five operations, no deaths; hysterectomy had to be performed subsequently in four of these cases. Lecture nine treats of vaginal hysterectomy. After a short historic review the advantages of the operation in comparison with abdominal operations, are mentioned. The author does not share the opinion of those ultras who try to operate every fibroid through the vagina, but advocates the sensible discrimination which differentiates the surgeon from the routinist. The two methods of vaginal hysterectomy, with or without morcellment, the use of clamps and ligatures, the after-treatment, are outlined carefully. One is not surprised to find at the end of this lecture the author's statistics ranging with the best published. Lecture ten, abdominal hysterectomy. This subject is presented in an extremely practical and clear way, the different methods being arranged according to their principles. The author favors the Stimson-Baer operation and describes its technique carefully for simple as well as complicated cases.

The book is a creditable one from any standpoint.

A Manual of the Practice of Medicine. By A. A. STEVENS, A.M., M.D. Philadelphia: W. B. Saunders. 1896.

This little manual has reached its fourth edition—evidence of merit. Its author understands the art of constructing a clear and fairly comprehensive abstract of the contents of the

larger works on medicine, to which due reference is made in the preface. The result is a convenient pocket companion that will be found useful by the student who is preparing a cram for examination, or even by the newly fledged professor who is about to step forth into the arena. But for students who are engaged in class-work such hand-books are too sketchy, and, consequently, dry and uninteresting—mere skeletons, devoid of attraction.

We Have Received in an envelope bearing the following stamp: "Treasury Department; Office Supervising Surgeon General; penalty for private use \$300;" a document purporting to be a reprint of the Cleveland *Journal of Medicine*, February, 1897.

The question of whether it is in violation of the law to send matter of this character without payment of postage, in a penalty envelope, is one for the postal authorities to consider; but looking at the matter of the document—a compilation which contains considerable miscellaneous information, among others, an editorial from the *New York Times*, August, 1893—it is chiefly remarkable for ignoring quarantine laws enacted prior to 1893, the Organic Act of Aug. 1, 1888, in particular being omitted. This omission is apparently malicious, unless we assume ignorance, and is not creditable to the present incumbent of the office of Supervising Surgeon General.

NECROLOGY.

JOHN B. DAVISON, M.D., Moline, Ill. The following resolutions have been adopted by the staff of St. Anthony's Hospital:

Your committee to whom was referred the duty of preparing an expression of our feelings regarding the death of Dr. J. B. Davison have the honor to make the following report:

Dr. Davison was born in Westmoreland County, Pennsylvania, June 11, 1826, and graduated from the Jefferson Medical College in March, 1868. He died at his home in Moline, Ill., Feb. 5, 1897. By his death this community has lost an upright citizen and the medical profession a devoted member. We will miss him at the meetings of our society and in our consultations in the sick room. That the evidence of our affection for him may live when we have gone we recommend that the following be spread upon our minutes.

Resolved, Death has removed from us Dr. J. B. Davison, an original member of the medical and surgical staff of Saint Anthony's Hospital.

Resolved, Dr. Davison, by his exemplary life both as a physician and as a citizen, was endeared to us beyond mention. Always honorable in his intercourse with his confrères. Always kind and sympathetic to the sick and afflicted.

Resolved, We regret his death and mourn with those who are dear to him, but submit in sorrow to his last call.

Resolved, That a copy of these resolutions be sent to the family of the deceased, a copy to the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, and copies to the press of Rock Island and Moline.

G. G. CRAIG, M.D.,
S. C. PLUMMER, M.D.,
L. D. DUNN, M.D.

WILLIAM B. BERRY, M.D.—At a meeting of the Orange Mountain Medical Society, held March 19, 1897, the following report was adopted:

Report of a committee appointed at the February 1897, meeting of the Orange Mountain Medical Society to prepare a suitable minute on the death of William Bogardus Berry, M.D.

WHEREAS, This society has been informed that Doctor William Bogardus Berry died in Pasadena, Cal., in December, 1896, and

WHEREAS, He was one of the founders of this society, and for a number of years did his full share to promote its scientific advancement and social well being, therefore be it

Resolved, That it is with profound sorrow that we have learned of the untimely death of our late associate. And that we desire, as a slight tribute to his memory, to have it recorded that we have never known a purer nor a more sincere man, and that his professional equipment and his private character were such that his membership cast luster upon this society.

Resolved, That in his death the profession has lost a faithful

and accomplished practitioner, his family a wise and devoted husband and father, the community a good citizen, the poor and unfortunate a ready helper, and the members of this society a genial companion and a noble and high-minded friend.

Resolved, That these resolutions be inscribed upon our minutes and that copies of them be sent to Dr. Berry's family, to the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, to the *New York Medical Record* and to the *New York Medical Journal*.

JNO. J. H. LOVE,
RICHARD C. NEWTON, { Committee.
THOS. W. HARVEY.

DOUGLASS EWELL, A.B., Columbia College, New York, 1888, M.D., College of Physicians and Surgeons, New York, 1891, died at the Langham Hotel, New York city, March 22, aged 30 years.

THOMAS SCOTT LAMBERT, M.D., Castleton, 1845, of New York city, died from pneumonia, March 31. He was 78 years old and had not been active in practice for years. Services and interment at Salem, N. Y.

MANOAH S. LONG, University of Pennsylvania, 1862, of Mertz-town, Pa., died of pneumonia, March, 16, aged 56.

ARNOLD SCHOTT, M.D., Jefferson Medical College, Pennsylvania, 1868, died in Philadelphia, March 18, aged 70. He was a lieutenant in the German army and afterward a military instructor at Berlin.

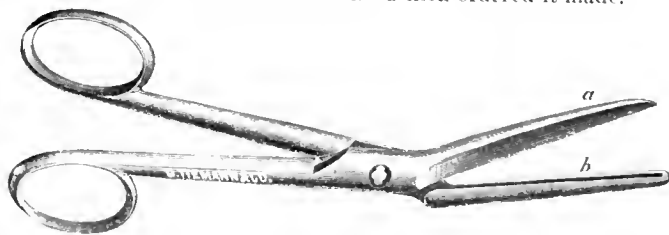
JAMES A. FISHER, M.D., an alumnus of the Pennsylvania Medical College (now extinct) class of 1853, died at his home in Reading, Pa., March 6, aged 56.

J. B. SAMO, M.D., of Buffalo, N. Y., March 12.—Wesley A. Dunn, M.D., of Chicago, at Naples, Italy, March 20. He had practiced in Chicago eight years.—Arnold Heinrich Arthur Scott, M.D., of Philadelphia, March 18. He was born in Germany in 1827 and came to this country in 1866 and was graduated from Jefferson Medical College.

NEW INSTRUMENTS.

CRAIG'S HERNIOTOME.

A few weeks ago I ordered an instrument from George Tiemann & Co., describing it as a pair of curved scissors, the under blade of which was a grooved director to be used in hernia operations and others of like character requiring the use of a grooved director. Mr. Tiemann replied that he had never heard of such an instrument, but liked the idea, and would make me one if I so desired. I then ordered it made.



A few days after receiving Mr. Tiemann's first letter I received another from him saying that the more he thought about the instrument the more he liked it, and requested me to write a description of it for publication in a medical journal, stating that he would furnish me a cut for illustration.

I have never posed as an inventor, but I believe I have unconsciously originated a very valuable little instrument, which I cheerfully give to the profession, hoping that those who use it will find some convenience from it, if not actual benefit. The illustration so accurately shows its mechanical construction that it is unnecessary to say anything about it. I only need to say that it can be used in any case where an inflexible grooved director is necessary. It can be used more gracefully, more rapidly, and with greater safety with one hand than the ordinary grooved director and knife can be used with both hands. It is impossible to cut anything except the tissue over the grooved blade.

have used it in one case, an operation for the radical cure of hernia, and it fully satisfied all my expectations. I believe it will meet the general approval of surgeons.

ROCK ISLAND, ILL.

G. G. CRAIG, M.D.

CHAUVAU'S IMPROVED STETHOSCOPE.

A large metal box fits over the chest, to shut out external sounds. It communicates with the close-fitting ear piece by a rubber tube, which has a side opening about 40 cm. below the ear. This opening enables the sounds to be perceived with much greater exactness, and can be connected if desired with a Marey drum.—*Cbl. f. Phys.* from *C. R. Soc. de Biol.*, April 25, 1896.

ASSOCIATION NEWS.

The Meeting of the American Medical Association.

To the Editor:—May I call the attention of those of your readers who are thinking of coming to Philadelphia to attend the semi-centennial meeting of the AMERICAN MEDICAL ASSOCIATION to be held June 1, 2, 3, and 4, 1897, that there will be in addition to the meeting of the ASSOCIATION at the same time a large mercantile convention which will to a certain extent utilize a considerable number of the rooms in the various hotels. For this reason it is advisable that physicians who intend to be present at the meeting should write at once to one of the following hotels engaging such rooms as they desire at the rates named:

Hotel Walton—Broad and Locust Streets: \$1.50 and upward per day, European plan; \$4 and upward per day, American plan.

The Colonnade—15th and Chestnut Streets: \$1 and upward per day, European plan; \$3 and upward per day, American plan.

The Lafayette—Broad and Chestnut Streets: \$1 and upward per day, European plan; Table d'hôte: breakfast 25 to \$1, luncheon 75, dinner \$1.25.

The Bingham House—11th and Market Streets: \$2.50 and upward per day, strictly on the American plan.

Hotel Stenton—Broad and Spruce Streets: \$2 and upward per day, European plan; \$4 and upward per day, American plan.

The Continental—9th and Chestnut Streets: \$3 and upward per day, strictly on the American plan.

The Windsor—11th and Filbert Streets: \$1 and upward per day, European plan; \$2 per day, American plan.

The Stratford—Broad and Walnut Streets: \$1 and upward per day, European plan only.

Girard House—9th and Chestnut Streets: \$2.25 to \$3 per day, strictly on the American plan.

Hotel Hanover—12th and Arch Streets: \$2.50 per day, strictly on the American plan.

Aldine Hotel—Chestnut Street above 19th: special rates to members of the AMERICAN MEDICAL ASSOCIATION, \$2.50 per day, on the American plan; \$1 to \$3 on the European plan.

The price quoted in each instance is for one person only. Rooms commanding only the lowest price are naturally limited in number. It is especially desirable that each member intending to be present at the meeting shall personally, or by letter, make his arrangement with the hotel at which he desires to stop.

It is worthy of note that the rate of \$1.50 per day at the Hotel Headquarters, the "Hotel Walton," is the rate for two people in one room.

All these hotels are within a few blocks of the meeting place and most of them are within two blocks. As a sub-committee of the General Committee of Arrangements has arranged clinical courses in all branches of medicine at the various teaching institutions and large hospitals during the week prior and following the week of the ASSOCIATION meeting, it has been thought that a considerable number of physicians would be glad to embrace the opportunity of brushing up upon the various branches by attendance on these courses, for which no charge will be made by the gentlemen giving them and as their

stay in this city will therefore be more than a few days, it has occurred to the Committee that some of the visiting physicians may wish to take rooms at some good boarding house. The Chairman of the Committee on Reception and Accommodation, Dr. G. E. de Schweinitz, 1401 Locust Street will be glad to send the addresses of such boarding houses to gentlemen desiring to stay here for a week or more.

The large number of gentlemen who have already signified their intention of attending the meeting, and the very large number of able and interesting papers already placed upon the programs indicate that this will be the most important meeting which the ASSOCIATION has ever had and it is hoped that every physician who is a member of a regularly organized County Medical Society will make an effort to attend.

The meeting halls for the various Sections are situated so close to one another that different papers in different Sections can be readily listened to during a single morning's session by those who do not wish to devote their time to one particular specialty.

Very truly yours, H. A. HARE, M.D.
Chairman of the Committee of Arrangements.

SOCIETY NEWS.

Antitoxin American Pediatric Society.—The Collective Investigation (report) will be kept open until April 10, in order to secure a return of all cases beginning before April 1. The committee desire to express its appreciation of the trouble and pains the members of the profession have been willing to take in this matter. The return blanks are more understandingly made out than in the first report.

International Bureau of Penal Law.—This organization will meet at Lisbon, Portugal, April 20 to 22, 1897. Subjects announced for discussion: 1, Modifications in the Statutes of the Union; 2, Contraventions; 3, Transportation as a Repressive Penal Measure; 4, Criminal Attempts; 5, Minor Delinquents; 6, Moral and Penal Responsibility. M. Rivière, Secretary, 52 Rue d'Amsterdam, Paris.

Pathological Society of Philadelphia.—The annual conversational meeting of the Society will be held in the Upper Hall of the College of Physicians, northeast corner Thirteenth and Locust Streets, April 22, 1897, at 8:15 p.m. Dr. Ludvig Hektoen, professor of morbid anatomy in Rush Medical College, will deliver an address, entitled "Fragmentation and Segmentation of the Myocardium." After the meeting a reception will be tendered Dr. Hektoen at the University Club, 1316 Walnut Street. A cordial invitation is extended to attend the meeting and the reception.

Union Medical Society.—At a meeting held in Troy, N. Y., the Union Medical Society was organized by the leading physicians of Rensselaer and Washington Counties, New York, Bennington County, Vermont, and Berkshire County, Massachusetts. It is intended to hold four meetings a year, one in each county. The first regular meeting will be held in Troy, April 21, when the permanent officers will be elected.

The Luzerne County Medical Society held a regular meeting at Wilkes Barre, Pa., March 14.—A regular meeting of the Syracuse (N. Y.) Academy of Medicine was held March 23.

MISCELLANY.

Dr. Unna's Pamphlets.—Dr. P. G. Unna of Hamburg, has kindly sent us reprints of various addresses and articles contributed by him to medical literature. We have sent them to the Newberry Library.

Extra-uterine Pregnancy, Deliverance through the Rectum.—The *Rev. Méd. de la Suisse Romande*, No. 12, describes the case of a woman of 28, who after every indication of extra-uterine

pregnancy, passed fetal bones, etc., through the rectum at intervals during a period of almost eleven years, when she died of peritoneal complications.—*Presse Méd.*, March 3.

Personal.—Prof. Nicholas Senn of Chicago, entertained the *Verein Deutscher Aerzte* of Milwaukee, at the Athletic Club, Chicago, March 26.—Prof. Hobart A. Hare of Philadelphia, has been appointed "consulting therapist" to the well known house of Parke, Davis & Co.—Dr. Fred. H. Wines has been reappointed Secretary of the State Board of Charities of Illinois.

The Republican Candidate for Mayor of Chicago. Judge N. C. Sears, in a letter written to the Physician's Club said that while he had made no pledges and could not make any, yet he believed in lawyers for legal positions and doctors for medical positions. This is all that should be asked.

Mr. Hesing, one of the candidates for Mayor, has sent a circular to physicians in which he says that, if elected, he will appoint a physician and not a politician as Health Commissioner. This commits all the candidates to the principle of a medical man for a medical office.

Seventy-Seven Cases of Extra-Uterine Pregnancy.—Wasten reports this number of tubal pregnancies occurring in his practice in three years. He operated in 52 cases, 45 celiotomies and 7 colpotomies, and considers that the sooner the operation is performed the more complete the results and the more rapid the recovery; out of 18 patients operated in *extremis*, 2 died: a fetus was discovered in 13 cases, twins in 2; 25 were treated non-surgically, but in only 3 of these was the resorption complete. In most of the cases there was tubal abortion or a retro-uterine hematocoele, complicating hematosalpinx, in 2 cases ante-uterine hematocoele.—*St. Petersb. Med. Woch.*, Feb. 27.

Effect of Venesection on the Chemical Constitution of the Blood.—Jessipow concludes from his numerous experiments on animals that the blood is altered in its chemie constitution by withdrawal of a certain amount, and that it then acquires a powerful bactericidal action, at its height twenty-four hours afterward, and gradually returning to normal. The resistance of animals to intraperitoneal cholera injections increased in direct proportion to this increased bactericidal action of the blood. Repeated venesections increased this resistance more than one single venesection.—*St. Petersb. Med. Woch.*, No. 1, 1897.

Railroad Hospitals.—The Southern Railway, according to the *Atlanta Constitution*, is to erect a chain of hospitals for the care of those injured in its service with the extension of the same privilege to all accident cases. Attention is at the expense of the road. This provision will ward off or at least mitigate damage suits. "The Plant system—and in fact most all of the great systems throughout the country," says our contemporary "have erected such institutions and from information the systems have saved many dollars and at the same time given more efficient service to the injured."

The Coming Rule of Moral Suasion in Russia. Even Russia, perhaps over-maligned by reason of its despotic form of government and its fierce though repressed racial wars, accepts the spirit of the times. We learn from authority deemed competent that the director of a new asylum for juvenile offenders has been refused permission to introduce corporal punishment in both the male and female departments of his institution. The *Novoe Vremya* recalls that a like petition was made several years ago by the director of a juvenile correction colony, and that the petition was denied in emphatic terms by the Minister of Justice. As somewhat germane to the subject the Rev. Dr. Talmage draws vivid pictures of the charming domestic life of the cultured Russians, whom he probably saw under the best possible conditions. He fosters the view that the national characteristic is that of an indifferent, resigned melancholy, upon which according to most alienists mere physical outrages can have but little effect. Probably in this history making epoch Russia is at "stack arms."

Intoxication from the Vapors of Anilin. An employe without syphilitic or alcoholic antecedents, was sent from a drug store in Nancy to the works at Bar le Duc for a quantity of anilin. (1892). It was kept in cemented tanks, and as he did not have a siphon, he drew the anilin in pails and emptied it into his vessels, which occupied him four or five hours. The work was done in a small, close shed, and the air was soon saturated with the vapors. The moment he emerged into the fresh air he fell prostrate, and remained unconscious for seven hours, pupils dilated, pulse feeble, skin cold, spasmodic contractions of the lower muscles and trismus. For a fortnight his urine was black and his complexion green, while his limbs could scarcely support him. He has since had two attacks of partial hemiplegia, and his mental condition has varied from extreme depression to periods of excitement, while his character has completely changed and he has become morose, and even savage.—*Presse Méd.*, March 3, from *Rev. Méd. de l'Est*, No. 18, 1896.

The Census Statistics of France.—To arrest the steady decrease in the birth rate among the French people, M. Alphonse Bertillon, the terror of the arrested criminal, and well known to everybody except, as is said, to a few New York police officials, advocates the exemption from direct taxation of every family in which there are three children. He would further have imposed an extra tax of 20 per cent. upon all without the requisite number, as a protection against loss of revenue by the treasury. In this way he hoped to establish a distinction between men to whom the nation's interests are dear and men who consider them not at all. In studying the degree of fiscal punishment a citizen, says M. Bertillon, has, as such, three primary duties; he must do his share toward the perpetuity, the defense and the financial maintenance of his country. If he shirks the first, he must undergo an extra charge for the other two. M. Bertillon, however, does not reveal whether he would begin again to tax a father, of whose three children one or more should die, nor whether exemption should cease when the children become self-supporting and leave the parents' home. Would it not be more satisfactory to discuss the whole question from the moral standpoint alone, without even a bias for the rights of posterity, which are or should be held to be inalienable. Poor France, in her history, it is to be feared has exchanged much too late her jocund shout of "On with the dance," for the yell of "Now to glory."

Wisconsin Law for Treatment of Inebriates Unconstitutional.—The manifest purpose of the Wisconsin law of 1895 (chapter 203 of the laws of that year) providing for the treatment of habitual drunkards in private institutions at county expense, the supreme court of that State declares was to benefit private parties. In other words, it says that it was to compel the county in which any citizen resided who had become "addicted to use of spirituous, malt or fermented liquors, morphin, opium, cocain, or other drugs or narcotics, to such a degree as to deprive him or her of the power of reasonable self-control," who had been committed to these private parties' private institute, in the manner prescribed, to pay such institution a sum not exceeding \$130 "for treatment, medicines, and board for four weeks," furnished to such person. This, the supreme court holds, Wisconsin Keeley Institue Co. v. Milwaukee County, Feb. 2, 1897, must, for one thing, stand in the way of the act being a valid exercise of the police power of the State. The mere fact that an institution is subject to visitation and inspection by public officials, it says does not make it a public institution. Nor does it think that a county can be compelled to pay any private party for treatment, medicines and board of any resident therein, having a disease not contagious or infectious, merely because such diseased person "has not the means to pay for said treatment." Upon these grounds, the court holds the law in question unconstitutional. The Maryland act that was held

valid, it points out was broadly distinguishable from this one. More like it was that of Colorado, but its constitutionality was not made to turn upon the questions considered above, so the case in which it was held valid was not deemed an authority here.

Five Hyatid Moles. Garcia Medina describes an unusual case in the *Revista Médica de Bogotá* for October. The patient, a woman 48 years of age, had passed through twenty-one pregnancies, some terminating normally, and others by abortion, and finally presented the symptoms of an eight months' pregnancy, with evidences of tumors in the uterus. He dilated the cervix as for an abortion, and made injections of citrate of ergotin in the hypogastric region, causing uterine contractions and the expulsion of the moles, five in number, two measuring twelve centimeters in length. Each had a pedicle and was enveloped in a sac of fibrous tissue. The immediate results were good, but a hemorrhagic endometritis that subsequently appeared required curetting. This restored the patient to health and her menses reappeared.

X Rays in Medical Jurisprudence.—The City and Suburban Railway Company of Baltimore, Md., have found the cathode X-rays an efficient checkmate for a recent fraudulent scheme. A man whose name the officers decline to disclose asserted that he had one of his arms broken by a car, and through an attorney demanded \$3,500 damages. His arm was tied up from the wrist to the elbow, and he pretended to be in great pain. Rather than go to the expense of a lawsuit, the company offered to compromise for \$100, which was refused. The company then arranged for a picture of the bones of his arm, which showed no fracture. When the bandages were removed the skin was found to be burned and discolored by an acid, said the physicians. The result of the examination was made known to the claimant who offered to settle for \$25, but the company was no longer in a compromising mood.

A One-Man Medical Faculty.—Dr. Dunglison writes in the *College and Clinical Record* that the late Prof. Robley Dunglison of Jefferson Medical College, when invited by the representative of Thomas Jefferson, then rector of the University of Virginia, to leave England to assume the duties of a professorship, or rather a combination of professorships, in that school, entered into a contract: "To teach to the best of his ability and with due diligence, anatomy, surgery, the history of the progress and theories of medicine, physiology, materia medica, and pharmacy." At the time he was invited to take upon himself this task he was but 26 years of age.

If any man in American history was ever able to accomplish so much, that man was Robley Dunglison, whose knowledge was well-nigh universal, and who touched no subject with his pen that he did not adorn.

An Ex-Post-Facto Medical Law.—The same reasons that control in imposing conditions upon compliance with which the physician is allowed to practice in the first instance, it is adjudged, may call for further conditions as a requirement of his continuance in practice. But the appellate division of the supreme court of New York holds, in *People v. Hawker*, Feb. 5, 1897, that any legislative requirement imposed for the continuance of a person in the practice of medicine, whether pertaining to his professional knowledge and skill or to his good moral character, must relate to his present status or condition. Thus, the provision of section 133 of the New York public health law (chapter 661, laws 1893, as amended by chapter 398, laws 1895) which enacts, among other things, that any person who, after conviction of a felony, shall attempt to practice, or shall so practice, shall be guilty of a misdemeanor, the court holds constitutional so far as it operates prospectively, and upon persons convicted of felony after its passage, but unconstitutional in so far as it applies by its terms to persons so convicted before the law went into operation. The underlying purpose of the

act, it says, may be to purge the medical profession of members unworthy of confidence, but the real effect, so far as it is pronounced obnoxious, is to accomplish that by inflicting an additional punishment, through a newly created offense inseparably connected with the anterior crime, and thus bring about a result the constitution forbids, no matter in what form the statute is drawn. Mr. Justice Ingraham files a lengthy dissenting opinion.

Sanitarium at the Canary Isles.—The *British Medical Journal*, February 6, states that there is an undoubted need for a health resort at one of those islands for the benefit of Europeans who get run down in health at the various fever-stricken stations of the western coast of Africa. In addition to the many Englishmen whose business or official duties take them to those sickly shores, there are also the French, Belgians, Portuguese and Germans in considerable numbers, and these by coöperating together can bring about the founding of a model sanitarium in the "golden climate of the Canaries." The *Journal* points out how necessary it is that the fever stricken patient does not return to Europe in the winter, a proceeding that is especially unsafe for those who are suffering from the extreme anemia produced by African fevers. The writer has known not a few cases of hemoglobinuric fever which relapsed on the weakened convalescent after being plunged into an English winter.

Prizes Offered by the Académie de Médecine of Paris in 1899.—Works submitted in competition for the prizes must be legibly written in French or Latin, accompanied by a sealed envelope containing the name of the competitor which must not be revealed otherwise. All articles must be in the hands of the Académie by the end of February of the year in question, and they are not returned to the authors. The prizes entitle the successful competitor to the title of laureate of the Académie de Médecine. Prix de l'Académie, 1,000 francs, annual, subject: Physiology and Pathology of the Thyroid Gland. Prix Alvarenga, 800 francs, annual, for the best article on any medical subject. Prix Amussat, 1,000 francs, triennial, for the article or researches based on anatomic and experimental studies, which have realized or prepared the way for the most important progress in surgical therapeutics. Prix d'Argenteuil, 6,800 francs, sexennial, for the most noteworthy improvement in the means of curing strictures of the urethra, or for the best work on the treatment of other diseases of the urinary passages. Prix Barbier, 2,000 francs, annual, for a complete cure for diseases recognized as incurable, such as hydrophobia, cancer, epilepsy, scrofula, typhus, cholera morbus, etc. Prix Mathien Bourgeret, 1,200 francs, annual, for the best article or work on the circulation of the blood. Prix Capuron, 1,000 francs, annual, subject: Modifications in the Placenta and Membranes of the Ovary Retained in the Uterus. Prix Chevillon, 1,500 francs, annual, for the best article on the treatment of cancerous affections. Prix Civrieux, 800 francs, annual, subject: Nervousness. Prix Daudet, 1,000 francs, annual, subject: Lymphadenoma. Prix Desportes, 1,300 francs, annual, for the best work on practical medical therapeutics. Concours Vulfranc Gerdy, for the nomination of two medical students to serve at a mineral water cure in France or abroad. Candidates must be inscribed at the Académie de Médecine. Prix Ernest Godard, 1,000 francs, annual, for the best work on external pathology. Prix Theodore Herpin, 3,000 francs, annual, for the best work on epilepsy and diseases of the nerves. Prix Laborie, 5,000 francs, annual, for the author of the work which has advanced the progress of surgery to a noteworthy degree. Prix Larrey, 500 francs, annual, for the best work on medical statistics. Prix Laval, 1,000 francs, to the medical student who has proved himself the most deserving. Prix Leffèvre, 1,800 francs, triennial, subject: Melancholia. Prix Meynot, 2,600 francs, annual, for the best work on diseases of the eyes. Prix Adolphe Monbinne, 1,500 francs; this sum is bestowed annually or biennially on scientific missions in the interests of the medical, surgical or veterinary sciences. Prix Nativelle, 300 francs, annual, for the best work on the extraction of the positive active principle of some medical substance never before isolated. Prix Onlmont, 1,000 francs, annual, awarded to the medical student who has won the gold medal in the annual "interne concours." Prix Portal,

subject: Experimental Work on Animals to Study the Inoculation and Contagiousness of Cancer. Prix Pourat, 700 francs, annual, reports of experimental work to elucidate the question of the immediate and ultimate destination of the albuminoid food substances. Prix Philippe Ricord, 600 francs, biennial, for the best work that has appeared during the two years on venereal diseases. Prix Vernois, 700 francs, annual, for the best work on hygiene. Competition is open to natives and foreigners alike for these prizes. The following is closed to foreigners: Prix Buignet, 1,500 francs, annual, for the best work on the applications of physics or chemistry to the medical sciences. Translations not admitted.

Cincinnati.

THE MORTALITY REPORT for the week ending March 19 shows: Zymotic diseases, 16; phthisis, 13; other constitutional, 14; local, 56; developmental, 10; total, 110; still births, 4; annual rate per 1,000, 14.12; total preceding week, 138; corresponding week 1896, 123; 1895, 134; 1894, 131.

THE ANNUAL ELECTION of officers of the Conner Surgical Society, a fraternity of the Ohio Medical College, which was held last week, resulted as follows: President, Dr. R. W. C. Francis; vice-presidents, Dr. Markley and Dr. Rayle; secretary, Dr. W. Koontz; treasurer, Dr. Bernheimer; masters-at-arms, Dr. C. E. Laws and Dr. P. Kennard. After the election Dr. P. S. Conner, from whom the Society is named, delivered a lecture, which was followed by a banquet.

AT THE ACADEMY OF MEDICINE meeting Dr. P. M. Ashburn read a paper on "Primary Vaginal Sarcoma," and Dr. Joseph Eichberg read one on "Treatment of Gallstones."

THE JOURNAL SPECIAL TRAIN.—Arrangements are being perfected for a special car out of Cincinnati to join the Special train to the AMERICAN MEDICAL ASSOCIATION meeting at Philadelphia, and those contemplating attending should address Dr. G. I. Cullen, 714 West Sixth Street, for rates, sleeping-car space, tickets and other information.

Hospitals.

The Mayor of Salem, Mass., has been notified by the Massachusetts State Board of Health that there is urgent need of hospital for contagious diseases. During the past six months the board has spent about \$9,000 in the management of these cases and it is thought desirable to build a hospital where they may be isolated and more advantageously treated.—Mrs. T. P. Sheppard of Providence, R. I., has announced her intention of purchasing a sterilizing plant to be presented to the St. Joseph's Hospital. The estimated cost is \$1,700.—The visiting staff of St. Mary's Hospital, Rochester, N. Y., have donated to that institution an X ray apparatus of the latest pattern.—The monthly report of the Charity hospital, New Orleans, La., shows that 1,578 patients were treated in the hospital during the month of February.

Colleges.

The Bellevue Hospital College has issued diplomas to 133 students out of a class of 160. The annual commencement has been abolished at this college. The ninth annual commencement of the Michigan College of Medicine and Surgery was held March 23. There were forty-seven graduates.—At the annual commencement of the Missouri Medical College, St. Louis, Mo., a class of seventy-four was graduated.

Illinois Medical Practice Bill.—The following bill was introduced by Mr. Bogardus, Feb. 18, 1897. Read first time, ordered printed and referred to Committee on Education and Educational Institutions:

A BILL

For an act to establish a State Board of Medical Examiners, prescribing its powers and duties, to provide for the licensing of practitioners of medicine and midwifery, and to regulate the practice of medicine and midwifery, in the State of Illinois, and imposing penalties, and to repeal all acts or parts of acts in conflict therewith.

SECTION 1.—Be it enacted by the People of the State of Illinois, represented in the General Assembly, That a board of examiners to be known as the "State Board of Medical Examiners" shall be appointed as follows: Within sixty days after this act shall take effect, the Governor shall appoint nine (9) physicians of recognized professional ability and standing, who are residents of the State, and legally qualified practitioners of medicine therein, as members of said board, who shall hold their office until their successors are appointed and qualified. The members of said board so first appointed, shall determine by lot, their respective terms of office, so that the term of one member shall expire on Dec. 31, 1898, and the term of two members on December 31 in each year thereafter. And at the expiration of the term of office of each of the members of the board, the Governor shall appoint his or their successor or successors, whose term of office shall be for the period of five (5) years; and all vacancies occurring in the membership of the board, by resignation or otherwise, shall be filled by the Governor, and all appointments on said board shall be made from physicians having the qualifications prescribed here-

in form members of the first board: *Provided, however,* That all appointments shall be made with the advice and consent of the Senate, but appointments made when the Senate is not in session may be confirmed at the next ensuing session thereof.

SEC. 2.—The said board shall, within thirty days after its appointment, meet and organize by electing a president, vice-president and treasurer from among its members, and a secretary who shall be a legally qualified physician, not a member of the board. Such officers shall hold office until the next annual meeting of the board, or until their successors are elected and qualified. The board shall prescribe the duties of its officers, and shall require the treasurer to give a satisfactory bond. The board shall adopt and have a common seal, and the president or presiding member and the secretary shall be empowered to administer oaths in taking testimony or in any matter pertaining to the duties of the board. A majority of the board shall constitute a quorum for the transaction of any business. It shall adopt such rules, regulations and by-laws not inconsistent with the laws of this State and of the United States, as it may deem necessary or proper to enable it to properly perform its duties and transact its business.

SEC. 3.—The annual meeting of the board for the election of officers shall be held in the State Capitol on the second Tuesday of January in each year. The board shall also hold regular meetings on the second Tuesdays of April, July and October in each year, at such place as it may determine, and may hold other meetings at such times and places as it may deem necessary, or its duties may require.

It shall keep an official record of all its transactions, and a complete file of all applications for licenses, together with the correspondence pertaining thereto, and of all examination papers, and shall make a report of its transactions, annually, to the Governor, which shall include a statement of all monies received and disbursed by it, and an official list of all physicians and midwives authorized to practice in this State.

SEC. 4.—No person shall hereafter begin the practice of medicine, or any of the branches thereof, except dentistry, in this State, without first applying for and obtaining a license from said board so to do. Application shall be in writing, and in the form prescribed by the board, and shall be accompanied by the application and examination fees herein-after specified, and with proof that the applicant is of good moral character, and has received a diploma conferring upon the applicant the Degree of Doctor of Medicine from some legally incorporated medical institution in the United States, in good standing, as may be determined by the board, at the time of issuing said diploma, or with proof that the applicant has pursued, in some institution of learning in some foreign country, a course of medical study not less in extent than the course of study prescribed for the Degree of Doctor of Medicine by legally incorporated medical institutions in the United States, in good standing, as aforesaid. When the application and proofs aforesaid have been inspected by the board, and found to comply with the foregoing provisions, the board shall notify the applicant to appear before it for examination, at the time and place mentioned in such notice. Such examination shall be in the English language, and embrace only those general subjects and topics, a knowledge of which is commonly and generally required of candidates for the degree of Doctor of Medicine by reputable medical colleges in the United States.

No person shall hereafter begin the practice of midwifery in this State without first applying for and obtaining a license from said board so to do. Applications shall be in writing, and in the form prescribed by the board, and shall be accompanied by the application and examination fee hereinafter specified, and with proof that the applicant is of good moral character, and has received a diploma from a school of midwifery, complying with the requirements of the board. When the application and proofs aforesaid have been inspected by the board, and found to comply with the foregoing provisions, the board shall notify the applicant to appear before the board for examination at the time and place mentioned in such notice. Such examination shall be in the English language, and of such character as to determine the qualifications of the applicant to practice midwifery.

All examinations provided for in this act shall be conducted under rules and regulations prescribed by the board, which shall provide for a fair and wholly impartial method of examination. If the applicant successfully passes his or her examination, the board shall issue to such applicant a license authorizing him or her to practice medicine or midwifery, as the case may be, in this State. Such license shall be in such form as may be determined by the board, and in accordance with the provisions of this act; *Provided, however,* any willful violation, on the part of an applicant, of any of the rules and regulations of the board governing examinations, shall be sufficient cause for the board to refuse to issue a license to such applicant.

SEC. 5.—The application fee for those desiring to begin the practice of medicine under the foregoing section shall be \$5 and the examination fee \$15, and for those desiring to begin the practice of midwifery the application fee shall be \$5 and the examination fee \$10, and, in all cases, both the application and the examination fee must accompany the application; *Provided, however,* if the application and proofs accompanying the same are not approved, or the applicant fails to pass the examination fee shall be returned; *And provided further,* in case the applicant fails to pass his or her examination, he or she shall, after the expiration of six months, and within a period of two years, be entitled to one re-examination without the payment of any additional application fee.

SEC. 6.—Any practitioner of medicine or midwifery, who has been licensed to practice by the licensing authorities of another State, whose standard of requirements for a license to practice was, at the time of the issuing of such license, not lower than that prescribed by this act and by the board herein provided for, may be granted a license to practice in this State, without examination by this board, upon payment of the fee hereinafter specified, to the treasurer of the board, and upon presenting to the board his or her license or certificate to practice issued by the proper authorities of such other State, together with proof that he or she is of good moral character, and is the person named in such license or certificate; *Provided, however,* the board may further require that such applicant shall furnish proof of the requirements he or she had to comply with in obtaining his or her license or certificate from the authorities of the State which issued the same.

The license fee for practitioners of medicine applying for license under this section shall be fifty (50) dollars and for practitioners of midwifery thirty (30) dollars.

SEC. 7.—That all persons who, at the date of taking effect of this act are qualified to practice medicine or midwifery, under the laws of this State, in force at the time of the passage of this act, and who desire to continue in practice, shall, within six months after the appointment and organization of the Board of Examiners provided for in this act, apply to such board for a license, which shall be issued by the board on payment of a fee not to exceed one dollar. *Provided,* the board may refuse to issue such license to any such applicant for cause hereinafter provided. All licenses issued under the provisions of this and the fore-

going sections shall expire on a date to be named therein, not more than one year from the date of issue, so that all licenses outstanding at any one time shall, as nearly as may be, expire on the same date.

SEC. 8.—That all licenses, issued under the provisions of this act, may, at the date of their expiration, be renewed for a period of one year, upon payment to the board of a renewal fee not to exceed one dollar, which renewal shall be evidenced by a new license: *Provided, however*, the board may refuse such renewal license for cause as hereinafter provided.

The failure of a licensee to obtain a renewal of license at the date of its expiration shall render such practitioner liable to the penalties provided for by this act for practicing without a license, but will not prevent application for a renewal license at some subsequent date, not later than one year from the date of expiration of his former license, within which time, subject to all the conditions for renewals heretofore provided for, the board may issue a renewal license which shall expire at the same date as if issued at the date of expiration of his former license. *Provided, however*, retirement from practice or removal from the State shall not deprive the licensee of the right to a renewal within five years after such retirement or removal.

All original licenses issued by the board shall be signed by all the members of the board. All renewals shall be signed by the president and secretary of the board, and attested by the seal of the board.

SEC. 9.—The board may refuse to issue any license provided for by this act, whether an original or a renewal license, if it shall appear that the person applying therefor has been guilty of persistent inebriety, or the practice of criminal abortion, has been convicted of a crime involving moral turpitude, or has, by false or fraudulent representations, obtained practice in his or her profession, or, by the false or fraudulent practice of his or her profession, has obtained money or any other thing of value: *Provided, however*, no person shall be finally refused a license until after the applicant for the same is given at least thirty days' notice of the grounds for such refusal, and opportunity given the accused for a hearing before the board to show cause why the board shall not finally refuse his or her license, at which hearing the accused shall be entitled to be represented by counsel.

SEC. 10.—That any person shall be regarded as practicing medicine within the meaning of this act who shall operate for or upon, prescribe for, or otherwise treat, or profess to heal or cure any physical or mental ailment, or any physical injury to, or deformity of another: *Provided*, nothing in this act shall be construed to apply to the practice of dentistry, to the administration of domestic or family remedies, in cases of emergency, to commissioned surgeons of the United States Army or Navy, or Marine-Hospital Service, in the discharge of their official duties, nor to practitioners of other States when acting in consultation with licensees of this State.

SEC. 11.—That any itinerant vender of any drug, nostrum, ointment or appliance of any kind intended for the treatment of disease or injury, who shall vend or sell any such drug, nostrum or appliance, or who shall, by writing or printing, or any other method, profess to the public to cure or treat disease or deformity by any drug, nostrum, manipulation or other expedient, shall pay a license of one hundred (100) dollars per month into the treasury of the board, to be collected by the board in the name of the People of the State of Illinois, for the use of said board. And it shall be lawful for the State Board of Medical Examiners to issue such license on application made to said board, said license to be signed by the president of the board and attested by the secretary with the seal of the board, but said board may for sufficient cause refuse said license. Any such itinerant vender who shall vend or sell any such drug, nostrum, ointment or appliance, or who shall, by writing or printing or any other method, profess to cure or treat disease or deformity by any drug, nostrum, manipulation or other expedient, without a license so to do, shall be deemed guilty of a misdemeanor and upon conviction thereof shall be punished for the first offense by a fine of not less than one hundred dollars, or by imprisonment in the county jail for a period of not less than thirty nor more than ninety days, or by both fine and imprisonment, and for each subsequent offense the penalty shall be double that of the preceding one.

SEC. 12.—That the office expenses of the board, and all expenses arising from the proper enforcement of the provisions of this act, shall be paid from the fees above provided for, and from such fines as may accrue to the board for the violation of the provisions of this act.

SEC. 13.—That the salary of the secretary of the board shall be fixed by the members of the board, and shall not exceed the sum of \$3,000 per annum. The members of the board shall receive no compensation; but their traveling and other expenses incurred while employed on the business of the board shall be paid.

SEC. 14.—That any person hereafter practicing or attempting to practice medicine or midwifery in this State without having a license so to do as herein provided for, or contrary to the provisions of this act, shall be deemed guilty of a misdemeanor and upon conviction thereof shall be punished for the first offense by a fine of not less than one hundred dollars and not exceeding two hundred dollars, or by imprisonment in the county jail for a period of not less than thirty days nor more than ninety days, or by both fine and imprisonment, and for each subsequent offense the penalty shall be double that of the preceding one: *Provided*, that the provisions of this section shall not apply, for a period of six months after the appointment and organization of the first board, to those persons who are qualified to practice medicine and surgery, or midwifery, under the laws of this State in force at the time of the passage of this act.

SEC. 15.—That all suits for the recovery of the several penalties prescribed in this act shall be prosecuted in the name of "The People of the State of Illinois" in any court having jurisdiction, and it shall be the duty of the State's Attorney of the county where such offense is committed to prosecute all persons violating the provisions of this act, upon proper complaint being made. All penalties shall be paid into the treasury of the State Board of Medical Examiners.

SEC. 16.—All acts and parts of acts inconsistent or in conflict with the provisions of this act are hereby repealed.

THE PUBLIC SERVICES.

Army Changes. Official List of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from March 20 to 26, 1897.

First Lieutenants: Isaac P. Ware, Robert S. Woodson and George DeShon, Asst. Surgeons, are ordered to report in person to Lieut.-Col. David L. Huntington, Deputy Surgeon-General, president of examining board, at such time as may be required, for examination for promotion.

Capt. Nathan S. Jarvis, Asst. Surgeon, is relieved from duty at Willets Point, N. Y., to take effect upon the expiration of his present leave of absence, and ordered to Ft. Clark, Texas, for duty.

Major Henry S. Kilbourne, Surgeon, will be relieved from duty at Ft. Clark, Texas, upon the arrival at that post of Capt. Jarvis, and ordered to Madison Bks, New York, for duty.

Capt. Eugene L. Swift, Asst. Surgeon, extension of leave of absence granted on surgeon's certificate of disability is still further extended one month on surgeon's certificate of disability.

First Lieut. Francis A. Winter, Asst. Surgeon, upon completion of his examination for promotion, ordered to West Point, N. Y., to report to the superintendent of U. S. Military Academy, for duty at that post.

Capt. Charles Willeox, Asst. Surgeon, is relieved from duty at West Point, N. Y., to take effect upon the expiration of his present leave of absence, and ordered to Ft. Bliss, Texas, for duty at that post, relieving Capt. Ogden Rafferty, Asst. Surgeon. Capt. Rafferty, on being thus relieved, is ordered to Willets Point, N. Y., for duty at that post.

A board of officers to consist of: Lieut.-Col. David L. Huntington, Deputy Surgeon-General; Major Walter Reed, Surgeon; Capt. Charles M. Gandy, Asst. Surgeon, is appointed to meet at the Army Medical Museum Building, Washington, D. C., on Tuesday, May 4, 1897, at 10 o'clock A. M., for the examination of such officers of the Medical Department as may be ordered before it, to determine their fitness for promotion.

Navy Changes. Changes in the Medical Corps of the U. S. Navy for the two weeks ending March 27, 1897.

Asst. Surgeon D. N. Carpenter, detached from U. S. naval laboratory and department of instruction, Brooklyn, N. Y., and ordered to the "Brooklyn" March 15.

Asst. Surgeon F. L. Pleadwell, detached from U. S. naval laboratory and department of instruction, Brooklyn, N. Y., and ordered to temporary duty on the "Constellation" March 15.

Surgeon H. G. Beyer, detached from the "Newark" March 17, and ordered home to await orders.

Asst. Surgeon A. W. Dunbar, detached from the "Newark" March 17, and ordered to the "Vermont."

Surgeon M. H. Simons, detached from torpedo station, Newport, R. I., April 15, and ordered to the "Columbia."

Surgeon E. Z. Derr, detached from the "Columbia" on being relieved, ordered home and granted three months' leave.

P. A. Surgeon J. M. Moore, ordered to the "Alert" upon the arrival of that vessel at Mare Island, Cal.

P. A. Surgeon L. W. Spratling, detached from the "Alert" upon being relieved, ordered home and granted three months' leave.

Asst. Surgeon G. D. Costigan, detached from naval laboratory and department of instruction, and ordered to the "Vermont."

Surgeon C. A. Siegfried, detached from the "Massachusetts" and ordered to the torpedo station.

Surgeon S. H. Dickson, detached from the "Texas" and ordered to the "Massachusetts."

Surgeon W. R. Du Bose, detached from the "Terror" April 6, and ordered to the "Texas."

Surgeon Oliver Diehl, detached from the Philadelphia naval hospital April 5, and ordered to the "Terror" April 6.

Surgeon T. C. Craig, placed on the retired list from March 12.

P. A. Surgeon R. M. Keunedy, detached from Norfolk naval hospital April 3, and ordered to the Philadelphia naval hospital.

Asst. Surgeon D. N. Carpenter, detached from the "Franklin" and ordered to the "Raleigh."

Change of Address.

Arthur, Mattie L., from Oakland to 1341 South 38d St., Omaha, Neb.
Davison, C., from 1002 Madison St. to 955 Jackson Boul., Chicago, Ill.
Fullertou, Anna M., from 22d and North College Ave. to 123 S. 16th St., Philadelphia, Pa.

Houstoo, J. M., from 707 Sutter St. to 502 Powell St., San Francisco, Cal.

Price, M. F., from Los Angeles to Colton, Cal.

Siegfried, C. A., U. S. N., from Washington, D. C., to Newport, R. I.

Starr, J. W., from Liberty Center to Chariton, Iowa.

Whiting, A. D., from German Hospital to 1223 Spruce St., Philadelphia, Pa.

Weatherby, B. J., from Hutchinson, Kan., to 65 N. Franklin St., Wilkes Barre, Pa.

Warner, C. J., from Congress to Wooster, Ohio.

LETTERS RECEIVED.

Aultz, L. L., Patrick, W. Va.; Ames & Frost Company, Chicago, Ill.; Alma Sanitarium Co., Alma, Mich.; Allouez Mineral Spring Co., Green Bay, Wis.

Bryant & Douglas B. & S. Co., Kansas City, Mo.

Crawford, J. D., Philadelphia, Pa.; Clark, M. F., Princeton, Ill.; Collins, H. O., Quincy, Ill.; Chidester, C. W., Delaware, Ohio.

Davis, A. C., Topeka, Kan.; Dering, H. R., Chicago, Ill.; Drake, E. L., Philadelphia, Pa.

Elliott, J. P., Boston, Mass.

Ferguson & Goodnow, Chicago, Ill.; Felck Brothers, Pittsburg, Pa.

Featherston, J. S., Macon, Miss.

Gould, George M., Philadelphia, Pa.

Hitchcock, Chas. W., Detroit, Mich.; Horlick's Food Co., Racine, Wis.

Herrick, A. B., Lisbon, N. Dak.; Hollister, T. C., Louisville, Neb., (2); Hall & Ruckel, New York, N. Y.; Howle, W. P., Oran, Mo.; Howard, Wm. Lee, Baltimore, Md.

Jelks, J. T., Hot Springs, Ark.

Koechl, Victor & Co., New York, N. Y.; Kellogg, James C., London, England; Knox, Myra, Oakland, Cal.

Lewis, Le Roy, Auburn, N. Y.; Lucas, S. T., Vanhull, Tenn.; Ludwig, H. C., New York, N. Y.

Markel, C. F., Columbia, Pa.; Mills, H. R., Port Huron, Mich.; Meynen, Geo. K., Jamaica, N. Y.; Mulford, H. K. & Co., Philadelphia, Pa.; Mogk, W. A., Ann Arbor, Mich.

Norwich Pharmacal Co., Norwich, N. Y.

Post-Graduate Medical School, Chicago, Ill.; Parke, Davis & Co., Detroit, Mich.; Priuice, L. H., Chicago, Ill.

Sutliff & Co., Peoria, Ill.; Sargent, C. E., Chicago, Ill.; Savage, G. C., Nashville, Tenn.

Vance, W. K., Bristol, Tenn.

Walsh, Ralph, Washington, D. C.; Whitfield, S. T., Uniontown, Ala.; Warren, Wadsworth, Detroit, Mich.; Walker Pharmacal Co., St. Louis, Mo.; White Rock Mineral Spring Co., Waukesha, Wis.; Wiener Klinische Rundschau, Vienna, Austria.

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No. 15.

ADDRESS.

ADDRESS DELIVERED AT THE CLOSING EXERCISES OF THE ARMY MEDICAL SCHOOL, MARCH 12, 1897.

BY SAMUEL C. BUSEY, M.D.

PRESIDENT OF THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.
WASHINGTON, D. C.

The selection of a physician in civil life to deliver the address on this occasion gives expression to that comity and fraternal fellowship which makes kindred of us all, and the presence of one whose professional life has been limited exclusively to civil practice adds force to the thought that the great brotherhood of scientific medicine is animated by those qualities of the heart and mind which bring together those engaged in a beneficent pursuit, however widely the incidents and environments of life of the individual members may differ.

You, gentlemen of the graduating class, have won the initial honor of your corps, and with the conclusion of these exercises you will be transferred to the active and practical duties of that department of medicine to which you have voluntarily dedicated your life work. To the doctorate of medicine, with one year of hospital experience and successful examination of the army examining board, you have today added the diploma of a school of military medicine, which attests your fitness to wear the official insignia of a surgeon in the army of your country. All this is in evidence of that high standard of qualification which your corps, under the leadership of its distinguished chief, has established, thereby keeping abreast with, if not leading, the efforts in active operation all along the line, to elevate medical education to the highest standard of a beneficent and life-saving science. The chapeau, shoulder straps and sword symbolize the distinction to which you have today attained, in a scientific corps, but they constitute no part of the equipment of the conscientious physician. They are significant symbols of authority and qualification, all the more honorable because they have been won by your own efforts, not only without aid from a paternal government, but in spite of the obstacles which your superior officers have interposed to an easy and free access to a corps, which, from its organization in 1775, has continuously advanced the requirements of examination, and now selects from those graduates in medicine who may apply only those who have attained that high grade of proficiency which qualifies them to discharge the duties and obligations of the skilled general practitioner of medicine. As yet, and fortunately so, limited specialism has not invaded the medical corps of the army. You can not follow the example of the young graduate in civil life, and go from this hall to your post of duty and swing out the sign of practice limited to a single organ or

function of the human body, but must accept the sick call from private and officer alike, and meet every emergency from a gunshot wound to a stumped toe. In brief, you must acquire expert knowledge in every branch of medical science and such manual dexterity as will enable you to fill the measure of responsibility and reach that high goal of scientific attainment which your commissions demand. With increasing and enlarged experience you will come to know your proficiency in some special work, which may lead you along the course of some broad specialism that will hold you in close touch with general medicine and widen the scope of your knowledge in one or more of its branches, and thus fit you for that higher and broader field of specialism to which skilled and expert work in general medicine will lead those seeking preëminence through the only safe channel to success. To the army medical corps will soon fall the task, and I know not to whom it can be so safely trusted, to arrest the progress of decadence of general medicine which threatens its speedy and final subdivision into as many limited and minor specialisms as can find adventurers with brains enough to capture the credulous sick.

This subdivision of work and creation of new fields of labor have contributed to the marvelous advance and present high standard of medical science. The annals of medicine furnish nothing comparable to the development which has crowned the researches and discoveries of Simpson in Scotland, Baker Brown in England, Marion Sims in America and Gustave Simon in Germany, who, simultaneously sprang up in distant lands and illuminated the civilized world with achievements that have restored millions of suffering women to health, strength and vigor. They came to this high renown along the beaten track of general medicine, but now that great specialism which they established is threatened with such minor subdivisions that women may enjoy the privilege of dying only through accident or old age. And, may I not suggest that these two causes of death may eventually submit to the expert management of some specialism as yet undiscovered, in which may lurk the hope that will inspire you to the attainment of glory that will endure forever.

You are free from the competition and rivalries of civil life, but not free from the emulation of high aspirations in scientific attainments. Your efforts have thus far been crowned with success, but be among you who will be content to rest at the point of beginning will not only fail, but will recede to the level of low repute and routine fossilism, and perhaps, low enough to accept the mastership of the drummer fiend, who dispenses free of charge, with thanks, from his wallet, a whole salvation army of cure-alls, with literature sufficient to occupy the hours of sleep and then laugh at the credulity of the victim. Liver pills, liver pads and all healing balms and salves are, fortunately, excluded

from the surgeon's requisitions. The common soldiers and enlisted sailors are the only classes of the population of this great country protected by law and regulation, alike from incompetent medical service and a mercenary pharmacy.

Those gifted with sloth and lack of force never leave the starting post, but wait in contemptuous complaint for that success that only comes to those who seek it, and those who seclude themselves in ignorance seek a livelihood through the glamour of pretence and empiricism. It may be that your corps is inadequately compensated for high grade work and low grade work in medicine is dear at any price, but you are free from the penury of emolument, from struggle with the capricious empire of fortune and monotony of scanty subsistence, and thus all the more free to utilize energy, thought and opportunity in the noble activities of the progressive, qualified and conscientious physician.

That you may fully realize the high standing of your corps and the grave responsibilities you have assumed, let me call your attention to a single fact, which has been re-affirmed forty-eight times, and lastly by an act of Congress, approved by the President. A score or more years ago the AMERICAN MEDICAL ASSOCIATION, the most numerous and powerful representative body of medical men in this country, declared by formal act that the force and fiat of law must be invoked to protect the profession of medicine from the ignorant and venal charlatans and mercenary imposters that had sneaked into it through low grade and snide medical colleges, not one of whom had gained admission into this corps. This simple act was the beginning of a new era in medical education in this country, which has continuously grown, acquiring force, power and popularity at every stage of its progress. Beginning with the State of Illinois, forty-eight States and Territories, the last this District by act of Congress, have enacted laws to regulate the practice of medicine, and to prescribe a standard of education, to which every graduate in medicine must attain before engaging in the practice of his profession. Now, mark the significant fact to which I wish to call your attention. In each and every one of these forty-eight laws there is a provision exempting the members of the medical corps of the government service from the examination prescribed for all others, who may seek to engage in the practice of medicine within the limits of its jurisdiction. Forty-eight States and Territories and the Congress of the United States have declared by law that the requirements for admission to these corps have established a standard of education and qualification coequal with the highest demands of the most advanced development. Nor is that all. The same statutory provision necessarily carries with it the obligation to enlarge the requirements, coincident with the expansion of knowledge, that this corps may keep abreast with the progress of scientific medicine, and thus fortify the honor of leadership that has placed medicine in this country in the front rank of applied sciences. No single fact or combination of facts has added such brilliancy to a career that has extended through a century and more of years of honored service. You need not then be surprised at the repetition of the injunction, that the profession must look to your corps for the restoration of general medicine to that high plane of scientific repute that gave to it a Rush, Watson, Bright, Bennett, Trousseau,

Niemeyer, Drake, Reynolds, Aitkin, Chapman, Wood, Flint, Bowditch, Loomis and a host of others too numerous to mention, and to your corps a Morgan, Lovell, Lawson, Barnes, and now a Sternberg, whose achievements in general medicine will illumine the pages of scientific medicine through all times and ages yet to come.

As if in fraternal reciprocity this corps has given to civil practice men whose good work has won high distinction in several branches of medicine, to which they have devoted themselves, among whom I may name Gouley, Weir, Smith, Curtis and Wagner of New York City; Allen, Thompson, Norris and Bartholow of Philadelphia; Conner of Cincinnati; Pitcher of Detroit and Howard of London.

The records of the Medical Staff of the Army suggest many lines of special work and study, which offer inviting opportunities for original research and investigation. Your assignments to duty will call you to stations on the Atlantic and Pacific sea coasts, from posts in valleys and along great rivers to others located on high mountain ranges, from tropical to arctic regions, from hospitals in barracks to the rude and improvised structures in the lonesome fastnesses of the frontier, from the comfortable dwelling of the city to active life in camp, always in the line of duty with soldiers in garrison or on the march, perhaps, in war as well as in peace, and always liable to summons from your study to the saddle, from the sick bed of the docile private to the sick chamber of the officer or his family, and perhaps, when opportunity offers, to patients in civil life. These constantly recurring mutations and changing scenes will add such charms to your official life as never come to vary the plodding wage-earning life of the civil practitioner. They give freedom to thought, add pleasing variety to care and enrich the mind with such observation as will widen the scope of intellectual acquirement. You will carry with you from post to post the scalpel, thermometer, microscope, barometer and all other implements necessary to complete the armamentarium of the accomplished surgeon and physician and scientific investigator. The bureau will keep you supplied with the current literature of the world of medicine that may be necessary to keep the student in close touch with new discoveries, improvements in technique, and new and improved applications of old methods, but it can not supply you with time to fritter away in thoughtless ennui and busy idleness. If you are not willing, ready and courageous enough to accept the conditions with all the hardships and grave responsibilities as they are, you had better, right here, plead the baby act and skulk away from an honorable duty.

The nomadic life of the army surgeon offers unusual facilities for the study and solution of many problems as yet undetermined, especially such as relate to the influence of climate, temperature, altitude, topography, meteorologic, electric and barometric conditions and changes, soils, their products and geologic formations, upon classes and entities of disease, and the interchangeable and intercurrent conditions of such natural phenomena upon life, health and disease, in garrison as well as in civil life. Much valuable work along these lines of research has been done by officers of the staff, but much remains to be done before the results can be formulated into law.

"Meteorologic science in this country was conceived and brought forth by the Army Medical Depart-

ment." On the 2nd of May, 1814, Surgeon General Tilton issued an order instituting meteorologic observations at army posts, and in July, 1816, Surgeon Benjamin Waterhouse made the first report, under that order, to the department. During the service of Surgeon General Lovell its usefulness was established and developed, to which Surgeon General Lawson, in 1842, gave impetus and value by supplying the staff with the most improved instruments and prescribing a series of rules for taking the observations, which were subsequently compiled by Surgeon Coolidge and published in 1855. In this valuable contribution to science are set forth "the results of observations of the thermometer, direction and force of winds, clearness of sky and fall of rain and snow, with a special report on the prominent features of general climate in the United States, as exhibited in the distribution of temperature and of rain," for each season of the year, embracing the period from 1842 to 1854 inclusive, which led up to and culminated in the establishment of the Signal Corps of the Army and the Weather Bureau, for which the Government and the people are indebted to the genius and scientific attainments of Surgeon, and later General A. J. Meyer. In 1856 another equally valuable compilation, prepared by Surgeons Wotherspoon and Coolidge, was issued, in which is contained the information "in regard to the location, topography and prevailing diseases of the various posts, the geology and natural history of the neighboring country, with observations on climate, manners and customs of the inhabitants." I have selected these citations from the records of the department that I might entice you into the open fields of investigation, luxuriant with opportunities not less attractive than profitable. Your research work need not, however, be limited to discovery, but may extend into the wider fields of re-examination and verification of accepted results and to the expansion of such knowledge in application and utility. In fact, the whole domain of medicine is open to you, and the hope is cherished that each one of you may determine some fact that will contribute to subjugate medicine to the reign of known laws. Your chances and possibilities are not less than were those of Surgeon Beaumont, whose fame is as fresh today as when he died in 1853. Through eight years of assiduous and patient investigation he established the basis upon which all subsequent experimentation has been conducted which has brought our knowledge of digestion to the present advanced stage of development, but as yet not at rest under the reign of established laws of the animal economy.

It will not, in this connection, be invidious to cite the facts that to Surgeon Smith is due the credit of pointing out the danger of lead pollution of drinking water collected from freshly painted roofs; to Surgeon Howard for suggesting the method of treating penetrating gun shot wounds of the chest and abdomen, which led to the form of primary antiseptic occlusive dressing which has revolutionized the treatment of gunshot wounds; to Surgeon Wright a recovery after a shot perforation of the chest; to Surgeon Otis for the first authoritative announcement of the practicability of enterorrhaphy in gun shot wounds of the intestines; to Surgeon Sternberg for the discovery of the micrococcus of pneumonia; and to Surgeon Letterman for the plan of "an organization of the Medical Department of an army in the field, that not only

contributed in a large degree to the discipline and efficiency of the foremost Army of the Republic, but also robbed war of many of its horrors: who left behind him for the use of those to come, the record of the means by which these noble ends may be again achieved, and who, in rendering this great service to his country, added a brilliant page to the record of the humane character of his profession."

Investigation of all the factors likely to influence the origin, spread and disappearance of diseases in general, and especially of epidemic and endemic diseases, offers to the patient painstaking student an abundant harvest in studies in medical topography, medical geography, and meteorology. We know the occurrence, prevalence and virulence of certain diseases are influenced by seasons, temperature, humidity and barometric conditions, as for instance, the regional prevalence of diphtheria, especially during damp, chilly weather, but our knowledge is insufficient to enable us to determine whether these meteorologic conditions predispose the system to catarrhal affections which favor the invasion of the diphtheria bacillus, or supply the environments necessary to intensify the virulence of the germs. We know also that measles, scarlet fever and diphtheria appear at different times and in different localities in mild, medium and malignant epidemics, showing conclusively that pathogenic effects are not uniform in degree of intensity, and indicating that germs vary at time and places in degree of potency, but we do not know what external influences, if any, determine the degree of virulence. We have been taught and believe that certain infectious diseases find their causes in local conditions and only originate when the local environments are suitable for their development, but we know nothing of the conditions of the soil and water, which in one instance favor and in another inhibit the development of the organisms. Those of you who may be stationed at consumptive health resorts will enjoy the opportunity of contributing to the common fund of knowledge by determining the effects of the air of such places upon the life-history of the tubercle bacillus and upon the streptococcus which goes hand in hand with advanced pulmonary infection, and perhaps settle the question whether the air inhibits the development of these organisms, or whether climatic cures are after all effected by an out-door life and abundance of free air.

In connection with meteorologic studies it would be interesting to know what causes the fits of pain in the hurt and maimed limbs of men, and in tender nerves and rheumatic joints, in connection with storms. Dr. S. Weir Mitchell has made an exhaustive study in the case of Captain Catlin of the army, but could not determine which of the storm-producing factors (lessened pressure, rising temperature, greater humidity or winds), caused the neuralgia in this case, or whether some other agency, perhaps electricity or magnetism, was productive of the evil. Professor Palmieri has shown that the atmospheric electricity is always positive during bright and cloudless skies, provided no precipitation has taken place within a radius of ninety kilometers, and that the rays of the hot sun diminish the electric tension. During an actual rain storm the electricity is always positive, but surrounded by a broad zone of negative electricity and the latter is again surrounded with a belt of positive electricity. These observations in connection with Dr. Mitchell's investigations are suggestive, but require further study and research.

So far we know nothing of the significance to the human organism of argon, the newly discovered constituent of the atmosphere, nor do we know anything of the role played by sudden barometric changes in the form of maxima and minima oscillations on the escape of ground air, and the possible liberation of disease germs from the soil.

In that wider field of investigation pertaining to general medicine let me call your attention to the unsettled problems in that prevalent and protean class of disease, comprehended under the term malaria, which the laity thinks it can treat as skilfully as the most learned physician. In 1849, Prof. John K. Mitchell of Philadelphia first announced the doctrine of parasitic origin of malarial and other fevers. In 1852 the late Surgeon-General Barnes, then a young assistant surgeon stationed at Fort Scott, added the weight of his opinion in favor of the parasitic nature of the malarial poison. In 1866 Professor Salisbury of Ohio presented some observations which led him to the conclusion that fevers are caused by the introduction into the system of cells or spores emanating from certain species of algoid plants. In 1879, Klebs and Tommasi-Crudelli described a bacillus found in the soil and water of the Roman Campagna and from various experiments appeared justified in assuming their microbe to be the etiologic factor of malarial fevers. In 1880 Laveran discovered an organism in the blood of a malarial patient in Algiers not found in that of healthy persons, which he called plasmodium and maintained it to be the essential cause of malaria. His conclusions have been confirmed by other investigations and it is now generally admitted that the plasmodium is a parasite belonging to the protozoa, which invades the red corpuscles of the blood, is always present in malarial fevers, never except in rare instances of mixed infection in other diseases, and that the morphologic and biologic peculiarities of the parasites differ in the various types of fever, a strong presumptive evidence of their etiologic relation. The discovery of Laveran supplies the crucial test of diagnosis and offers a scientific explanation of the specific properties of cinchona and its preparations in the treatment of malarial affections. But as yet the natural history of the microbe has not been determined. We know nothing about its external habitat and the conditions under which it develops, whether in some plant or animal or elsewhere, how it enters or leaves the body. It has never been found in the air, soil or water of malarial districts or in the secretions and dejecta of the patient and there is no record of its successful cultivation. But the fact that the microbe of malaria has not been discovered outside of the body is not proof that it does not exist, for we are dealing with an extremely minute parasite which may be found like other parasites in different stages of development. It has always been held that a certain degree of heat, moisture and vegetable decomposition are necessary for the development of malaria, and that drainage, removal of forests and cultivation of fields have resulted in the disappearance of the disease. While this is in the main true, malaria has disappeared at times regardless of drainage. It is equally difficult to account for the fact that from many localities where the disease formerly prevailed extensively it gradually disappeared, and in later years returned. Again, we are without satisfactory explanation of the pandemics of malaria of which Professor Hirsch describes a number, the

latest appearing between 1866-1872, in which the disease spread not only over a great part of Europe but visited simultaneously many parts of India and North America and showed itself, and in a severe form, for the first time in the Island of Mauritius. All this is especially remarkable because not in a single instance has the disease on a large scale been shown by observation to have spread according to the direction of the wind.

What the older writers called the malarial diathesis, and the epidemic constitution of the atmosphere, may play some role in the spread of the disease, but reason and observed facts suggest that the organism is developed in a specific soil, and that the quality has more to do with it, than the quantity. As for instance in the vicinity of Rome, we are told that malaria decreases as soon as the limits of animal soil pollution are reached. Extensive marshes, rank with vegetation, in favorable latitudes where we expect to find the poison are often devoid, while infection has taken place in the deserts of Africa, where the surface was covered with sand with a substratum of wet clay. Malarial soils have been created by temporary dams or irrigation. Some observers refer to striking examples of the influence of house-plants in the production of malarial intoxication. Salisbury's experiments with a cake of malarial soil carried to a house five miles from the locality and infecting two young men is very suggestive. Ship malaria may be due to a balast of malarial soil. It is just in such remarkable instances where the physician should invoke the aid of the bacteriologist, for it is self-evident that an examination of suspected flower pot and plants may yield satisfactory results on account of the limited fields.

If the organism develops in the soil, why should it not find its way into the drinking water, or into the atmosphere by the ascending currents? Is night air bad because the ascending currents after sundown contain ground air? The influence of ground air is illustrated by frequent infection of persons sleeping on the ground or first stories, also after excavations, as in the construction of railroads, streets, sewers and buildings. I hope you may find time and opportunity to clear up the nature of "mountain fever," a search for the plasmodium together with Widal's serum diagnosis, ought to settle the question, whether it is a malarial or typhoid fever or the result of a mixed infection.

If time permitted I might review other classes of disease, in that I might expand and multiply your opportunities for research work in clinical observation, verification and experimentation, but enough I hope has been said to interest you in some one of the multiform, composite and mooted subjects, in the final settlement of which you may find that distinction which comes only through diligence and expert work.

And now let me add the testimony of Professor Virchow, to whom scientific medicine owes as much if not more than to any man living. In his statement of the status of the doctrine of infectious diseases he referred to the progress of medical science in the United States, with special reference to the labors of the Army Medical Department and said:

"In the Crimean war the French army lost one man out of every three of the whole army, and it is estimated that of the 95,615 lives lost only 10,240 fell before the foe. About as many died of wounds in the hospitals and the remainder, more than 75,000 men were victims to epidemic diseases. It is calculated that in the American war of rebellion 97,000 men fell

in battle and 184,000 died of diseases and epidemics. But it must here be acknowledged that it was not the necessity alone that revealed the evil and brought the help. The French in the Crimea learned from their experience little or nothing and the Americans in their civil war, so much, that from that time dates a new era in military science. These results were brought about not by the magnitude of the need which the Americans had to suffer, for this was not greater than experienced by the French in the Crimea, but rather by the critical and truly scientific spirit, the open minds, the healthy and practical understanding which in America gradually permeated all departments of the army organization, and which, under the wonderful coöperation of an entire people, reached the highest point in humane efforts ever attained in a great war. Whoever takes up and reads the extensive publications of the American Medical Staff will be constantly astonished at the wealth of the experience therein found. The greatest exactness in detail, careful statistics even about the smallest matters, and a scholarly statement embracing all sides of medical experience, are here united to preserve and to transmit to contemporaries and posterity, the knowledge purchased at so vast an expense."

You may, but those who have come to witness these ceremonies and to offer you their congratulations may not know that in this hall is the largest and most valuable medical library in the world, collected, classified and arranged at comparatively small cost to the Government by Surgeon John S. Billings. Upon its shelves are all the original publications of the bureau, among which are the volumes of the medical and surgical history of the civil war with the issue of which began the new era in military medicine. On other shelves are the seventeen ponderous volumes of the Index Catalogue, the conception and work of Surgeon Billings, which has contributed more to the progress of medicine and advancement of the higher standard of medical education than any single publication by any nation on the face of the globe. To these must be added the nineteen volumes of the Index Medicus, "a monthly classified record of the current medical literature of the world," edited by Surgeon Billings and Dr. Robert Fletcher, which, with the Index Catalogue offers to all students the opportunity of exhaustive examination of every subject in the whole range of medical science. In another hall is an anatomic and pathologic museum unsurpassed in the variety and value of the collection, which owes its inception to Surgeon-General Hammond, its establishment upon a permanent basis to Surgeon-General Barnes, and its scientific value and importance to Surgeons J. H. Brinton, J. J. Woodward and George A. Otis. In an adjoining room is located the biological laboratory, under the immediate supervision of Surgeon Walter Reed, which, like similar laboratories in the Bureaus of Animal Industry and Marine Hospital Service, is continuously expanding our knowledge of medical and biologic sciences. All these foundations are housed in a building erected by a munificent government to signalize and emphasize the eminent distinction to which this corps has attained in military as in general medicine. These endowments, with their prospective expansion, will in the future, as in the past, give impetus to new thought and to such new and enlarged conceptions of scientific research as may,

eventually, under the fostering care of a generous Government, advance the science of medicine and biology beyond the most hopeful progress of any other civilized nation.

Many years ago the late Surgeon-General Barnes, in a conversation with me, made the statement that it was his policy to encourage the officers of the staff to affiliate with their conferees in civil life, in that the attrition and conflict of thought and experience would be active and effective instrumentalities in correcting mistake, fallacy, misconception and misapplication. In this policy he exhibited that remarkable sagacity which characterized his executive capacity. In the years since that interview, I have had, almost daily, opportunity to witness the good influence and now place upon record the testimony of one in civil life, in evidence of the wisdom of his policy. There is no reason for any division, by the sharp line of official and civil duty, of the members of a noble profession founded upon the broad principles of Christian philanthropy, and it is a pleasing reminiscence of my professional life, that I have in some measure fostered the common fellowship, that was established between the corps of the government medical services and the civil practitioners of this city in the organization, in 1819, of the Medical Society of the District of Columbia, which has continued during the past seventy-eight years and is now more closely fraternal than at any previous period. During the early years of the history of this city the influx of charlatans and pretenders was so extraordinary, and such injuries and wrongs were perpetrated by them upon the citizens, that the qualified physicians assembled to consider and discuss methods of procedure and organization by which the community could be protected from such wrongs and informed of the qualification of those fitted to practice the healing art, which culminated in a petition to Congress, signed by twenty-one physicians, including two surgeons in the army and one in the navy, for the charter which was granted and approved by President Monroe on Feb. 16, 1819. In 1820, Edmund Cutbush of the navy, and in 1822, Joseph Lovell, Surgeon-General of the army, were admitted to membership, and throughout the entire period of the life-history of that society there has been a continuous succession of membership of army and navy surgeons, now including the members of the faculty of this school. During the succeeding decade there came a class of men possessing the doctorate of medicine, but not less unscrupulous than the charlatans who had been transmigrated to some less fortunate community by the act of Congress Feb. 16, 1819, which made it necessary to segregate the men of low and doubtful repute from those who were animated by the highest impulses of honor, dignity and philanthropy. Surgeon-General Lovell and Surgeon Thomas Henderson were the intrepid leaders in the movement which culminated in 1833, in organization of the medical association, which continues in operation. The interesting and pertinent facts are, that army and navy surgeons were actively instrumental in the establishment of the first scientific medical society in this district, which has now passed its seventy-eighth year of continuous existence and is today one of the most active bodies of the kind in this country, and that the surgeon-general of the army was the founder of a medical association, now in its sixty-fourth year of continuous life, which was formed to unite the profession into one concrete body, upon the

¹ Translated by Dr. G. M. Kober and published in *Pacific Medical and Surgical Journal*, November, 1874.

basis of high professional character and decorum. The attempted but unsuccessful revolt of the community against this organization was a most remarkable occurrence. It was a strange freak of public opinion that assembled citizens in mass meetings to organize concerted action to frustrate the united efforts of physicians to enforce such rules of conduct as would secure to the community the full fruition of the highest qualifications of the medical fraternity and harmonious coöperation among themselves in a common pursuit. And, it was even more strange that the same citizens should in mass meeting, in angry misapprehension, have resolved to sever the close relation of the family physician, and, to accomplish this purpose, have invited from a distance an influx of strangers to supply the places and accept the confidences of the evicted family physicians. To the sturdy independence and courage of Lovell, Henderson and their associates the civil practitioners were indebted for the failure of this unseemly outbreak. Such historical events ought to guarantee permanency of good feeling and harmonious coöperation in all the relations of professional life and association between the officers of these corps on duty in this district and the civil faculty, with so many of whom they may be brought into the closest professional intercourse, as co-equals in all that pertains to that high esprit de corps which should unite us in the common fellowship of a profession, animated by the noble aspirations to alleviate suffering, prolong and save life and to broaden the scope of our usefulness in the interest of and for the good of mankind.

Apart from considerations of a high esprit de corps, a high standard of education, high scientific attainments and uninterrupted and continuous leadership in the advancement of a scientific and philanthropic profession, there are other incidents in the history of the Army Medical Department, which add dignity to honor, and emblazon its escutcheon with the armorial bearings of Revolutionary Sires. In response to that spontaneous outburst of patriotism, following the battle of Lexington, which called "the farmer from his plough, the mechanic from his shop, and the clergyman from his pulpit," physicians in numbers, hastened with their saddle bags from their native towns, to the rescue of the sick and wounded, and to assist the cause of liberty.

On May 8, 1775, the second Provincial Congress of Massachusetts Bay ordered:

"That the President *pro tempore*, Doctor Church, Doctor Taylor, Doctor Holten and Doctor Dunsmore, be a committee to examine such persons as are, or may be recommended for surgeons of the army now forming in this colony."

"Resolved, That the persons recommended by the commanding officers of the several regiments, be appointed surgeons in their respective regiments, provided, they appear to be duly qualified on examination."

At the first examination under that act six out of sixteen applicants were "found disqualified." This was the beginning of the Army Medical Department, which has continued without a break in its history, and is now older than the Constitution, older than the United States of America, older than the office of President, older than the highest tribunal of justice, aye, older than the Declaration of Independence. Born in patriotism, baptized in battle, grown to manhood in the struggle and conflict for independence, it has

reached maturity through a century and more of years of service in peace and in war. Who, then, more entitled to wear the armorial honors of Revolutionary Sires?

ORIGINAL ARTICLES.

A GLIMPSE OF THE HISTORY OF MILITARY SURGERY.

Read at the meeting of the Association of Military Surgeons of Illinois, Springfield, Ill., March 19, 1897.

BY JOHN B. HAMILTON, M.D., LL.D.

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At the meeting of this Society in Chicago last fall; one of these pleasant reunions which I had the honor to attend, it was suggested that a paper on the history of military surgery would be of interest, and I was asked by your distinguished President if I would write a brief essay on this topic. Fortunately for the Society, he used the word brief, and all of us know what it is to obey a command. Another fortunate thing in the matter was, that it would have been impossible I think to have made it otherwise, in view of the smallness of the material at hand. If, however, the idea had been to write upon the many virtues and important position occupied by departed worthies who had filled places in military surgery, the task would have been easy. I confess my astonishment at the paucity of medical literature on this special subject. If we exclude the Homeric writings we shall find nothing, or next to nothing, about military surgeons in ancient medical literature. Indeed, we must come to the conclusion that in the early days of the human race, when wars were more common than now, and conflicts were hand to hand, the surgeon was viewed as a species of personal property, to be owned by king, conqueror, or great general, and his service utilized as the potentate saw fit.

In Malcolm's History of Persia, we are told that Taxiles endeavored to conciliate the Greek envoy whom Alexander sent to herald his approach. He said: "I shall send to the great conqueror, your master, my beautiful daughter, a goblet made of ruby that replenishes itself with liquid, a philosopher of great knowledge of the sciences, and a physician who has such skill that he can restore the dead." In other words, this ancient exponent of an effete monarchy gave away the young woman, a ruby goblet, a philosopher and a physician with the same ease that he would have given away a pet camel, a jack-knife, or any other article that might chance to have entered his mind at the moment. Nevertheless, the fact remains that physicians were held in great esteem, as Homeric writings abundantly prove, and as a matter of fact, it seems that almost all of the ancient worthies who have contributed much to the literature of our profession, at some time or other were compelled to serve in the army either willingly or unwillingly; but the civil surgeon is better situated for progress in the science of the art, and it must be confessed has contributed much more to the art of surgery in general. If we examine the progress of the art of surgery and especially as applied to the preservation of life of troops and the conservation of the wounded, we shall find that each war in its turn, down to modern times, has given better results. Our own Civil War was an immense improvement in these respects from the war

in the Crimea, although there skilled surgeons from every hospital in Europe were prepared to render service to the armies in the field. The Franco-Prussian War was a still greater advance, because the beginning of recent antiseptic methods were apparent; but the Russo-Turkish War of 1878, especially in the campaigns of Bosnia and Herzegovina, gave marvelous results. It is this difference in methods of treatment between those of the early periods of the present century and that which we practice today, that makes a study of the ancient history of military surgery rather one of curiosity and of polite recreation than of positive advantage. Even the character of arms in general and of projectiles has entirely changed. A constant change has gone on since the days of Paré, Wiseman, Joubert, Braunschweig, Felix Würtz, Gersdorf, Larrey and Percy, Heister, Guthrie and McLeod. But the greatest triumphs of the military surgeon have been in the field of preventive medicine, and in that field the medical men of our own Civil War must ever stand preëminent as pathfinders.

LITERATURE BY MILITARY SURGEONS.

Paulus Aegineta, 625-690, one of the earliest writers on military surgery, speaks of the method of cure of wounds caused by the weapons of his period, such as sling stones, darts, arrow heads, etc. He was the first to recommend that the arrow head be pushed through a wound or put a tube over the barbed arrow. In the time of Justinian, physicians of the war were mentioned whose duty it was to examine recruits and soldiers as to their capacity or disability. At the time of the Emperor Maurice, 582-602, every division of two hundred to four hundred cavalry had eight or ten stout fellows detailed as attendants to furnish water, to collect the wounded, etc. In 1042 it is said that the Norwegian King, Magnus, after a battle, selected twelve of his warriors, who had the softest hands, to care for the wounded and dress their hurts. That the stretcher has been used for an early period we may learn from Nibelungenlied.

"Of wounded to the death, know thou our princes high,
Full eighty stretchers, red with blood, are in our land.
—He begged for best of care,
Rest suited for their wounds he sought, and gentle heed."

That the Romans had field hospitals there is probably little doubt, but in the campaigns of Greece and in Asia the old temples which had been formerly used as hospitals were utilized just as they were in the later period.

In Germany in 1570, according to Baas, there was one feldscherer to every two hundred calvary, and each feldscherer had one assistant.

Alexander Benedetti, of Legnago in Lombardy, in 1490 removed to Greece, where he practiced medicine in the isle of Crete, in Canea, which then belonged to the Venetians. In 1493 he returned to Venice and was appointed to a Chair at Padua, but in 1495 he served in the capacity of a military surgeon in the army which the Venetians sent against Charles VIII., and which was defeated before Fornova. He died about 1525. He wrote on anatomy "in which," says Sprengel, "there is not a single new discovery, but there is enough good physiology written in the spirit of the times. His great work is crowded with rare and remarkable observations." (Alexander Benedetti, Opera in 4to, Bas., 1539). His contemporaries compared him with Celsus, "but a more exact parallel," says Sprengel, "would be Alex. de Thralles."

In 1514-1564 we have André Vesalius, who was

born at Brussels. He made his studies first under Lavigne, and afterward under Sylvius, where the ardor with which he applied himself to dissections was said to be the cause of shortening his life. He served as military surgeon in the armies of the Emperor, but later he went to Italy, where in Padua he gave his first course in anatomy. He attracted to himself an enormous number of students. He went also to Bologna and to Pisa. After the publication of his great work on anatomy, Charles V. made him come to his court, and he became physician to Philip II., son of Charles V., and among other remarkable cures he cured Don Carlos from a very dangerous wound of the head. In the last year of his life he visited Palestine, but on his return a tempest arose and the vessel was wrecked on the Island of Zante, where he perished.

"The principal merit of Vesalius," says Sprengel, "was incontestably his judicious critique of the assertions of Galen, and in which he has been sometimes accused of having altered the text, but it has been proven conclusively that these alterations were in the shape of necessary interpolations." There is one thing to be said about Vesalius' "Anatomy," that is, he had the aid of the celebrated artist, Titian, and Jean d'Calcar in the preparation of the anatomic plates. Furthermore, it is said, these are the first exact anatomic plates ever made; for those of Leonardo da Vinci, made for Mark Anthony del Torree, were scattered at his death, and the plates which the immortal Michael Angelo engraved have unfortunately been lost.

There is one point about the writings of Vesalius that must command attention, and that is, that following his master Sylvius, all of his dissections were made on the human body, whereas those of Galen were not, although it is now known that Galen did make dissections of the human body, although most of them were made on animals.

Paracelsus, the greatest medical mystery of the sixteenth century, laid the foundation of his fame as a military surgeon in the low countries, the Roman States, the Kingdom of Naples, and against the Venetians, the Danes and Dutch. He, in 1526, having been called to the University of Bâle to the Chair of Physics and Surgery, wrote in mixed Latin and German and said that the writings of Hippocrates were true enough for Greece, but were of no use in Germany. He said that every hair on his head was more learned than all the Arabs and Greeks united, and he publicly burned the books of Hippocrates and Galen that he might show his contempt for them.

Ambroise Paré, the celebrated French surgeon, followed the French army in all its campaigns from 1536 to the battle of Moncontour in 1569. He was a barber by trade, and the son of a barber. His life and the incidents of his famous career have been so frequently told that I may be pardoned for omitting further reference to him here. He is commonly spoken of as the father of French surgery. This is incorrect, as that title is due to Henri d'Mondeville, 1320, and if not to him, at least to Guy de Chauliac, 1360. But d'Mondeville is clearly enough the father of French military surgery, as de Chauliac never served in a military capacity, being a churchman at Montpellier.

Paré's first work was on the true method of treating wounds, etc., in which the ligature was brought out; but as it is now known, this had been previously recommended by d'Mondeville, by Theodoric and Galen.

But Paré was a voluminous writer, a forceful man, and as Napoleon said of Larrey, "The most virtuous man I ever knew," and popular among the troops to an extent that no modern surgeon can ever hope to aspire.

In the fifteenth century in England, as a curious reminder of the salary of army surgeons of the period, we find that Henry V. in 1415 engaged Nicholas Colnet as field surgeon, who, it is said, "must carry three mounted archers and accompany the King wherever he went. In return he was to receive yearly forty merks, at the rate of ten merks per quarter. He had also twelve pennies a day as subsistence money, and each archer twenty merks a year and six pennies a day subsistence. Morstedt, who was Chief Army Surgeon, had served at Agincourt, was engaged with fifteen men, three archers, and the remaining twelve surgeons."

The next English military surgeon is Thomas Gale, who was born in 1507, served in the army of Henry VIII. and afterward in that of King Philip at St. Quintin in 1557. He published a treatise on gunshot wounds.

A curious incident is cited by Ballingall of the first examining board. He quotes Thomas Gale, who was attached to the English Army from the time of Henry VIII.

"I remember," he wrote, "when I was in the wars at Muttrel, in the time of that most famous prince, King Henry VIII., there was a great rabblement there that took upon them to be surgeons, some were sow-gelders, with tinkers and cobblers. This noble sect did such great cures that they got themselves a perpetual name, for, like as Thessalus' sect were called Thessalians, so was this rabblement for their notorious cures called dog leeches, for, in two dressings, they did commonly make their cures whole and sound forever, so that they neither felt heat, nor cold, nor no manner of pain after. But when the Duke of Norfolk, who was then the General, understood how the people did die, and that of small wounds, he sent for me and certain other surgeons, commanding us to make search how these men came to their death; whether it were by the grievousness of their wounds, or by the lack of knowledge of their surgeons. And we, according to our commandment, made search through all the camp and found many of the same good fellows which took upon them the name of surgeons. Not only the names, but the wages also. We, asking of them whether they were surgeons or no, they said they were. We demanded with whom they were brought up, and they, with shameless face, would answer, either with one cunning man or another who was dead. Then we demanded of them what chirurgery stuff they had to cure men withal; and they would show us a pot or a box, which they had in a budget, wherein was such trumpery as they did use to grease horses' heels, and laid upon scabbed horses' backs; and others that were tinkers and cobblers; they used shoemaker's wax with the rust of old pans, and made there withal a noble salve, as they did term it. But, in the end, this worthy rabblement was committed to the Marshalsea, and threatened by the Duke's grace to be hanged for their worthy deeds, except they would declare the truth what they were, and of what occupation; and in the end they did confess, as I have declared to you before."

William Clowes was a navy surgeon, 1570, who afterward in 1585 went to care for the wounded in the low countries.

Among the early English surgeons Alexander Munro, who served with McKay's Scottish Regiment, 1626, and who was doubtless much more accustomed to the claymore than he was to the roar of the artillery, gives an account of the impression upon the early armies of the invention of artillery.

"It is thought the invention of cannon was first found at Nuremberg, for the ruin of man; being at first for a long time used for battering down of walls and cities, and for counter batteries, till at last they were used in the field to break the squadrons and battailes of horse and foot; some carrying pieces called spingards of four foote and a halfe long, that shot many bullets at once no greater than walnuts; and how soon the trumpets did sounde, the enemy were thundered on, first with these as with shours of hailstones, so that the enemies were cruelly affrighted with them, men of valour being suddenly taken away, who before were wont to fight valiantly and long with the sword and lance, more for the honour of victory than for any desire of shedding blood; but now men martyrizd and cut down at more than half a mile of distance, by those furious and thundering engines of great cannon, that sometimes shoot fiery bullets able to burne whole cities, castles, houses or bridges, where they chance to fall, and if they happen to light within walles or amongst a brigadd of foot or horse, as they did at Leipsigh, on the grave of Von Torme, his brigadd, they spoil a number at once, as doubtless the devilish invention did within Walenstine."

It will be recalled that many years were spent by surgeons in the discussions of the alleged poisonous character of the balls used as projectiles. Curiously enough, the idea of the idiopathic poisonous nature of bullet wounds was revived in the Slaterry case tried in 1892, in which the acquittal of the accused policemen turned partly upon the issue whether bullet wounds were or were not necessarily septic. The acquittal decided they were not.

The seventeenth century was prolific in the annals of military surgery, especially in English. Woodall's "Surgeon's Mate," written about 1626, and the "Chirurgical Treatise" of Richard Wiseman appeared in 1676.

In the eighteenth century we have John Hunter, who was staff surgeon and general surgeon; Surgeon-General John Pringle, whose writings were far ahead of the time in regard to hospitalism, and Inspector-General Robert Jackson, and in America James Thatcher.

Jackson, who was the Inspector-General of British Army Hospitals, commenced his medical life as surgeon to a Greenland whaler, but he finally entered the British service and served through our Revolutionary War. Many traits of Jackson deserve to be perpetuated and held in remembrance. Although we are not accustomed to speak well of our enemies, yet that chivalrous spirit which should imbue all military men leads us to recognize remarkable bravery wherever found.

At the battle of Cowpens, Jackson served as Assistant Surgeon to the Seventy-first Regiment in Tarleton's Brigade, and during the heat of action Tarleton's horse was shot, and Dr. Jackson, being well mounted, rode to his side and dismounting tendered him his horse, which was accepted, and Tarleton immediately rode off, although the British were in full retreat and hotly pressed by the Americans. Seeing that many wounded British were in our hands Dr. Jackson fas-

tened a white handkerchief to a stick and as a flag of truce walked directly to the American front, where he was conducted to the rear as a prisoner, and immediately offered his services to attend the wounded. He occupied himself that night in caring for them and in default of dressings took off his own shirt and tore it up for bandages. The next morning he was sent for and examined by General Washington, to whom he tendered his professional assistance for the wounded Americans also, an offer which was readily and courteously accepted, and as soon as the British wounded could be exchanged, Washington sent Dr. Jackson with them without requiring his parole or demanding an exchange.

The biographer of Jackson, himself a Briton, relates this story, and adds that "he would have taken great pleasure to have been able for the honor of human nature to have entered upon the record a demonstration of General Tarleton's grateful recollection of the service done him by Dr. Jackson in the hour of his rout and danger. But Lieut.-Colonel Tarleton in his history remained entirely silent; although to this remarkable instance of duty and devotion perhaps he owed his life, as he certainly did his liberty and capability of usefulness." Later Dr. Jackson served under Lord Cornwallis, and after one of the battles, when the British troops were retreating, the building into which the sick and wounded had been carried was being riddled by the shot of the Americans, visiting became so dangerous that the surgeons proposed casting lots to determine which of them should go and attend the wounded soldiers. Jackson was present and when the proposal in turn reached him to cast lots, he said: "No, no, I will go and attend them." And he did.

Jackson's work on the "Formation, Discipline and Economy of Armies," the last edition of which was published in 1845, is today a book of great interest and instruction.

Dominick Anel (born 1679, died 1750), the French military surgeon, was the first to write on the cure of lachrymal fistula by the aid of sounds and injections. It is curious, in looking up the history of these smaller operations, to notice the enthusiasm with which military surgeons were engaged in treatment of affections which might be supposed to belong exclusively to private life.

The Dutch army surgeon, von der Haar, perfected the method of hare-lip operation, and recommended a preliminary bandage by which the parts were brought strongly together.

In abdominal surgery the military surgeon has long been in advance. I need not refer to that noble collection of authorities, gathered by your distinguished president, when he wrote his classical article on "Circular Enterorrhaphy," but can only refer you to Wiseman, 1676, and others of that date and of the succeeding century as to the treatment of wounds of the intestine.

Of hernial operations, one of the most remarkable was performed by Mennel, a regimental surgeon of Naumbourg, who, about the year 1753, in a case of gangrenous hernia, removed the epiploön, the testicle, the cord, and a considerable portion of the ileum. Unfortunately, all of the military surgeons of that day were not thus successful. "The operations of Michaelis," says Sprengel, "were unfortunate operations, and, for the most part, executed with much maladroitness."

Claude Joseph Gentil, Chief Surgeon of the Armies of France, paid particular attention to operations for

cataract and the prevention of staphyloma in 1752. The operation for cataract, now a prominent subject, occupied the attention of surgeons, and was a frequent topic for discussion a great many years. Among others Olof Acrel, who was professor at Stockholm and Chief Surgeon to the Swedish Army in 1766, wrote a long criticism on the best method of extraction of the crystalline lens.

John Christian Tagden was called the Machaon of the Prussian Army. He wrote a work on surgery, in 1795, which is a veritable storehouse of medical and surgical information.

Christian Louis Mursinna in 1796 wrote a work published at Berlin on the observations which he had made in the campaigns of the Prussian Army, with especial reference to wounds of the head.

J. C. Jager in the same year wrote an essay on military medicine, published at Frankfurt-on-Main.

Within the limits of this paper it is hardly possible to speak of the great work of Guthrie, Hunter and McLeod on the Crimean War, and in naval affairs of Saurel and Sir Gilbert Blane, whose "Medicina Nautica" was an epoch-making book.

In the nineteenth century a course on military surgery was established at Edinburgh by Wm. Ballingall, who had seen thirty years service. It must be admitted that a course on military surgery had been outlined by John Bell in a memoir in January of 1798, addressed to Earl Spencer, but it was not adopted by the British Government. One is impressed with the advanced views entertained by Bell at the close of the eighteenth century. They are as follows:

1. The Professor must teach the essentials of anatomy, surgery, dissection, etc.

2. Gunshot wounds.

3. Military medicine, fevers, fluxes, spasms, infectious diseases and duties of camp and hospital; scurvy, ulcers and disorders frequent in ships of war.

4. Medical geography, climates, seasons, coasts of various countries; manner of conducting soldiers on a foreign expedition; the general care of their health; the choice of encampment; forming of hospitals on shore; how to convert churches, garrisons, public buildings into occasional hospitals; how to attend an army in the field; how to lay the wounded in besieged towns; how to carry them off the field in a retreating army.

5. Military economics, diet, exercise, clothing, general medicine, and all methods of preventing disease.

For a quarter of a century Legouest remained the standard French text-book on military surgery, but it is now superseded by the latest work on military surgery, by Chauvel and Nimier, who, in speaking of the progressive improvement, say, "That frightful hecatomb, the Crimean War, has come to demonstrate the sad results of a vicious organization, more murderous than the projectiles of the enemy; the epidemics due to a neglect of the most elementary rules of hygiene, thinned the ranks of the effectives. The slightest wound became a cause of death, and in the crowded hospitals and the overloaded ambulances the surgeon sought in vain against infection which decimated them nearly to the close of a day where, worn with the enervating struggle and superhuman work he fell to rise no more, on this rotten straw, the only bed which was furnished for his needs. This was the *corps de santé militaire*: Invalids, physicians and pharmacists, who paid the heaviest tribute to the

dead. However, France, ignorant of these disasters and of their cause, wept silently for its children, and without asking if their loss could have been prevented, or if all had been done to save them.

"Michel Levy and Bégin raised in vain their voices. The cannon which thundered to celebrate the victory and the peace drowned the appeal of the physician as it concealed the cries of the dying and the tears of the mothers. The War of Italy came and we have seen reproduced the same disorder and the same results. Here were physicians without material, and material without physicians; warehouses stored with linen, charpie, surgical cases, etc., during which much of the time in the ambulances and hospitals, over the battlefield, there were a hundred physicians to give assurance of service for an army of twenty thousand men. In a word, all the evil effects which were seen in Crimea and Constantinople were here observed on French frontiers whilst still in a friendly country. The emancipation of the medical corps was not yet complete, but the example of the United States by its incontestable statistics in favor of the value of independence of the medical corps was finally adopted by a decree issued in 1882. Today in the French military service, as in other armies of the civilized world, the military surgeon is the veritable chief of his own service, and with this authority has been vested in him the responsibility."

The English Army has fared much better. It was early made apparent in the history of that enlightened nation, that not only were competent physicians needed for the military service, but that they must have autonomy and responsibility for their portion of the work.

In Germany military surgery has had the same evolution marked in other countries. Fischer of Hanover, whose historic articles are now appearing in the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, notes with surprise that the great Frederick wrote exhaustively on the affairs of the sutler, but very briefly on transportation of wounded and immediate assistance on the field.

"Frederick occasionally visited the hospitals, gave money to the sick soldiers, investigated the medicine vials and showed special interest in certain wounded soldiers." But Frederick in 1781 put captains in command of the doctors and stewards, "so that arms and legs would not be amputated wholesale, and that in general no amputations should be undertaken until mortification had set in, for which the captains must also be responsible." If the surgeon did not do his duty he was to be "put in chains."

This regulation naturally brought confusion and mismanagement, and Zimmermann was finally called to rectify it.

Cothenius and Schmucker, Bilguer and Theden served with distinction in the seven years' war. Schmucker was badly wounded at the battle of Prague, but nevertheless kept on duty. He was very much annoyed by the lack of transportation; he obtained permission to have a regiment of dragoons dismounted, and "in half an hour all the wounded were on horses and the dragoons marching at their side." (Fischer.)

The very interesting chapter of Fischer's book, I must refer you to as containing in brief space the condensed history of German military surgery. I can not take more of your time now on this branch of the subject, but I wish to express my unbounded admiration for the system now carried out by that

able and distinguished and courteous officer, General Von Coler, at once an ornament to his profession and to the military service. Through his courtesy, when in attendance at the Medical Congress in Berlin in 1890, I was afforded by him abundant opportunity to study the present German method.

The German and Austrian armies have in our day shown great appreciation of their medical corps. In Germany Volkmann, Gürtl, Von Esmarch, Bardeleben, Von Bergmann and Von Coler, and in Austria Neidorfer and the immortal Billroth represent not only the most advanced military surgery, but all that is best in general surgery as well.

In Russia who has not heard of Pirogoff and the gallant Reyer?

In this outline I have omitted reference to our own country as many of those present understand its military history as well, and some of them better than myself; beside, the brilliant successes of the medical department of our Army have been adequately portrayed by Capt. Harry E. Browne of the Army, from the writings of James Thatcher, Mann, Lovell, Letterman and Otis to those of Hammond, Barnes and Baxter.

As we sit here within our now peaceful State, within the shadow of the Capitol, our eyes are turned again to the orient as were those of our ancestors of a thousand years ago, and the familiar names of Canaan, Crete, Actium and Thessaly are on every tongue, and if grim-visaged war, now showing his wrinkled front on the Grecian frontier, shall actually come to that historic people, I have no doubt that the glories of ancient Greek medicine will be surpassed by our Grecian military brethren at the close of the nineteenth century by the application of the methods now in vogue.

SURGERY OF THE KIDNEY.

BEING A STUDY OF A SERIES OF CASES IN WHICH
METHODS OF DIAGNOSIS AND TREATMENT
ARE ILLUSTRATED.

BY BAYARD HOLMES, B.S., M.D.

PROFESSOR OF PRINCIPLES OF SURGERY IN THE COLLEGE OF PHYSICIANS
AND SURGEONS OF CHICAGO.

RENAL CALCULI.

In this series of cases none are more interesting from a surgical or from a pathologic standpoint than those in which calculi were found. The imagination is at once aroused to conceive the various causes of renal calculi, and the ingenuity is taxed at each effort to diagnose the condition and afterward to treat the case in the wisest manner in the emergency of the operating room.

Occasional attacks of pain in the right side of the abdomen in a multipara for twenty-five years. Insignificant renal and urinary symptoms. No interference in the general health. At last at 63 years of age suppurative pyelitis. Nephrotomy and removal of the stone, drainage of the kidney for four weeks. Closure of fistula.

Mrs. D., age 63, widow, was treated by me in St. Luke's Hospital on March 25, 1896. She had complained for some time of a pain and tenderness in the right hypochondrial region and had had a great many attacks of pains in this region during the past twenty-five years, which had been termed by her attending physicians liver complaint and congestion of the liver indiscriminately. These attacks had usually lasted five or six days and had been relieved by rest in bed and a light diet with the use occasionally of narcotics

to lessen the pain. Otherwise she had not been sick but had constantly suffered from frequent and sometimes painful urination though this had not been a marked symptom of the fore-mentioned attacks. Upon admission she complained of great pain in the right hypochondrial region and a very irritable bladder, loss of appetite and diminution of strength. Dr. Mary Bush, of Rogers Park, had seen her and had



FIG. 1.—Mrs. D. Diagram of abdomen made before operation, showing the location of the tumor as outlined by palpation and percussion.

made a diagnosis of pyonephrosis of the right kidney. Upon examination the lungs were found normal and the heart slightly enlarged, the apex beat three and one-half inches from the median line in the fifth interspace. The patient was rather fleshy weighing 160 pounds and somewhat anemic. The spleen could not be palpated and the area of hepatic dullness was increased about one and one-half inches. In the right abdominal region was found a large and smooth tumor extending about two inches above the level of the umbilicus and

bladder distended with air and a ureteral catheter passed into the left ureter. Four cubic centimeters of urine passed from this ureter in fifteen minutes. This urine was free from pus, albumin and casts. It contained a large amount of urea, 40 grams per liter.

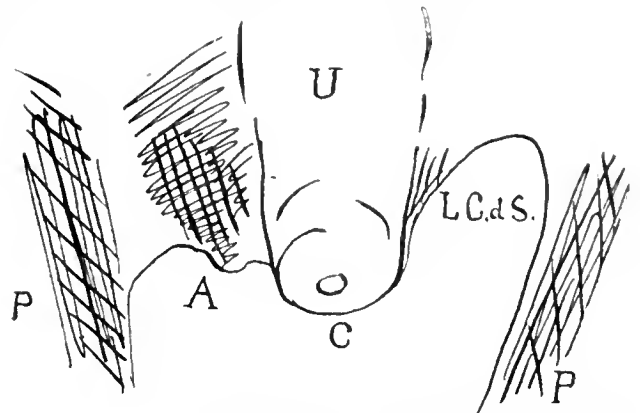
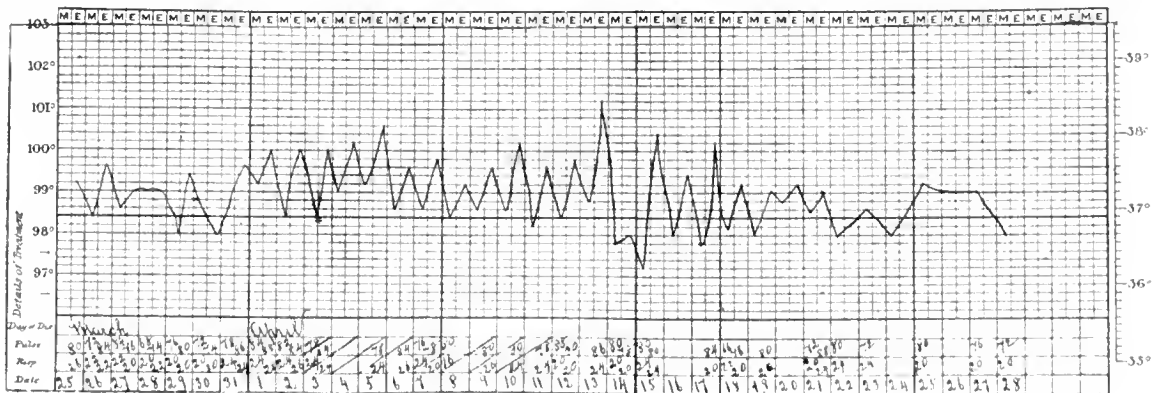


FIG. 2.—Diagram of the vaginal and rectal examination. U, uterus; P, wall of pelvis; LCdS, left cul-de-sac; A, thickened mass in right cul-de-sac.

Although the catheterization was readily accomplished the patient was so exhausted by this procedure that no attempt was made at this time to catheterize the right ureter. On the following day, however, the catheter was passed into the right ureter but nothing escaped the catheter except a small amount of thick greenish pus. The catheter was removed, washed and reintroduced without any other result. No long flexible catheter was at hand and the indications were



the kidney was enlarged and a stone two and one-half inches long and one and one-half inches in diameter was extracted with some difficulty. It was found necessary to crush it with strong forceps and remove it piece by piece. It seemed to occupy the entire pelvis of the kidney and had no fassets behind it indicating the presence of other calculi. The cavity was explored with the finger but no other stones found. The ureter was somewhat dilated, but the thickness of the wall of the kidney seemed to suggest the presence of enough kidney substance to be useful in secreting urine. The edges of the pelvis were grasped with forceps and the pelvis itself packed with iodoform gauze inside of the Mickulicz handkerchief. A portion of the lumbar incision was closed with sutures and the abdominal opening completely closed and dressed. The patient was put to bed in good condition. Her pulse during the afternoon and evening ranged from 59 per minute directly after the operation with a temperature of 97 degrees F., to 80 per minute with a temperature of 98 degrees F., and respirations 28 per minute. There was a good deal of oozing from the wound but it was of a very pale and watery character and showed no tendency to the formation of clots. When burned in the flame it gave off a urinous odor. On the fifth day after the operation the discharge was almost entirely urinous and saturated the dressings with six ounces in twelve hours showing considerable activity in the kidney.

The accompanying temperature record (Figure 3) shows the uneventful progress of this case. The patient left the hospital on April 26 with the wound not yet entirely closed, but all urinous discharge had ceased for several days before. A few days afterward a fragment of stone was discovered in the wound and removed. Since this event and up to this writing (March 1897) the wound has completely closed, the patient is gaining in strength and the urine seems entirely free from pus and albumin.

This case illustrates the way large calculi are borne by the kidney. For many years the symptoms were so slight as to be hardly noticed. There were of course occasional attacks of pain but they did not last long. At last the ureter became partially obstructed and the symptoms were more pronounced. The case also illustrates the possibility of demonstrating the adequacy of the opposite kidney before operation. The scanty urine that was removed from the left ureter contained an excessive amount of urea and pointed at once to its health and the need of a larger amount of water to carry away the urea. Incidentally also this case shows the possibility of performing the most serious operations upon very old persons, even under such unfavorable conditions as attend the destruction of a kidney. Operations as serious as nephrotomy have been successfully performed on octogenarians.

Nephrectomy was thought of in this case, but the result shows that it is better to leave behind rather than remove remnants of a suppurating kidney provided there is no obstruction in the ureter. If necessary the kidney may be removed at a subsequent operation after the patient has recovered from the sepsis and the effects of the pain.

There are many cases of calculi which give rise to no symptoms and are only discovered postmortem. In many cases also small calculi pass into the bladder at intervals with dreadful pain. It is sometimes possible to follow such a stone along the ureter by

the point of tenderness and at last with the cystoscope see it borne into the bladder as I have once done in a man, using for the purpose a Casper ureter-cystoscope. It is often possible to prove that the stone has been discharged into the bladder by using the cystoscope. This I have done and after making a drawing of the small stone with a bloody end my patient did me the kindness to urinate and demonstrate the accuracy of my observation by passing the calculus which had irritated his prostate for several days.

Many cases of calculus of the kidney are not surgical cases at all and become surgical only when they have gone on to suppuration or to such excessive pain as to interfere with health.

THE UTILITY OF NUCLEIN.

A Clinical Lecture delivered at Mercy Hospital.

BY N. S. DAVIS, JR., A.M., M.D.

PROFESSOR OF PRINCIPLES AND PRACTICE OF MEDICINE AND CLINICAL MEDICINE, NORTHWESTERN UNIVERSITY MEDICAL SCHOOL.

At the clinic last week I showed you this patient when he exhibited most fully the physical signs and symptoms of croupous pneumonia. He had then been ill five days and was suffering from a moderately severe attack of the disease. The lesion was limited to the lower lobe of the right lung. At that time I hazarded the prophecy that unless an extension of inflammation occurred he would be likely to pass the crisis of his illness either on the night of the day that you saw him or within the two following days. I also pointed out to you the treatment that was usual in such cases and particularly called attention to the fact that in this case I was trying in addition to the ordinary routine treatment of pneumonia nucleic acid. I made no comment at the last clinic upon the mode of action of nucleic acid or the indications for its employment in the treatment of diseases. I call your attention now to this patient in order to point out the changes that have occurred since you last saw him, and also to speak somewhat more at length in regard to the usefulness of nuclein as a remedy, not in cases of croupous pneumonia only, but in other diseases as well.

Almost immediately after you saw our patient there occurred an extension of inflammation so that the entire lung on the right side was involved. During the week after this spread our patient became extremely ill. His fever continued high, in the neighborhood of 104 and 104½ at night time. He was delirious almost continuously. His breathing was very rapid, varying from 40 to 50 and sometimes 55 per minute; it was also shallow. He gradually grew cyanotic, his lips and finger-nails were bluish, and the skin over his body of an ashen gray. At one time he seemed so ill that recovery appeared impossible. On account of the very pronounced cyanosis and because of the constant delirium and unconsciousness of our patient, it was thought necessary to administer oxygen gas freely. It produced its usual effect; the cyanosis for the time was lessened, the mucous membranes became pink and the heart grew stronger and the pulse fuller. Our patient, however, under the influence of oxygen gas did not become entirely conscious or lose his delirium altogether, but his mental state improved. As good fortune would have it his temperature during the last three days has gradually lessened, and in all respects his condition has

slowly improved. You now see him conscious, with a temperature this morning of 99 and a temperature last night of only 100½. His pulse is medium in size, very regular, and from 80 to 85 per minute. The respirations, however, are still quick. You will observe that they number 35 to the minute, and are shallow. Percussion over the affected side of the chest demonstrates marked dulness over the entire right lung. It is filled with moist râles indicative of liquefaction of the fibrinous exudate.

So much for the present condition of our patient and for the history of his illness since you last saw him.

In regard to his treatment.—Aside from the employment of nucleinic acid there has been nothing unusual used. He has been given five grains of carbonate of ammonia every two hours; and during all the severe part of his illness strychnia was given in full doses. Oxygen was administered very freely by inhalation. Digitalis was given when the heart was most feeble and cyanosis was greatest. We are still administering strychnia and digitalis, but not frequently: the carbonate of ammonia has been discontinued. Of course the patient has been fed carefully and systematically, even during his delirium, but only liquid foods. His bowels have been kept regular, for the most part by the administration of enemata. In this case I prescribed nuclein as I have frequently in others, because of the excellent experimental results obtained by Vaughan with the drug in animals infected by the pneumococcus. I was, moreover, led to employ it in this case particularly because a comparatively new preparation of nucleinic acid was put in my hands for trial—a stronger preparation than has usually been employed. Whether it has produced good effects or not in this individual case we will consider a little later, I will first refer to the mode of action of nucleinic acid and its mode of administration, and then consider its therapeutic value.

Nucleinic acid or, as it is commercially known, nuclein, was introduced to the profession by Professor Vaughan of Michigan University. Professor Vaughan has been most ably seconded in his experimental investigation of nuclein by Drs. McClintock and Novy of the same institution. It has been demonstrated by them, and the demonstration has been confirmed by various observers in other parts of the world, that nuclein possesses very pronounced germicidal power. Moreover, when it is administered to animals or to man it produces leucocytosis or phagocytosis, that is, a great increase in the number of white blood corpuscles. The amount of uric acid eliminated by the kidneys is augmented when it is taken. Nucleinic acid has also been shown to be absolutely innocuous. It can be given in doses of all sizes, and can be administered either by the stomach, hypodermatically, or injected directly into the veins of animals, without causing fatal results or illness. This is a rare combination of qualities. All of the germicides that we are accustomed to employ are poisonous to animals and to man, if used in sufficiently large doses. According to prevailing theories as to the cause of immunity to infectious diseases, phagocytosis is of prime importance, and a drug which will greatly increase the number of leucocytes in the blood we would expect to be of value to combat an infectious malady. Indeed, as you know, Metschnikoff assigns to phagocytosis wholly the power of combating microorganisms that gain access to the tissues or

the blood of animals or man, and he has declared that if we can increase the number of phagocytes in the blood at will and sufficiently, we have almost a certain means of combating infectious maladies. Whether this statement is absolutely correct or not can only be demonstrated by extensive clinic trials of those drugs that provoke phagocytosis, and extensive experiments in the laboratory with the same class of remedial agents.

Vaughan showed in some of his early experiments that nuclein administered hypodermatically to those animals that are very susceptible to infection by pneumonia will produce complete immunity toward the pneumococcus. It would therefore seem that nucleinic acid should prove an important remedial agent in the treatment of croupous pneumonia. His experiments also demonstrated that it readily killed staphylococci and streptococci. Some of his experiments showed that it produced at least an attenuation of the virulence of tubercular infection. Vaughan therefore urged that nucleinic acid be tried by physicians in pneumonia, in infection by staphylococci and streptococci, and in the early stages of tuberculosis.

Some very recent experiments by Hahn are of interest at this point. He has proven by the introduction of nucleinic acid into the blood of animals that the germicidal properties of the blood serum are very greatly increased. For example, by taking a given quantity of blood serum from a healthy animal and inoculating it with the staphylococcus, he found at the end of two hours that only 19½ per cent. of the microorganisms were alive; at the end of five hours, only 4 per cent. were alive. If nucleinic acid was introduced into the blood of the same animal, a marked leucocytosis was rapidly produced and the germicidal power of the blood serum was increased, so that when it was inoculated again with staphylococci, at the end of two hours only 2.9 per cent. were alive; and at the end of five hours only 1.7 per cent. The bactericidal properties of blood serum were shown to be increased more for the bacterium coli commune than for staphylococci. It is possible, as Hahn claims, to double the number of leucocytes in the blood in a few hours, and to double or even more than double the germicidal power of the blood serum by administering nucleinic acid. In order to produce a perceptible increase in the germicidal power of blood serum the number of white blood corpuscles must be increased to 13 or 14,000 per cubic centimeter.

The remedy has not been employed as extensively as it might have been, because at first it was recommended that it be used only hypodermatically, and few remedies that are employed hypodermatically gain very general use. Patients object to frequent puncture of the skin by a hypodermic needle if thereby they are not immediately relieved of pain. But it has been shown by the investigators at Michigan University that the drug can now be employed in solutions of 5 per cent. strength by the mouth, and quite as good results can be obtained in this way as by its hypodermic use. I doubt not, therefore, that we will soon see it more generally tested. We will then be better able to determine its exact degree of utility as a remedial agent.

There are several preparations upon the market which bear the name of nuclein. For the most part these are liquid preparations and are solutions of nucleinic acid. Personally I know nothing of the genuineness or value of these various preparations. Prof. Chittenden of Yale University, has made a care-

ful analysis of them, and in a recent publication has asserted that the only preparation which he has found to contain any considerable quantity of nucleinic acid (and it is the nucleinic acid which is the active principle of the preparation) is the solution which goes by the name of nuclein prepared by Parke, Davis & Co., of Detroit, Mich. My own experiments have been both with this and other preparations, but chiefly with this preparation of nucleinic acid. The clinical results which I have obtained by its employment have been conflicting. I have used it in a great variety and in a large number of cases, sometimes with encouraging results and sometimes with apparently no results at all; yet often enough with apparent good effect to make me willing to test the drug still further, particularly as we know that it is innocuous.

I have used it, I think, in ten or a dozen cases of pneumonia. I tried it at first hypodermatically, and stopped using it because it was so disagreeable to my patients; more recently I have tried it again, administering it by the mouth. In no case has the course of the disease been shortened. The difficulty of estimating the value of a drug by its trial in a given case is well illustrated in the one before us. It is quite impossible from any one or from a dozen cases to judge of the utility of a given drug. Its effects must be carefully watched in very numerous cases, in cases that occur in different years and in different epidemics, and cases of very different degrees of virulence. The patient before you has suffered from an intensely severe form of croupous pneumonia, and has been so seriously ill that at one time it seemed impossible for him to recover. The disease has been prolonged by the extension of the lesion from one part of the lung to another. In ninety-nine cases out of a hundred as severely ill as he was, recovery would not take place. Fortunately in this case recovery is taking place. That nucleinic acid has played a part in producing this recovery, we can not say with certainty. We expected, or hoped rather, that by its administration the bactericidal properties of his blood serum would be so increased as to prevent spread of the lesion in the lungs. The drug was employed in this case for about thirty-six hours before any extension of the disease occurred; but it did not, as you see, prevent the extension. It may, however, have played a part in making the patient better able to withstand the severe attack of illness that he has gone through.

The best results which I have seen from the employment of nucleinic acid have been in cases of infection by pyogenic organisms, in cases where there was plainly infection but not actual suppuration. For instance, in quinsy where a tonsil was enlarged in the way characteristic of this form of sore throat, and when suppuration seemed imminent the drug has apparently prevented suppuration. Such good results have been obtained only when it was administered early and frequently. In the treatment of bubos, variously caused, similar results can often be obtained. After suppuration is established it does not seem to influence it. It is well known that all glands infected by pyogenic organisms do not suppurate. However, I have used the drug so often in such cases as to have acquired some confidence in its ability to prevent suppuration. I have used the drug in several cases of suppuration in deep-seated organs, from which drainage could not be perfectly established, but have never gotten positively good results.

Some of you may remember a case in this hospital last winter, of abscess of the lung, a simple abscess, not a tubercular one. In that case nucleinic acid was administered hypodermatically just so soon as there was any suspicion of an abscess in the lung; and it was used persistently without appreciable effect. During the last summer I have employed it in two cases of intense pyelitis. The first occurred as a complication of disease of the spine which produced a paralysis of the sphincter muscles of the bladder, causing thereby retention of urine. The bladder was so greatly and so long distended with urine that the latter underwent decomposition and provoked inflammation of the bladder. The inflammation extended to the pelvis of the right kidney. When the patient first came under my observation he was extremely ill, suffering from a continuous fever, sweating at night, able to retain no nourishment, with a very feeble pulse and apparently not likely to live more than a week, if so long. The patient was removed from his home, where he was receiving very imperfect care, to the hospital; his bladder was frequently perfectly emptied and was carefully washed. At the same time nuclein was administered persistently. Teaspoonful doses of the 5 per cent. solution were given by the mouth once in two hours at first. The kidney, which had been greatly enlarged by the accumulation of pus and urine in the pelvis of it, rapidly diminished in size, the tenderness of the organ gradually disappeared, the fever disappeared with rapidity, vomiting ceased and nourishment was taken with avidity and ease. A somewhat rapid recovery took place; not a complete recovery, for that is probably impossible, but a comparative recovery. He now voids only a small amount of pus with his urine; he has once more gained control of the sphincter muscles of the bladder so that catheterization has no longer to be resorted to, and is feeling in every way comfortable. His lower limbs are of little use to him.

In this case, too, we are left in doubt as to how much the improvement has been effected by nucleinic acid and how much was due to the fortunate thorough drainage of the pelvis of the kidney through the bladder by regular removal of urine from the latter organ. Quite as good results have been observed where nuclein was not used.

In furunculosis it has repeatedly seemed to lessen the number and size of the successive boils and to make the disease of less than the usual duration.

I have tried nuclein in two cases of malignant endocarditis. In cases of this disease above all others we would expect a drug that is innocuous and that possesses such marked bactericidal properties to be beneficial, since the infection is in the blood channel. But in neither case has improvement been observed that seemed justly ascribable to nuclein. One of these patients you know, for he is now in this ward. You examined him when he first showed symptoms of malignant endocardial trouble, and you have seen embolism occur in his arm and leg, and finally gangrene of one foot develop. Nuclein was administered to him every two hours for several weeks. The patient, as you will remember, had daily a high temperature which lasted for an hour or two only. It first reached 106, and quite constantly ranged above 104. After the nucleinic acid had been used for some days the temperature gradually fell, its daily maximum being 102 or 102½. While the temperature ranged high there was both morning and evening a

period of elevation. Usually the morning temperature was highest. The highest rises of temperature coincided with the occurrence of embolism in new localities and followed it for one or two days.

The patient is steadily failing in strength. The noticeable diminution of fever is quite as probably due to the occurrence of no new embolism as to treatment. The failure of the treatment in this uniformly fatal disease is not unexpected.

As nucleic acid increases the bactericidal power of the blood, it might be expected to be especially serviceable in those diseases in which the blood is the seat of infection. We have no clinical or experimental evidence bearing upon this point.

Vaughan reported good results from the employment of nuclein in cases of diphtheritic sore throat produced by streptococcus infection. He used it both locally upon the throat and administered it hypodermatically. I have also used it in these cases both locally and internally. I have never felt so great confidence in it, however, as to be willing to discard other germicides. I use invariably in addition to it the peroxid of hydrogen either with the atomizer or with a syringe. Recovery has occurred without complications in all cases of this kind that I have treated in this way.

Vaughan's experiments with nuclein in the laboratory on animals affected by tuberculosis were sufficiently flattering, although he could not produce absolute cures or perfect immunity by the drug, to make it appear of probable utility, at least in cases of incipient phthisis. He urged the profession to try it. I have endeavored to watch its effects in a large number of cases. If it does good it probably does so in part by lessening the virulence of the tubercle bacilli and in part by preventing superimposed infection by pyogenic organisms, to which there is always so strong a tendency. I have often thought that when given in the first stage it delayed suppuration and excavation.

Since nuclein produces experimentally such marked phagocytosis and increases the bactericidal power of blood serum, it is a drug well worth a thorough clinical test. From clinical trials it seems most certain to do good in furunculosis and similar pyogenic infections of mild type. It is especially useful as a prophylactic or attenuant when such infection has just occurred. It deserves more extensive trial in pneumonia and beginning tuberculosis. I know of no contraindication for its employment except its augmentation of uric acid and consequent possible aggravation of the uric acid diathesis.

CONCERNING THE PRESENT CONDITION OF STATE MEDICINE IN THE UNITED STATES.

BY FRANKLIN STAPLES, M.D.

WINONA, MINN.

State medicine as now understood belongs entirely to modern times. It began in England just before the middle of the present century, when Edwin Chadwick, a barrister, made what has been called his "Epoch-making report" to parliament on the health of towns. By his investigations and report he secured the attention of the government and the interest of the people; laws were passed, and English sanitary work and control were inaugurated. More than fifty years have passed, and England's system of sanitary control, both inland and marine, is a strong feature of

her government. The statistics in the Register General's office show that the annual death rate for England and Wales for the ten years 1871-1880, averaged 21.27 per 1,000; while for the period 1881-1890 it was 19.8, a decrease of more than 11 per cent. The former death rate in England was given at 32 per 1,000. The present annual death rate in the United States varies slightly in different States and cities from 16 to 18 per 1000. In some favored cities and towns it is less.

The beginning of State medicine in the United States was in this wise: In 1849 the Governor of Massachusetts, by authority of an act of the Legislature, appointed a commission consisting of three citizens to prepare a plan for a sanitary survey of the State. Lemuel Shattuck, Nathaniel P. Banks and Jehiel Abbott were made to constitute this commission. The work of investigation began, but delays were inevitable, and the Massachusetts State Board of Health was not formed until the year 1869. Dr. Henry I. Bowditch was properly placed at its head. The names of Shattuck, Banks, Abbott and Bowditch of the old Bay State are well remembered.

Because of the frequent invasions of yellow fever in New Orleans the Legislature of Louisiana established a State Board of Health in 1885, whose duty was to maintain a quarantine and have some control of the sanitation of that city. This, then, was the first named as a State Board of Health in the country. The powers of this Board were enlarged in 1867. Its service was valuable for the purpose at the time, but it had not at first the means and general power of control that have since been given to State boards of health.

A little more in the line of history is best given in an account of the work of Dr. Bowditch. In the centennial year of 1876, an International Medical Congress was held in Philadelphia. The president of the Massachusetts State Board made the address on "Hygiene and Preventive Medicine." The discourse was historical, showing much of the condition of things at the time, and the work of pioneer sanitarians. He said: "I have been requested to speak to you on public Hygiene and its great resultant, State preventive medicine, as it appears to an observer looking back upon the centennial period now just closing."

"As a matter of vital importance to the well-being of any community, and, as such, worthy to be cheerfully and amply sustained by great cities and States, public hygiene, as we now understand that term, has, till within a short time, been woefully neglected, save when, under the stimulus of some great and terrible epidemic, frantic but temporary efforts have been made to stay the plague by hygiene or by other means. Of late, however, a new and better era seems opening to our view, and State preventive medicine affords us higher hopes for all coming time."

Farther on in this address Dr. Bowditch spoke of the work immediately preceding, viz., 'from 1869 to 1876, as that "which is destined to continue and progress while the nation itself lives, the noblest and most beneficent of all, viz., that in which the profession, joining heartily with the laity and aided by the material and intellectual resources of great States, will study to unravel the primal causes of all disease with the object of preventing it. It is the epoch of State preventive medicine.' As it now seems, this

¹ Address.—Transactions International Medical Congress, Philadelphia, 1876.

was a true representation of the condition and spirit of the times and was correctly prophetic.

As shown above, the organization of State boards of health in this country began in Massachusetts in 1869. Time was required to bring the country to a general understanding and appreciation of the advantage of State sanitary laws and management. Eight years were required for the establishment of the first ten boards. A little more than a quarter of a century has passed, and in the forty-six States there are thirty-eight State boards of health, which are operating under laws of uniform general requirements.

The following figures represent the sanitary machinery of a single State; 1,804 local boards of health; 40 in cities, 355 in villages, and 1409 in townships. These report vital statistics and anything notable in disease-prevalence to the State board monthly, and receive its directions (Minnesota).

Some ways and means.—Interstate and sea-coast notification is now an important means of protection from the importation of contagious diseases. This is possible only by coöperation between sea-board quarantine and State organization. To illustrate: A steamer arrives with immigrants, is inspected and passes quarantine at New York. No cases of contagious disease are found on board, but the vessel is from an infected port, and certain passengers are supposed to have been exposed to contagion. The New York quarantine telegraphs the secretary of the State of Minnesota, for instance, that suspected immigrants have left ship and are on their way to such a town in the State. The health officer of this town is notified and his inspector is on the lookout. The same arrangement for notification to the State holds with the United States ports and with the Canadian quarantine in the St. Lawrence River; this much for complete organization, interstate and international reciprocity and governmental control.

The great discoveries and advances in bacteriology made in late years have laid a foundation for practical work in preventive medicine not before known. Laboratories are provided for by State and municipal authorities, and expert bacteriologists and chemists are employed not only in the analysis of water and food products, but in furnishing the means of diagnosis of disease, and, of late especially, in developing the various means for rendering the human body immune to the poison of infection. Physicians and scientists make the discoveries and improvements, and the State may well aid in supporting the same and extending the advantages in the public service.

The department of diseases of animals in the work of State boards of health is an important one. The flesh of animals as a food product, and the liability of the communication of disease from animals to man through milk products and in other ways, make this an essential part of State sanitary management and control.

The influence of State medicine in the United States on the advancement of the standard of medical education has been notable. The position and work first of the Illinois State Board of Health, then of other States by their examining boards, in fixing a lawful standard of requirements for admission to the practice of medicine in the States, has given character to medical practice in this country not before possible. Competing medical colleges of the lower grade have been allowed the choice of elevating their courses and standard of instruction or of retiring from busi-

ness. The condition of the few States which have not fully advanced to the enactment of wholesome laws has been pitiable. The quacks of the country, being refused admittance to or driven out of the better States, have sought refuge here, and are doing their work in communities whose State governments have not yet advanced. Time is required to advance a whole people by education, but the higher civilization lies in this direction.

The great American Public Health Association has for its territory the United States, the Dominion of Canada, and the Republic of Mexico. Its membership includes the leading sanitarians of these countries, and its published literature covers the field of modern public hygiene and State medicine. Prof. Stephen Smith of New York City was the founder of this Association and its first president (1872, 1873 and 1874). Dr. Irving A. Watson, Concord, N. H. is the secretary.

The National Association of State Boards of Health maintains an active existence, and holds annual sessions for the discussion of matters pertaining to sanitation and for promoting unity of action.

The economic advantage of public sanitation has been shown as an argument in favor of the public support of State medicine; that to prolong the average time of active human life by the suppression of preventable disease, is of much greater advantage to the State than is the cost of the means employed. Moreover, it is agreed that to ward off the calamity of disease and to prevent the coming of pestilence, is to increase the sum of human happiness and to elevate the race. The standard of what is done in this way now indicates the degree of intelligence and the virtue of a people.

Attempts have been made from time to time to establish a National Board of Health, and at one time with temporary or partial success. Different plans have been proposed with reference to having the different States and State boards represented in the National Board; also to having this a Department of State, with its chief officer a member of the cabinet. The national control is now in the hands of the Marine Hospital Service in the Department of the Treasury. All matters of quarantine are in charge of this office. Reports, foreign and domestic, are made to it, including vital statistics, disease prevalence, and weather reports. A weekly bulletin of Public Health Reports is issued and distributed regularly to health officers throughout the country.

At the first Pan-American Congress held in Washington, D. C. in 1893, a Committee on Department of Public Health was appointed, which committee when complete consisted of Dr. Henry L. E. Johnson of Washington, D. C.; Dr. William Pepper of Philadelphia, Pa., and Dr. Charles A. L. Reed of Cincinnati, Ohio. This committee reported to the second Pan-American Congress, held in the City of Mexico in November, 1896, the draft of a bill to be presented to the Congress of the United States which, becoming a law, would create a National Department of Public Health and provide for its support. This bill specifies the duties of the Secretary at length, showing the extent and importance of this department. This report was accepted by the Congress and the bill has been presented to the U. S. Senate. (SEE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, March 6, 1897).

A committee of the AMERICAN MEDICAL ASSOCIA-

tion, of which Dr. U. O. B. Wingate, Secretary of the Wisconsin State Board of Health, is chairman, is also engaged in the preparation of a bill for the establishment of a National Department of Public Health.

It remains for the American people to understand the case, take a lively interest therein, and help the action that shall be for the greatest good.

GONORRHEAL OPHTHALMIA—REPORT OF A CASE TREATED WITH ARGONIN.

BY FRANK TRESTER SMITH, A.M., M.D.

PROFESSOR OF DISEASES OF THE EYE, CHATTANOOGA MEDICAL COLLEGE.
CHATTANOOGA, TENN.

C. D. R., male, aged 33. First seen Nov. 25, 1896. Two weeks before, right eye became sore, for which he was treated by his family physician. It was extremely painful until two days before, when something seemed to give way and water gushed from between the lids, after which it became easier.

There was an abundant purulent discharge. The cornea was not clear at any point but had a fleshy appearance and bulged from the general curvature of the eyeball (total staphyloma).

The man lived at some distance in the country and failed to attend regularly, coming only once or twice a week. For two weeks he was treated in the usual way with boracic acid, bichlorid and nitrate of silver with very little effect on the discharge, which was abundant from the time first seen. A microscopic examination by Dr. E. C. Anderson, chief of the Microscopic Laboratory of the Chattanooga Medical College, showed the presence of gonococci in abundance. The patient had gonorrhea.

Thinking this a favorable case to test argonin, as the eye was hopelessly lost, a 5 per cent. solution was instilled into the eye. The application caused no pain and a solution was given the patient for use at home. Four days later he reported that the discharge had almost entirely ceased after the first use of the argonin. He had kept samples of the discharge, which were preserved on cotton swabs made by wrapping pledgets of cotton on toothpicks. These were sealed in envelopes as soon as obtained. An examination of these failed to show a single gonococcus. A sample of the discharge taken direct from the inside of the lid was found to contain a few, very few gonococci.

The argonin was continued. A few days later the eye again became very painful. The tension was increased to plus 1 and the staphyloma was larger. The ball was incised and the clear lens escaped. There was no pus inside the eye. There was no further pain and the patient ceased his visits owing to sickness in his family. One of his neighbors reported that he had no further trouble. The fellow eye was unaffected during the whole of the treatment.

This case seems to indicate that argonin can be used safely in the eye; that it is less irritating than nitrate of silver and from its wonderful effect on the discharge and the development of the gonococci it appears to be the ideal remedy in purulent ophthalmia. Further tests will demonstrate its true value.

ONLY A DROP OF WATER.

BY D. LICHTY, M.D.

ROCKFORD, ILL.

Dr. Jacobi, after deploring the fatality following

tracheotomies in diphtheria and membranous croup, says: "The results of *any* treatment in *membranous croup* are of so *doubtful* a character that *any* observation both faithfully made and reported may be of service."

This passage, italicized by myself, will be the apology for offering and having recorded a single successful item in the after-treatment of croup with tracheotomy.

Every one with experience in the after-treatment and care of the tube in tracheotomy whether for croup or diphtheria, must be painfully conscious of the inefficiency of the methods thus far suggested and employed to maintain a sufficient degree of moisture in the tube to prevent the hardening and drying of the exudate and the sticking of the membranes in the dry metallic tube; sprays and vapors can not be generated in volume great enough, or be induced to enter the narrow aperture of the tube in sufficient quantity to even dampen its lumen a quarter of an inch from its distal extremity, while the dry air passing on at each inspiration impinges on the tracheal mucosa only to *absorb* the little remaining moisture the diseased conditions have created: the result is, a hard brown plug soon forms within and around the proximal end of the canula that neither swabs or hen's feathers can remove; and the distress of flap-valve respiration, or the hazard of occlusion and the prompt removal of the tube and its re-insertion confronts the anxious attendant: it is this difficulty more than any other that interferes with the successful local after-treatment of tracheotomies, and makes the postponement of this surgical procedure often too long deferred.

A recent experience in this line, when every modern means of supplying moisture to the trachea through the tube was being employed, with the threatening failure that usually follows, it was suggested, by recalling the experiments along the line of Rossbach and Calvert in supplying moisture to the inner tracheal area by hypodermic means that "normal salt solution" might be safely supplied through the canula in quantities sufficient not only to moisten the interior of the tube, but to also diffuse over the mucous surface of the trachea and membranes; the experiment was so satisfactorily successful that the nurses, the patient, a little three-year old, and the attending physician were all wonderfully relieved of the further impending peril of occlusion of the tube, and progress, from the introduction of this feature, went on to complete and uneventful and uninterrupted recovery, the tube being removed on the eighth day.

The salt solution was warmed to the temperature of the blood and allowed to trickle down the canula by means of the ordinary medicine dropper, one, two or three drops, in slow succession until the to-and-fro respiratory r le indicated that there was moisture enough, and soon the patient would pass into calm repose: this would be repeated as often as the indications called for it, and instead of the violent paroxysms of dyspnea, with coughing and straining to expel a plug of dried and hardened mucus and membrane, the exudate poured out a stringy, purulent stream easily caught up by the nurses on pledgets of gauze, or wiped away with an easy whirl of the sterilized hen's feathers in the tube.

Did this normal salt solution mingling with the remaining tracheal mucus have a solvent or bactericidal effect on the pathologic membrane?

If this observation will reach those who have oppor-

tunity for more extended trial, and it should prove repeatedly as beneficial as it seemed to in this case, the offering of a "Drop of Water" will have added to it the blessings of medicine as well as those of charity.

A CASE OF CONGENITAL SYPHILIS COMPLICATED BY A MIXED INFECTION WITH THE STAPHYLOCOCCUS AND STREPTOCOCCUS PYOGENES.

Read before the Chicago Pathological Society, Jan. 11, 1897.

BY H. GIDEON WELLS, PH. B.

STUDENT-ASSISTANT IN THE PATHOLOGICAL LABORATORY OF RUSH MEDICAL COLLEGE.

On April 29, the body of a child was brought to the laboratory of Rush Medical College for examination. The autopsy was performed immediately, before postmortem changes could have possibly occurred. The child was born in the practice of Dr. A. B. Strong, who furnishes the following history:

The mother was 20 years of age, a primipara, with a good personal and family history. She had been married one year. The labor was an uneventful one, a vertex presentation. The child was alive when born, but died after gasping a few times. The father was 23 years old and denied any specific history, as did the mother, and presented no suspicious scars. Dr. Strong, his interest in the case having been aroused by the condition of the child, conducted a careful investigation into the history of the parents, but was unable to obtain the slightest evidence of a primary specific infection in either. The mother was troubled after the birth of the child with constant dreaming, a symptom not present before that time, and which was not relieved by administration of potassium iodid. The father spoke of aches and pains in the lower extremities which he said he had had for years. On examination two subcutaneous swellings were found attached to the crest of the tibia, just below the tubercle, and a third on the inner side of the right femur. Treatment with the iodid of potassium and the biniodid of mercury was followed by some reduction in the size of these swellings and the disappearance of the subjective symptoms. On cross examination the patient stated that these swellings had been present since he was a boy. Asked about his father he stated that he knew little about him beyond that he was a sailor. Beyond this reference to the third generation there was no obtainable evidence as to the source of infection.

The findings at the autopsy were as follows:

The body was that of a child, 50 cm. long, and weighing 2500 gm. The abdomen was rounded and firm, and the umbilical cord, which was moist and fresh, was tied with a silk ligature. The skin was covered over almost the entire body with eruptions, most numerous about the ears, face, forehead, hands, feet and buttocks. Most of these eruptions contained a serous fluid, but many were filled with a purulent fluid, and some with a firm, cheesy substance. The peritoneal and pericardial cavities were normal, as were the pleural except for a thin, white, pellicle, covering the pleural surface of the base of the left lung. The heart muscle showed several white, indurated areas, the largest lying on the ventral surface, and about the size of a dime. The heart was not opened, but on account of this rather unusual condition was preserved

for a more complete special examination by Dr. Le Count. The thymus contained several soft, light colored areas, which on section yielded a gray viscid, fluid. Otherwise the organ appeared normal. Beyond an unusual amount of blood the thyroid and salivary glands showed no changes. The lungs were firm, non-crepitant throughout, and pieces placed in water sank quickly to the bottom. They presented both under the pleura and in the deeper parts of the lungs, white areas, firm and smooth on the cut surface—a typical pneumonia alba. The liver was large and firm, the right lobe reaching nearly to the level of the umbilicus. On section it was found to be very full of blood, but there were no other changes. The biliary system was normal.

In the stomach was found a large amount of jelly-like mucus, and the intestines contained the usual amount of meconium. The cecum was attached to all the adjacent coils of intestine by firm, fibrous adhesions, except the vermiform appendix, which was free. The mesenteric glands were enlarged.

The kidneys and supra-renal capsules appeared normal. The spleen was slightly enlarged and full of blood. No changes could be detected in the central nervous system. At the epiphyses of both the long and short bones the line of ossification was very broad, irregular and hemorrhagic. Ossification had not begun in the lower epiphysis of the femur.

Under the microscope many changes very typical of syphilis in the new-born were observed. The description of the various organs follows:

Lungs.—Both lungs were almost completely consolidated, the air vesicles having been dilated in but a few places. The expanded vesicles contain a granular substance which in most places completely fills the lumen, and contains many poly-morpho-nuclear leucocytes and some flattened epithelial cells. The walls of the vesicles are quite thick, with some infiltration of leucocytes, and with greatly dilated capillaries. In many places the epithelial lining of the alveoli is absent. The formation of the consolidated portion by non-expanded alveoli can be determined only with difficulty, because of the degree of infiltration of the tissues. Everywhere, within and between the alveolar walls are poly-morpho-nuclear leucocytes, for the most part scattered singly but in some places collected in groups of a dozen or more. Occasionally the alveolar walls have been separated by slight hemorrhages, in which the blood contains many leucocytes but is not disorganized. Practically all of the bronchi and bronchioles have been filled with masses of cells, in some of which the nuclei stain deeply, in others scarcely at all. The walls show a diffuse infiltration with leucocytes, many of which are also to be found in the contents of the lumen. All the vessels are dilated with blood, and the walls of the smaller arteries are greatly thickened so that the lumen is practically occluded. The pleura, which is quite thick, is not as much infiltrated as the subadjacent tissues, but in the outer portion many of the nuclei fail to stain, and the tissue elements are much disorganized. The vessels in the pleura are much dilated with blood, and in some places slight hemorrhages have occurred.

Liver.—The vessels are greatly engorged, but nowhere can the blood be found outside the regular channels. The connective tissue is everywhere infiltrated with leucocytes, which are also collected in groups in many of the intra-lobular capillaries. The parenchyma cells in some places seem slightly vacu-

olated and their nuclei stain faintly. The capsule is not thickened nor infiltrated, although the engorgement is most marked immediately beneath it.

Kidney.—The glomeruli completely filled Bowman's capsule, the capillaries being filled with blood. In a few cases the glomerulus is forced to one side by an extravasation of blood. In the convoluted tubules some of the epithelial cells lack nuclei, and a few of the collecting tubules contain blood. Occasionally poly-morpho-nuclear wandering cells can be found in the inter-tubular connective tissue. The blood vessels are generally filled with blood containing an unusual number of leucocytes.

Spleen.—This organ is extremely hyperemic, every vascular space being filled with blood. The Malpighian corpuscles appear small in contrast with the superabundant pulp surrounding them, but no changes can be detected in any of the structures.

Adrenal.—In the capsule of this gland are a few collections of epithelial cells packed closely into columns, with very little stroma, probably accessory suprarenals. Beyond a large amount of blood no changes are observed.

Gastro-intestinal tract.—Beyond a slight infiltration of the connective tissue of the villi of the small intestine no changes can be detected.

Thymus.—The follicles show no change except those located near the walls of the abscesses before described. Here there is a marked increase in the connective tissue between the gland elements, and a considerable infiltration with poly-morpho-nuclear leucocytes. In some follicles the glandular cells have mostly disappeared and many fragmented and faintly staining nuclei are seen, beside numerous concentric bodies staining with eosin and containing no nuclei, probably degenerated corpuscles of Hassell. Surrounding the abscess is a wall of varying thickness, consisting of an embryonal form of connective tissue with numerous large and deeply staining nuclei. This wall contains very few vessels, and is infiltrated with many poly-morpho-nuclear cells. The contents of the abscess consist chiefly of a granular matrix containing fragments staining with hemotoxylin, cells with a granular protoplasm and faintly staining nuclei, leucocytes and occasional red corpuscles. The leucocytes are the most numerous of these elements and are collected, especially near the walls of the abscess.

Thyroid.—Only a small proportion of the alveoli contain colloid material, most of them having their walls in apposition and showing no evidences of secretion. Colloid material is found in some of the lymph spaces of the secreting areas. There is a marked dilatation of the capillaries, especially about those alveoli which contain colloid. No other changes can be observed.

Skin.—A section through one of the eruptions shows the stratum corneum separated from the stratum granulosum by a homogeneous substance staining faintly with eosin and containing leucocytes, red blood corpuscles, squamous epithelial cells, epithelioid cells and shreds of necrotic tissue. In the center of the vesicle the stratum granulosum is entirely gone, only a thin membrane separating its contents from the connective tissue below, which contains many round and poly-morpho-nuclear cells, especially just below its floor.

Cultures were made from the heart's blood, liver, kidney, thymus, lung, pleural exudate and the eruptions on the skin.

From the skin, cover slips showed many groups of cocci. The cultures contained but one form of organism, a coccus staining by Gram's method, arranged in groups and agreeing in its growth on culture media with the staphylococcus pyogenes aureus. Cover slips made from the exudate on the pleura showed numerous short chains of cocci. The cultures showed the presence of a streptococcus staining by Gram's method, and agreeing in its culture growths with the streptococcus pyogenes. Inoculations with this streptococcus into guinea pigs showed it to be very virulent, producing death in a short time. Cover slips and cultures made from the abscess in the thymus showed the presence of an organism apparently identical with that obtained from the pleural exudate. All the other organs gave negative results.

It is therefore evident that we have here to deal with a case of congenital syphilis, complicated by a mixed infection with the staphylococcus and streptococcus pyogenes. The diagnosis of syphilis is based upon the typical pneumonia alba and the universal and characteristic osteo-chondritis. The mixed infection is proven by the presence of the microorganisms in smear preparations from the thymus, pleural exudate and skin eruptions, and by the growth of similar organisms in cultures made from these sites.

Such a complication of infections is very unusual, at least, for a search through the more recent literature has failed to reveal any reference to a similar case. In fact, mixed intra-uterine infections of any kind have been demonstrated but a very few times. One of the most recent of such cases is that reported by Dürk (*Münchener med. Wochenschr.* No. 36, 1896), who obtained from the tissues of a child born of a typhoid-stricken woman, which had lived but a few minutes, the typhoid bacillus and the staphylococcus pyogenes.

Infection with the pus microbes seems also to be a rather rare occurrence, by far the largest part of cases in which intra-uterine infection has been proven being cases of typhoid fever. Of the pyogenic organisms the streptococcus seems to make its way to the fetus much more often than the staphylococcus, as would be expected from its greater tendency to produce a general infection. Gustav Ricker (*Centralbl. für Allgem. Path.*, 1895, p. 49) has reported two cases of intra-uterine infection with the streptococcus, in one of which the mother had a streptococcus diphtheria, in the other a streptococcus infection following an injury. Lebedeff (*Revue Mens. d. Mal. d'Enfance*, March, 1887) has reported the case of a woman with erysipelas of the legs giving birth to a child with an erysipelas, and in whose skin a streptococcus was found. Here, however, the infection was traced from the mother to the child through the lymphatic system.

Chotzen (*Vierteljahrsschrift f. Dermat.*, 1886) has observed that a streptococcus can be found in the tissues of a large proportion of the children dying of hereditary syphilis, basing his work on similar results obtained by Kassowitz and Hochsinger (*Wiener med. Blätter*, 1886). However, these results have no bearing on intra-uterine infection, as the cases were all of children who had lived some time, whereas in the body of a six months fetus Chotzen failed to find the organism.

It is to be noticed that in all cases of intra-uterine infection reported there is some evident infection of the mother from which the infection of the fetus has been derived, while in this case there is absolutely

nothing in the history that throws any light on either of the infections. It is possible that the mother, being in vigorous health, resisted infection by the organisms that had gained entrance into her system, while the diseased tissues of the fetus offered a favorable site for their localization and multiplication, it having been shown by Lubarsch (*Virchow's Archiv*, Bd 124, Heft 1) that organisms can and do pass through the intact placenta. It has also been suggested that the infection might have occurred from outside, say from a preëxisting endometritis, through the medium of the fetal membranes. As to the possibility of such a transmission nothing can be said, as, unfortunately, the placenta and membranes were not available for examination. That the infection did not occur either just after or a very short time before birth is shown by the presence in the tissues of a reaction to the infection, as for example the formation of a connective tissue capsule about the abscesses in the thymus, which must have required a considerable period of vital activity after the inception of the infection.

It is interesting to note that in the thymus of this case there existed abscesses produced by pyogenic organisms (as is proven both by the bacteriologic findings and the microscopic appearance of the lesions) since similar areas have been generally considered as quite typical of congenital syphilis. They were first described by Dubois (*Gaz. Méd. de Paris*, 1850, p. 393), and by many authors named after him Dubois' abscesses. Orth (*Pathologische Anat.*, p. 89) considers them as due simply to the syphilitic virus, and no relation between them and pyogenic processes seems to have been demonstrated. This case suggests, therefore, the possibility that in many of the cases of thymus abscess observed in syphilitic children, careful bacteriologic investigation would have demonstrated the presence of pyogenic organisms, although it is possible that the abscess formation may represent the site of a preëxisting syphilitic lesion.

SURGERY ONE HUNDRED YEARS AGO.

AN HISTORICAL STUDY

BY DR. GEORGE FISCHER.

DEDICATED TO THE GERMAN SURGICAL ASSOCIATION.

TRANSLATED FOR THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

BY CARL H. VON KLEIN, A.M., M.D.

(Continued from page 652.)

CHAPTER IV.—NOTICE ON HOSPITALS.

Charité in Berlin: The Allgemeine Krankenhaus in Vienna; Small German hospitals: Hospitals in England, St. Bartholomew Hospital in London, and others; Hospitals in France, Hôtel Dieu and Charité in Paris, and others; Hospitals in Sweden, Denmark and Russia; Diet; Mortality, small number of operations; Ventilation, J. Pringle; Proposition to improve hospitals; Experiments in putrefaction; In-lying hospitals.

Whoever, in the middle of the last century, strapped his pack to become acquainted with the German hospitals was soon at the end of his wanderings, for no country possessed fewer hospitals than Germany. In the Catholic countries the sick were better cared for than in the Protestant, in so much that in the seventies Vienna, Prague and Olmütz are said to have had more hospitals than all the Prussian cities taken

together. In those countries, wherever public hospitals were lacking, their place was filled by the hospitals of the Brothers of Mercy, and the Sisters of St. Elizabeth.

In the first half of the century the most important hospital in Germany was the *Charité in Berlin*. King Frederick William gave for that purpose a large house which, in the year 1710, on account of the plague, was built outside of the city. In this the poor patients from the army and among the citizens of Berlin were to be treated without charge and the infirm aged cared for till their death; domestics with tedious diseases had to pay. Besides these, patients with contagious diseases and skin diseases, and all venereal women were received. If the harlots were cured, they were taken to the work houses "in order to drive out of them their former desires." To check infanticide, pregnant women were received in the hospital without charge, eight days before delivery. According to a plan projected by the surgeon-general and body-physician Holtzendorff, the new institution was to serve at the same time as a training school for military physicians. The monarch himself gave the institution the name Charité. "Because this institution was a public work of Christian love, benevolence and generosity, so His Royal Majesty, himself gave this house the name Charité, and commanded that it should be called so in future, and particularly for this reason, that it be always free to everyone, out of its abundance, from Christian love to them, to succor the poor and sick, or as they say, to render *charité*." (Eller). The hospital was opened in 1727, after they had brought together 300 sick and poor with the infirm street-beggars from Berlin. The latter were taken into the lower story, called the hospital; the patients proper, who when bedridden were carried out from the city in litters, into the upper story, the so-called Lazareth. This consisted of four equal wings, which abutted upon a common court, and were provided with a gallery running between, from which one could enter any of the halls. There were separate rooms for men and women, medical and surgical patients, for soldiers, maternity cases, and contagious diseases. There was no discrimination made in admission, although the subjects of His Majesty had the preference. A special bed was provided for each patient, with white linen, a straw bed, mattress and one woolen cover, beside special hospital clothes. (At that time very few Germans were accustomed to the English habit of sleeping on mattresses.) The sick wards had a chimney place for ventilation and were fumigated every two hours. The *personel* of the administration consisted of an inspector, a sworn scribe, a house steward and several waiters and waitresses, two of whom served in each hall; special women attended to the cleaning of the basins. Under the supervision of the Surgeon-General Holtzendorff, Dr. Eller directed the medical department, and the regimental surgeon G. Senff, the surgical department. The pensionary surgeons of the army were ordered to the Charité for practical instruction. As one man alone could not attend to two hundred patients, he was allowed a few under or sub-surgeons, two of whom lived with him in the Charité. He examined the newly arrived patients, conducted the journal and ordered the medicines, which the court apothecaries furnished free (just as for all the royal servants, and the city poor). Eller and Senff came twice a week for visits, to serious cases oftener, and on the other days had reports made to them. If operations were to

be performed, they were previously announced, and the pensionary surgeons and stewards of the garrison gathered in the operating room. The difficult operations Senff performed himself, the pensionary surgeon did the simpler ones under his direction, and one of the under-surgeons had to watch beside the patient, regularly for the first nights. Professor Budens conducted the directions. Great stress was laid upon the care of the soul, since those first received into the Charité were "a brood of dissolute sinners who had for the most part forgotten God and honor." There were daily lessons by the bedsides, and a sermon on Sunday morning. Not satisfied with this, the clergy examined the older people twice a week, which was very uncomfortable for them, since they knew little of the teachings of religion, and manifested very little curiosity to make themselves better acquainted with them. This catechism was kept in store for Sunday afternoon after the service, and once again gone through. The capacity of the Charité was increased in the following years through generous gifts: The General Field-Marshal von Wartensleben presented a large field lying next to the hospital, and this was converted into a garden, the General Field-Marshal von Arnim 1,000 thalers, a pious nobleman 5,550 thalers, and so on. They built in one wing a third story for contagious diseases, more domestic buildings, stabling for cattle for the shambles, and a brewery, and projected a chapel and a botanical garden (*Eller Med. and Chir. Anmerk.*, 1730). Under Frederick II. there was a new enlargement, and the new building was completed in 1736. The insanity ward was also added. After Eller's death Schoarschmidt became director of the medical department, but he was dismissed by a cabinet order in 1744, and replaced by Muzell, who officiated as director for thirty years. His son succeeded him, then Selle, and in the year 1800 Hufeland was called from Jena as body physician and first physician of the Charité. When Senff died in 1737, the regimental surgeon Neubauer received the place of directing surgeon and obstetrician: after him Professor Pallas served for twenty years, then Henckel in 1770, Voitus in 1779, Mursinna in 1787. In 1816 Rust assisted Mursinna, on account of his age. Along with the first physicians, officiated so-called second directing physicians and surgeons, who lived in the Charité. The "operator and chief surgeon in the Maison de Charité," made semi-weekly visits, examined the surgical patients, dictated his orders to the pensionary surgeon had the patients bandaged in his presence by the pensionary surgeon and the hospital stewards. In all important operations and for internal treatment he had to consult the physician. He performed the operations himself and could not trust them to an unskilled pensionary surgeon; besides he treated the maternity cases. The second directing surgeon took the place of the first in his absence, consulted with him concerning all important cases and treated them according to the method mutually agreed upon. Of the pensionary and staff surgeons, one was assigned to the medical, another to the surgical departments, a third to the maternity ward and the venereal cases, and a fourth to the insane ward and the patients with skin diseases (1799). They had special supervision of the nursing, medicines, diet and the writing of the history of the cases. Among them were assistant surgeons who every two or three months alternated in the main departments, so that in the course of a year they had filled most of the positions. They saw the patients allotted to them four or five times

a day, watched by them at night when it was necessary and looked after the proper distribution of food, but their prescriptions must be inspected by the pensionary surgeon.

One would expect that the Charité, as the largest hospital at the capital, would be a model for all the others in the country. But how dark is the picture which the directing surgeon, E. Horn, draws of it in 1806, when he makes a public report of his twelve years' service! Dirt and stench that defy description, prevailed then everywhere in the hospital. Instead of bathing the patients when they were received they were left in their filthy rags and packed away in dirty beds. The bed-linen was left dirty for a whole week and it was washed so badly that the clean linen was scarcely to be distinguished from that which had been used; there were no baths. Under almost all the beds stood basins which smelled as foul as the wooden buckets used for carrying refuse. Vermin bred in the straw beds and the feather covers, soaked with perspiration and urine, infected everything around. The bedsteads, which they had not thought it necessary to paint, became loose and fell apart, and they were breeding places for bedbugs. Wherever one looked, whatever he touched, wherever he stepped, everywhere indescribable filth. Nearly all the windows were closed fast for fear of a draft and colds. The food was so bad that the waiters made a business in the institution of selling sausage, cheese and brandy to the patients. Nowhere was the attendance worse than here: the people understood nothing and were very much underpaid—one thaler a month and no supper in the hospital. Nothing can enable the imagination to picture the results of this wretched management. The hospital was crowded with patients. Although the space sufficed for at the most 750 patients, 800 or 900 were taken in, so that patients with contagious diseases and those in delirium lay among the convalescents. For years hospital fever infested the place and carried off many, even patients not seriously ill, attendants and assistant surgeons. If you ask the causes which made the Charité a veritable den of murder, you find that they lay chiefly in the defective administration and the disadvantages of war time. It was a misfortune that the physicians were entirely excluded from the administration of the hospital. The chief inspector reigned alone; he regulated, without reference to the physician, the temperature of the wards, the change of linen, the food, the lighting and cleaning of the rooms, and so forth. According to his principle, the less expense and labor the better, and dirt and vermin got the upper hand from day to day. Fuel was either denied or supplied so scantily that one could hardly warm a poultice with it. Horn requested some wood; when he received none he looked about for it; after a while he got some and begged earnestly for more; all this depended upon the caprice of the administration. The light was so bad that even in 1815 a suicide could occur in the presence of fifteen patients, which with proper lighting could probably have been prevented. The other reason for this great distress was the lack of money during the war, in which the French cleaned out the Charité as far as possible and converted it into a military hospital. Even before 1806 the allowance of the King did not suffice, and from 1806 to 1814 it was discontinued entirely. They seized its capital and increased the debts. In the year 1810 the purveyor of the Charité had a claim of 50,000 thalers.

and the interest of 5,177 thalers must be collected by suit at law in a court of the second resort. Even after the restoration of peace the stringency continued inasmuch that the purveyor was informed of the state of affairs and the authorities were notified that the supplies would last only one day longer. Under these circumstances the complaints of the physicians were lost in the air. It was due to the extraordinary efforts of Horn and Hufeland that greater cleanliness was maintained in the Charité and that the other unhealthy conditions were bettered.

In the second half of the century all eyes looked to the newly founded *General Hospital* of Vienna. In the time of Maria Theresa Vienna possessed several small hospitals and poorhouses. Among others the St. John's Hospital, the Imperial Hospital, the Burgher Hospital and St. Mark's Hospital (for syphilis and maternity cases), the Beckenhäusel (a refuge for the poor), the Spanish Hospital and the Triple Hospital. In the last was the medico-surgical school created by Van Swieten. Emperor Joseph II. had convinced himself by repeated observations of his own of the error of maintaining those small pest hospitals which regularly cared for about two thousand patients and poor, and had a yearly income of about 200,000 guilders. He closed these and in place of them established a large general hospital at great expense. Vienna letters of that time relate that "everyone is excited over the important change, and the Vienna physicians are stirred up because the end is made of many old institutions." The Emperor was generous enough not to expend any public money but defrayed all expense from his own purse (aside from the revenues of the disestablished institutions). They used the old buildings of the former poorhouse, making such alterations as were necessary, and built two additional two-story buildings, so that the whole included beside the regular hospital, a maternity hospital, a house of refuge, a home for incurables and a foundling house. The hospital was opened Aug. 16, 1784. The principal entrance was adorned with the inscription in gold: *Saluti et Solatio Egrorum Josephus Secundus semper Augustus*. Through the gate we entered into the first court, over six hundred feet long, which was laid out with avenues, trees and fountains. Behind this were six more courts, smaller but just as elaborate. The whole hospital would accommodate 2,000 patients (the German periodicals said 6,000), and for medical and surgical patients had 86 rooms, of which in the first year 72 were occupied; 34 for men and 28 for women. The former contained at that time 812 beds, the latter 676, a total of 1,488. The ophthalmic and venereal patients were allotted to the surgical department. Most of the rooms contained 20 beds, some 40, and the largest rooms, for venereal patients, contained 90 beds. All the rooms were 14 feet high and 26 feet wide, and had windows on both sides, under which stood the beds 3 feet apart. The ventilation was so arranged that when the windows, 6 or 8 feet above the floor, were opened upon both sides of the room the air passed through without harming the patients. Beside this there were air-holes in the wall through which pipes led to the open air, also in the floor under the beds and under the stoves. The greatest cleanliness prevailed everywhere to a degree which could not be excelled or surpassed in a princely palace; beds and linen were frequently changed and washed. Every patient had his own bed; beside it stood a small table with drinking vessels, a metal ves-

sel for refuse and a wineglass. Over the table hung a black tablet upon which were noted the number of the room and the bed, the name of the patient, the day of his entrance, the medicine, diet and the most important symptoms. They divided the patients into four classes. Those in the first class paid one guilder daily and received a separate room, board, medicines, treatment and a special attendant. The bed consisted of a horse-hair mattress, a straw bed, two fine sheets and several cushions. In the second class they paid half a guilder and received the same as those in the first class, only they had no special attendance and fewer dainties in food. The third class, made up principally of servants, were charged ten kreuzer, while the fourth class consisted of paupers taken gratis. The hospital furnished clothing and linen. In the acceptance of patients there was no discrimination, either in respect to nativity or religion, only the hopeless cases were sent to the house for incurables. Six physicians and six surgeons alternated daily to take care of the incoming patients. The body surgeon, Quarin, who had originated the plan of the hospital, acted as director and was accountable only to the Emperor. The medical patients were under four physicians-in-charge, so-called *primarii*, of whom two had free residence in the house; under these were fifteen assistant physicians. Of the five over-surgeons, who supervised the surgical department, the chief must be called to counsel in all important cases and large operations. He visited all the surgical patients daily, without treating them officially, and had the oversight of instruments and bandages. Beside these there were seven other surgeons whose position was similar to that of the assistant physicians, beside ten assistants and a number of practitioners. The surgical cases which came to light in the medical department were taken care of by one of the over-surgeons, while on the other hand the important internal diseases which appeared in the surgical department were taken care of by one of the first physicians. The hours for visiting patients in summer was from 7 to 8 in the morning, in winter from 8 to 9, and afternoon, from 3 to 4. Every twenty patients were served by three attendants, who received 9 guilders a month and lived at their own expense. The economy of the institution, the inventory and property of the patients were looked after by four stewards with twelve assistants; at the same time all the food, which in general was very good and appetizing, was carefully contracted for by three cooks. The hospital had an apothecary of its own, the equipment of which had cost 20,000 guilders; this had four dispensing tables for one apothecary and six assistants, also a laboratory in which seven persons worked. They held a polyclinic every morning where one physician and one surgeon presided, gratis. The attendance was so great that in the first half year 16,659 patients received free medicine and within three years the total number amounted to 116,041. As to the salaries of the hospital physicians, the director received 3,000 guilders, the *primarii* 600 to 1,000 guilders, the chief over-surgeon 1,500 guilders, the other over-surgeons 800, the assistant physicians 300 guilders and the certain practitioners from 100 to 200 guilders. Most of these had free residence in the hospital. (*Oestreichische Gesetze in John's Lexicon; München, Scherf's Archiv d. med. Polizei*, v, 1786.) In the year 1874 the director of this greatest European hospital in which 20,000 patients annually were treated, who was

required to superintend the university clinics and twenty-seven departments and to command a force of 220 men, received the same salary as that which Joseph II. had paid to the director one hundred years before!

With the Berlin Charité and the Vienna General Hospital, which included a beautiful hospital in Prague, founded by Joseph II., we exhaust the list of the most important hospitals in Germany. It is only in the last decade that the number of hospitals has increased in a gratifying way. The people grew ever more conscious of the fact that their value lay not alone in the help which they extended to the sick, but that science was indebted to them for the greatest part of its riches. They improved the old hospitals; new ones were erected by Joseph II. in all the great garrison cities, or the empty monasteries were used for that purpose. Dresden obtained in 1751 a small surgical hospital, which in 1778 was joined to the collegium medico-chirurgicum. Frankfurt-on-the-Main owed its Burgher Hospital to the well known philanthropy of one of its physicians, Dr. John Christian Senkenberg, who in 1770 presented to the city his whole very considerable fortune. Out of this they built the hospital, an anatomic amphitheater, a botanic garden and a chemie laboratory. In Brunswick a hospital with fifty beds was established in 1780. But most of the German universities as yet possessed no hospital. What then was to be expected in the way of achievement from professors of surgical training of the young, or of progress in surgery, when the patients were lacking, and thus the science deprived of its most important and vital nerve? Göttingen existed as a university forty-three years before it obtained a small hospital with fifteen beds (1780), although many years previous A. G. Richter, at that time professor, had pointed out that without a hospital neither medicine nor surgery could truly thrive. In Würzburg these conditions were reversed; there the bishop-prince Julius first founded the Julius Hospital for paupers, sick and orphans (1576), and afterward founded Julius University in 1582. But true appreciation of the hospital for the purpose of instruction did not begin until the end of the eighteenth century. Julius Hospital received about four hundred patients, when, according to one Brande (1704), a large new building had been erected. Beside this there was in Würzburg (1786) a hospital for journeymen mechanics and apprentices, erected by the hat-maker, Heydenreich, out of voluntary contributions. Kiel, which was raised to a university in the year 1665, obtained a hospital over a hundred years later, built by contributions, as a result of the activity of Professor Weber (1787). In Halle University also a hundred years passed before they obtained, in 1806, and at the suggestion of Reil, a hospital of twelve beds, which was erected at a cost of 1,800 thalers. In the last two decades of the century they began to establish special schools for the training of nurses. Dr. May founded such a one in 1782, in Mannheim, for twelve nurses, and a few years later there arose similar schools in Carlsruhe, Magdeburg, and still later in the Berlin Charité.

If we look at the hospitals in foreign countries in the eightieth year of the century, we find that Germany was far behind England and France, where almost every city of any considerable size had its hospital and possibly also a house of refuge, a maternity hospital and a smallpox hospital. In no

country were the sick better cared for than in England. There nearly all institutions for the public health were founded and maintained through the private benevolence of certain rich citizens, and no city in Europe was richer in charitable institutions than England's capital. The hospitals in London in 1784, twenty-seven in number, had an excellent internal management, which was nearly everywhere the same. The oldest and best was *St. Bartholomew's Hospital* and also one of the most beautiful buildings in London. Founded in the year 1102 by Rayhere, the prior of St. Bartholomew, little by little it fell into decay, and was newly organized at the dissolution of the monasteries by Henry VIII. Harvey, the discoverer of the circulation of the blood, had worked there. The new buildings, erected in 1730, formed a large quadrangle. Two wings contained each sixteen halls, twelve of which were continuously in use; the third wing was reserved for sick women, the fourth for the members of the household and service. In the hospital, where the greatest cleanliness prevailed, there were almost always over four hundred patients, among them one hundred surgical cases, ten to fourteen of whom lay in each hall, about six feet apart. Great chimney places served for ventilation, and all the doors stood open, except in severely cold weather. The water was led into the house through pipes and was dispensed to the patients in leather pitchers. The meager equipment of the apothecary, which consisted of scarcely a dozen bottles and glasses was very striking in comparison with that in Germany. They usually had so-called sisters, two to four, for each room, who received a moderate salary. Three physicians and three surgeons, with as many assistants, treated the patients. They made visits three times a week and alternated weekly, so that within that time each received the new patients for his department. So it happened that the surgical patients were often unevenly allotted and one surgeon had thirty while another had fifty. Admittance was possible at all times, but Wednesday was the regularly appointed day. Upon his entrance the patient paid 24 shillings, or gave a surety for the possible burial expenses; at his departure he received the money back. The surgeons consulted mutually over important cases and each operated upon his own patients, with the understanding that no one of them should specialize in a certain line of operations. Pott, who was assisted by Sharp and Earle, did most of the ophthalmic and almost all the lithotomic operations in the hospital. There was a great deal of operating, mostly done on Saturdays. Great operated in St. Thomas Hospital and Chandler performed many lithotomic operations. Guy's Hospital was founded in 1722 by the book-dealer Guy, by which act he deprived his house-keeper, whom he had wished to marry, of 240,000 pounds sterling. There Lucas, Warner and Cooper had charge of the surgical cases. The London Hospital, founded in 1758, was mostly filled with sailors and therefore had abundant wounds and operations. There were also a large number of patients in St. George's Hospital (founded in 1773), where, after 1786, John Hunter worked, under whose hands came very many patients with aneurysm; together with him worked his brother-in-law, Ev. Home, and Hawkins. Of these four London hospitals the St. Thomas Hospital contained 500 beds, the others from 300 to 400, of which one-third were required by the surgical patients. The Westminster Hospital (founded 1719)

was maintained entirely by the oratorios, which all the musicians in London together, at least 800, gave every year in Westminster Abbey, the admission being one guinea. For this reason, sick musicians enjoyed the preference of admission into the hospital. The Lock Hospital, founded by Bromfield and others (1746), received only syphilis patients; according to its by-laws it would receive each patient but once. There were already in London at that time, special hospitals for certain diseases, as for smallpox and insanity. Two houses of correction, each accommodating 300 patients; among these was the Bethlehem Hospital (founded in 1553) in which prevailed, until 1770, the abominable custom of exhibiting to the public for a fee of one shilling, the half naked patients chained to the wall; there was also St. Luke's Hospital. London possessed also a Magdalen Hospital as an asylum for penitent fallen women, and several maternity hospitals and charitable institutions (infirmaries) where physicians, surgeons and apothecaries twice a week dispensed their counsel and medicines gratuitously to the poor. A private citizen provided a fund, the interest of which was devoted to caring for twelve cancer patients. There was as yet no hospital for ophthalmic patients; there was, indeed, three miles away in Kentishtown, a beautiful building with the inscription, "Infirmery for Blind People," but there were no patients there. Greenwich and Chelsea had Invalid Houses, the latter accommodating 2,000 sailors. In all the London hospitals the visits were made at eleven o'clock, and the operations were performed at twelve o'clock, in a special room which had most light from above. As to the provincial towns, Portsmouth had a large hospital, which was situated by itself upon a large peninsula, and had 120 sick rooms with 2,100 beds. There principally sailors and patients with scurvy, also from 500 to 700 surgical cases were treated. Edinburgh possessed a very beautiful hospital for 200 patients. In this twenty-four surgeons alternated every month, two serving at a time, and performing the operations in a great amphitheater. But no operation could be undertaken without the approval of four surgeons; whenever an operation had been postponed, a notice must be posted at the gate of the hospital a day in advance.

Entrance to the London hospitals was made difficult to foreigners by a high admission fee. Once only would they admit a stranger with a letter of recommendation; but the second time, the porter stopped him at the entrance of the operating room, if he had not been enrolled. Most foreigners, for this reason, saw only one or two operations, went through the hospitals and contented themselves with buying a few instruments, attended one lecture and took their departure. On this account many foreigners went to Edinburgh, where living and lectures were very much cheaper and the admission to the hospitals was free. (J. Hunczovsky, "Med. chir. Beobachtungen auf seinen Reisen durch England und Frankreich, besonders über die Spitäler." Viennos, 1783. Briefe aus London in Baldinger's *Med. Journ.* 15 Stück, 1787.)

If we turn to France before the revolution, we find in Paris the imposing number of fifty-one hospitals, among them twenty-two for the sick, eighteen for incurables and chronic cases, two for soldiers and the rest for the aged and orphans. Most of the hospitals were very old and had been founded by some monastic order, therefore they were almost always sit-

uated in monasteries or near the churches. The archbishop with the general-procurator of the assembly had supervision of them; beside, each separate hospital was administered by priests or citizens of repute. Within, the monks and nuns ruled to such an extent that, to the great detriment of the patients, the physicians were almost wholly excluded from the administration; indeed they had no power, and must beg the most necessary medicines as a favor from a nun. It was so difficult to prevail against the monastic rule that although the administration was made acquainted, through several decades, of the unfortunate condition of the maternity cases in the Hôtel Dieu, every improvement was thwarted by a crowd of cabalists. While in the civil hospitals the greatest abuses were found the administration of the military hospitals, where the physicians and the laity alone were in power, was excellent. At the outbreak of the revolution it was even worse. The priests no longer begged for the hospitals, so that a large part of their revenues was lost, and the rich people concealed their money. When the opportunity came priests and nuns were thrust out of the hospitals, but their successors discharged their duties so badly, that finally a veritable anarchy arose in all branches of the administration. In 1772 when a part of the Hôtel Dieu was burned, a reform was earnestly considered. Many propositions were, made, until at last in the year 1787, the conclusion was reached to build four new hospitals. Within a short time two million livres were collected through subscriptions, and over ten millions subscribed, but the royal treasury swallowed up the money, and built nothing. Under these conditions the constitutional Convention came on and while it improved the administration in many respects, and provided certain revenues, it left everything else to the legislative assembly. When all these properties were declared to belong to the nation the hospitals were at one blow robbed of their means and left to their fate. The revolution broke forth. The confusion in the hospitals mounted to the highest, but nevertheless the patients during the reign of terror never suffered want. The state was generous to their needs, and their fare was better than that in the families of the poorer citizens. There was never a time when the patients had less than eight ounces of bread, an eighth of a pound of meat and a quarter of a bottle of wine. On the other hand the stringency during the summer of 1797 became worse than ever; once the treasury of one hospital contained only 36 livres.

(To be continued.)

PECULIARITIES OF THE SURGICAL DISEASES AND INJURIES OF THE NECK.

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(Continued from page 602.)

TORTICOLLIS.

Torticollis, also called wry-neck, is a deformity of the head and neck in which the face is turned upward and to one side. It is not a very rare disease. The causes are numerous and will be studied with the forms, varieties and complications. The pathologic lesions vary also with the causes. The symptoms are the deviations mentioned above, accompanied by other lesions according to the forms and varieties. There

is also atrophy of the face and cranium of the affected side; sometimes strabismus, impairment of vision, dysphagia. There are usually no general symptoms. The course, duration, diagnosis, prognosis and treatment all vary with the forms, varieties and complications.

Acute, transient or rheumatic torticollis is that due to cold; it presents no cranio-facial deformity; it may affect the sterno-mastoid, the trapezius, or all the muscles of one side. The peculiar point in the treatment is to immobilize the head in a liquid glass bandage for a few days.

Chronic torticollis comprises all the following forms and varieties.

Intermittent or spasmodic torticollis is characterized by a sort of convulsive to and fro movement of the head with cessation for short intervals or during sleep. The name is a bad one, because there is no spasm, but simply a loss of dynamic action, a lack of muscular synergy. The head is easily restored to its proper position, but it returns to the vicious one; the muscles behind and in front are of the same consistency on both sides; the contractions are clonic spasms returning by attacks more or less frequent, followed sometimes by a more or less lasting contraction; this may become permanent; it is then called tonico-clonic. The spasms are limited to the sterno-mastoid, trapezius and splenius; when the patient is lying down with the head flat there is no deviation; when sitting up, the head loses its equilibrium; it is first inclined laterally, and then in rotation; the movements are slow, gradual, without jerks. The head is easily straightened by an assistant, but it falls back immediately when the support is withdrawn. Electricity and massage are the most usual means employed, together with a collar apparatus; stretching or section of the spinal nerve has been done in one case with only temporary improvement.

Permanent torticollis may be cutaneous and cicatricial, muscular or articular or osseous; the muscular may affect the lateral muscles (sterno-mastoid, platysma, scalenes), or the posterior muscles (trapezius, rhomboid); the latter will be described with the diseases of the posterior region of the neck. Torticollis may be hysteric or may be simulated or affected (dude's torticollis). Torticollis due to affections of the sterno-mastoid is by far the most frequent; it may be due to retraction or to paralysis.

Cutaneous or cicatricial torticollis is easily recognized; the head is not twisted as in the regular torticollis.

In articular or osseous torticollis due to tuberculous osteo-arthritis, and in that due to tumors, the head can not be budged from its absolute immobility on the vertebral column; the head is not twisted as in the real torticollis.

In torticollis by contraction the head can be straightened; the muscle retains its shape and its contractility; it is the trapezius that is most commonly affected.

In torticollis by retraction the head can not be thoroughly straightened, and there is the persistence of a hard stretched muscular cord. Sometimes it requires the administration of an anesthetic to determine those points, and whether it is the sterno-mastoid or the trapezius which is affected or the deep muscles. Torticollis by retraction of the sterno-mastoid is also called torticollis by contraction, meaning a permanent strong contraction and retraction of the muscle. It is the most common; it is characterized by a hard

stretched cord along the course of the sterno-mastoid, especially when the head is rotated in a proper manner. That it may be congenital is recognized, but it is rare; it is sometimes called obstetric when it is thought to be due to the traumatism produced by the forceps; it may be due to myositis syphilitica or to a gumma. It is called physiologic when it is due to vicious attitudes, voluntary or involuntary; or it may be due to disease of the central nervous system or to the nerves of the muscle. Or it is called ocular when induced by defects of vision, *i. e.*, headache, diplopia, astigmatism, amblyopia. It is sterno-clavicular torticollis when it affects only that head of the muscle, or double-headed when it affects the two heads; the sternal head is the most commonly affected. The pathologic lesions are a fibrous degeneration or transformation of the muscle; it usually occupies the lower two-thirds; the right side is more frequently affected. Cranio-facial atrophy is due to the defective nutrition of the parts.

The prognosis is that the deformity always tends to increase.

The treatment consists in performing tenotomy, subcutaneously or openly, of the affected head or of the two heads; the best time to operate is not before the third or fourth year. The disease has no influence on the development of the skeleton up to that age; after the tenotomy a proper collar apparatus, with or without suspension, must be used.

In permanent paralytic torticollis the head is inclined to the opposite side of the hemiplegia, due to the action of the sterno-mastoid of the opposite side; it may in the course of time bring on a retraction of that muscle. No other form of paralytic torticollis is recognized by most writers. The head can be straightened, and remains so only as long as it is supported.

The treatment presents nothing special except to apply also a supporting apparatus.

Torticollis of the platysma has been observed, also of the scaleni. Hysteric torticollis is diagnosed by anesthesia. Also the simulated torticollis and the affected torticollis of the dudes; in these last cases the two sterno-mastoids are simultaneously contracted.

Induration of the sterno-mastoid in the newborn will be described with hematomata. Induration of the muscles in adults is syphilitic; it may be diffused sclero-myositis; it may occupy the whole muscle, which is transformed into a cord, or it may be localized in one spot.

Congestion or hyperemia of the region of the sterno-mastoid presents no peculiarity.

Inflammations of the side of the neck are comparatively frequent. They present peculiarities in almost all of the tissues of the region.

Inflammations of the skin and subcutaneous connective tissue, however, present no peculiarities not already described with the neck in general.

The external jugular vein is sometimes affected with phlebitis, recognizable by the long hard cord on its course, with pain, etc. The sterno-mastoid muscle itself is seldom inflamed (sterno-mastoid myositis) except in acute rheumatic torticollis due to cold or sprains of the muscle; the muscle may be destroyed in cases of abscess developed in the sheath; when the muscle itself is inflamed and suppurates, it is in one of the general infectious diseases.

Inflammations in the sheath of the sterno-mastoid are common; sometimes they begin in one of the

small lymph-nodes situated in the sheath itself; when originating from these, it is remarkable that the inflammation and the pus that usually follows it remain limited to the sheath very strictly and descend toward the lower third of it, near the clavicular attachment, where they become superficial. This inflammation leaves after it a stiffness and a shortening of the muscle.

Acute cervical adenitis and adeno-cellulitis or adeno-phlegmons are the most common of all the forms of inflammation of the neck.

Diffuse cellulitis is usually due to the fact that although probably originating in the glands from some infectious products, in angina, scarlatina, etc., conveyed from the face, neck, mouth, pharynx, esophagus, larynx or trachea, it quickly spreads into the surrounding connective tissue and form those grave cases of diffuse cellulitis which spread all around, and became very extensive, already described above, where the pus may burrow in all directions as also said above. Phlebitis of the internal jugular vein is not very common; it is usually due to infection from the interior cavities or to metastasis. It is accompanied with great pain and swelling along the course of the vein; it is often complicated with phlebitis of the lateral sinus and with cerebral symptoms. It is diagnosed with the exploring needle; it is of the utmost importance to diagnose early and to evacuate early by incision or dilatation as a guide.

Arteritis presents no peculiarity.

Neuritis of the nerves of the region are most uncommon.

Chronic inflammation of the glands or chronic cervical adenitis is most common; it is usually strumous or tuberculous. Chronic inflammation of the other tissues of the region is most rare.

Gangrene presents no peculiarity.

Ulcers are usually strumous or tuberculous or cancerous from the ulceration of the lymphatic glands; they leave ugly scars.

Fistula of the region are sometimes congenital branchial; but they almost always are due to the tuberculous glands.

Tumors of the lateral region may be pharyngocele, esophagocele, laryngocele, tracheocele and emphysema; they present nothing peculiar here.

Liquid tumors containing blood are all represented here. Hematoma due to contusions, to ruptures of the sterno-mastoid, to narrow penetrating wounds of the vessels, when they are persistent should be aspirated but not until full time has been allowed for resorption. Varix or dilatation of the external jugular vein is usually due to heart disease; it requires no treatment. Varix or dilatation of the internal jugular also.

Angioma of the neck is sometimes called sanguineous cyst. It must not be confounded with a cyst in which hemorrhages have taken place or have opened into a cavity; they may be superficial or deep or cavernous. Angioma sometimes presents a single vein opening into the jugular by one or several orifices; sometimes several angiomata open into the jugular. The neck is a special seat of ampullar venous dilatations, forming cavities in an erectile tissue with narrow spaces. Angioma is often completely reducible. In operating it is advisable to place a ligature on the large vessels as soon as possible before extirpating the tumor, thereby diminishing very much the hemorrhage during the removal and facilitating

the removal. A sanguineous cyst is sometimes due to a serous cyst with a hemorrhage in its cavity. A sanguineous cyst is also a cyst which originally was serous and has opened into a vessel, usually a vein. Sometimes a sanguineous cyst is found completely isolated and closed on the course of absent veins; other sanguineous cysts are either an angioma developed in the walls of the jugular or due to venous dilatations or varices of the jugular. We do not consider as sanguineous cysts those cysts formed by an encysted hematoma, by a sarcoma with a cystic degeneration and hemorrhage in its cavity, nor of central cysts developed in the lymphatic glands, or hemorrhage in cystic tumors or serous bursæ.

Aneurysms of the neck may affect the three carotids, or their branches, *i. e.*, the superior thyroid, lingual and facial; but these are rare. They may also spring from the first and second portions of the subclavian or its branches, especially the vertebral, then the inferior thyroid, deep cervical; but the two last are most rare.

Clinically and practically the aneurysms of the neck form two groups: The aneurysm of the root, *i. e.*, situated low down nearer the clavicle and sternum; they should be treated as detailed above in the supra-hyoid region. The following are the diagnostic signs of the seat of the aneurysm: Increase in the retardation of the right radial pulse is a constant sign of innominate aneurysm. In aneurysm of the ascending arch the inequality of amplitude of the two radial pulses is frequent. It exists only on the right side in innominate aneurysm. The increased retardation of the pulse exists simultaneously in the radial in subclavian aneurysms. Increased retardation of the temporal pulse characterizes carotid aneurysms. We should not take an arterial dilatation of the whole artery for an aneurysm. Spontaneous aneurysm is exceptional.

The aneurysms above the root are those where there is room to penetrate between the tumor and the arch. They are aneurysms of the carotids and branches and of the vertebral.

The aneurysms of the carotids are seldom traumatic; however, they may be the result of contusions. The common carotid is more frequently affected (18 per cent.); it is comparatively frequent in females, more so surely than the other aneurysms; it is also more common in young subjects than the aneurysms of other arteries. These aneurysms may be confounded with vascular or aneurismal goitres, pulsatile sanguineous cysts of the thyroid when they exist on the course of the carotids; also with pulsatile encephaloid; also with other tumors of the neck situated on the course of these carotids.

The treatment of aneurysms of the carotids by the methods of Anel, gave 22 per cent. mortality; the special complications being cerebral anemia, thrombosis, softening, ocular symptoms, laryngeal and pulmonary troubles. Incision of the sac without previous ligation is most dangerous. Ligations below and then incision of the sac gave 100 per cent. cures. In regard to ligation both below and above and then incising the sac, we have no data, because usually after ligating below and incising, the upper end is also secured. Extirpation has never been done on this artery; but it should be unless the sac be very large and closely adherent to the important vessels and nerves.

Aneurysms of the external carotid have been most

frequently treated by ligation of the common carotid with twelve cases and two deaths. The external carotid itself has been ligated in three cases, with one death and one return. The sac has been extirpated once with success. Aneurysms of the internal carotid, *i. e.*, of the extra-cranial portion, often project into the pharynx; ligation has been performed seven times with only one recovery.

Arterio-venous or jugulo-carotid aneurysms require no treatment unless they grow and cause grave pressure symptoms. Then the artery and the vein should each be tied above and below and the sac incised, or better, extirpated, because if left in place it may still cause trouble by pressure symptoms. This has been done in this region. Arterio-venous aneurysm of the external carotid present three cases on record; in two the ligature was applied above and below with one death. Arterio-venous aneurysms of the internal carotid, *i. e.*, the extra-cranial portion, have two cases on record, no operation was performed; both died.

The diagnosis of the affected artery in cervical aneurysms, etc., is often most difficult. Clinically and practically the diagnosis is made by operation. A provisional ligature should be applied below the tumor. When this stops the pulsations another ligature should be placed above; if this is not possible the ligature below should be tightened, the sac incised, the upper end of the artery secured and the bleeding points, if any, clamped and the sac extirpated if not too closely adherent to the important vessels and nerves. When, after placing the loop ligature, the pulsations are not affected, it is because the wrong artery is attacked; the loop should still be kept in place and the vertebral should have a loop ligature under it, when the pulsations will stop; then another ligature should be placed above, if possible, and as described for the carotid. Lymphangioma of the region presents no peculiarities.

Serous congenital cysts of the neck are most frequently situated in the lateral region of the neck; they are usually seen at birth; the multilocular cysts specially occupy this lateral region, whereas the unilateral occupy more frequently the median line, but there are many exceptions. Serous acquired or post-natal cysts of this region are really but congenital cysts. We will only mention the following, which are not truly cysts: Sanguineous cysts, due to contusions, which is an hematoma; sanguineous cysts due to sarcoma with an internal hemorrhage. Mucous, mucoid, dermoid cysts are all congenital cysts and present no peculiarities not already mentioned with the cysts of the neck in general. Hydatid cysts of this region are very rare; sixteen cases in all. Cystic degeneration of glands and tumors are not described as cysts. Purulent cysts or chronic abscesses or abscesses by congestion are sometimes observed in the sheath or the sterno-mastoid. We do not consider the softened tuberculous glands as cysts. Chronic abscesses are most frequently situated in the sheath of the large vessels, whence the pus may pass down into the mediastinum.

The solid tumors of the lateral region are: Hematoma, clotted or solidified, from contusion. It has been observed, also, from rupture of muscles and injuries of blood vessels. Senn had a most interesting case of persistent solidified aneurysm of the common carotid. Hematoma of the sterno-mastoid in the new-born is most remarkable and unique. It usually appears after birth; it is more frequently on the

right, it occupies the body of the sterno-mastoid, partially or totally forming a part of its substance; it is firm, elastic; it is oval; it is stationary; there is no pain except on pressure: the head is inclined as in torticollis; there is no tendency to grow nor to suppurate; it usually disappears by resolution in a few weeks or months. It is thought to be due to obstetric traumatism or a malformation; it is common after breech presentation when traction has been made to extract the head; it may cause a permanent torticollis. It must not be confounded with enlarged glands.

Induration of the sterno-mastoid in adults is syphilitic; it may be a diffused sclero-myositis; it may occupy the whole muscle, which is transformed into a cord, or it may be localized in one spot.

Gummata of the sterno-mastoid are found usually at the inferior insertion of the muscle; they may attain the size of an orange. This muscle is a point of election of gummata; they develop rapidly, in four weeks, without traumatism and without trace of pain. One case of hereditary syphilis of the sterno-mastoid is reported.

In connection with adenomata of the lateral region we will note here that tumors of the lateral region of the neck are usually glandular: a median tumor is most commonly connected with the thyroid body, larynx or trachea. Simple adenoma or lymphadenoma or pure hypertrophy of the gland is rare. In some cases of anemia there are peculiar hard glands of stony hardness, commonly unilateral, usually affecting the whole set of the glands (Miller). Adenoma of Hodgkin's disease, or adenia or adenoma of leucocythemia very commonly begins by the neck; in leucocythemia there is increase of white blood corpuscles; in adenia there is no increase. Strumous adenoma is very common in this region. Senile scrofula is represented by strumous adenomata in old people. Tuberculous adenoma is most common here; it is almost a seat of predilection. Syphilitic adenomas are very frequent: also, next to the nucha it is the part of the body must frequently presenting the symptoms of chronic syphilis: the glands are usually painless, of the size of a hazel nut, indurated; they never suppurate. Adenoma of glanders presents no peculiarities. Lipoma in this region presents no peculiarity not already mentioned in the description of the diseases of the neck in general; however, we must bear in mind that they often adhere to the vessels and bones. Fibroma is rare. Myxoma and myoma present no peculiarities. Neuromata of superficial nerves are cutaneous, plexiform; they are common in the neck, but not more frequently so in the lateral region. Chondroma is more commonly found as originating in the glands; they often adhere to the sheath of the vessels and to the bones. Osteoma has not been observed except as a possible calcareous degeneration or ossification of some structures. Encephaloid, melanotic, colloid or pulsating sarcoma, epithelioma, carcinoma and scirrhus are almost always secondary to such diseases of the head, face, pharynx, esophagus, larynx or trachea.

Tumors special to the region.—The hematoma of the new-born is the only tumor special to this region.

Surgical operations of the lateral region of the neck or region of the sterno-mastoid and of the carotids. The only operation requiring peculiar mention is that of tenotomy for torticollis, when the innominate vein may be wounded.

(To be concluded next week.)

SOCIETY PROCEEDINGS.

Chicago Academy of Medicine.

Regular meeting held March 12, 1897, at the Leland Hotel.

Dr. W. X. Sudduth in the chair.

The subject for discussion was

AUTO-INTOXICATION IN ITS MEDICAL AND SURGICAL RELATIONS.

THE CHAIRMAN said: Auto-intoxication, *i. e.*, self-poisoning, may arise from perverted cell metabolism or through deficient elimination of the ordinary waste products of cell katabolism produced in the regular course of functional activity, but which become deleterious by reason of their retention within the organism. Both conditions may be truly classed as auto-intoxications if we consider the body as a unit, a perfected whole, made up of many parts all working together for the general good. An organ is a complicated structure and its functions are simply the sum total of the functions of the individual cells that go to make up the organ. It is therefore a matter of indifference, pathologically speaking, whether the poison is produced by the cells of the particular organ that is affected by the product or whether it is evolved by the cells in some other portion, and carried to the part involved by the vascular or lymphatic system. If the poison is produced within the organism by reason of some fault of the organism itself, or if the ordinary waste products of the body, which are invariably poisonous to the body producing them when retained, are not quickly removed, the result is a true auto-intoxication and comes within the scope of this discussion.

The only phase of the question that I desire to present is the auto-intoxications that arise from the poison produced by perverted or excessive emotional activity. From time immemorial it has been known that the emotions, when excessively indulged have a direct action upon secretion. Clinically, we are all familiar with the interference in the normal functional activities of the several organs of the body by excessive grief. The derangements of the stomach and alimentary tract, that produce dyspepsia and faulty assimilation with the consequent long line of disorders, physical and mental, that follow in the train of mal-nutrition, are also well known.

Every mother knows the danger that lies in permitting a child to nurse soon after she has indulged in an uncontrolled fit of anger or suffered a severe fright. The sympathetic diseases that a nursing child has in common with the mother, while not in themselves true auto-intoxications, yet conclusively prove, when related thereto, the effect of toxic agents produced within the body of the mother through the operation of emotional prodigality. It has only been within the last few years, however, that physiologic chemistry has taken up this question and even more recently that psycho-physiologic investigation has demonstrated the nature of these processes. Professor Gates in an elaborate series of experiments has shown that each and every emotion has its own particular secretion which, if retained within the body, produces an auto-intoxication. These psycho-neurotic processes are undoubtedly the source of many of the trophic derangements found in the practice of the nervous specialist. Quite recently the theory has been advanced that insanity is many times the result of auto-intoxications from these products of emotional prodigality, exacerbations of mania frequently having been observed to follow a more or less prolonged period of emotional excitement. Professor Gates' experiments conclusively show that the emotional toxic agent is a constant product and can be extracted from the secretions, sweat, etc., at each successive recurrence of the emotional state in which it has previously been found, and further, that when separated and injected into man or dog, that the special emotional state may be reproduced, thus proving by experiment that there is a characteristic chemical action taking place in the system as the result of excessive emotional indulgence that may be determined by laboratory methods.

The other question, as to whether these products are always toxic in character, depends upon the nature of the emotion producing them, and opens up a field for discussion that transcends the scope of this symposium and will be deferred until some other more favorable time.

DEFINITION OF AUTO-INTOXICATION.

Dr. W. A. Evans. I have been requested to devote my time to a definition of auto-intoxication. Intoxication comprehends: 1, production of the intoxicants; 2, absorption thereof; 3, reaction thereto. The three are embraced when we speak of

auto-intoxication. This is poisoning of an organism with matter produced by itself.

Assimilation or the making of tissue is the passing of the simple into the complex, of stability to instability, with the storing of energy. This instability is a necessity of life. Dissimilation, divided into two divisions, death and energy, the last being a modification of death, is the passing of the complex to the simple; the instable to the stable with the liberation of energy.

In the building-up process the unused portions of the absorbed foods may be said with fair propriety to produce auto-intoxication. In the breaking-down process the ash can produce auto-intoxication. So long as these two processes, tissue building and tissue waste, are normal, intoxication can only ensue from faulty action of the destroying organ of which the liver is the chief, or of the eliminating organs of which the kidney is a type. This constitutes then the first group, those due to faulty elimination. It applies to food remnants and to tissue waste, both normal and pathologic.

The second group is due to errors in cell life. It has three sub-heads: 1, by some reason food elements are left unused; 2, the ash from food-burning is unusually toxic or unusually difficult to absorb; 3, the secretion of the cell is toxic.

The third group is where the production of a toxin is beyond the capacity of the lymph and vascular channels for absorption.

As you will see, poisons secreted by germs located in any recess of the body or metabolism induced by those germs can not be considered as auto-intoxication. Ergo, it has no bacteriology. In a general way leucodermas are mild irritants and their lesions are those of a mild irritation long continued—the interstitial inflammations.

CHEMISTRY AND PHYSIOLOGY OF AUTO-INTOXICATION.

Dr. JOHN A. WESENER—I will first discuss the decomposition of the proteid molecule while it is undergoing digestion. According to Kühne proteids under the action of gastric and pancreatic juices are changed into an hemi and an anti group. The anti group is broken down to anti-albumose and an anti-peptone, but very little of the last body is formed. Anti-peptone is a most stable compound resisting the further action of the digestive juices and even that of dilute sulphuric and hydrochloric acid. It is absorbed by the small intestine, but does not replace any waste of the used-up proteids of the body. Anti-albumose is changed to serum albumin and is the one that furnishes the body with its proteid food. According to some of the late experiments a true peptone is not poisonous, whereas both albumoses are very poisonous. The albumose when injected subcutaneously cause death; the blood fails to coagulate by reason of the fact that the lime salts are precipitated by this body. If for any reason the epithelium of the intestine fails to perform its function of changing this body into serum albumin toxic symptoms will arise. Brunton attributes lassitude, depression, sense of weight in the limbs, dulness in the head, etc., occurring in the well-fed inactive man after his meals to absorption of anti-albumoses.

Taking up the hemi group we find an entirely different arrangement. This group is burned up entirely; the stages are: Hemi-albumose, hemi-peptone, leucin, tyrosin, glutamic acid, and finally, by the action of the liver, urea. The assimilative apparatus, and especially the liver, converts the toxic hemi-albumose to the harmless urea.

Nuttall and Thierfelder have demonstrated positively that bacterial life is unnecessary in the digestive processes; that the juices alone will decompose the products perfectly. Furthermore, Senator has shown that in the newborn, indican is never present in the meconium or urine. From this standpoint poisons elaborated in the intestines through putrefactive changes can not be considered as the cause of auto-intoxication.

Before leaving this part of the body a word must be said about the bile. Bouchard in his experiments has shown that the bile is very toxic. After removing the coloring matter it is poisonous to a less degree. A certain portion of the bile is reabsorbed and stimulates the liver to renewed work. This continued circulation of bile through the liver stimulates the liver to destroy the toxic substances of the digestive tract and of the body as a whole.

Uremia.—In diseases of the kidneys where elimination is bad toxic symptoms will rapidly appear, for it is by this channel that the greatest amount of extractives are removed. In Bright's disease urea has been found in the stomach; nature has merely tried to throw off waste matter. Urea, however, is not poisonous, but whenever there is an accumulation of this in the blood toxic products are also increased, so that the amount of urea may be taken as a guide to the amount of toxic material present. Uremia, according to Bouchard, is probably due to the absorption of mineral matter, especially potash col-

oring matters and alkaloidal bodies. Landois laid bare the surface of the brain in dogs and rabbits and sprinkled the motor area with creatin, creatinin and other constituents of the urine. Urea, ammonium carbonate, sodium chlorid and potassium chlorid had but slight effect, but creatin, creatinin and acid sodium phosphates caused clonic convulsions on the opposite side of the body, which later became bilateral. He concludes that chorea gravidarum is a forerunner of eclampsia.

Cellular Secretion.—Under this head I will only mention the glands of the stomach and the pancreas. Pepsin and pancreatin, when injected into the circulation, produce death. Hildebrandt finds that a fatal dose of pepsin for dogs is from .1 to .2 gram per kilogram of body weight. The pepsin is destroyed in the intestines by the action of the bile and the pancreatin by the acids of fermentation; if this process is perverted, and if the liver and the cells of the intestines have lost their destroying and converting property auto-intoxication will arise.

Brieger is of the opinion that a great many toxic symptoms in gastritis are due to peptotoxin. This body is produced by the action of the pepsin upon albumins. When the function of the pancreas becomes arrested from disease or otherwise, the formation of glycogen in the liver is interrupted and diabetes results. The same is true of other organs in the body, interference with any organ upsets not only its specific function, but causes disturbances through the body generally.

Uric Acid.—Recent investigation shows that uric acid represents the metabolism of the nucleins of the body, and is in no way related to the albumins taken in as food, for these last bodies are burned to urea. Uric acid is non-poisonous, but some bases of this group are very poisonous. According to Milroy nucleinic acid combines with proteids to form nucleo-proteids. Frölich says gout is due to a leucocytosis. The necrosis arises as follows: the immature leucocytes break down easily because the carbon dioxide remains too long in the tissue spaces; the nucleinic acid which is liberated in this way attacks the connective tissue *i.e.*, irritates it, and this forms a good basis for the depositions of urate salts which are produced by the destruction of nucleins. This theory to my mind fits much better than that of Haig's.

In conclusion, I will say that I have tried to make five points: 1. Albumoses are poisonous. 2. Bile is poisonous; that the liver uses the bile as fuel to strengthen it to destroy poisons. 3. Uremia is probably caused by several anabolic and katabolic products. 4. Cell secretion. Perverted function in one organ will affect disturbances through the body generally. That the secretions are toxic. 5. Uric acid is non-poisonous. The preceding necrosis is a perverted cell metabolism. The toxic symptoms I have not considered, because I am not ready to answer just how these arise in this condition.

THE CHAIRMAN: In the absence of Dr. Fütterer, who was to speak on the clinical relations of auto-intoxication, I will ask Dr. Waugh to take up that phase of the subject.

CLINICAL RELATIONS OF AUTO-INTOXICATION.

Dr. WM. F. WAUGH—It has been a matter of interest to me to watch the development of this question as it has appeared in the medical press. Practically starting from the publication of an article by Sir Andrew Clark on "Fæcal Anæmia," some years ago, there has been a continual increase in the number of articles which devote attention to it. Bouchard's book gave it considerable impetus, and the question has been steadily growing in importance; the clinical field of auto-intoxication has been gradually widening until about a year ago in the London *Lancet*, it was claimed in an editorial that not only is the materies morbi of such diseases of the alimentary tract as the cholera group, typhoid fever and all affections characterized by fetor of the stools and so on, generated in the intestinal canal, but rheumatism, epilepsy, uremia, headache, diabetes, chorea, skin diseases, and many of the chronic diseases of the brain and spinal cord. And in the current number of the *Dosimetric Medical Review* I note an editorial that opens with the assertion that he who comprehends auto-toxemia fully has but little of practical medicine to learn.

There is one phase of the question to which very little attention has been paid, though it is rather an important one. I refer to the part played by auto-intoxication in fevers. We know that in all fevers the secretion of the bile is interfered with; it is greatly lessened. We know that the bile is the natural antiseptic of the system, consequently it stands to reason that in all fevers on account of the lack of bile and the increased temperature, we have an increased tendency to decomposition of the contents of the alimentary canal. There is in fevers, then, necessarily a certain amount of auto-intoxication, and the symptoms of auto-intoxication are added to those which are due to the fever proper. By a system of efficient intestinal antiseptics these can be separated and when

the effects of auto-intoxication have thus been eliminated, we find that the severity and the danger of the attack have been materially lessened. It is a question, of course, whether it is better practice to stimulate the liver, already suffering from the fever in such cases, or whether antiseptics should be secured by the use of antiseptic drugs.

UNTOWARD EFFECTS OF DRUGS AND THE DERMATOLOGIC AND VENEREAL RELATIONS OF AUTO-INTOXICATION.

Dr. WM. L. BAUM—The untoward effects of drugs in the production of cases of auto-intoxication are well known, and are described in almost every department of medicine. Certainly, almost every drug in the pharmacopeia is capable at times of causing such chemic changes in the system as to produce auto-intoxication. This is very frequently pointed out as being a peculiar condition or idiosyncrasy of the individual. Any drug can, in its ordinary physiologic action, produce a form of auto-intoxication, which may be increased or diminished, not according so much to the quantity of the drug taken, but according to some previously present condition. The subject of untoward effects of drugs is very intimately interwoven with the effects of auto-intoxication. A large number of the diseases of the skin which we are called upon to treat are the results of auto-intoxication. For instance, gouty conditions are frequently expressed in the form of eczemas. In other individuals we have urticarial eruptions, these being often one of the untoward effects of the drugs. I might say, that among the untoward effects of drugs, so far as skin lesions are concerned, the entire life-history of the untoward effects of drugs indirectly upon the skin is that they produce upon the already altered condition of the patient a chemic change in the products of digestion which are resorbed, the result being that they exercise a very profound influence upon the vasomotor centers. If there is a decided irritation we will have the formation upon the skin of urticarial wheals; if the irritation is more intense, we have not only the formation of urticarial wheals, but erythematous or hemorrhagic infarcts due to the long continued distention of the smaller capillaries. If the irritation continues for a long time you may have the formation simply of papules, beginning eczemas, or beginning erythematous conditions, subsequently followed by the appearance and bursting of vesicles and the red weeping eczemas. If the irritation continues, pustular conditions subsequently form and may in themselves become auto-intoxicants, such as in small-pox. Here there is a rise of temperature coincident with the change from vesicles to pustules. You have then an example of a dermatosis producing a direct auto-intoxication from the resorption of the toxins present. It would be almost superfluous to dwell upon those drugs which are apt by their untoward effects to cause similar symptoms. We find, moreover, that the irritation may be of an entirely different character; that instead of having the untoward effects of drugs in manifestations upon the skin of the patient, we have profound impressions produced both upon the nervous and genito-urinary systems. It is not always a direct mechanic irritation produced by the drug which is responsible for certain manifestations in the genito-urinary tract, but it is due to altered chemic condition, which produces intoxications which are not confined to particular portions of the anatomy, but which may become general, and for that reason I do not wish at this time to dilate very much upon this phase of the subject. Auto-intoxications also take place as a result of some disease process which allow resorption of altered urine or septic material through the destruction of some portion of the lining of the genito-urinary tract.

THE EAR IN ITS RELATION TO AUTO-INTOXICATION.

Dr. NORVAL H. PIERCE It is not my purpose to consider the general aspect of auto-intoxication, but rather to confine myself to the very small sphere that has been allotted to me by "the powers that be." In order, however, to have a basis for my remarks, I shall assume that the term auto-intoxication means an intoxication produced by an excess of normal chemo-physiologic substances elaborated within the body, or by toxic substances derived from them in the course of a perverted metabolism, or by the absorption of toxic substances from the gastro-intestinal canal, produced by a faulty or perverted digestion. While I am not prepared to give proof of the fact, yet I am sure from clinical experience that a great many cases of so called catarrhal inflammations, if not entirely dependent upon the absorption of toxic substances from the intestinal canal, are, at least, greatly influenced by them. Thus, cases of simple subacute ear disease will resist local treatment unless attention is given to a coexistent intestinal disease, for instance, constipation. That intestinal auto-intoxication, by its depressing influences, renders infection elsewhere more easy, there can be little doubt. We frequently

find cases of otitis precipitated by an excess in eating or drinking with derangement of the digestion, and symptoms of fermentation in the bowels. But it is more especially the diseases produced by an excess of normal chemo-physiologic substances elaborated within the body, or by toxic substances derived from these in the course of a perverted metabolism, such as urea, diabetes, etc., that I wish to consider. Disturbances of the ear are probably much more frequent in Bright's disease than we have formerly believed. Thus, Doumergue, with the object of finding the frequency of ear troubles in Bright's disease, examined seventy-two cases of nephritis, and found 35 per cent. concomitant otitis, which was probably due to uremic poisoning.

Moos has divided ear troubles occurring in Bright's disease into two groups. First, those which are directly due to increased tension of the aortic system. Second, those in which otoscopic examination gives negative results. In the first class of cases, one of the most prominent and frequent pathologic conditions found upon postmortem is ecchymosis of the mucous membrane of the middle ear. In other cases there is actual hemorrhage in the cavum, or there may be a serous exudate in the tympanum. Those cases are more readily infected than the ordinary cases of catarrhal inflammations, and are especially liable to go on to suppuration. All these cases manifest the symptoms of catarrhal inflammation of the middle ear, tinnitus, more or less deafness, more or less pain, according to the pressure in the middle ear. The symptoms in the second class of cases are tinnitus with or without hardness of hearing. When deafness occurs it may be only partial or total. Fournier says that sudden failure of hearing power in these cases may be regarded as a prodromal sign of uremia. Indeed, there is sufficient reason to believe that a sudden loss of hearing in cases of Bright's disease should put us on our guard against approaching general anasarca. The important symptom in all of these cases which we wish to accentuate is the intermittent character of the deafness. Thus, there may be daily intermissions, or the attacks may occur several times daily. It begins suddenly, and almost as suddenly disappears. Or there is a pause of two or three or eight days, or a month, and then another seizure. It has been noticed that the amount of deafness often bears a relation to the facial edema and to the general anasarca. After the disappearance of the uremic condition the ear symptom may clear up. In other cases the deafness is lasting. In some of the cases there are symptoms which lead us to believe that the labyrinth is involved, such as dizziness, nausea and vomiting. Cases are on record in which a diagnosis of gastric trouble has been made, when in reality the stomach symptoms were produced by disturbances of equilibrium. On postmortem the middle ear may be entirely free from pathologic manifestations. The greater number of authorities believe that these symptoms are produced by edema of the acoustics. One writer compares the changes found in the acoustic nerve with those found in retinitis albuminurica. The tuning fork is of little value in the diagnosis of this class of affections. Galvanic reaction of the acoustic nerve is much more preferable. The appearance and the disappearance of the symptoms are explained by the resorption and reappearance of the edema.

As regards rheumatism, while it may often cause forms of dry and moist catarrh of the middle ear, there are no peculiarities in the local manifestations which differentiate them from others due to different causes, and we only gain a knowledge of the rheumatic character of the disease by the manifestations elsewhere in the body. As regards gout, we are all aware of the peculiar susceptibility of the external ear to gouty concretions. Gout may cause disease of the middle ear by concretions about the joints of the ossicles, and especially by concretions in fenestra ovalis, binding the stapes down, so that it can not possibly oscillate. In speaking of diabetes, I will pass over the eczemas and furuncles which occur so frequently in the external auditory canal, because they are of no special importance, inasmuch as the same conditions occur elsewhere in the body, and will say that perforative inflammations of the middle ear in diabetes are probably always purulent and of bad prognosis. This is due to two facts. First, a lessening of the resistance of the tissues to microbic invasion; secondly, the presence of sugar in the tissues, which produces a more salubrious nidus for the growth of germs than the ordinary plasma. Diabetic otitis media hemorrhagica is a well-marked type of ear disease occurring in diabetes. It occurs suddenly, with few or no prodromal symptoms, blood gushing from the ear, more or less great in quantity, with perhaps little or no pain. On section, little is found except necrosis of the tissues, and Buijnd has found in such cases the streptococcus pyogenes aureus in the blood-vessel walls, and he has suggested that the action of these microorganisms directly on the

blood-vessel walls, together with the inherent tendency to necrosis caused by the sugar, has produced these hemorrhages. We all know the proneness of the diabetic to mastoid disease, and we know, too, that up to late years surgeons have been divided as regards the advisability of operating on these cases, first, because of the uncontrollable hemorrhage; and second, because of the danger of infection.

At a late meeting of the German Society of Naturalists, held at Basel, this question was put to rest apparently by the greater number of authorities there, who said that they believed we may operate on these cases with impunity under strictly antiseptic conditions.

THE EYE IN ITS RELATION TO AUTO-INTOXICATION.

This subject was assigned to Dr. CASEY A. WOOD, but in his absence the chairman called upon Dr. WM. H. WILDER.

Dr. WILDER.—On such short notice I do not feel competent to discuss satisfactorily the topic assigned Dr. Wood. In such a highly organized structure as the human eye, we should naturally expect to find more or less disturbance from the circulation in the blood of any of the toxic substances that arise in cell metabolism. There is one disease that occurs very frequently in the eyes of children which, notwithstanding its frequency, is up to the present time very little understood. We have had very little light thrown upon the pathogenesis of so-called phlyctenular keratitis, or phlyctenular conjunctivitis.

As far as the histologic pathology is concerned, it appears to be simple enough, but there is something deeper than that, which seems to elude investigation, and I have always thought that a more accurate knowledge of the subject of auto-intoxication would enable the ophthalmologist to get some light upon this intricate topic. It certainly will repay a more thorough investigation. This disease, with which you are more or less familiar, comes on in children possessing peculiar idiosyncrasy or diathesis, and in certain individuals in whom the processes of the body are not performed as readily as in others. It appears also in certain children who are predisposed to gouty manifestations.

All are familiar with the influence exerted upon the mesoblastic structures of the eye by such diseases as rheumatism and gout, intoxication from syphilitic poison, etc. I refer now particularly to those inflammations, sometimes of a peculiarly low grade of asthenic type, that affect the iris and other uveal structures of the eye so disastrously. More light can be thrown upon the pathogeny of these affections by a more careful study of the problems that are included in the subject of auto-intoxication. Nothing can be more disastrous to the individual than a severe inflammation of the iris, or of the choroid, because it not only affects these structures but the refracting media as well.

We know also that certain of these general diseases influence very profoundly the nutrition of other refractive parts of the eye, structures which, if they lose their transparency, are unable to perform their functions. I refer now to the lens and the vitreous particularly, which having no blood supply of their own, depend upon other structures for their nutrition. Fatty degeneration, or cataractous change in the lens, is frequently induced, as we know, by diabetes.

Every general practitioner is aware of the changes that occur in the retina, that delicate nerve structure which modern histology has shown us is really a part of the brain, as a result of certain general diseases. This part is profoundly influenced by the changes that are brought about by auto-intoxication. And we are all more or less familiar with the effect of degeneration of the elements of the retina that occur in the so-called albuminuric affections of the retina. We speak of a retinitis, of an inflammation of the retina, but these changes are due to degenerative processes going on in the nerve elements, similar to the degenerative changes that take place in the glandular elements of the kidney. A more intimate knowledge of this subject of auto-intoxication will throw some light also upon the peculiar effects produced in the retina by albuminuria. The circulation in the blood of toxic substances not only affects the blood vessels of this part, but influences profoundly the nerve elements as well. There is one change that takes place in the eye, under certain conditions, which seems to demonstrate positively that this most delicate structure in the eye may be profoundly affected by the circulation in it, or near it, of some of the deleterious products of cell metabolism. I allude to the change which takes place in the head of the optic nerve as a result of tumors of the brain. It was formerly held that the so-called choked disc or optic neuritis that occurred because of brain tumor, was due merely to the stasis of circulation in this part, together with the distention of the optic nerve sheath by the fluids forced into it because of the increased intra-cranial pressure. A more rational explanation of this

condition has been advanced by Leber, in which he claims that this change in the head of the optic nerve is brought about by the direct influence of toxins generated in the tumor itself, circulating through the lymph spaces of the optic disc, and his conclusions seem to be borne out by clinical evidence, because in many instances it is impossible to find any such distention of the optic sheath as former theories would require.

(To be continued.)

Chicago Pathological Society.

Regular meeting was held January 11, 1897.

Dr. JAMES B. HERRICK, President, in the chair.

H. GIDEON WELLS, PH.D., read a paper on "A Case of Congenital Syphilis Complicated by a Mixed Infection with the *Staphylococcus* and *Streptococcus Pyogenes*." (See p. 688).

PRESENTATION OF SPECIMENS.

Dr. JAMES B. HERRICK exhibited a specimen of *Gummata of the Myocardium*. This heart, taken from the museum of Rush Medical College, was obtained at an autopsy made by the coroner's physician, on an adult male of average size who had been found dead. There is, therefore, no clinical history save that of sudden death. Other anatomic evidences of syphilis were present. The heart is a trifle large, the wall of the left ventricle thickened and the cavity somewhat increased in size, the endocardium showing a few grayish areas over the underlying gummata. The pericardium is free and smooth. The valves are unaffected save for some grayish plaques in the mitral close to a gumma. In the upper third of the interventricular septum, close to the aortic valve is a firm nodule the size of an olive bulging into either ventricle. The endocardium over the mass in either ventricle is thickened, grayish, somewhat uneven from slight irregular eminences in the nodule. One of the chordae tendineae running from the tip of a papillary muscle in the right heart to the posterior tricuspid leaflet, is firmly adherent about its middle to the thickened endocardium over the gumma. Some interference with the closure of the valve probably resulted. A few smaller nodules are found in the wall of the left ventricle, and here and there are a few grayish streaks in the myocardium.

Microscopically a section from one of the smaller nodules from the wall of the left ventricle shows the accumulation of round cells between the muscle fibers with consequent atrophy of the latter. In places an encircling wall of fibrous tissue is forming. No marked central necrosis has as yet taken place.

Dr. HERRICK further briefly discussed the subject of acquired syphilis of the heart as it affects the endo-peri- or myocardium, in fibrous or gummatous forms. The difficulties of anatomic and clinical diagnosis save by exclusion of other causes of cardiac disease and definite proof of constitutional syphilis, were also referred to. The therapeutic test of improvement under anti syphilitic treatment was not conclusive. Rosenfeld's asthma syphiliticum and Semmola's twenty seven clinical cases of syphilitic disease of the heart, must be viewed somewhat skeptically in the light of Mracek's finding of only six anatomic diagnoses of syphilis of the heart in 100,000 autopsies in Vienna.

The effects of gummata of the myocardium were 1, weakening of the wall with perhaps aneurysm or rupture; 2, obstruction of a cardiac orifice by pressure, or 3, interference with the valvular mechanism by involvement of the valves themselves or by deformity of papillary muscle or chorda tendinea (see specimen); 4, the breaking down of the gumma, discharge of contents into the circulation with emboli in distant organs (cf. case of Oppolzer); 5, from pressure upon, or involvement of cardiac nerves, vessels or muscle, marked interference with performance of function as shown in palpitation, arrhythmia, dyspnea, angina. Sudden death, as in this case, was common in gumma of the heart.

Dr. E. R. LECOURT exhibited a specimen of *Gummata of the Heart in Congenital Syphilis*. The gummata of the heart were found in the body of a child born in the practice of Dr. A. B. Strong of Chicago, to whose kindness we are indebted for the following findings:

Death occurred almost immediately after birth and the autopsy done at the Pathological Laboratory of Rush Medical College resulted in the anatomic diagnosis of: 1, syphilitic interstitial pneumonia (nodular); 2, syphilitic osteo-chondritis; 3, gumma of the heart; 4, pustular syphilides of the skin; 5, multiple foci of suppuration in the thymus; 6, hyperemia of the liver and spleen.

The heart showed a large white area on its anterior surface and three similar smaller areas on its posterior surface. On section these all showed irregular margin, lessened consistency

and a disposition to spread out near the pericardium. The columnæ carneæ were involved in the larger area.

Microscopic examination of these areas revealed a proliferation of the connective tissue elements in the shape of oval or partially fibrillated cells. This was most marked around the vessels where proliferative changes in the adventitia were extensive. Widely scattered foci of necrosis of heart muscle fibers were present and these were the seat of infiltration with leucocytes.

The diagnosis of syphilis was confirmed by the microscopic examination of the liver in which a characteristic interstitial hepatitis was found, also by the examination microscopically of the osteo-chondritis and the interstitial pneumonia.

The literature on congenital heart syphilis has been thoroughly summarized by Ludvig Hektoen in a case reported of multiple foci of interstitial myocarditis in hereditary syphilis (*Journal of Pathology and Bacteriology*, Edinburgh and London, January, 1896) and a search through the *Index Medicus* failed to show any additional cases reported since. The above author was able to find only nine previously reported cases of hereditary heart syphilis, these being collated in the well known treatise by Mracek (*Die Syphilis der Herzen bei erworbener und erbter Lues*. *Arch. f. Dermat. u. Syph.*, Wien, *Erganzungsheft* ii, 1893) and the syphilitic nature of some of these was doubtful.

Dr. WELLER VAN HOOK briefly discussed *Syphilis of Bones*, as illustrated by specimens from the museum of Rush Medical College.

DISCUSSION.

Dr. R. H. BABCOCK -With reference to the location of the gumma in Dr. Herrick's specimen it is interesting to note that of Grenouiller's nineteen cases, gumma was found nine times in the wall of the left ventricle and but once in the septum, six times in the wall of the right ventricle, twice in the wall of the right auricle, and once in the wall of the left auricle. The specimen which Dr. Herrick presented illustrates the frequency with which an individual suffering from syphilitic disease of the heart may die suddenly. Mracek says that out of sixty-three cases twenty-one died suddenly without previous symptoms, while if those cases were also counted in which there were some symptoms of cardiac weakness the cases of sudden death amount to 50 per cent. Such figures emphasize the gravity of this disease and the desirability of our being able to diagnose it during life; and yet, unfortunately, this is a disease in which the diagnosis is of the greatest difficulty and is to be arrived at oftentimes by exclusion and the history rather than from physical signs or symptoms. However, if the clinical experience of such an eminent man as Semmola counts for anything, it would seem that one of the very earliest symptoms which should direct our attention to the possibility of this disease is irregularity of the heart's action. This irregularity may be manifested for a considerable time, may appear even during the secondary manifestations of the disease.

So far as symptomatology is of aid in diagnosis, we can only say it is that of heart disease in general. Before coming over to this meeting I stepped into the syphilitic wards of the Cook County Hospital and looked over some half a dozen male cases there. The first man I examined, one with tertiary lesions, has an enlarged area of cardiac dullness. The relative dullness extends an inch and a half to the right of the right sternal border, and four inches to the left of the left sternal border, a total transverse distance of more than six inches. The heart was rapid; the first sound a little valvular. It would be absurd for a physician to claim that this patient, although suffering with syphilitic disease in the third stage, has cardiac syphilis.

Another man, who gives a history of having had syphilitic infection twenty-four years ago, stated that last summer he suffered with irregularity of the heart's action and shortness of breath, but as he is five feet three inches in height and weighs 189 pounds, has great abdominal corpulence, one would meet with considerable difficulty, it seems to me, in saying that his symptoms are due to syphilis of the heart. Another man, a fireman, stated that last summer while at work he suffered greatly from shortness of breath. Since coming into the ward and being put on antisyphilitic treatment his shortness of breath is much less. The transverse area of cardiac dullness is six and one-quarter inches: the first sound is feeble and when the man is in a recumbent position it is almost absent; the second sound in the aortic area is accentuated; the heart's action is quite rapid, over 100. Would anybody dare say that that man has cardiac syphilis? Would anybody dare say that the diagnosis points to cardiac syphilis because the man has been put on appropriate treatment and his symptoms have been relieved, when rest from work alone would explain his improvement?

This illustrates the difficulties we encounter in making a diagnosis and the extreme caution we should exercise. Nevertheless, it seems to me not unreasonable to assume that very many of these patients have cardiac disease of one kind or another, perhaps a very much larger percentage of them than we assume or have any means of determining, for the changes in the heart do not involve any one particular structure of that organ, but all of them. The development of the disease in the heart is so insidious and the symptoms are so latent that the disease escapes our recognition through the importance and prominence of other symptoms and the fact that the patients complain of nothing with reference to the heart.

The relative frequency with which the various structures of the heart are involved interested me very much in reading Mracek's article; he states that out of 61 cases 10 showed myocarditis gummosa, 9 myocarditis fibrosa, 8 gummosa et fibrosa, 15 myocarditis with endocarditis or pericarditis, 2 endocarditis alone, 1 pericarditis alone, 1 endocarditis with pericarditis, 1 pericarditis and endarteritis, 3 disease of blood vessels, 4 diseases of the ganglia and 6 of all the parts.

The prognosis is exceedingly grave because of the fact that a considerable percentage of these cases die without previous symptoms and because of the difficulty of recognizing the disease during life; the physician, as well as the patient, is thrown off his guard and allows the cardiac disease to run its course without special treatment. It is a well known fact that any treatment addressed to this form of cardiac disease is useless unless it be appropriate and specific; that is, ordinary cardiac tonics, and so forth, are utterly useless in the absence of specific treatment.

Dr. JOSEPH M. PATTON—I am glad to hear it admitted that the obliquity of failing to apply the pathologic lessons, such as have been given us tonight, to clinical medicine, does not rest upon the internalist alone. There are several reasons why we should not be able to apply these lessons to clinical work. In those cases of cardiac syphilis where there are fibrous changes in the muscle or septum, or where gummata of the heart are developing, the symptomatology would be similar to that pertaining to any other affection of the heart muscle wherein the dynamic integrity of the muscle was directly affected. Again, in those cases where the changes due to syphilis are limited to the vessels of supply, the symptoms are identical with those pertaining to stenosis of the cardiac vessels from obliterating inflammation of any variety.

I would emphasize a point brought out by Dr. Herrick to the effect that it is unfair to accredit to certain lines of therapy curative powers for syphilitic cardiac changes. The fact is that all cases of chronic cardiopathies do quite well under the same medication as would be used in suspected cases of cardiac syphilis.

Dr. LUDVIG HEKTOEN—You have seen the beautiful specimen of so called pneumonia alba in congenital syphilis. I present here a specimen of another form of congenital syphilis of the lung, namely, the gummatous form. You will see scattered throughout the lungs foci of a light grayish color. Under the microscope these foci are seen to be composed of areas of round cell infiltrations with focal necroses. Surrounding these areas are the characteristic desquamative changes of pneumonia alba, showing that the two forms of congenital syphilis of the lung may coalesce.

Dr. VAN HOOK made some very appropriate remarks concerning the difficulties of diagnosis between syphilis and true tumors. He stated that the microscope should be resorted to in order that the question may be definitely decided. I desire to go further and to emphasize the point that even the microscope can not always decide whether the growth is syphilitic or sarcomatous; that instances have come under my own observation in which I was unable to determine from the microscopic appearance whether a given growth was syphilitic or sarcomatous, so much similarity may there be between the structures of these proliferations. In connection with this, attention may be called to the fact that there is great likelihood that many testicles are being removed for sarcoma and other diseases that are really syphilitic. I am not able to prove this assertion at this time by any concrete example, but I have seen specimens which lead me to suspect that such things may occur.

Finally, a remark with reference to congenital syphilis of the heart, namely, that such changes have a marked practical importance because children so affected may live for a time after they are born and present no external marks of syphilis whatsoever and die suddenly.

Dr. W. L. BAUM Dr. Hektoen called our attention to the removal of testicles for sarcomatous conditions which are really syphilitic. Until within a few months I had a case under antisyphilitic treatment which had done very well, but the patient upon removing to another city had his testicles taken out for tuberculousis.

A second case, a young man, had one of his testicles amputated for what was believed to be sarcoma, but which from the testimony of his family physician was undoubtedly syphilis of the testicles. Another physician in this case made a diagnosis of gumma of the testicle and had advised the patient to place himself upon antisyphilitic treatment.

As regards the heredity of syphilis in the third generation, it reminds me too much of the tendency we all have when attacked by gout to lay great stress on the way our grandfathers lived. I am inclined to think that a large percentage of the so-called cases of syphilis that occur in older individuals are cases of the disease acquired during infancy. When we consider that by far the larger percentage of cases of so-called hereditary syphilitic children die at birth, are born dead or die within three months after birth, it is also strange that we should see so many examples of hereditary syphilis where we find the eruption appears two months after birth with a clear history of acquired syphilis. In the majority of cases, if the attending physician examined his cases thoroughly, he would have no difficulty whatsoever in locating the primary lesion.

The cases of gumma of the heart are interesting from a pathologic point of view, but I doubt very much whether they will have any great clinical significance for the reason that a large per cent. of the cases have died suddenly at a period far remote not only from the date of the initial lesion, but far remote from the time when any active specific lesions were present; so that while the attention of the physician may be called to the fact that the patient has had syphilis, yet in these cases of sudden death it is practically worthless. Discussions upon such cases as reported point out another fact, that we should impress upon the mind of every physician who treats cases of syphilis, that the treatment means not simply the gathering of a fee from the unfortunate patient, as is too often done in large cities; the idea seems to prevail that there is a specific treatment for syphilis which is of value in every case, and which is simply routine, and no attention is paid to the fact that the patient can acquire other diseases during the time he is suffering from syphilis. No attention is paid to the fact that one individual will react violently to small doses of iodids or mercurials, while others with apparently the same conditions present require extraordinarily large doses of these remedies.

Dr. EMIL RIES—I wish to say a few words concerning the case of Mr. Wells. The complication of hereditary syphilis with infection with streptococcus and staphylococcus is highly interesting. It is to be regretted that we do not know more about the history of the case and that no examination of the placenta could be made. It is possible that infection with the streptococcus and staphylococcus took place after premature rupture of the membranes. The membranes may have been ruptured two or three weeks or a month before the child was born, as such cases have been observed. A few weeks or even days may be sufficient for infection of the fetus with the germs mentioned. If the placenta had been obtained for examination we might have known something about its condition and the route of infection. I refer here to the white infarcts of the placenta which by some authors have been considered characteristic of syphilis, which they are not by any means, and which by others have been regarded as a product of inflammation, which is not so, at least not in every case. Such infarcts may undoubtedly have a bearing upon infection, the infection following the paths of the circulatory system through the mother into the fetus. Such an infection may have taken place in this case, but we do not know whether there have been such infarcts. Beside, under confinement, within a few hours, infection of the fetus may have taken place if instruments had been used, or the vagina had been packed for hemorrhage or some such condition and such an infection may have spread rapidly after the death of the fetus. Examinations of fetuses of mothers with typhoid fever, which were made in Strassburg, and some of which I witnessed, showed how difficult it was to differentiate between intrauterine infection, infection during pregnancy or labor, and an infection after death. Fetuses of mothers infected with typhoid fever were found full of bacterium coli commune, and as there was no reason to suppose that during the life of the fetus the infection had gone so far, it had to be assumed that after death the germs had spread rapidly. Such might have been the case in the case reported where there was streptococcus and staphylococcus infection. Of course it is impossible that the streptococcus and staphylococcus could have produced abscesses after death. Wherever there were abscesses and accumulation of round cells, these conditions must have originated and then produced during life.

With regard to the cases of syphilis of the heart that were discussed to-night, they interested me very much because of

another organ consisting of muscle tissue, the syphilis of which organ we know so little, and which is so near the usual gate of infection, the uterus. Cases of syphilis of the uterus have been described in literature, but most of these descriptions are of very doubtful character. Gumma of the uterus has been described in extremely few cases.

Mr. H. G. WELLS.—In regard to my statement of the impossibility of the infection in the case reported by me occurring after death, I will say that it was made because the lesions show a vital process to have taken place at the site of infection. For instance, in the abscess of the thymus shown under the microscope, the abscess is walled off with connective tissue, showing that the lesion must have occurred before death.

Dr. L. HEKTOEN presented specimens of: 1. *Brain Tumors Hardened in Mueller's Fluid 95 Parts and Formalin 5 Parts.* About a year ago I showed to this Society some gross and microscopic specimens of brains and cords hardened in a mixture of Mueller's fluid 95 parts and formalin 5 parts. Particular attention was then called to the great advantage of this method of hardening on account of, 1, rapidity (one to three weeks); 2, the desirable consistency produced; and 3, the plainness and distinctness of the markings of the cut surfaces, making the specimens very useful for museum and teaching purposes, at the same time the tissue is properly prepared for various kinds of staining procedures. Since then, this method has been adopted in the anatomic department of Rush College as well as elsewhere.

I now desire to present several specimens of brain tumors; these brains were hardened *in toto* in the above mixture, and then divided into transverse sections 1 cm. thick by means of this board, which you see presents a series of grooves 1 cm. apart in which the point of the knife is held as the brain hemisphere is divided from before backward. This board I first saw used in Henschen's laboratory in Upsala, and it is a useful contrivance. Brains divided in this way allow of accurate comparisons between corresponding parts in the two sides.

The above mentioned advantages of this method of hardening and of cutting are well illustrated in the specimens from these cases.

2. *Mixed-celled Sarcoma of the Pons and Left Crus.* The hemispheres show no changes except dilated ventricles. The upper or dorsal half of the pons presents an enlargement which at the posterior end assumes the form of an oval prominence lifting up the roof of the fourth ventricle, projecting into this cavity and pressing upon the vermis of the cerebellum. This mass is a little more prominent upon the left side. It is quite firm and homogeneous. It is sharply differentiated from the rest of the pons, but its exact upper limit can not be outlined, it being lost in the substance of the left crus.

Microscopic examination shows the tumor to consist of small round and spindle-shaped cells between which are interspersed a few small multinucleated giant cells, all being imbedded in a granular matrix. The tumor is rather vascular, and the vessels and vascular spaces have thin walls. Hemorrhages are not present.

This specimen came from a 30 year old woman in the service of Dr. Davis in the Cook County Hospital. In July, 1896, she complained of headache, dizziness and blind spells. On October 7 she entered the hospital, and it was then observed that the reflexes were exaggerated: that there was ankle clonus, nystagmus and retinal hemorrhages. On November 23 an exploratory trephine opening was made over the left hemisphere, but careful exploration failed to reveal anything abnormal. She died rather suddenly on Dec. 15, 1896.

3. *Glioma of the Left Temporo-Sphenoidal and Occipital Lobes.* *Anatomical Diagnosis.*—Craniotomy, encephalocle, intracerebral tumor of the left temporo-sphenoidal lobe, optic nerve atrophy, diffuse nephritis and hypertrophy of the heart.

Extract from postmortem record: Circumference of the skull 59 cm. Over the left parietal region is an oval opening in the skull 10 cm. in antero-posterior diameter and 6 cm. transversely. Through this opening protrudes a soft, round mass. Over this opening the pericranium is adherent to the dura, but the dura is not adherent to the pia. The protrusion corresponds to a hernia of the brain substance. The skullcap is thin: the antero-posterior diameter is 17½ cm., the transverse 14½ cm. The margins of the opening are beveled from within outward. The dura is tense, the convolutions flattened, the pia mater anemic, the brain firm. The total weight of the brain is 1860 gms.: of the left hemisphere 940 gms.; of the right 740 gms., and the cerebellum, pons and medulla together weigh 180 gms. The optic nerves are hard and white. The basal ganglia of the left side are prominent. The spinal cord is normal. After hardening the brain in the formalin, Mueller's fluid mixture, for two weeks, the hemispheres were divided into transverse, vertical sections each 2 cm. in thickness. In the

left hemisphere was a large tumor that commenced in the apex of the temporo-sphenoidal lobe and extended backward in the brain substance for the distance of 10 cm., the transverse diameter being 8, the vertical 6 cms. This mass was infiltrating and intracerebral, except in the fissure of Sylvius, where it reached the surface of the convolutions and caused pressure upon and distortion of the convolutions of the island of Reil. The left lateral ventricle was much deformed by the pressure of the tumor, the posterior horn being greatly enlarged. The tumor contained many large and small cystic cavities filled with a viscid fluid. The probable microscopic diagnosis is glioma.

In May, 1896, Dr. Van Hook operated upon this man under the diagnosis of tumor of the left hemisphere, but exploration failed to discover any growth. The diagnosis had been based upon failing vision, headache, difficulty in speaking and right sided paresis. He entered the service of Dr. Edwards in the Cook County Hospital, Oct. 2, 1896. At that time there was total blindness, slow and thick speech, choked disk and a diffuse tenderness over the top of the head. Shortly before death he was transferred to the surgical service of Dr. Davis, where he died on Dec. 27, 1896.

4. *Sarcoma of the Left Temporo-sphenoidal and Frontal Lobes Springing from the Dura.* The patient, a man, age 50, came under the care of Dr. Butler in Cook County Hospital Dec. 29, 1896 and died Jan. 4, 1897. The exact onset of the present trouble could not be found out. The left eye was protruding, the left eyelid drooping. The right eye had normal vision, and reacted to light and accommodation. There was tenderness when the head was tapped on the left side. His gait was slow, the legs being spread wide apart. On January 3, shortly before his death, the patient had a convulsion during which the head deviated to the right, and the muscles of the right side being then most involved in the clonic contractions.

The postmortem shows the body poorly nourished, the left eye prominent, the dura tense. Along the under surface of the left frontal and temporo-sphenoidal lobes, the brain is firmly adherent to the floor of the skull so that removal is impossible without considerable laceration of the brain substance. The brain weighs 1710 grams. There is a large mass extending into the left frontal and temporo-sphenoidal lobes from below, the tumor springing from the dura mater, more particularly the part lining the apex of the left middle fossa. The tumor is about the size of a hen's egg. It is but very loosely connected with the brain substance and threatens to fall away from the brain. On the cut surface it is reddish gray in color and firm in consistence. Microscopic examination shows the tumor to be a small round and spindle-celled sarcoma with much fibrillar stroma and many large thin-walled blood vessels.

SELECTIONS.

Pre-Columbian Leprosy. The *Berliner Klinische Wochenschrift*, Nov. 16, 1896, states that a discussion in the *Berliner Medizinische Gesellschaft*, March 4, 1896, following a paper by Havelburg on "Einige Bemerkungen zur Lepra, nach Erfahrungen aus dem Lepra-Hospital zu Rio de Janeiro," Professor Virchow said: "We have only a short time for the discussion of this pamphlet. It has been reserved at the last sitting when the patient was presented here, that at this occasion when Dr. Havelburg made his communication we could come back to the question which was stirring at that time, especially to the hygienic question, What was to be done with the people? Before I open the discussion, I should like on my side to observe in regard to the observation of Dr. Havelburg that it is historically established, that leprosy was brought into Brazil by people coming from Europe: that is at least how I understood it. That this is rather a well meaning than a sure interpretation of historic facts; as far as I know, there is nothing sure in that direction, and I will only emphasize, what I have done before, that just recently more researches in America, as well in North as in South America, have commenced in order to decide the question whether there has been a pre-Columbian leprosy. I have on the occasion of the Jubilee Lewin already called the attention of the public to this that there are really all kinds of objects which may be interpreted in an affirmative sense. The most striking according to my opinion are certain earthen or

clay figures which have been found in old tombs of Peru, and which certainly show mutilations and changes of other sorts which might easily be referred to leprosy. These researches are not concluded, because we have not to do with real works of art, which might be used as authentic interpretations. Nevertheless, the things are very strange, and Mr. Ashmead, who at this moment is traveling about America in order to pursue the question still further, would probably have much to say against the theory that leprosy has surely been introduced into America. The reverse opinion is according to my mind, still discussible."

The same journal of Dec. 7, 1896, gives the concluding remarks of Mr. Havelburg: "Speaking the last of the assembly, I have only to take notice of a few observations made in this discussion. The much honored Chairman has criticized my historic indications that leprosy was imported into Brazil by the Portuguese. No evidence that leprosy existed in pre-historic times in Brazil, so far, has come to light. In a work based upon historic foundation, of Dr. Marquez Pinheiro, a jurist, and which I shall like to bring to your library, there is an historic representation of the appearance of leprosy in Brazil, and the development of the Hospital dos Lazaros in Rio de Janeiro. The Portuguese are supposed, in that work, to be the importers of leprosy. In the year 1420, the Portuguese discovered the island of Madeira; in the year 1498, under Cabrel, Brazil was discovered. Into the same period falls likewise the discovery of the Canary Islands by the Spaniards. According to the communications of different authors, and especially of two gentlemen in the 22d volume of the *Archives for Pathologic Anatomy*, as answers to an appeal made in the year 1861, by Professor Virchow, in the case of leprosy it was most probably brought by Spaniards into the Canary Islands. In the 15th century leprosy was absolutely existing in Spain and Portugal. In 1542, the first leprosy was established in the Canary Islands, by means of the men who under the Portuguese flag, populated Madeira. At that time leprosy reached that island, so that in the year 1640 an especial lepra hospital had to be established there. But the greatest part of the emigrants directed themselves to the greater colonial possessions of Portugal and Brazil; hence that the same was done there as in Madeira. I have received by good chance a small pamphlet by my colleague Azeoedo Lima. He has much to do with the leper hospitals of Portugal. He mentions it as a fact, that in the 16th century, leprosy was carried into Brazil by Portuguese colonists. Two years ago I was asked by Dr. Ashmead, of whom Virchow also makes mention, to give him some information about this matter. As he was occupied with a work on the spreading of leprosy through the Spaniards of the American continent; and on that occasion, I found that the Brazilian authors were unanimous in this idea that the Portuguese carried leprosy into Brazil. Of course this is not a proof, and I am thankful to Professor Virchow for the appeal which he made to me, to search after the foundation of this historic idea, so generally admitted in Brazil."

NEW YORK, March 26, 1897.

Dr. WM. HAVELBURG, Hospital dos Lazaros, Rio de Janeiro, Brazil.

Dear Doctor:—In the discussion in a certain paper of yours, published in the *Berliner Klinische Wochenschrift*, Nos. 46, 47, 48 and 49, (1896) Professor Virchow disputes your claim that it is historically established that leprosy was brought into Brazil by people coming from Europe. He does not think this to be a sure interpretation. The earthen images, the huacos of Peru, he says, show certainly mutilations and changes which could easily be referred to leprosy, and the question of pre-Columbian leprosy is still open. I think with you that the disease was imported by Spaniards and Portuguese, perhaps negroes, by the last not very probably: there is not a scintilla of evidence that leprosy was here before Columbus. I have sought

over all America for some possible evidence of that kind, and have not found it. As to the deformations on the huacos pottery, I have shown to the satisfaction of the Washington Smithsonian Institution and Professor Brinton, the ablest American paleontologist, that these potteries show no evidence of leprosy; they are to be interpreted as syphilis and lupus, both of which diseases undoubtedly existed before the arrival of Columbus on this continent. In the matter of syphilis, Virchow is the last to hold out against a pre-Columbian syphilis. He will not admit it. Professor Brinton wrote me some time ago, that I should endeavor to convert Virchow to my view, and I wrote to Prof. Putnam of the American Museum of National History, to forward to that German scientist, a Pachacama skull which was sent to the museum by Professor Bandelier, now at Lake Titicaca, Peru. This skull was dug out from a depth of twelve feet at Pachacama. There has never been found at Pachacama, any *post*-Columbian bones buried at such a depth. Bandelier wrote me that this skull was without question pre-Columbian. It bears osseous evidences of pre-Columbian syphilis, so that we have two evidences in favor of the latter, the huacos pottery and this skull. The bones of Colombia, the most ancient seat of leprosy in South America, have never been studied. Now Colombia is the country where this disease is most prevalent. It is my desire some day to go through this bone work for such evidence. I do not think I shall find it. As far as negative evidence can count for anything, leprosy did not exist in pre-Columbian days, in the Micmacs of Nova Scotia, the Aztecs of Mexico, the Aymaras and Incas of Peru, nor among the Indian tribes of Brazil, *nor in Alaska and British Columbia*. You are at liberty to send this letter to Professor Virchow, or to any Berlin authority you please.

Very truly yours,

ALBERT S. ASHMEAD, M.D.

The Terrible Stiletto of the Italians.—Baron Garofalo, an eminent criminologist of Italy, has said of the accursed knife of his countrymen, that it claims a homicide every two hours, or an average of twelve victims daily. It would be a curious and instructive inquiry, that of ascertaining how far offences are aggravated by the medium through which they take effect—drunkenness, for example, being a more brutal phenomenon when the drinker incurs it with ardent spirits and not with wine or beer. Similarly, personal violence is one thing when it takes the form of fisticuffs and quite another thing when it is inflicted with the knife. A people, not necessarily more depraved, may appear technically more criminal by giving vent to its passions or propensities, not in themselves worse, through agencies of deadlier power. Italy possesses an unhappy priority in lethal offences, and Northern exceeds Southern Europe in drunkenness; just because in the one case the knife is used instead of nature's weapon, and in the other because raw whisky is the available beverage and not the juice of the grape. The Italian senate on the initiative of the Marchese Vitelleschi had a full-dress debate on the prevalence, nay, the increase, of crimes of blood during the last decennium, and many were the causes, primary and secondary, adduced in explanation of the fact. Vitelleschi saw much that was answerable for these crimes in the lack of sound education, even where it is given at all, deploring, for example, the total suppression of religious instruction in schools. Again, he thought the abolition of capital punishment directly favorable to homicide. To some of his arguments the Minister Costa replied not ineffectively. Admitting the prevalence of lethal crime, he showed that it was not universally distributed throughout the kingdom—that the Southern provinces contribute to these crimes out of all proportion to their population. This would confirm Vitelleschi in his impeachment of defective schooling as a cause, these provinces being far ahead of the North in the number of *analfabeti* (unlettered). On the other hand, he drew attention to the striking fact that in Italy alcoholic

excess is not attended with increase of violence. The provinces of Italy where homicides are most frequent are, he proved, precisely those where the lower orders are exemplary for their sobriety and abstemiousness. Indeed, the supineness of Italians—the absence of all sense of citizenship—runs through their whole attitude toward every detail of national life, from representative government downward. But, again, the speaker redressed the balance in his favor when he proved that the suppression of religious (as distinct from secular) education in schools had nothing to do with the increase of lethal crime. In 1870, in Latium, where there was also religious instruction more than compulsory, there were also many more homicides. But the abolition of capital punishments he did not at all succeed in justifying. Thirty years ago in the House of Commons the whole subject was threshed out thoroughly. One of the most powerful speeches in favor of such punishments being John Stuart Mill's, who, on the ground of humanity, advocated execution as preferable to the slow torture of lifelong imprisonment with, or still more without, hard labor. But the speech of the occasion was Sir George Bowyer's, who, in answer to the pleas that capital punishment was not deterrent, adduced the following fact: A Neapolitan wanted to kill his wife. The guillotine was still the penalty for murder in the kingdom of the Two Sicilies, so he took her to Tuscany where that penalty had been abolished and put her to death there. Yet in spite of that historic debate on the subject—in spite of the fact that Switzerland, having abolished capital punishments, was compelled by sad experience to legalize them once more, the Italian Government (though not without numerous and authoritative dissentients) made the abolition of these punishments the law of the land, and we now find the Minister of Grace and Justice defending that reform in presence of "a homicide every two hours." The truth is that Italy, in many aspects of her life, has not emerged from the middle ages; that hardness of living at once inspires crime and robs detention in prison of its terrors; that the administration of justice is so perfunctory that the people, knife in hand, settle their differences among themselves; that, in fact, D'Azeglio's watchword thirty-five years ago: "Now we have to make Italians," has lost none of its significance, and that Italy's most dutiful sons are those who, like the mass of her medical men, act strenuously in the spirit of that watchword, beginning with the rising generation and so guiding its growth as to exclude the vicious and give the healthy subjects such advantages of training and environment as can alone form the groundwork of a civilized and progressive state.—*London Lancet*, January 23.

PRACTICAL NOTES.

Anti-leucorrhea Injection (Lutaud).—Tannic acid 60 grams; spirit of lavender and creosote aa 30 grams; aq. dest. 250 grams. One tablespoonful to a liter of tepid water. *Journ. de M. de Paris*, February 28.

Influence of Food and Inanition on the Effects of Certain Microbian Toxins. Teissier and Guinard have been studying the effects of the administration of the diphtheritic toxin and of pneumobacillin to well fed dogs and to others in a fasting condition. They found that the fasting dogs resisted the toxins to a much greater degree than the others. When they succumbed to the effects of the toxins, the lesions were much less severe than in the others. The *Progrès Méd.*, February 27, remarks that these experiments may throw a new light on the question of diet in infective diseases.

Jalaguier's Method of Securing Solid Reconstitution of the Abdominal Wall.—After incising the aponeurosis of the large rectus muscle, Jalaguier pushes the muscle to one side and enters the peritoneum through an incision in the rear wall of the aponeu-

rosis. By this means the muscle when brought back to its former position covers and supports the suture in the peritoneum and the aponeurosis and ventral hernia from distention of the cicatrix becomes an impossibility. The details are given in full in the *Presse Méd.* of February 3. It is not adapted to cases requiring drainage, nor where extensive indurated adherences can be palpated beforehand, but for children and the usual category of cases operated upon *à froid*, or after the attack has subsided, it has proved extremely effective in his practice during the past year.

Treatment of Intestinal Troubles with Iodin.—A writer in *Wratsch* states that iodine is very effective in typhoid and other intestinal disturbances, but that the iodine, as usually administered, is absorbed by the stomach and fails to reach the intestines. He has been using it for three years in the form of amyllum iodatum and recommends it in high terms. In this form the iodine reaches and exerts its influence upon the intestines, while it does not combine with the ptomaines and alkaloids to form poisonous compounds. In typhoid he administers rectal injections of dec. amyli to which is added tinct. iodi 10.0 and ol. cinnamomi gtt. xxv. Internally, amyllum iodatum, 0.6 four times a day. This treatment commenced before the fourth day arrests the attack; after the first week it only attenuates it. The tongue clears off and becomes moist, the pulse becomes slower and stronger, the evacuations acquire normal odor and consistency, and the appetite improves. The temperature is not affected, but the duration of the disease is much shorter, five to six days in light cases and eleven to twelve in severe. The writer has also secured "the best" results with the same treatment in 100 cases of dysentery and several cases of cholera asiatica.—*St. Petersburg Med. Woch.*, No. 1, 1897.

Modification in the Bone Marrow Produced by the Staphylococcus and Its Toxins.—The pains in the bones we have observed in the course of certain infections are perhaps explained by some recent experiments of Drs. Roger and Josué, who injected staphylococci or their toxins into rabbits and then examined sections of the bone marrow, comparing them with normal sections. As soon as the injections in the flank had produced an abscess they found enormous proliferation of all the cells in the marrow and modifications in the giant cells, with marked congestion. After intravenous injections the proliferation was much more rapid and pronounced. Similar effects were produced by subcutaneous injections of staphylococcus toxins. Experimental septicemia also produced the same effect even more rapidly. All the elements of the bone marrow start at once to proliferating with energy, which is doubtless a phenomenon connected with the defense of the organism against the infection, as the marrow generates the leucocytes that destroy the germs. What is the mechanism by which a distant local lesion can thus act with such rapidity on the medullary tissue? It can not be ascribed to the direct action of the microbes, as marrow stewed on the culture media does not promote the growth of any microbial colonies. More than this, staphylococcus toxins injected under the skin produce the same modifications. It is therefore a question whether the cellular activity of the marrow is started by the toxins secreted by the microbes, or by nervous system. Whatever the mechanism may be, it is another demonstration of the solidarity of the different parts of the organism, showing how a local lesion may react on the most distant organs. The results of these experiments may also explain the rapid growth of the skeleton in certain affections. *Presse Méd.*, February 20.

Voracity After Head Injuries. Mr. Stephen Paget read a paper before the London Clinical Society on cases of voracious hunger and thirst after injury or disease of the brain. He had collected notes of fourteen cases of this kind pointing to the existence of special centers of hunger and thirst close to the

centers of speech, probably in the anterior extremity of the temporo-sphenoidal lobe, near the uncinate gyrus. A short account was given of each case, including one in his own practice. The primary injury or disease in each case was as follows: Four of the patients had received a severe blow on the forehead, two had been struck on the side of the head, two had fallen heavily on the back of the head, two had presented signs of a fracture of the base, and one had fallen from a height, coming down in a sitting posture. In addition to these eleven cases of injury there were three cases of disease; one had abscess of the left temporo-sphenoidal lobe, one had a suppurating cyst in the right temporo-sphenoidal lobe, and one had embolism of the left side of the brain. Eight of the fourteen patients suffered from voracious appetite for solid food without much thirst; three suffered both from thirst and hunger; and three had intense thirst without hunger. In none of them was the primary injury or disease fatal; it was therefore, certain that the centers of hunger and thirst were not situated in the immediate neighborhood of the vital centers. Three of them had well-marked aphasia; it was, therefore probable that these centers lay close to the centers of speech, and not improbable that they were connected with the olfactory center. This hunger and thirst was not the natural appetite of convalescent patients or of the result of any general mental derangement, and it was not secondary to traumatic diabetes. With regard to treatment, no harm had come in any case from letting the patient freely indulge his craving for food and drink. The voracious desire lasted, as a rule, for many weeks or months and then came to an end of itself.

Cerebellar Ataxia.—Dr. Campbell Meyers reports a case of this affection in a male, 17 years old, an only child, who had been attending school regularly. His paternal grandfather died at 75 of diabetes, his maternal grandmother of consumption, and his maternal grandfather of locomotor ataxia. His mother was of a nervous disposition but otherwise healthy. He was born by the aid of forceps, but the labor was not prolonged nor attended by any serious difficulties. He began to walk early, and no defect in his development or health was noticed until he was 3 years of age, when he began to suffer from diabetes insipidus, which has continued. Three years ago it was first noticed that his gait was affected and it had become steadily worse. His speech, at times, was peculiar. His general health was good. Thirst had always been extreme. Condition on examination showed the patient to be a well developed boy without any noticeable deformity about the head or body. The knee jerks were decidedly increased and there was moderate ankle-clonus on both sides, the wrist, elbow and superficial reflexes were very active. The gait was uncertain and staggering, the feet being placed widely apart. He could not start to do anything quickly. When attempting to walk he hesitated for a moment, started, walked with uncertainty and turned around with difficulty. His speech was slow, the separate syllables being all pronounced. His movements were awkward and often it was with difficulty he could prevent himself from falling backward. He could not stand steadily when his feet were together, nor could he maintain his balance when one foot was placed immediately before the other, even with the eyes open, but he at once fell sideways if the eyes were closed. There were no defects in smell, hearing or taste. A chart of the field of vision showed a bilateral contraction in the outer part for white, a more marked concentric contraction for red and decidedly contracted field for green. Central color sense was good. There was no irregular contraction of the pupils; no appreciable heterophoria with the phorometer, though the right eye appeared to roll upward. Slight nystagmus if the eyes were fixed in an upward position. Abstract in *Montreal Medical Journal*, January.

Section of the Cervical Sympathetic in Exophthalmic Goitre.—Every new operation confirms the success of this measure, and as ablation of the thyroid gland is so often fatal and fails to remove the cause, and thyroid treatment only aggravates this disease, much is hoped from the new operation. Jaboulay now has a record of six cases, and in all the exoph-

thalmus was immediately and enormously improved, but the tachycardia was not benefited in the same measure, although all the symptoms were much attenuated. These results confirm the theoretic basis for the operation, viz., that the disease is due to some permanent excitation of the vaso-dilating fibers of the cervical sympathetic. As the vessels are dilated to an abnormal degree, the eyeball is forced forward, the thyroid gland becomes enlarged, and all the other symptoms of exophthalmic goitre follow, all caused by hyperdistension of the blood vessels dilated by the vaso-motor fibers of the cervical sympathetic or their nuclei. Cutting the fibers therefore prevents further dilatation, and the symptoms pass away. The cardiac fibers, however, are so low down that they are not affected by the operations hitherto attempted, and sectioning the sympathetic or extirpating the ganglia, as has been done, only relieves the region innervated by the sectioned fibers. Total resection of the sympathetic and its three ganglia, which Jonnesco has performed, seems more than is necessary to Abadie, as he remarks in a study of the subject in the *Presse Méd.* of March 3. Theoretically, section of the cervical sympathetic *above* the middle ganglion, or the extirpation of the ganglion, should put an end to the exophthalmus by cutting the fibers that dilate the retrobulbar blood vessels, and section of the cervical sympathetic *below* the middle ganglion should arrest the hypertrophy of the thyroid gland. And in fact, experience is confirming the theory. When the exophthalmus dominates the scene, section of the sympathetic between the middle and superior ganglia should be the preferred operation, as it is simple, easy and effective. But if the goitre is troublesome, the sympathetic should be sectioned below the middle ganglion, a more difficult operation, and in the rare cases in which the tachycardia still persists after all other means have been tried, the efferent fibers of the inferior ganglion should be sectioned.

Tetanus Caused by Bite of Ape, Treated with Antitoxin; Recovery.

A student of the Budapest Veterinary College who had been bitten by an ape on the palm of his left hand was imprudent enough to dissect on the same day a horse which had died from tetanus, and on the following night he was seized with pain in his left hand, but waited till next morning, when he went to Professor Reczey's clinic. The wound of the hand was at once enlarged, thoroughly cleansed with a solution of perchlorid of mercury and subsequently cauterized with caustic potash. He was then sent home, and although advised to present himself at the clinic next day, did not do so, but stayed at home, where he was seized on the following night (November 12) with tetanic convulsions. A neighboring practitioner who was called in ordered large doses chloral-hydrate to be taken every two hours. On November 13 the convulsions increased in frequency and intensity. The patient was conscious, his secretions and excretions were normal, he perspired freely, and his temperature was 107.3 degrees F. He was now given a subcutaneous injection of pilocarpin, which arrested the convulsions for a few hours, but in the evening he was seized again every thirty minutes with convulsions lasting from a minute to a minute and a half. On November 14 pilocarpin was again administered, giving relief for several hours. On November 15 the pilocarpin ceased to be effective, the convulsions came on again twice every hour, and sometimes respiration stopped owing to the spasm of the respiratory muscles, so that artificial respiration had to be resorted to. It was consequently resolved to give the tetanus antitoxin a trial. The antitoxin was given in doses of 3 c.c. thrice daily on November 15, 16 and 17, and once on November 18. The patient's nights were quieter from the beginning of this treatment, and the last of the fits occurred during the night between November 17, and 18. He has been free from convulsions ever since and may be safely considered as recovered. His highest temperature was 109.7 degrees F. on November 17, and the lowest was 95.3 degrees F. on November 20. The special features of this case were: 1. The early development of the tetanus, the period of incubation lasting generally from eight to fourteen days; this rapid onset may be attributed to the obvious fact that the disease was in this case not due to bacillary infection, but rather to the absorption of toxins. 2. The absence of trismus and the absence of troubles connected with the secretory and excretory functions. 3. The marked predominance of very violent clonic convulsions, the characteristic tonic contractions being but little marked.—*London Lancet*, January 23.

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SATURDAY, APRIL 10, 1897.

A WATER SYMPOSIUM.

A special double number, for the months of March and April 1897, of the *Albany Medical Annals*, the journal of the Alumni Association of the Albany Medical College, contains a series of papers on the relation of impure waters to disease, read at the annual meeting of the Medical Society of the State of New York, Jan. 27, 1897. The intention was to present to physicians the many important facts that have been developed by special workers during the past twenty years. Some of the papers are rather elementary, and from their character we would be at liberty to form a somewhat unflattering opinion of the standard of progress among the members of the Society; but we prefer to believe that the authors were in fault in lowering the tone of their papers to the popular instead of merely to the professional plane.

Nothing new is presented in the various contributions, but all the subjects are brought up to current date. The latest observations, investigations and opinions are cited. Malaria is not regarded as propagated by water supplies. It is said that a close study of the literature shows but little reliable evidence in favor of its water-borne origin. This is the view recently taken by the bacteriologists, because they have been unable to find the causative microorganism in water; but it is to be remembered at the same time that they have as yet been unable to find it in air. The evidence of water transmission in amebic dysentery is held to be equally unsatisfactory, but

here it is considered that the probabilities are in favor of the theory. The propagation of cholera by infected water is undoubted, as the presence of the spirillum has been demonstrated. Nor does there appear to be any doubt as to the causation of enteric fever by water, although in no well authenticated instance has the typhoid bacillus been isolated from contaminated water by competent observers in the past few years. It is difficult to detect it even in the stools of typhoid patients. It has been found with a larger percentage of success in the urine; but when found its identification involves so much careful bacteriologic work that a simpler test of its presence is needful for diagnostic purposes than that dependent on its detection and identification. This appears to have recently been discovered by WIDAL in the action of the antitoxin in the serum of the blood of a typhoid patient on pure cultures of the bacillus. The dried blood test as applied by JOHNSTON of Montreal to attenuated cultures is now in use in most of the laboratories of the United States. This, it is hoped, will determine the presence of typhoid infection in the individual. To determine its presence in a water supply, we have only to look at the records of typhoid prevalence or mortality in the community supplied by the water. With a pure water supply the typhoid death rate is low; with a contaminated supply it is high. European cities have low rates because care is given to the purity of water. American cities have high rates because the supply is distributed without purification. Dr. THOMAS B. CARPENTER gives an excellent discussion of methods of bacteriologic purification. All the evidence is in favor of the efficiency of natural sand filtration. Bacteriologic data are not available to determine with precision the efficiency of mechanical filtration, with or without coagulants such as alum or iron; but the typhoid rate of cities supplied by these filters is considerably higher than that of communities having efficient natural filtration. Chemic and electrolytic methods have not proved satisfactory. The nitrification of organic matter in polluted water or sewage in its disposal by irrigation or soil filtration, is held by E. K. DUNHAM to be the best method of preventing the fouling of river waters because this is nature's method of operating.

The discussion thus far was mainly of interest to bacteriologists, health officers and sanitary men; but as so many of the auditors were practicing physicians, it was deemed advisable to give some consideration to the management of typhoid fever, the most important of the diseases caused by contaminated water. It was held that the WOODBRIDGE treatment should be accorded further trial; that the depressant action of the coal tar derivatives should be carefully watched; that the diarrhea of typhoid is salutary and should be gently promoted, but that the main dependence must be placed on hygienic conditions, milk diet and care-

ful nursing. The BRAND treatment, immersion in cool water with active friction of the surface, repeated every three hours so long as the temperature is above 102.5 Fahr. and with the free use of water internally was strongly advocated. The discussion closed with an article on disinfection in the individual case—the disinfection and disposal of the intestinal discharges, urine and bath waters, the disinfection of the bed pan, the thermometer, the rectal syringe and tubes, the hands of nurses, attendants and physicians, door knobs that may have been touched with soiled hands, and of course the bed and body linen of the patient.

The subject of contaminated water is one of great and increasing importance in this country, where cities are growing with phenomenal rapidity. The State Board of Health of Massachusetts led off in the effort to protect the purity of public water supplies, and a few other States are following her example. Discussions such as that under consideration can not fail to have a powerful influence for the public good, and Dr. HENRY HUN of Albany, who organized it and all those who contributed to it deserve the highest credit.

PLUMBING SIMPLIFIED.

Modern sanitary plumbing establishes two lines of defence against the intrusion of sewer air into our dwellings: 1. An exterior line consisting of a water trap on the house drain, with a fresh air inlet to the soil pipe on the house side of the trap. 2. An interior line consisting of a water trap beneath each fixture with a vent pipe on the soil-pipe side of each trap. The first prevents the pipes in the interior of the building from being in any way affected by varying air pressure in the sewers and establishes a ventilating current in the soil pipe itself. The second protects the interior from the intrusion of soil-pipe air and insures the traps against siphonage. The plumbing regulations of most of our cities require each trap to have a vent pipe of suitable size at or near the crown of the trap and extended to the roof, or connected with the soil-pipe line above the highest fixture. No sanitary plumber, sanitary engineer, or sanitarian, has questioned the efficiency of a system constructed in accordance with these requirements. On the contrary, the suggestion occasionally made that internal pressure in the sewers might be relieved through the soil pipes, implies that in the opinion of those making the suggestion the water trap in the house drain and the fresh air inlet to the soil pipe are not essential to the protection of the house; but the objection to the general acceptance of this view is that if any one of the house traps should become unsealed, sewer air would be drafted through it by the warmth of the interior instead of passing up into the atmosphere above the roof through the extension of the soil pipe.

And now comes a sanitary engineer of some prominence, Mr. WILLIAM PAUL GERHARD of New York, who while retaining intact the first line of defence considers the interior line to be unnecessarily complicated and expensive. He is led by years of observation to believe that the trap venting law is a mistake which will ultimately be remedied by repeal. He makes use of non-siphoning water sealed traps and in the case of water closets common S traps with such a depth of trap seal as will not be destroyed by the discharge of other fixtures. In a small building having only one or two fixtures on each floor, he leads each waste into the vertical soil pipe by a separate entrance and, when untrammelled by plumbing regulations, does away with the separate vent pipe for each trap, maintaining that the air movement through the soil pipe will prevent siphonage and that the rush of liquid through the short wastes will keep their interior clean notwithstanding the absence of vents or ventilation. In a large building where several water closets, basins and baths are aggregated on each floor he leads each waste by a separate opening into a branch of the soil pipe. This branch does not begin by a dead end at the distal fixture, but by an open end above the roof, whence it descends of full size to its junction with the soil pipe, receiving its separate wastes near this junction. Its free opening above enables it to act as a vent for the traps connected with it, while its communication below with the ventilated soil pipe gives free passage to an air movement through it. It is not to be expected that this air movement will be as free as that through the direct vertical extension of the soil pipe, but the frequency with which the branch is flushed by the use of its fixtures keeps it practically clean.

There is no question that the separate venting of each trap complicates the piping and adds largely to the expense of our present system of plumbing. If Mr. GERHARD's experience is sustained by further investigation an important modification of the Plumbing Regulations would be warranted. Ten or fifteen years ago every sanitarian would have protested against a proposition to modify them, and even now many who have not given this subject consideration would no doubt promptly vote it down as a backward step in the progress of modern sanitation; but we must remember that the present Regulations with their positive requirement of a vent for every trap were formulated when sewer air was regarded as *sui generis* in its deadly and penetrating qualities, and when it was considered that any deviation from the accepted system might be followed by the most dangerous consequences. In effecting protection at that time it is possible that the pendulum may have swung too far to one side. The knowledge of typhoid fever causation possessed by the profession is better defined now than it was then, so that when a proposition of

this kind comes from an experienced worker and observer in this particular field of sanitation it might be well for municipal authorities to consider the subject with a view to determining whether security with simplification and materially lessened expense might not be attained by a revision of their Plumbing Regulations.

OSTEOPATHY.

The attempts in certain States to legalize the practice of "osteopathy" have attracted the attention of the *Medical Record*, which wonders what this new eccentricity of the West means. It fails to recognize an old exploded quackish system, based on one of the many distorted hypotheses of the reflex origin of the disease, known as "bonesetting." This system, starting from the results of massage, claimed that diseases were the results of irritation about bones, which could be relieved by manipulation. Probably coeval with the evolution of medicine from fetichism, it has always maintained itself among the degenerates who constitute most of the devotees of quackery. In the middle of the 18th century it had such a predominance as, like other forms of quackery, to encounter the satiric pen of HOGARTH. In his "Company of Undertakers" are three prominent quacks, the most recognizable of whom is Madam MAPP, a famous "bonesetter," or "shape mistress" of the third decade of the 18th century. The other two quacks in HOGARTH'S caricature were "drop and pill" WARD (whose remedies gained royal patronage through fees paid the mistresses of GEORGE II.) and "oculist" TAYLOR, who cured all sorts of diseases by operations and manipulations on eyes, after the fashion of the cylinder quackery of today. Both were in great esteem in the society world when its attention was, according to JEFFERSON ("Book about Doctors"), suddenly attracted by a female bonesetter (who, like the "snapping doctors" of early days in Illinois, gloried in enormous feet and hands). "Crazy SALLY of Epsom" was an enormous, fat, ugly, drunken woman, a haunter of fairs, about which she loved to reel screaming and abusive in a state of roaring intoxication. This attractive lady was so much esteemed for skill in her art that the authorities of the watering place at Epsom offered her \$500 yearly to reside there.

"Crazy SALLY" awoke one morning to find herself famous. Patients of rank and wealth flocked in from every quarter. Attracted by her success, an Epsom swain made an offer of marriage to SALLY, which she accepted. Her maiden name of WALLIN (she was the daughter of a Wiltshire "bonesetter" of that name) she exchanged at the altar for that of MAPP. If her marriage were not in all respects fortunate she was not burdened with much of her husband's society. He lived with her only a fortnight, during which he thrashed her soundly thrice and decamped with her

earnings. She found consolation for her wounded affection in the homage of the fashionable world. She became a notoriety of the first water, "a gem of purest ray serene," and every day some interesting tale appeared about her in the London newspapers. The most prominent of these stated that "the cures of the woman bonesetter of Epsom are too many to be enumerated; her bandages are extraordinarily neat and her dexterity in reducing dislocation and setting fractured bones wonderful. She has cured persons who have been twenty years disabled and has given incredible relief in the most difficult cases. The lame come daily to her, and she gets a great deal of money through persons of quality who attended her operations making her presents." How much she paid for this "write up" is not known, but paid "write ups" of quacks were then, as now, essential to "newspaper enterprise."

Mrs. MAPP continued to reside at Epsom, but visited London once a week. Her journeys to and from the metropolis were performed in a chariot drawn by four horses, with servants wearing splendid liveries. She used to put up at the Grecian Coffeehouse, where Sir HANS SLOANE (the founder of the British Museum) witnessed her operations, and was so favorably impressed by them that he put under her charge his hysteric niece, who was suffering from a "spinal" affection. On the stage the following ditty was sung, which (like similar performances in the English music halls and French guinguettes) served at once for satire and (paid for) advertisement:

You surgeons of London, who puzzle your pates,
To ride in your coaches and purchase estates,
Give over for shame, for pride has a fall,
And the doctress of Epsom has outdone you all.

What signifies learning or going to school,
When a woman can do, without learning a rule;
What puts you to nonplus and baffles your art,
For petticoat practice has now got the start.

In physis, as well as in fashion, we find
The newest has always its run with mankind;
Forgot is the bustle 'bout Taylor and Ward,
And Mapp's all the cry, and her fame's on record.

Dame Nature has given a doctor's degree,
She gets all the patients and pockets the fee,
So if you don't instantly prove her a cheat
She'll loll in her carriage whilst you walk the street.

On one occasion as this lady was proceeding in her carriage and four, dressed in a loosely-fitting chemise, manifesting by her manner that she had partaken somewhat too freely of gin, she found herself in a very trying position. Her fat frame, indecorous dress, intoxication, and dazzling equipage were in the eyes of the mob such sure signs of royalty that she was immediately taken for an unpopular mistress of George II. Soon a crowd gathered around the carriage, and with the proper amount of swearing and yelling, were about to break the windows with stones, when the spirited occupant of the vehicle, rose from her seat and letting down the glasses exclaimed with an imprecation more emphatic than polite, "Don't you know

me? I am Mrs. MAPP the bonesetter." This brief address so tickled the humor of the mob that the lady proceeded on her way amidst deafening acclamations and laughter.

Bonesetting early made its appearance and had its own literature in the New England and Middle States, especially in Connecticut. In 1696 the "library" of a certain "Dr." PORTER of Hartford was advertised for sale. It consisted of a "bone-sett book valued at two shillings." Up until 1890, descendants of this Porter did "bonesetting" in New England and extended their ravages to New York City. Bonesetting skill was hereditary and generally transmitted in the female line. In certain respects the female magnetic physician, so boomed of late by the septuagenarian editor of a Chicago newspaper, is a practitioner of the "boneset" hypothesis, who like her Epsom predecessor of old, owes her fame to the "thrill of the touch of her sex." The bills for legalizing "osteopathy" are attempts to evade medical practice acts under pretense of regulating bonesetting practice. Under these bills, could practice the before-mentioned female "magnetic physician," whose circulars have been excluded from the United States mails on the score of indecency. The Iowa legislature has defeated one of these bills and that of Illinois will doubtless do the same. The *Medical Record* however should not be too severely criticised for its ignorance of "osteopathy" albeit a female "osteopathist" or "bonesetters" in the days of its editor's youth created a great furore in New York City. The *Medical Record's* knowledge of either medical history or medical science is, it must charitably be admitted, an unstable quantity. It revived Alexander II., after his encounter with the nihilist, by the use of "oxygen sulphate." A medical journal capable of such a chemical extravaganza can hardly be taken seriously on any subject.

THE DISPENSARY AND HOSPITAL ABUSE IN NEW YORK CITY.

The dispensary and hospital abuse war has virtually opened. The promise is that of long duration, with much acerbity of feeling and a probable ending in much confused legislation. The seat of war is in the Greater New York. Greater demoralization—to continue the favorite adjective of the Knickerbocker State—likewise prevails. Very unexpectedly, the discovery has been made that human nature is no better there than in the distant territories, for committees have made patent to all that "the dispensaries and hospitals, more particularly the out-patient departments of hospitals, were guilty of gross negligence in discharging the trust committed to their care." Worst of all, there comes likewise the usual unhesitating declaration that the abuses are chargeable wholly to the medical practitioners themselves. "And," says the committee, "the doctors, who really lose heavily by the practice of

treating free persons who are abundantly able to pay, are so eager to get dispensary and hospital appointments, and to establish small dispensaries of their own, that, in the opinion of the committee, they cannot be influenced or restrained except by legislative exactment."

Passing by our Excelsior sister's "faith-cunist" bias toward law-making and hospital Saturdays and Sundays, there is after all a modicum of sense in the clearing-house system for the riddance from overlapping charity. We confess to the suspicion that after all there is no monopoly of pauperism or fraud any more than of intelligence or honesty. The Charity Organization Society may do its work effectually, and the enlarged State Board of Charities much more, but self-examination should not fail to reveal the fact that the sinners are very near to home. Let us concede for the sake of argument that the profession itself, somewhat addicted to signing petitions with a mechanical persistency, is really culpable. Let us not gainsay the fact that there has been an over-preachment of benevolence to every medical student in the land, that there has been much beckoning into the halls of learning, that there has been no lack of gaudy perspectives and that there has been an unstinted flow of gold from the reservoirs of the rich. Let us, however, confront the situation at once by the question, Wherein lies the remedy? Let us leave behind us the topic of pauper-making and with it the hope of relief by special legislation.

New York has adopted a general leveling process and requires of her charlatans a better equipment. Might it not be charged that there has been a mingling of codes without much improvement in morals, and that a free field had been given for a sham battle? Furthermore, might there not be a more thorough probing of our own wounds without considering at all the minor complaints of the discouraged whose purses may or may not have been depleted by reason of the counter-prescribing or the fakir with ingenious devices? In very justice, might we not still further ask, have the hospitals or dispensaries done much more than take what the profession has refused? Again, the individual has from time immemorial resented the demand of "your money or your life."

The profession, along with the multitude, of which of course it is only a puny part, has keenly felt the depression of the financial condition and much envied incomes have been at a discount. But the paucity of fees can hardly be chargeable to the rapacity of institutions. The only allegation can be that there has been a lazy distribution of benefits and a quieting of conscience, after the fashion of the revolving prayers of the Chinese. As an outcome of newspaper exploiting, some one or other "memorial" institution enters merrily upon its duties with a political corporation at its back, or a millionaire far in the van. In

the revolution which settles the ultimate distribution "the outs" become "the ins" and the public contents itself with visiting its wrath upon the ambulance surgeon, as the incarnation of the concentrated brutality of his superiors.

We may speak warmly of the commercialism of the day, which is ever coaxing the roar of traffic into every channel, but at the same time can much be looked for in legislation run mad? Can we yet accept the ultimatum of being split into guilds in preference to submitting with dignity to our own calamities? For the present we may have less to do, but can we be deprived of the satisfaction of more thorough work or more deserved if not achieved success? The poor may have marble hearts, but let us not therefore descend to cataloguing our own attainments in the public prints, or express our surprise that photographs should ever be purloined by reporters. Let us remember that we need not give what can not be sold for the highest price, nor preach that common code that the rich must pay for the poor. Let us recall the long ago when we parted from the clergy that we also shared the vows of poverty, chastity and obedience. Above all, "let us have peace."

CORRESPONDENCE.

Reduced Mortality from Consumption in Massachusetts.

BOSTON, MASS., March 29, 1897.

To the Editor:—In your issue of March 27, just received, I find the following quotation from a paper by Dr. A. Walton, entitled a "White City for Consumptives":

"From conversation with prominent men in Massachusetts, where consumption is *rampant*, I am led to believe the State of Massachusetts would infinitely prefer to have a consumptive State home somewhere where there was a possibility that at some time there would be an end to the enormous expense incident to carrying on a consumptive home within its own borders, where they now have such an institution, which is merely the last resting-place of the persons who are received there. People do not go there to be cured; they are supported by the State until such time as death ends their sufferings."

The foregoing paragraph contains so many remarkable mis-statements that I am constrained to make the following comments upon it:

When present times are compared with past, *consumption is not "rampant"* in Massachusetts. As a matter of fact, it is steadily diminishing, the death rate from this cause having fallen off just one-half in fifty years, and if the same rate of decrease continues, we may look for its extinction in the first half of the next century. The death rate from consumption in Massachusetts is no greater than that of Germany, France, Austria or Belgium.

"Massachusetts would infinitely prefer to have a consumptive State home" somewhere else. In reply to this statement, it is only necessary to say that Massachusetts has already indicated her preference by establishing a home within her own borders.

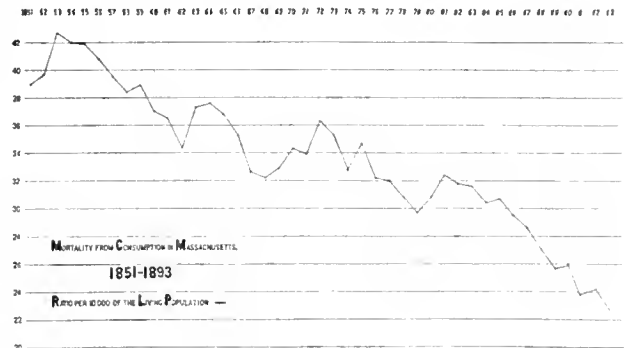
"An end to the enormous expense." Is not the expense of transportation of some thousands of people from New England to New Mexico something of an item?

"The last resting-place of persons who are received there." No persons having been received there, this statement may be discounted.

"People do not go there to be cured." Very true, since no one has ever been there for any purpose except the construction of the hospital.

"They are supported by the State till such time as death ends their sufferings." The writer probably intended this as a prophecy and not as a fact. All honor for good intentions!

The State has indeed established a hospital for consumptives, now in progress of construction on elevated land; a sunny southern slope, 1,200 feet above the sea and about sixty miles from the seacoast. It will be ready for occupancy some time next year, possibly earlier.



With reference to the curability of consumptives by treatment in favorable climates, I have no doubt whatever, but this method does not apply to persons of slender means living at distances of 2,000 miles or more from such regions. Moreover, there is reason to believe that a very considerable proportion of consumptives may be cured, even in unfavorable climates, under proper treatment.

The German government has recently issued a circular in which it commends the establishment of homes for consumptives in the highest terms, stating that by the returning of a small percentage of consumptive wage-earners to their families, nearly two million dollars a year are saved to the government, after deducting the cost of treatment. The circular closes with these words: "If there is any work which is at once a blessing to mankind and also of pecuniary value to the community (*menschenfreundlich und nutzbringend*) it is the establishment of homes for consumptives."

Yours truly, SAMUEL W. ABBOTT, M.D.

"Fish Diet and Leprosy."

NEW YORK, March 29, 1897.

To the Editor:—In your issue of March 27, under heading "Public Health," a paragraph labeled "Fish Diet and Leprosy," you quote from the *London Medical Press*, giving credit to Dr. Hansen of Bergen of some views of my own, which were published originally in the *University Medical Magazine*, January, 1896. The article was translated by Hansen into Norwegian. I sent also a reprint of it to the *Sei-I-Kurui* medical journal, from which Japanese paper the *London Press* quotes. Whether it is originally the *Sei-I-Kurui* which attributes these views to Hansen, I do not know; it is not likely; it may be the *London Medical Press*. At any rate, there is here a slovenliness of medical journalism and literature that is really remarkable. I do not see why these views should seem so very new to most leprologists. I began to expose this theory six years ago. It might be possible, nevertheless, that these views were new to most leprologists, if only the art of printing, electricity, etc., had not been invented some time ago.

Strange to say, Hansen is not one of the advocates of the fish theory, as is shown by the following passage from his book, "Leprosy in its Clinical and Pathological Aspects": "Against Hutchinson's hypothesis there is in the first place the fact that

we have never succeeded in cultivating the bacillus, which, if the bacillus lived as a saprophyte on decaying fish, would be a very simple matter. And there are, secondly, places where the inhabitants certainly and frequently employ decaying fish without the disease appearing. And thirdly, there are many places authoritatively indicated where leprosy is present, and where no fish is eaten."

Very truly yours,

ALBERT S. ASHMEAD, M.D.

Reply to Dr. Anders.

CHICAGO, April 5, 1897.

To the Editor:—In reply to Dr. Anders' inquiry I can say that the First Methodist Episcopal Church of Waukegan, Ill., which has a membership of 300, has used the individual communion cup for four years. It met with general approbation from the beginning, only two or three members refusing to participate. It is a complete success, as the details have been conveniently arranged.

Respectfully,

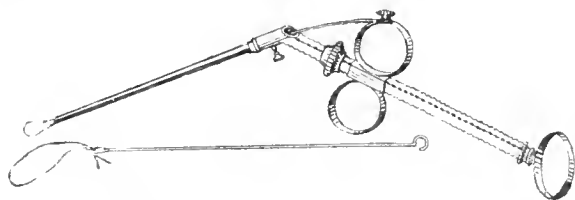
J. M. G. CARTER, M.D.

NEW INSTRUMENTS.

A MODIFICATION OF BOSWORTH'S NASAL AND AURAL SNARE.

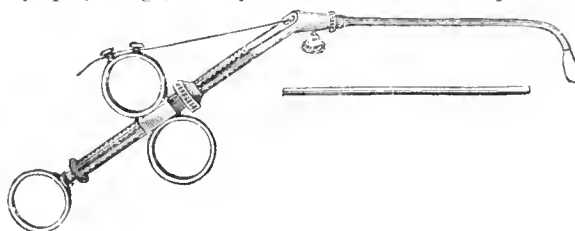
BY P. L. ANDERSON, M.D.
CHICAGO.

Long experience with the various snares on the market has demonstrated that while they all have their individual points of excellence, no one snare combines all of the good qualities without some of the bad ones. The accompanying cuts show by comparison, the simplicity and advantages of the Bosworth snare as modified by the author.



ANDERSON'S MODIFICATION OF BOSWORTH'S SNARE.

Instead of the long wire loop, there is substituted a flexible steel stilette, with one end flattened and having a round eye large enough to receive a double thread of No. 5 piano wire; the other end terminates in a circular hook, the central point of which is in line with the long axis of the stilette. The stilette is inserted into the canula of Bosworth's snare with the eye projecting just beyond the distal end, in position for



BOSWORTH'S SNARE.

threading with the short loop of wire. The other end is hooked around a screw-post set into the upper finger-ring of the sliding handle. This post is provided with a thumb-screw which securely holds in place the hook, allowing the stilette to slide either forward or backward. The advantages of this modification are:

1. The facility for threading the stilette with a short wire loop instead of using the long wire loop and having to pass it through the canula and fasten to the retention pin.
2. The wire loop may be bent to any curve and withdrawn

into the canula so that but about one-half inch of the loop projects, thereby leaving it small and very convenient to introduce into the nose. After it is in the nose, the loop is easily projected farther by the sliding handle, and being of the flexible steel, assumes its original upward, bent position. This allows the operator to introduce the instrument, adjust the loop and complete the snaring by the use of one hand only, which gives the eye a complete view of the entire field of operation and leaves the other hand free to hold the speculum.

3. It is easily taken apart and cleansed after each operation, and is no more expensive than a Bosworth.

84 Dearborn Street.

PUBLIC HEALTH.

The Water Supply at Greater New York.—Among the liberal concessions to the public may be noted the local Board of Health agitation regarding the water supply of the village of Flushing, Long Island. A communication to the State Board has been forwarded requesting the adoption of a resolution providing for the same protection as is already in effect in the Brooklyn water supply. It is to be hoped that the "Borough" of Brooklyn will balk the efforts of its contractors to become of themselves suddenly rich at the expense of the already overburdened tax-payers. Luxuries are very costly.

Contagion in Public Schools.—The New York Health Board staff of medical inspectors reported as the result of their first day's work: Number of boys examined 2,565; girls 1,690; cases of measles, 3; diphtheria, 14; scarlet fever, 1; mumps 3; eye diseases, 35; parasitic diseases of the head, 55; parasitic diseases of the body, 12; chickenpox, 8; cutaneous diseases, 8. These cases were presented by the teachers of the primary departments as being the most under suspicion, the remainder and the higher grades to be examined are not expected to give near the number just reported. The Board, however, think the result justifies the importance of the system, inasmuch as very many parents studiously avoid calling in a physician at all, rating school advantages above every other consideration.

The Bacteriology of Rinderpest.—This epizootic disease was recognized as early as 1715; it again made its appearance in 1745, and in 1865 there was a tremendous outbreak, which led to the Royal Commission and the stamping out order of 1866. Since that time only a small outbreak in 1872 has been recorded, and this was stamped out almost immediately. It is, however, stated to be epizootic in Asiatic Russia, in Hindoostan, Persia, China, and even Ceylon, but on this point it is difficult to obtain very accurate information. From the very first the disease was stamped as contagious, and several attempts have been made to trace the fons et origo mali. Murchison maintained that the cattle plague resembled smallpox in all but the cutaneous eruption, but further acquaintance with the disease did not allow of the analogy being carried very far. The disease, however, runs the course of a specific infective fever, the incubation period is short, the symptoms are marked, and the pathological changes are definite.

The contagion was by Burdon Sanderson localized in the blood as well as in the discharges, and in his report to the commissioners appointed to inquire into the origin and nature of the cattle plague, he pointed out that the serum separated from the blood of an animal suffering from this disease contained the contagium which could be transmitted by experimental infection to other animals. Beale described cocci; Sanderson and Smart of Edinburgh, saw them also, and in 1883 Semner brought up the subject again, and described streptococci as the cause of the disease. Whether these cocci are primary or secondary still remains to be seen and proved, but from the whole nature of the disease we should expect to find some "contagium vivum" as its primary cause—a contagium which is

easily carried, which may be inoculated by flies, and which it is very difficult to render inert in the countries in which the disease is enzootic.—*British Medical Journal*.

Public and Private Filtration of Potable Waters.—Dr. Maxwell Ross, in the *Sanitary Journal*, January, traces the advances made in the last decennium in the above department of sanitary work. It was in 1887 that Piefke, the resident engineer at the Berlin Waterworks, came to the conclusion that the effective barrier to the passage of microorganisms through the sand-filter was the coating of slime which forms on the top. A filter constructed of sterilized sand was found to be absolutely useless. It increased instead of diminishing the number of the organisms. Examination of a section of one of the ordinary working filter-beds showed that nearly five-sixths of all the organisms it had retained were to be found in the surface layer, and that the numbers in successive layers rapidly diminished from above downward. In 1890 Frankel and Piefke, using first a pigment-producing organism, *bacillus violaceus*, and afterward the organisms of cholera and typhoid, showed that sand-filters, even under the most favorable conditions, did not offer an absolute barrier to their passage, but that the numbers which made their way through depended on the rate of filtration and the formation of the slime coating. A study of the Altona outbreak gave origin to the classical paper by Koch on water-filtration and cholera. During the serious epidemic in Hamburg in 1892, Altona, which took its water from the Elbe, contaminated with the Hamburg sewage, but filtered it before distribution, was practically free from the disease.

"At the water-work of that city, which," says Koch, "is fortunately managed by one of our ablest and most experienced filtration-technicians, the rate of 100 millimeters (per hour) was never exceeded during the cholera epidemic, and it was evidently due to this precaution that Altona suffered in so strikingly slight a degree. According to the information at my disposal regarding the cholera in Altona, there were about 500 cases there, of which, however, at least 400 were found to have been introduced from Hamburg, or to have originated through intercourse with the harbor, or must be regarded as emanating from such cases by direct transmission. Of the remaining 100 cases, which can not be directly or indirectly traced to Hamburg, a certain number will nevertheless have been of the same origin, though it was not possible to prove it. Whether among the remnant of cases left after these deductions, which, as having originated independently of Hamburg, form the Altona epidemic proper, there were a certain number of cases which were due to the imperfect cleansing of the infected Elbe water in the sand-filters, can, I suppose, never be decided. After the investigations of Frankel and Piefke, however, which have shown that, at a filtration rate of 100 millimeters, the cholera bacteria are not completely kept back by sand-filters, I think it very probable. But the number of cholera cases that originated in Altona in this manner can not have been at all considerable, and it will probably not be possible to demand that, in order to prevent such isolated cases with certainty in the future, the sand-filters must be enlarged to two or even three times their present dimensions. All that we yet know of sand-filtration, therefore, compels us to admit that, even under the most favorable circumstances, it can not afford absolute protection against infection, though it does afford a protection with which, considering the practical conditions of life, one may rest content."

That such protection is not absolute was shown by the experience of Altona during the following winter. The epidemic had almost entirely died out in Hamburg when a series of cases occurred in Altona which could in no way be connected with Hamburg. The water was suspected, and an investigation showed that the number of germs in the filtered water, which was examined weekly, had increased rapidly immediately before the fresh outbreak.

"The water coming from each filter-bed was then examined separately, and it was found that the increase came from one of them. When the water was drawn off it was seen that the sand-layer was frozen at the top, and was in consequence unable to retain the bacteria. The filter-bed had been cleaned during the cold weather. Other natural agencies may have a similar effect. One of these may be an excess of vegetable growth in summer. When this happens the working of the

filter is liable to be stopped, and if the consumption of water is at its height, too little time may be given for rest after cleansing, and it is immediately after cleansing before the slime coating has properly formed, that the filter is least able to retain bacteria. In addition to these natural agencies, careless or ignorant manipulation of the filter-beds may also expose the consumer to the risk of infection if it should happen that the organisms of infectious disease are present in the water when the disturbances in the filters are allowed to occur. An example of this is the Paisley typhoid epidemic of 1893. There is no doubt that the water supply was implicated in the spread of the disease. Professor Frankland, it is true, did not find the typhoid germ, but, as he very properly pointed out to the commissioners, the failure to find it did not prove that it was not there. He did find an organism closely allied to it, the *bacillus coli communis*, which is normally present in the feces of man and the higher animals."

Koch suggests that a daily bacteriologic examination of the filtrate should be made. Except in times of danger this is hardly necessary, but a frequent examination of the effluent from each filter-bed will always be of value, indicating whether the filter is acting properly or not. Lastly, it must never be forgotten that the protection afforded by sand-filtration is relative, not absolute, and it is therefore incumbent on local authorities and water commissioners and companies to select their supplies from sources as pure as possible.

"To the subject of domestic filtration I can only refer very briefly. Where filtration is done on the large scale it should not be required, but as unfiltered water is not unfrequently disturbed, domestic filters have their use. Their name is legion. Practically, only two can be relied on to remove disease germs. These are the Pasteur-Chamberland and the Berkefeld. The former is made of porcelain clay, the latter of a diatomaceous earth. Both yield a sterile water, but after being in use for a time bacteria begin to appear in the filtrate. The filters must then be re-sterilized. This may be done by boiling or by the use of hydrochloric acid, but some care is required with the Berkefeld as it is brittle. The opinions of experts appear on the whole to be less favorable to it than to the Pasteur-Chamberland. Though it yields a more palatable water it becomes non-effective much sooner. Dr. Johnston's experiments in the public health laboratory of the University of Edinburgh showed that, while the Berkefeld allowed bacteria to pass, in periods varying from three to ten days, after continuous use, the Pasteur filter remained sterile for over six weeks. To the use of this latter filter in the French army has been attributed a great decrease in the mortality from typhoid. At Darjeeling its use in a large institution has been followed by the cessation of a prevalent dysentery, and a large installation is now being prepared for the central water supply of the place—that is to say, utilizing this which has hitherto been a laboratory and domestic filter for filtration on the large scale. The experiment will be watched with much interest."

SOCIETY NEWS.

American Climatological Association.—This Association will hold its annual meeting in Washington, D. C., May 4, 5 and 6, 1897. The sessions will be held daily from 10 A.M. until 1 P.M., in the Columbian University Building. The general sessions of the Congress will be from 2 until 5 P.M., and an annual dinner will be held at the Hotel Normandie on the evening of May 4. The following are the officers: President, E. Fletcher Ingals, M.D., Chicago; vice-presidents, S. A. Fisk, M.D., Denver, J. C. Munro, M.D., Boston; secretary and treasurer, Guy Hinsdale, M.D., Philadelphia.

Texas State Medical Association. The Texas State Medical Association will hold its annual meeting in the city of Paris, Texas, April 27 to 30. Would be pleased to have you contribute a paper to my section, General Medicine. It is our desire to make this the most pleasant, important, as well as profitable meeting in the history of the Association. Will you notify, at once, either Dr. Horatio L. Tate, secretary, Lindale, Texas, or myself, of the title of a paper on some medical subject to be presented by you.

L. ASHTON, M.D.

Chairman Section on General Medicine, Dallas, Texas.

Chicago Medical Society.—The annual meeting of the Chicago Medical Society was held April 5. The election of officers for the ensuing year resulted as follows: President, Dr. Ferdinand Henrotin; first vice-president, Dr. A. D. Bevan; second vice-president, Dr. J. C. Hoag; secretary, Dr. A. R. Edwards; treasurer, Dr. A. R. Reynolds. There was an informal discussion on the outcome of the election and the appointment of a new commissioner of health. It was reported that each of the mayoralty candidates had promised in case of his election to appoint a physician, and no action was taken on the matter. Speeches advocating the passage of the amendment to the medical practice act now before the Legislature were made.

NECROLOGY.

JOHN O. BRONSON, M.D., died March 28 at his home in Rhinebeck, N. Y. He was born in Glastonbury, Conn., Nov. 9, 1827. In 1857 he became professor of anatomy in the New York Medical College (now extinct) from which he was graduated in 1855. During the war he served as a medical director in the departments of the Pacific and of the South, having been commissioned a Surgeon of U. S. Volunteers. He returned to New York, retiring in 1880. He was interested in Florida railroad building and had a country seat in that State. He leaves a widow.

SAMUEL G. ARMOUR, M.D., it has been learned in Brooklyn, died of jungle fever last January in Central Africa, while in the service of the Belgian government. He was graduated at the Long Island College Hospital in 1892, and served as interne for two years. He sailed from New York City for Brussels in February of last year. He landed at Boma, a town at the mouth of Congo River and proceeded overland to Stanley Pool. A part of the mission of his party was to deal with Arab slave hunters. From a letter received about a month before his relatives learned that he was slightly ill. In this he said the command to which he was attached was about to be reinforced by Europeans, after which it would push further into the interior. Dr. Armour had gratified his taste for travel to an unusual extent, having made several trips to Europe, and at the time of the Brazilian revolution having also secured the appointment of the surgeon on the dynamite steamer *Niethe-roy*, formerly the New Orleans steamer *El Cid*, and refitted in New York City.

GEORGE B. TWITCHELL, M.D., died at his home in Keene, N. H., March 30, aged 77 years. He was a Virginian by birth, an alumnus of the University of Pennsylvania Medical College, class of 1843, and surgeon of the 13th New Hampshire Infantry, discharged March 21, 1863.

JONATHAN STRONG CURTIS, M.D., Dartmouth, 1844, died in Hartford, Conn., March 31, in his 76th year.

HENRY WALDBURG COLEMAN, M.D., College of Physicians and Surgeons, N. Y., died in Trenton, N. J., March 30, 1897.

MISCELLANY.

The Columbus Medical Journal has removed from 150 E. Broad St. to its new quarters, 68 Buttle Ave., Columbus, Ohio.

A Long Honorable Life. Dr. de Bossy of Havre, who has just died at the age of 103 years, was the *doyen* of French doctors. Up to the end of January he gave consultations and attended patients regularly.

Good Evidence that Strychnin is a Poison.—The supreme court of South Carolina holds, in *State v. Green*, Jan. 6, 1897, that a physician may be permitted to testify that in his opinion, based upon his reading of standard medical works, that strychnin is a deadly poison.

A Good Prescription. The *New England Medical Monthly* and *The Prescription* have been consolidated and will hereafter be

published as one journal. This consolidation is a wise one, and we doubt not *The Prescription* will be even more agreeable to its progressive readers than in the past and *taken* with avidity. Dr. Wile will continue as editor-in-chief of the joint publication.

College Proceedings.—At the commencement exercises of the medical department of the University of Nashville, held March 23, there were fifty graduates.—The commencement exercises of the Chattanooga Medical College were held March 23; thirty-four students were graduated.—The annual commencement of the Southern Medical College was held March 30.—At the annual commencement of the medical department of the Western University of Pennsylvania, at Pittsburg, there were 105 graduates.—The eighteenth annual commencement of the Central College of Physicians and Surgeons, Indianapolis, was held March 24. There were thirty-four graduates.

Verdict Conclusive.—In *Hedenberg v. Graham*, which was an action brought to recover for professional services as a physician and surgeon, where the defense was neglect of professional duty in the case, the appellate court of Illinois holds, March 8, 1897, that, whether or not, under the evidence, the plaintiff was guilty of neglect of duty, was a question of fact and not one of law, and it being determined in his favor, then the further question of what was the reasonable value of the services rendered by him, became, likewise, one of fact and not of law, and upon both questions it must consider the verdict as conclusive upon it.

Labor for Convicts.—The State Prison Department of New York State "reports the following schedule as being in complete operation. At Auburn, for the manufacture of baskets, cloth, bed-ticking, hollow ware and furniture; at the women's prison, women's underwear and women's clothing; at Clinton, wrappers, tinware, baskets, knit underwear, hosiery, wheelbarrows, shirts, collars and cuffs; at Sing Sing, printing, men's clothing, boots and shoes and office desks; at Auburn a school for instruction in wood carving has also been established." The trades unions, naturally staunch adversaries of competition, procured the introduction of the prohibition clause in the new constitution chiefly on politico-economic theories of what was in reality class legislation. The prisoners themselves now joyfully accept the new conditions as a needed relief from the ennui of solitary monotony and at the least of an imbecility that is inevitable. Dr. Austin Flint, in his address before the New York State Medical Association nearly two years ago, ably advocated the policy now in vogue as benefiting both the State and its criminal wards. "Idleness," said a far-back ancient, "is the devil's workshop."

Bad Indictments.—In the two cases of *State v. Julius A. Pirlet* and *Alexander W. Walter*, respectively, the indictments charged merely that the defendants "did unlawfully practice medicine and surgery, for reward and compensation, against the form of the statute," etc., without setting forth in what the unlawfulness consisted. These indictments, the supreme court of Rhode Island holds bad, and orders quashed, Jan. 22, 1897. In explanation, it says that the rules of criminal pleading require that the offense shall be charged specifically; first, in order that the accused may know precisely what he is to defend, and secondly, that the record of his acquittal or conviction may be a bar to a subsequent prosecution for the same offence.

An Eclectic Pest in England.—The quack, John Ferdinand, was tried before a London court December 17, on the charge of having committed perjury at the coroner's inquest on the death of a woman named Sophia Holliday. The evidence of the prosecution showed that Ferdinand had been a most dangerous pest to society for a long period. Twenty-six years ago he had been convicted of stealing bread, at which time he seems

to have been a plumber and glazier in Somersetshire. He had since carried on business as a quack in Stockton-on-Tees, Manchester, Birmingham, Cheltenham and Swindon, and had advertised himself largely as the possessor of a certain method of curing cancer. He claimed to be a Doctor of Medicine of the United States of America and to have a diploma from an eclectic medical school in Pennsylvania. Doubt was thrown upon the truth of these claims, though from all that we can see they might have been admitted without bettering his case. There is, we need hardly say, no such degree as "M. D., U. S. A.," although certain of these eclectic institutions have long been known to be shops for the sale of licenses to practice gross quackery. Ferdinand was sentenced to twelve months hard labor for perjury, in Mr. Braxton Hick's court, and no one can consider the sentence a heavy one. This fellow has lived for years on the credulity of the sick, has buoyed up miserable men and women with false hopes, has cozened them out of the money that might have been spent in alleviating their misery, and, lastly, in many a case by his pretensions of ability to cure, has prevented them from seeking medical assistance until too late. What is this last crime but manslaughter?—London *Lancet*, December 26.

Porro's Operation Under Difficulties. Six village midwives struggled to relieve a primipara of a child in pelvic presentation with such force that the body of the child was torn from its head, which remained in the uterus with the placenta. The woman was brought to the hospital the seventh day, with severe hemorrhage and an advanced septic endometritis. Lesin performed Porro's operation with success.—*St. Petersb. Med. Woch.*, No. 1, 1897.

Doctors Not Scapegoats for Murderers.—Similar, in effect, to the Iowa decision referred to on page 331 of this volume of the *JOURNAL*, comes one from the supreme court of Alabama, handed down Jan. 27, 1897, in the case of Daughdrill v. State. It says that a defendant can not escape the penalties for an act which in point of fact produces death because death might possibly have been averted by some possible mode of treatment. The true doctrine, it holds, is that where the wound is in itself dangerous to life, mere erroneous treatment of it or of the wounded man suffering from it will afford the defendant no protection against a charge of unlawful homicide. Nor is it necessary to a conviction that the wound should have been "necessarily fatal."

The Pancreas and Other So-called Sweetbreads.—Dr. Parry in *British Medical Journal*, hints at a possible danger to health in the use of thyroid and thymus glands, that may be sold by butchers under the name of sweetbreads. He has made some investigation of the subject and finds that there is a confusion of terms, intentional or otherwise, in the minds of the sellers of meat. He says: In talking to a butcher I was surprised to hear him say that there were three sweetbreads in an animal. I asked him where they were situated and he told me, at the root of the neck, in the cavity of the chest, and in the belly of the animal. I questioned him more closely and discovered that his three sweetbreads corresponded respectively to 1, the thyroid gland; 2, the thymus gland; and 3, the pancreas. To make quite sure that no mistake had been made I watched him, a day or two after, kill and cut up a bullock. The thyroid gland in this animal is situated low down at the root of the neck over the trachea. The thymus (which he told me was bigger in the calf than in the bullock) is placed in a somewhat similar position to where it is in man; while the pancreas (the most important organ) he regarded as the least significant, and told me it was "given in with the liver." He told me, moreover, that if he were asked for calf's sweetbread he would always give (what we call) the thyroid and thymus glands. I have been informed that all butchers do the same thing, though I can not vouch for the accuracy of this statement.

At any rate it seems to me to be right for every physician to be on his guard when ordering "sweetbreads" for his patients that the pancreas be provided and not these other glands. An undercooked calf's thyroid gland being repeatedly given in the place of a real "sweetbread" might, as we know, produce untold mischief in a patient, as well as perplex the mind of the prescribing practitioner in a peculiar and undeserved manner.

Not Evidence of Illness that will Excuse Witness.—An attorney made affidavit that he had had a personal interview with a certain witness, in the presence of her physician, and was informed by her and her physician that the condition of her health was such that it would be impossible for her to attend the trial, and he examined as a witness in open court, without exposing herself to great danger, she being a sufferer from a form of nervous prostration which the excitement of an examination in open court would be certain to aggravate. Upon this affidavit, an order was granted for the examination of the witness before trial. Feb. 12, 1897, the appellate division of the supreme court of New York reversed the order, *Montgomery v. Knickerbacker*, holding that the evidence of the illness of the witness which would prevent her from appearing at the trial was altogether too slight to justify the order.

Inquiry Necessary.—Before a member of a board of governors of an association formed under the provisions of the New Jersey act entitled "An act to provide for the incorporation of associations for the erection and maintenance of hospitals, infirmaries, orphanages, asylums and other charitable institutions," approved March 9, 1877 (Supp. Revision, p. 372), can be removed from his office, the supreme court of New Jersey holds, in *Welch v. Passaic Hospital Association*, Jan. 30, 1897, that there must be an inquiry, and a determination of the neglect of duties imposed upon such member by the constitution and by-laws of such association; and this inquiry and determination can only be made upon notice to him, and an opportunity for him to be heard in his defense. An irregular removal of such member, the court further holds, will warrant the use of the writ of mandamus to restore him to his corporate rights in said board. And the mere fact that a member of such a board, who is a physician, is a member of the medical staff of another hospital, the court apparently does not believe shows a neglect of duty as such board member, or ground for his removal, where neither statute, constitution, nor by-laws renders it inconsistent with his serving in the latter capacity.

Differential Diagnosis of the Cocain Habit.—A medical writer in the European edition of the *New York Herald* has a note on a new diagnostic symptom. The symptomatology of the cocain habit is very similar in its main features to alcoholism and other intoxications: it would even be difficult in the absence of other data to make the differential diagnosis if we did not know the truly characteristic signs, which M. Magnan of Paris, has ascertained. Thus, independently of the marked symptoms of exaltation of the cerebral functions, soon followed by profound depression of the whole system, as is also the case in alcoholism, there occurs a form of hallucination, of general sensation, consisting in the feeling of the existence of foreign bodies beneath the skin. These bodies generally seem to be round in form, similar to grains of sand, and the patient complains of feeling microbes, worms or insects between the skin and flesh. These disagreeable, multiple and movable sense disorders have also been observed by M. Rybakoff of Moscow, who considers them truly characteristic of the chronic use of cocain. On several occasions he diagnosed the cocain habit, which he otherwise would not have suspected, merely by having the patient speak of a sensation of worms beneath the skin, and in each case the hallucination disappeared simply by stopping the cocain habit. Complete and definite suppression of the

alkaloid is naturally the first indication in the treatment of the cocain habit. The disorders that follow the adoption of this radical means, such as loss of appetite, palpitation, insomnia and moral and physical depression, are sufficient to put the patient's will power to a severe test; but they improve little by little, particularly if the physical weakness is treated by tonics, iron, cinchona bark and arsenic. However indispensable it may be to give up the use of cocain, there are nevertheless cases in which half measures are necessary: in other words, in which the dose must be first lessened. This must be done with nervous or weak patients, and with those who have pulmonary or cardiac lesions, with whom absolute suppression may give rise to serious symptoms, such as syncope, collapse or complete loss of control amounting almost to mental disorder.

Washington's Attack of Smallpox. Authentic history records several marvelous instances in which the life of Washington was saved under circumstances seemingly little less than miraculous. One of these wonderful escapes from impending peril occurred during the period of Washington's sole recorded absence from the American continent, when he accompanied his brother Lawrence (then fatally ill with consumption) to the Barbadoes. They sailed in September of 1751, George being then in the twentieth year of his age. Before the brothers had been a fortnight in the island, the younger, the future hero of the Revolution, was attacked with smallpox in its "natural" and virulent form. This disease was not then the fangless monster with which we are familiar, but was terrific in its assaults and almost invariably fatal: yet Washington recovered in something less than three weeks and retained through his life but slight marks of the malady. One of General Washington's biographers well says in reference to this incident in the life of the first president, that, "It may be doubted whether in any of his battles he was in equal danger. If the disease entered an army it was a foe more to be dreaded than embattled hosts. . . . But it belongs to that class of diseases of which, by a mysterious law of our nature, our frames are, generally speaking, susceptible but once. . . . Thus it came to pass that in the morning of his days Washington became (humanly speaking) safe from all future danger from this formidable disease." The reader of our history will remember that the smallpox appeared among the British troops in Boston in the fall of 1775; that it ravaged our army in Canada in the following spring; that it prevailed the same year at Ticonderoga, and in 1777 at Morristown. Regarding this last occasion of its appearance, Washington said, in a letter to Governor Henry, of Virginia, where vaccination was not permitted: "You will pardon my observations on smallpox, because I know it is more destructive to the army than the enemies' sword, and because I shudder whenever I reflect upon the difficulties upon keeping it out." This was the tremendous peril from which Washington was comparatively safe after his twentieth year. "If," says a very eminent writer, "to refer this to an overruling Providence be a superstition, I desire to be accounted superstitious."—*Independent*, February 18.

No Grounds for Damage in Alleged Mental Sufferings.—Before supreme court, appellate division, in New York, the theory held in some States that damages may be awarded for injuries to the emotional nature was negated in the suit of Curtin against a telegraph company, by reason of delay in the delivery of a certain telegram. Justice Barrett, in giving the decision, considered one question only, namely, whether the plaintiff could recover damages for mental distress, causing, as was claimed, physical suffering. This question, the court says, was the crucial one and it must be disposed of adversely to plaintiff, both upon principle and authority. The recent case of Mitchell against the Rochester Railway Company was cited, where the court of appeals held that, although a miscarriage

and consequent illness resulted from fright occasioned by the negligent management of defendant's car and horses, yet the plaintiff could not recover, for the reason that there was no immediate personal injury. "The law looks upon the strict physical injury alone," Justice Barrett says, "and the proximate consequences of the negligent act; not upon the secondary ailment resulting from the primary mental suffering. An injury to the feelings, independently, alone, is something too vague to enter into the domain of pecuniary damages; too illusive to be left, in assessing compensation therefor, to the discretion of a jury. The extent and intensity of such injuries depend largely upon individual temperament and physical, mental and nervous conditions. These conditions are shadowy, unequal and uncertain in the extreme. When they exist in connection with physical injury, they can be examined and tested. Existing alone and independently, they are easily simulated and the simulation is hard to detect. There is, in fact, no genuine congruity between pecuniary loss and isolated mental pain. And if there were, there is no certain means whereby such mental pain can be fairly and accurately compensated."

A Method of Untying the Knots of Silk Ligatures.—At a recent meeting of the New York Obstetrical Society, Grad (*American Gynecological and Obstetrical Journal*, February, 1897, p. 105) described an ingenious method of untying the knots of silk ligatures, especially after hysterectomy. For this purpose a ligature proper is required with one end knotted for ready identification, together with a number of so-called traction-strings. The latter are made of pieces of braided silk, preferably No. 13, about twenty inches long, the two ends of which are tied together. These are designated 1, 2, 3, etc., and are distinguished by a corresponding number of knots. Thus when the operator is ready to fasten his ligature, he slips over the knotted end, let us say, traction-string No. 3, and ties over this with the ligature a single or double knot as he prefers. Then traction-string No. 2 is slipped over the knotted end of the ligature and a second knot is tied. For additional security a third knot may be tied in the ligature, traction-string No. 1 being first slipped over the knotted end of the ligature. The knotted end of the ligature is now cut short and the three traction-strings, with the remaining long end of the ligature, are tied together with a piece of fine silk. At the completion of the operation the separate bundles of traction-strings and ligatures are brought down into the vagina and they serve to facilitate drainage. The same process is repeated in turn with each ligature. If the traction-strings have been properly applied, their subsequent removal and that of the ligature can be easily effected. The patient is placed in the lithotomy position, the bundles of traction-strings and ligatures are pulled out of the vagina, each bundle is separated from its fellows and the thread binding the selected bundle is cut, thus releasing the traction-strings and the long end of the ligature. Traction-string No. 1 is now picked up, and slow but steady traction is made on one-half of it until it is felt to move out of its position. After making this forward and backward motion two or three times the traction-string suddenly comes away and the first knot (the last one tied) is untied. The same maneuvers are repeated with the other traction-strings. All the knots are now untied and the ligature alone remains. A slight pull will suffice for the removal of this. Each bundle of ligatures and traction-strings is treated in the same way until all are removed. An aseptic douche follows, and the patient is returned to her original position in bed without having suffered material discomfort.

A Great Scottish Scholar. The *Lancel* points out with regret how a great British scholar has had his memory slighted, remarking that since Dr. Milligan has been in his grave a half-century, his countrymen are better able to take the measure of his scholarly attainments. He it was who re-discovered

Celsus, "the Roman Hippocrates," but we hunt in vain for his name in the important Dictionary of National Biography; and the same may be said of certain other encyclopedic works of reference that have been consulted. It should not be overlooked, however, that di Renzi, the medical historian of Italy, has given to Dr. Milligan, in his *Bibliographia Celsiana*, an adequate and admiring credit for his rehabilitation of Celsus. We should remember also that Daremberg, the ablest of French historians of medicine, to whom the text and interpretation of Celsus owe so much, makes honorable mention of Milligan's labors; nor do we forget that, in such standard works as Riddle and White's Latin Lexicon, Milligan's edition is the only one referred to. It is, indeed, the single serious attempt yet made by British scholarship to edit the Roman Hippocrates with due regard for purity of text and sufficiency of explanatory comment, and its merits are not passed over in the great *Biographisches Lexikon der Hervorragenden Aerzte aller Zeiten und Voelker*, which was published recently at Vienna and Leipsig. To that treasure house we go for further information as to Edward Milligan, and we learn that he was born in 1784 in Dumfriesshire, that he was destined apparently to the humble lot of a bootmaker, but that he educated himself *zu einem ausgezeichneten Gelehrten* (to be a distinguished scholar) at Edinburgh, where, turning to medicine, he graduated as doctor in 1815, and besides his three editions of Celsus (1826, 1831 and 1839), edited with Latin text and English translation Cullen's "Nosologia," wrote on "The Doses of the Ancient Physicians," and on "The Theory of the Frontal Sinus," and was for years conjoint editor of the *Edinburgh Journal of Medical Science*. He died in London about half a century ago, leaving a record as medical teacher and scholar eminently worthy of notice in his country's "Dictionary of National Biography," and surely deserving of something better at the hands of his compatriots than to be relegated to the pages of a German encyclopedia for a brief acknowledgment of his meritorious life-work.

Liquid Air.—The *Monthly Weather Review* for January, 1897, invites attention to a lecture on "liquid air" delivered January 6, by Dr. Karl Linde of Munich, before the Berlin Society of Engineers. From the report of this lecture we summarize as follows: At certain pressures every gas has certain critical temperatures at which it begins to become fluid. For atmospheric air under a pressure of 39 atmospheres the critical temperature is -140° degrees C; at ordinary pressure or a pressure of one atmosphere -191° degrees C. The question is how to produce this low temperature. One way is first to prepare liquid carbonic acid and by the cold of the evaporation of this substance (-50° degrees C.) to prepare acetylene or some other liquid gas whose boiling point is considerably lower than that of the liquid carbonic acid. This method has now been abandoned as too laborious and expensive. A simpler method is by the compression of the gas and its expansion after cooling. When a gas is compressed it becomes warm; when released so that it occupies its original space there occurs a cooling back to its original temperature. If, however, the heated gas be cooled off while it is still compressed and then allowed to expand there will result a cooling to some point below the original temperature, and this temperature will, in fact, be lower in proportion to the cooling of the compressed gas. An ingenious apparatus has been contrived by which the cooling of the condensed gas is effected by means of its own cooling by expansion. A small metal tube is placed within a larger one, and the compressed gas is forced into the small tube. A throttle valve on the end of the small tube allows a diminution of pressure and at the same time the conduction of a part of the expanded and cooled gas backward through the larger tube. The direction of the flow of the gas through the large tube is therefore opposite to that in the small tube, so that the cooling takes place in the most perfect manner. By the repetition of this process the second diminution of pressure brings the gas down to the ordinary atmospheric pressure and by a second application of the cooling flow in the opposite direction extraordinary

low temperatures are attained and the air itself may be liquefied. Since the liquid air thus obtained will not remain liquid under ordinary conditions but will very rapidly evaporate, it is collected and preserved in glass flasks having double walls. The space between the two walls is exhausted of air but contains a few drops of quicksilver. The mercury evaporates into the vacuous space and forms a mirror by condensation on the cold inner glass wall. This mirror hinders the radiation of heat while the vacuum hinders the conduction of heat. In this way scarcely a thirtieth part of the heat enters the liquid that would under ordinary circumstances penetrate into the interior of the flask. Air is a mixture of nitrogen and oxygen and as nitrogen requires a temperature for its liquefaction lower than that at which oxygen is liquefied it is apparent that at first more oxygen than nitrogen passes into the liquid condition. The liquid exhibited to the audience consisted of about one-third nitrogen and two-thirds oxygen. It demonstrated its richness in oxygen visibly by its delicate blue color, for oxygen is blue and nitrogen colorless. The extreme coldness of the liquid was demonstrated by the formation of fog in the neighboring air, as also by the behavior of the liquid when poured into an enameled dish having the temperature of the room. The liquid circled around until the dish was cooled precisely as in the Leidenfrost experiment when water is dropped into a heated platinum dish. Such extraordinary cold produces burns on human skin similar to those produced by great heat. The lecturer closed by referring to the possible industrial application of liquid air or oxygen. In one hour and with the expenditure of one horse-power five cubic meters of air can be liquefied. When we reflect that for industrial applications pure oxygen is not necessary, but that a mixture of oxygen and nitrogen will suffice, we see at once that here there is really much promise for the future.

The Essentials of Hypnosis.—Dr. Liebault, of Nancy, France, who has been conducting hypnotic experiments for two or more years, avers that he has found males far more susceptible to hypnosis than females, in the proportion of three males to two females. Opinions widely differ as to the reason for this. It is generally thought, however, that it is, strangely enough, because the mind of woman lacks the strength of that of man. It is often true that a person of exceedingly nervous temperament, lacking in a measure ability to concentrate thought, is a very poor subject for the hypnotist. This is shown by the fact that it is rarely possible to actually hypnotize a person whose mind is unbalanced. It is possible to hypnotize 95 per cent. of mankind. The remaining 5 per cent. are impervious to the direction of the hypnotist, let him be of as strong mind as he may. All these persons who are susceptible to the influence of hypnosis are not affected to the same degree by any means. The influence of the hypnotist on woman is very different than upon the sterner sex. It is more difficult for a woman to fix her attention upon a given object than for a man to do so. Just why this is, is not known. Dr. Liebault says that "persons who are easily distracted, who from nature or training have not the power of fixing the attention or concentrating thought, and persons in agitation, those who are heavy and dull, idiots whose brains lack the power of understanding what is required of them—these are the least capable of hypnosis. It simply amounts to this. Sense and activity are subtracted from the subject's mind, and in their place is sleep. That is all there is of it. Once the subject accepts the suggestion of the operator it naturally follows that he will accept suggestions other than those which are first given, but it is absolutely impossible to make a person who is hypnotized perform a crime. No person can be hypnotized against his will. I am fully aware that in saying this, particularly the first assertion made, I am contradicting generally accepted beliefs. Yet I do not hesitate to say what I have said is not only true, but that the statement is the result of thorough, extensive and complete investigation and experiment. It is no deduction from theory, but fact, pure fact. The reason why a man can not be induced to commit crime while under the influence of hypnosis is simply because the power of the hypnotist does not extend that far. A person may be made to become thoroughly

insensible to pain, and his mind may be turned in various directions, up to a certain limit, but, that limit reached, then a halt must be called, or rather, the hypnotist finds himself incapable of forcing further action on the part of his subject. Truly he may make the subject think of crime by offering such a suggestion, but he can not force him to commit action of that sort. It is very plain to the hypnotist who has given the subject thought and who has tested his ideas by experiment that hypnosis, as applied to women to relieve them of frightful pain, is of inestimable value. For instance, in the matter of therapeutics it is exceedingly useful. You see for centuries it has been admitted that there was no medicine that equaled sleep. Therefore, the doctor who can place his patient at a critical time under the influence of hypnosis is really giving her an opportunity to find in that blessed oblivion the relief that can be gained in no other manner, except by the use of anodynes. I am sure that there is no woman who would object to being placed under the influence of hypnosis if she understood how beneficial it would be to her under such circumstances. I do not hesitate to make the assertion that hypnotism is of far greater benefit than the ordinary sleep. Neither sleep nor medicine can approach in power the effect of thought reacting by suggestion upon the organism."

New York.

A GROWING NEED.—The New York Infirmary for Women and Children, beginning as a dispensary in 1854, with a hospital added in 1857 and chartered as a Woman's Medical College in 1864, is receiving not a little encouragement in the way of funds for a suitable building. The last annual report shows a total of 752 patients for hospital and 1,319 for home treatment. A contribution of \$10,000 from a lady who does not wish to exploit her name, has brought the fund up to \$69,000. This institution is both ethical and discriminating, inasmuch as all persons applying for free attendance at home are asked if another doctor has been called in; if so, a letter is required from the doctor stating that the family can no longer afford to pay for medical care. But then, charity should not be too punctilious, lest the tramp falter between the fragments of a plate-glass window and the comforts of the workhouse.

SALE OF THE COLORED HOME AND HOSPITAL PROPERTY.—The Colored Home and Hospital Society, organized in 1839, has prepared to move its site to somewhere in the upper section of the island by the sale of its property to the "City and Suburban Homes Company" for \$210,000, which is a more recent philanthropy. The latter was incorporated only last year, and offers to capital a safe 5 per cent. investment, and at the same time supplies to wage-earners improved wholesome homes at current rates. The first undertaking of the company was the purchase of a tract in 68th and 69th Streets, between Amsterdam and West End Avenues, from the Clark estate, upon which it is now constructing a group of model tenements.

ANOTHER NEW HOSPITAL.—The Nassau Hospital Association are preparing to erect a new hospital on a prominent site at the extreme end of the Garden City Company's property, which will cover an acre of ground. The aim is to complete the building during the summer. The location is more exactly described as being west of the Hempstead and Mineola Railway line and on the outskirts of Mineola township.

A LITTLE BETTER. Governor Black of New York signed on March 30 a bill providing a fee of twenty-five cents from the municipality in which they reside for physicians and midwives reporting births. Clergymen or judges are to receive the same amount for reporting marriages. The reform was undoubtedly suggested by a Massachusetts law, to forestall the objection to the right of any State to demand a service without an equivalent remuneration.

Hospitals.

A NEW BUILDING to replace the present Hospital for Women and Children is to be erected at Central Avenue and Tenth Street, Newark, N. J. It is to be five stories high with two open wards, eighteen private rooms, operating theaters, and as far as practicable the usual modern equipments. The structure is to be of white brick and to be in part ready for occupancy in September.

A FIRE AT A STATE LUNATIC ASYLUM.—The northeast section of the Manhattan State Hospital for the Insane, on Ward's Island, New York city, was burned out early in the evening of March 30. The damage done was to the extent of \$2,000. The 170 male lunatics who were confined in the section escaped without injury and stood with 1,100 other inmates on the broad lawn for over two hours enjoying the work of the island fire brigade and of the city firemen that went to their aid. Efficient use was made of the drill which is gone through with twice daily. The Manhattan Hospital became a State institution on March 1, 1896. Before that it had been called the New York City Hospital for the Insane, part of which was burned down in 1883. The city purchased Ward's Island from the State for \$2,000,000 in 1894 and early in February, 1896, gave the State the free use of the grounds and buildings, without consideration, but with the provision that the State should vacate the premises on fifteen years' notice from the city, the latter to pay for the buildings. Accounts agree in the statement that the mood of the lunatics was that of a subdued jollity, coupled with the dominant delusion that the performance, continuous and spectacular in character, was for their amusement. The estimated loss by this fire is between \$75,000 and \$100,000, but by about August 1 new fire-proof quarters are to be provided. At the present writing arrangements have been made for fifty patients to be sent to the King's Park Department of the Long Island Hospital, a like number to the Central Islip Department of the Manhattan State Hospital, and fifty more to Blackwell's Island.

THE PUBLIC SERVICE.

Army Changes. Official List of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from March 27 to April 2, 1897.

Capt. Julian M. Cabell, Asst. Surgeon, having been found by an Army retiring board incapacitated for active service on account of disability incident to the Service, is by direction of the President retired from active service this date, March 23, 1897. He will proceed to his home.

Major Louis M. Maus, Surgeon, will be relieved from duty at Ft. Sam Houston, Texas, upon the arrival at that post of Major Augustus A. De Loffre, Surgeon, and ordered to repair to Washington, D. C., and report in person to the Surgeon-General of the Army for temporary duty.

Change of Address.

Burchard, W. M., from Lemon City, Fla., to Uncasville, Conn.; Bunta, F. E., from 380 Pearl Street, to 275 Prospect Street, "The Osborne" Cleveland, Ohio; Bradley, C. M., from Decatur to Sublette, Ill.; Bacon, John, from Philadelphia, to Andalusia, Pa.

Crile, Geo. W., from 380 Pearl Street, to 275 Prospect Street, "The Osborne," Cleveland, Ohio.

Ferguson, H. M., from Chicago, to Washington and Liberty Streets, Morris, Ill.; Frisby, E. G., from 803 to 734 Sutler Street, San Francisco, Cal.

Hector, W. S., from 3656 to 3673 State Street, Chicago, Ill.; Hanna, E. A., from 1369 Jackson Blvd., to 725 W. 69th Street, Chicago, Ill.; Henley, A., from Melbourne, Fla., to Fairmount, Ind.

Kerr, Norman, from 111 to 107 Chicago Avenue, Chicago, Ill.

Oyen, A. B., from 807 to 801 N. Rockwell Street, Chicago, Ill.

Smith, J. W., from 2301 to 2313 Washington Avenue, St. Louis, Mo.; Steele, D. C., from Wahpeton, N. Dakota, to Colcato, Minn.

LETTERS RECEIVED.

Anderson, P. L., Chicago, Ill.; Allan, B. A., Louisville, Ky.; Alma Sanitarium Co., Alma, Mich.; Ayres, S. C., Cincinnati, Ohio.

Backen, H. M., Minneapolis, Minn.; Boehringer, C. F. & Soehne, New York, N. Y.; Brooksher, W. R., Ft. Smith, Ark.; Bean, W. B., Latons, Ark.

Cathcart, Cleland & Co., Indianapolis, Ind.; Chadwick The Company, Chadwicks, N. Y.; Cole, G. E., Girard, Kan.; Colorado Sanitarium, Boulder, Colo.

Elliott, A. R., New York, N. Y.; Erwin, C. R., Chicago, Ill.

Falconer, R. C., Lexington, Ky.; Ferguson & Goodnow, (3) Chicago, Ill.; Fessenden Mfg Co., The (2) Pittsburg, Pa.

Green, George W., Battle Creek, Mich.; Guthrie, F. A., Alledo, Ill.

Harvey, G. F., The, Saratoga Springs, N. Y.; Hudson, S. E.; Austin, Texas; Haldenstein, I., New York, N. Y.; Hiltz, Henry B., Milwaukee, Wis.; Harroun & Wilbur, North Wilkesboro, N. C.

Joseph, S., St. Louis, Mo.

Knight, T. Howard, Philadelphia, Pa.

Lord & Thomas, Chicago, Ill.

Murray, J. A., Clearfield, Pa.; Manning, W. B., West Acton, Mass.;

McDavitt, Thos., St. Paul, Minn.; Marshall, John S., Elyria, Ohio.

Norbury, Frank P., St. Louis, Mo.; New York Medical Book Co., New York, N. Y.

Ott, Isaac, Philadelphia, Pa.

Pacific Electric Co., La Crosse, Wis.; Pasteur Vaccine Co., Chicago, Ill.; Patterson Home, Grand Rapids, Mich.; Pope, Curran, Louisville, Ky.; Parke, Davis & Co., Detroit, Mich.; Polk, J. T., Greenwood, Ind.

Reed & Carnrick, New York, N. Y.

Sternberg, Geo. M., Washington, D. C.; Stearns, F. & Co., Detroit, Mich.; Stewart, P. H., Paducah, Ky.

The Proctor & Collier Co., Cincinnati, Ohio; Tobey, H. A., Toledo, Ohio.

Wingate, U. O. B., Milwaukee, Wis.; White Rock Mineral Spring Co., Waukesha, Wis.; Whitefield, S. T., Uniontown, Ala.; Williams, H. S., Durango, Colo.; Ward, W. A., Conneaut, Ohio; Whelpley, H. M., St. Louis, Mo.

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ORIGINAL ARTICLES.

THE USE AND ABUSE OF EXPERT MEDICAL AND SURGICAL TESTIMONY AND SOME RECOMMENDATIONS FOR INCREASING THE VALUE OF SUCH TESTIMONY.

Read at the Third Annual Meeting of the American Academy of Railway Surgeons, held at Chicago, Sept. 23, 24 and 25, 1896.

BY ROBERT MATHER.

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CHICAGO, ILL.

Expert testimony has no logical place in the common law theory of trial by jury. The admission of it, indeed, violates one of the cardinal principles on which the system is founded. The legitimate function of testimony in courts of law is to make known the facts relative to the cause in controversy. Inasmuch as these facts in general rest in the knowledge and recollection of persons, the ordinary medium for the ascertainment of them is the living witness. Owing to the infirmities of human nature, it results that the facts made known in a legal controversy through this medium are often, if not always, uncertain, confusing and contradictory. To deduce from this mass of uncertainty, confusion and contradiction a just conclusion as to the truth of the matter is the proper province of the jury. It is the theory of the law that in the process by which the jury deduce from the mass of facts laid before them the ultimate conclusion of fact which forms the basis of their verdict, both the judge and the witness are rigidly excluded. The judge is confined to the dry domain of the law; the witness to the bare region of fact. Into the bright realm of speculation upon the facts, where are conceived and brought forth those marvelous children of chance known as jury verdicts, neither may enter. The lot of the witness in this respect is even harder than that of the judge. The latter is not confined to telling the jury what he *knows* the law to be; he may, and frequently does, instruct them as to what he *thinks* it to be. But the pent-up witness is limited to the bare recital of what he knows. He may not enliven his wearisome tale by interspersing the facts with his theories; nor may he lighten the arduous labors of the jury by giving them the benefit of his opinion on the facts. Indeed, the rigid and constant effort of the theory of the law of evidence is to prevent any expression of opinion on the part of the witness.

To this general rule, the expert witness is the anomalous exception. Indeed, it is a misnomer even to call him a witness. He may have, and as a rule has, no knowledge of the facts out of which the controversy arose. He is called to tell not what he knows but what he thinks; not to relate facts but to rehearse opinions.

The reason for such a startling departure from the

fundamental rule of evidence which excludes the opinion of a witness, rests on a recognized defect in our jury system. It is admitted, as the basis of this exception to the general rule, that there are certain classes of fact from which the ordinary juror is not so well qualified to draw a just and correct inference as are men who have made such facts, their phenomena and their laws, the subject of special investigation and study. And so, such facts being in evidence, the expert—the man experienced in the science or art to which these facts belong—is called, not to add to the mass of facts involved in the controversy, but to assist the jury in the performance of its legitimate function of deducing inferences from the facts. In other words, the expert witness is not properly a witness at all, but rather an assistant to the jury.

The expert was an early graft on the growth of the law of evidence; and it is an instructive and significant fact that it was in the capacity of an assistant to the court that he first won his anomalous place in our system of jurisprudence. His first appearance was as an adviser of the court or judge in matters of science or learning in which the court admitted its deficiency. In a case decided as early as 1555, it was said by Saunders, J.: "And first I grant, that if matters arise in our law which concern other science or faculties, we commonly apply for the aid of that science or faculty which it concerns. Which is an honorable and commendable thing in our law. For thereby it appears that we do not despise all other sciences but our own, but we approve of them and encourage them as things worthy of commendation. And, therefore, in 7 H. 6 in a case that came before the judges, which was determinable in our law, and also touched upon the civil law, they were well content to hear Huls, who was a bachelor of both laws, argue and discourse upon logic and upon the difference between *compulsione previsa et causativa*, as men that were not above being instructed and made wiser by him. And in an appeal of mayhem the judges of our law have used to be informed by surgeons whether it be a mayhem or not, because their knowledge and skill can best discern it." (Buckley v. Rice Thomas, 1 Plowd. 122.)

How much the science of medicine and surgery owes to this complacent approval and encouragement of it, as a "thing worthy of commendation," by this ancient spokesman of the law, is not for a lawyer, speaking to physicians and surgeons, to say. We of both professions are more interested to note that, when the law first pressed the physician and surgeon into its service as an expert, it was in the capacity of instructor to the court.

The case from which my quotation is taken is both instructive as to the then position of the expert witness in the law, and prophetic of his fall from grace. It was a contested election case. Buckley, a Knight of Anglesea County, in Wales, sued Rice Thomas, sheriff of the county, to recover a penalty for return-

ing one Lewis as the duly elected member of Parliament, whereas Buckley claimed the election. Buckley's lawyer alleged in his declaration that although (*licet*) he was elected, nevertheless the defendant did not return him, but Lewis, as the chosen Knight. The sheriff's lawyer, with scholastic acuteness, demurred on the ground that this allegation did not amount to a positive affirmation that Buckley *was* elected. The discussion of this important issue was opened by Staunford, Puisne Justice, thus learnedly:

"Then it is to be seen how the plaintiff has here alleged that he was chosen a Knight to come to Parliament. And it seems to me that he has not alleged it by a full affirmation. And thereupon the meaning of this word (*licet*) ought to be weighed and discussed. And in order to understand it truly, being a Latin word, we ought to follow the steps of our predecessors, judges of the law, who, when they were in doubt about the meaning of any Latin words, enquired how those that were skilled in the study thereof took them, and pursued their construction. . . . So in 9 H. 7, it appears that one was bound in an obligation upon this condition, that if he paid £5 of fine gold, that then etc., and the obligation was *puri auri*, and there the judges were in doubt what was Latin for *fine* gold, and (as it appears by the book) the masters of grammar were put to give their opinion what was Latin for *fine*, and they could not tell. So that our predecessors have always consulted about the meaning of Latin words with grammarians and others that best understood them, and such sense as the grammar warrants and allows they have admitted; wherefore I apprehend that the grammar is the most proper judge of the meaning of this word, *licet* being a Latin word."

Whether recourse was had, in this case, to the grammars, rather than to the grammarians, as in the case cited from the time of Henry VII., because of the unsoundness of the latter experts on the gold question, does not appear; but it is certain that the result of calling the grammars as expert witnesses foreshadowed the modern decadence of expert testimony. The grammars called upon seem, like the modern experts, to have taken sides and swore point-blank against each other, so that when their testimony was duly considered, the judges were unable to agree. The plaintiff's grammar, however, prevailed over that relied upon by defendant: the majority of the court were convinced that *licet* could, and did, introduce a full and precise affirmation, and the plaintiff was successful in his suit. Posterity would doubtless reverse that judgment if the record were thus open to review, not on the ground that the court misconstrued the Latin word, but because civilized sentiment would deny that the plaintiff had suffered damage by the sheriff's false return. For the parliament to which the litigious knight was elected, but in which he was saved the odium of sitting, was the execrated body that revived the barbarous statutes of Henry IV. for the punishment of heretics; and while the sapient judges of the law were maundering at Westminster over the meaning of *licet*, the recalcitrant Protestants were burning at Smithfield. The man who was prevented from sharing in that infamy ought not to be heard to complain.

The disgraceful disagreement of the grammars in Buckley's case, I have said, foreshadowed the decline of the expert witness both in usefulness and in the public estimation. It was, however, an early, though a sure antetype, and for more than two centuries after

that case was decided the expert maintained his honorable and trusted position as *amicus curiæ*. A case decided in 1782 is the first, so far as I know, to reveal him in his well-known modern character of the retained advocate of a party. In that case Lord Mansfield granted a new trial on the ground that the witness had been surprised on the trial by the testimony of an expert called by his adversary on a question of science involved in the cause. It was held that he was entitled to pit his expert against that of his opponent, his Lordship saying: "In matters of science, the reasonings of men of science can only be answered by men of science." (*Folkes v. Chadd*, 3 Doug., 157.)

This was the first step in the downward path of the expert. The right, thus established, on the part of the suitor to call his own expert to help prove his case was eagerly embraced and promptly abused. The expert was soon no longer consulted by the court or called to aid the jury, but was retained on one side or the other of a controversy, in the expectation, which was seldom disappointed, that his testimony, like that of other witnesses called on the same side, would help that side to prevail. The skill, the wisdom and the reputation of science were employed through the medium of the expert, not to work justice, but to win cases. The high place that was set apart, by a modification of the true genius and theory of our system of evidence for an expert adviser and assistant of the court and jury, was filled by the paid partisans of litigants. And thus the humility of the law, which was willing to be instructed and aided by its sister sciences, in its efforts for the attainment of equal and exact justice, has been cheated of its hope.

I do not mean to say that science and its devotees are alone responsible for this departure by the expert from the high path of usefulness and honor which the original conception of his functions opened up before him. I think it more than probable that he was seduced from that path by the allurements of the advocate of the law, though it must be admitted that the retainer which now always accompanies the employment of the expert witness, has been both the price of his honor and the cause, in part at least, of his downfall. When the practice of paying fancy retainers to scientific witnesses first came in vogue I do not know, but I doubt if the grammarians, the doctors of the civil law, the physicians and engineers called upon to advise the court and assist the jury in matters relating to their respective sciences, from the troublesome times of Philip and Mary to the golden age of the English common law when a Mansfield sat in judgment, took pay for their opinions from either side of the controversy in which they testified. The modern plan of paying such retainers still has its bitter opponents. (See article on "Expert Testimony," 138 *N. Am. Review*, 605.) The force of the proposition must be admitted that a witness should not be compelled to devote to the public good the special knowledge and skill which he has only been able to acquire by special study and investigation, without receiving special compensation therefor. This much might be conceded and there would still be room in the argument for the proposition that the witness who parts with his knowledge only for such a consideration, is hardly entitled to be called *amicus curiæ*.

The real evil, however, is not in the fact that the expert is paid a special retainer, but that the retainer is paid by the party who calls him to testify. The

influence of this fact reaches in two directions; it corrupts the witness and it weakens the weight of his testimony with the jury. I make no apology for the statement, in the presence of men who are constantly called as expert witnesses, that the practice of paying such witnesses retainers on one side or the other of a legal controversy, corrupts the witness. No charge of moral turpitude is intended by the assertion. It is no doubt natural that a witness thus retained, knowing the result which the party who retains him hopes for in the verdict of the jury, should begin his investigation into the facts of the case with a lively hope that they might justify inferences tending to produce that result; that he should seize eagerly upon the facts that have such a tendency, and look coldly and with critical eye upon those that point another way; and that he should finally reach a conclusion in harmony with the spirit that has controlled his investigation and in consonance with his client's desires. The influence of the retainer upon both process and result, in such a case, is more insidious than open. The most mentally honest may not even be sensible of its operation, nevertheless it is there, working out its result with more or less directness and certainty.

In no class of cases is this influence unfelt. I venture to say in this presence that the discriminating railway lawyer frequently has occasion to doubt the entire fairness of the report and prognosis of the surgeon of his road in cases involving what may be called concealed injuries. The interest of the surgeon in his employer's affairs, his natural desire to save that employer from heavy loss, a pardonable pride to justify his selection as its medical adviser, trace their origin directly to the retainer or salary that secures his services. These sympathies, together with the conviction that long experience in the similar cases of his client has forced upon him that many of such claims are wholly feigned or largely exaggerated, have all, consciously or not, entered into the process that has led him to the opinion given to the legal adviser of the company. He may be, and undoubtedly is, mentally and morally honest in his conclusions, but to the extent to which his view has been perverted and his judgment affected by these considerations, he has been corrupted by them. The situation would not be so bad if the corrupting influence of the retainer were always of the unconscious character which I have described. Unfortunately, it must be admitted that the retainer is often both given and accepted in the literal sense of the term, as a sum paid to retain the knowledge, skill and reputation of the so-called witness in the sole interest of the party who pays the fee. In such a case the influence of the retainer is direct, open and convincing. The effort of the expert thus retained, is not to lead the jury by correct and impartial deductions from the facts in evidence to a just conclusion as between the contending claims, but to develop, fortify, present and defend a theory, which, if accepted by the jury, will win his client's cause. I think I have not been unduly harsh in stigmatizing such a sale of professional standing, learning and skill as corruption; a better term would be prostitution.

A second effect of the practice of retaining experts as witnesses is to minimize and degrade the value of their testimony. A prime requisite to the credibility of testimony is that it should be disinterested and impartial. The witness to the ordinary facts of a legal controversy, though called by and friendly to one of the parties as against the other, must, if he would

have his testimony weigh with the jury, relate his facts with absolute and apparent impartiality. The least inclination on his part to color his narrative for the benefit of the party producing him, discredits him as a witness and casts a cloud upon his testimony. What, then, must be the position of the expert, who it is known in advance has been *hired* to testify in favor of the party calling him, and whose sole effort on the stand is to demonstrate that the laborer is worthy of his hire? I could weary your patience with extracts from judicial opinions which describe in more or less forcible and picturesque terms, the degraded position of the expert before the courts and the slight esteem in which his testimony is held. Your own experience, no doubt, makes such a recital unnecessary. One writer, speaking of the fee system, has said:

"Hence it is that, apart from the partisan temper more or less common to experts, their utterances, now that they have as a class become the retained agents of the parties, have lost all judicial authority, and are entitled only to the weight which a sound and cautious criticism would award to the testimony itself."—Isaac T. Woodson in *III Kentucky Law Reporter*, 477.

The method provided by the machinery of the courts for testing the worth of the expert's testimony by "a sound and cautious criticism," deserves a passing notice. The reason for calling the expert as a witness must be borne in mind:

"It is not because a man has a reputation for sagacity, and judgment, and power of reasoning, that his opinion is admissible; if so, such men might be called in all cases to advise the jury, and it would change the mode of trial. But it is because a man's professional pursuits, his peculiar skill and knowledge in some department of science, not common to men in general, enable him to draw an inference, where men of common experience, after all the facts proved, would be left in doubt."—Shaw, C. J., in *New England Co. v. Lovell*, 7 Cush., 319.

The man thus qualified to draw an inference which the jury must deduce before they can reach a verdict but which, owing to their want of knowledge and skill in that branch of science, they are unable to draw, is called before them to tell them what the proper inference is. He gives his opinion and his reasons for it. An advocate, more or less learned in the law, and superficially prepared for the purpose with the assistance of the opposing expert, puts the witness through a cross-examination, the object of which is not to learn the truth, but to demonstrate that his opinion is wrong, his reasons unsound, and the witness himself either ignorant, dishonest or ridiculous. The expert on the other side is then called and gives a contrary opinion, with grave and weighty reasons in support of it. The opposing lawyer then tries by cross-examination to show that this witness is as ridiculous, dishonest, ignorant and unsound as his own expert. The whole matter is then referred to the jury, who were admittedly, at the outset, incapable of drawing a correct inference, but who, edified and instructed by the dignified performance that has taken place before them, are now expected to give to the conflicting theories of the experts "the weight which a sound and cautious criticism would award" to them. The wisdom of such a final reference must be apparent: the capacity of the ordinary jury for "sound and cautious criticism" in matters of science needs no eulogy here.

This evil, however, if it be an evil, can hardly be

remedied until we shall change materially our method of determining questions of fact. The really vital abuse of expert testimony, and the one which is susceptible of speedy correction, is the practice of retaining the expert as a partisan advocate. Indeed, I am inclined to think that the correction of this evil will tend largely to the lessening, if it does not accomplish the abrogation, of the other. I believe, in my optimistic ignorance, that when experts shall resume their true relation to the court and jury, as advisers and assistants, there will be fewer disagreements among them than under the present system, and that such as shall occur, being honest differences of opinion, uncreated and uninfluenced by interest or partisan zeal, will be more readily and more decently reconciled. None would more quickly recognize or more readily bow to this changed condition of affairs than the members of the bar. There is no occupation that is less fruitful of results to the client or of reputation to the lawyer, than the cross-examination of an honest, intelligent and impartial witness. It is only against the ignorant, the prejudiced or the corrupt, that cross-examination is a fatal, or even an effective, weapon. And when science occupies, in the presence of its experts, the position of an honest, wise and disinterested adviser of the court and jury, the efforts to discredit both its processes, its conclusions and its representatives, to which the legal profession is now driven perforce, will, by losing their efficacy, lose their place in our trials.

The remedy for the apparent abuses of expert testimony lies in the designation by the court in each case of the experts who shall be called to testify. There is no novelty in this suggestion; it has been frequently and ably urged and, I believe, already commends itself to the honest judgment of both our professions. It will be observed, however, that I have used the term "designation" rather than "selection" by the court. If we always and everywhere had a judiciary that was able, impartial and strictly just, from which prejudice, partisanship and demagoguery were absolutely removed, I should favor the sole selection of experts by the judges. But even my limited experience and observation make it safe to say, without injustice to the judiciary here or elsewhere, that there are tribunals in which both the parties and the blind goddess herself would prefer that the experts whose opinions are to guide the jury to a correct conclusion, should be selected by the litigants. The parties, therefore, should be given an opportunity to agree, the court to make the selection in case of disagreement. But whether agreed upon by the parties or selected by the judge, the experts should receive their appointment from the court. They should be officers of the court, sworn and acting as its commissioners for the better ascertainment of the truth.

This plan would remove the root of existing evils, the retainer system. The cause of the discredit in which expert testimony is now held being thus removed, the effect would disappear. The expert would be restored to his ancient and legitimate function of adviser to the court and jury, and, in this character, would win back his place in the confidence of the courts and the community. The use of science in the courts would be consecrated to the task of solving, instead of obscuring and confusing, those difficult questions which the law, without the aid of science, admits its incapacity properly to solve. More than this, the plan would insure the selection of actual experts. The medical

profession, especially, knows how little this term means in our courts. As the law now stands, the preliminary examination into the qualifications of medical men who are presented as expert witnesses is mere mummery, meaning nothing. With but very slight reservation the statement may be made that any one who practices medicine, no matter of what school, or with what little pretension to preparation, scholarship or experience may be permitted to swear to his opinion of the cause, course and probable duration and effect of the most hidden injury or the most mysterious malady. The veteran practitioner and the novice; the disciple of approved schools and the herald of a new propaganda; the profound scholar and the sciolist, all are presented to the jury with the equal sanction of the law, under the comprehensive description of "experts." Under this common guise trickery poses as skill, and assurance as wisdom. Those are the most efficient experts who can most plausibly present and most boldly defend the theory required by the exigencies of the side on which they are retained. This faculty is not a necessary accompaniment of professional learning, skill and reputation, and is not seldom found, in most effective degree, among that class of whom it has been said that their "confidence, in many cases, bears a direct similitude and ratio to their ignorance." The appointment of expert witnesses by the court would exclude this class of men and would insure the calling of experts who are not only impartial and disinterested, but who are best qualified to express an opinion on the case before the court. The parties, knowing that neither could make use of a partisan witness, would both be interested in having the witness whom the court should call chosen from those most competent to form an opinion on the particular case. The learned would not be called upon to pit their opinion against that of the ignorant, nor the honest against the unscrupulous. Character, rather than acuteness, would count in the choice of experts; learning and skill would take precedence of glibness and pretension. Thus science would be represented in the courts by its nobler disciples, and, while justice would be better served, science would gain in reputation.

Of course practical difficulties present themselves, as they do in the path of every advance. What shall be done with the practitioner who has attended a case from its inception to the time it has become the basis of a suit, and on to the time of trial? He is clearly a competent witness to detail the facts as to his patient's condition. Shall he be confined to a recital of these facts? Or shall he be permitted, though not a court expert, to express his opinion on those questions as to which expert testimony is admissible? Assuming him to be the equal of the official experts in learning and skill, he would seem, from his long and intimate acquaintance with the case, better qualified than they to form an opinion on these questions. Yet he comes in the character of the partisan and has the taint of the retainer about him. Professional pride, as well as personal pride of opinion, sway him irresistibly to the defense of the diagnosis on which his treatment of the case has proceeded, especially if that view of the case should be questioned or assailed by the experts. But, while there is danger in the admission of his testimony as an expert, there seems to be injustice in the exclusion of it; and the better judgment, I am satisfied, would admit it, trusting that his prejudice or ignorance, if his testimony should reveal either, would

find their foil in the wisdom and disinterestedness of the experts of the court.

A minor difficulty might be met in disposing of the question of compensation for the experts. Such is my opinion of the value of professional services, being a professional man myself, that I concede the right of an expert to a reasonable, and even a liberal fee. Nor would I keep the word of promise to the ear and break it to the hope by leaving him, for the payment of his fee, to the hazard of the collection of a bill of costs. The payment of his fee should be required of the party demanding the appointment of experts, and as a condition precedent to the appointment.

A more serious difficulty would be encountered in determining in what manner the expert should give his testimony or make his report, and how it should be treated when received. A logical adherence to the theory that the expert is the assistant and adviser of court and jury in matters about which both are ignorant would require that he report his opinion, with his reasons, orally or in writing, and that the jury should accept the opinion as conclusive of the question on which it bears. Of course, where opinions of experts differ, the jury, as in the case of conflicting testimony as to facts, must reconcile them, when possible, and accept that which is most reasonable, where the conflict is irreconcilable. And in this process of reconciling, accepting and rejecting, I suppose that cross-examination must be admitted to play its part, though the moment the official expert submits to cross-examination he loses something of his dignity and independence as an agency and officer of the court. In France, where the plan is in operation of appointing experts as court officials, the court not only selects the experts where the parties can not agree, but determines what questions shall be put to them. American lawyers, I think, would object to that method of procedure here. In Scotland the experts make a written report, upon which they are subject to cross-examination. Such a system might not be wholly unacceptable in our courts. Certain it is, that doubts as to the proper mode of procedure should not long obstruct such a needed reform.

(To be continued.)

PERIODICITY, A PHYSIOLOGIC LAW IN THE MALE SEX AS WELL AS IN THE FEMALE.

BY H. L. GREEN, M.D.

MT. PLEASANT, IOWA.

"The proper study of mankind is man."—Pope.

The importance of a physiologic law of periodicity in the male, granting for the sake of argument such to be the fact, must needs be in its effect upon the human understanding so vast as to be scarcely of comprehension. And in its politico-economic influence of no less importance to the statesman than it is to the physician. Let us look at the scope of its application in figures in order to gain an approximate idea of the vastness of its application and influence. Just when puberty and the first orgasm, accompanied by the elimination of the male fecundating fluid, begins is not fixed at any definite year. Approximately, however, we know this with even more certainty than we do when it ceases.

"That women are menstruant and men pubescent at the year of twice seven is accounted a practical truth," Browne, "Vulgar Errors," Book, iv, chapter xii.

We know its beginning is nearer 15 than 21. It will be of interest to note, as we are endeavoring to obtain some idea of its proportions, how often it will recur in the course of the individual lifetime, in that of all virile average men, in each generation and also its volume, its comparative and its intrinsic value, etc. Supposing that under the assumed physiologic law of periodicity we place it in round numbers at once a month or every thirty days, as we often do with women and for convenience in figuring, although we know it to be considerably oftener than this. Such laws are rather empiric at best. But what are we to consider a natural lifetime. Can we assert with certainty a physiologic law for the duration of life? Here we are again at sea. If there is such a law, where are we to find it? We may take tradition for it, but here we find nothing definite. Taking history we find it in the first place to be fixed at 120 years—Genesis, i, 3, or again at 70. Psalm, xc, 10. Preferring a scientific view of the matter, while wishing to be just to all sources of evidence we will examine the theories of M. Flourens, the distinguished French physiologist and "perpetual secretary of the Paris Academy of Science," deceased 1867, sets the normal period of life at 100 years. The grounds upon which this conclusion rests are based on the fact in natural history that the length of each animal's life is in exact proportion to the period it is in growing. M. Flourens, from his own observations and those of his predecessors, concluded the life in the different species of animals to be *five* times as long as the period of growth. The period at which animals leave off growing, or, to speak more correctly, the precise circumstances which indicates that growth has ceased, M. Flourens ascertained to be, "in the union of the bones to their epiphyses. As long as the bones are not united to their epiphyses the animal grows; as soon as the bones are united to their epiphyses the animal ceases to grow." Now, in man the union of the bones and their epiphyses take place at the age of 20. Consequently M. Flourens preclaims that "the natural duration of human life is five times twenty years, or one century." Applied to domestic animals, M. Flourens' theory has, he tells us, been proved correct. "The union of the bones with the epiphyses," he says, "takes place in the camel at 8 years of age, and he lives 40 years; in the horse at 5 years and he lives 25 years; in the ox at 4 years and he lives 15 to 20; in the dog at 2 years and he lives from 10 to 12 years; in the lion at 4 years and he lives 20." That man does not in these latter days live out his allotted time M. Flourens triumphantly explains in these words: "With our manners, our passions, our torments, man kills himself." Viewed in these modern days sixty-five years would seem a fair guess at the duration of life. In the medical profession the duration of life has been approximately given at sixty years (JOURNAL, Jan. 2, 1897). Let us strike an average on these different estimates 120, 70, 100, 65 and 60 years—we find 83 years to be the period for a lifetime where the uninterrupted course of nature runs her consistent course. Lopping off fifteen years as an equivalent of the period preceding puberty for the time in old age when vitality may be considered to cease, we have left 68 years. This physiologic period is subject to further reduction by war, pestilence, disease, accident and unphysiologic living to about one-half, giving us 34 years as the basis on which to figure virile activity to the individual; and at once a month he will have

in a lifetime 12 times 34, or 408, recurrences of the physiologic sexual cycle.

On the basis of the statistics which show the *paler familias* in the proportion as one to five, or, on that of the voter, which is the same ratio, and taking the earth at 1,500,000,000 inhabitants, we have 300,000,000 cycles recurrent 408 times in a life period (34 years) or 122,400,000,000 to the generation. If a person were able to count at the rate of 200 in a minute and were to work without intermission 12 hours in a day he would take 850,000 days, or 2,328 years and 280 days to count them. Again, taking the volume of these at each individual cycle (*vide infra*) at half an ounce we have 478,125,000 gallons; which to count as before would require 9 years and 25 days. What is the value of this vast amount of fluid in which such latent possibilities lie dormant?

Now what of the intrinsic value? Only one-fifth, that which vitalizes the ovum (*vide supra*) may be considered as having any intrinsic value at all. The balance having no value serves as a wash-house calculation. The intrinsic value of the good fifth, however, transcends all calculation, for it is that of the totality of human life itself above all things else.

"All life is divine and God's way of doing things is the way of continuous progressive change according to *certain laws*."—Lyman Abbott.

Periodicity in the female claims the dignity of physiologic law. May this claim really, after all, be made with greater justice than for the male? We think not. In the female menstruation regularly recurring and associated with the maturation of a Graafian vesicle and production of an ovum are taken as the evidences.

"With the immediate causes of menstruation we are unacquainted, we express only our ignorance when we assert it to depend upon periodicity; it is evidently connected with the condition of the ovaries and it is generally supposed—with the periodical discharge of ova from them. The menstrual secretion is the separation of the catamenial discharge from the uterine glands and vessels." (Dunglison.)

Striking at the beginning, the cause of the ovarian activity, as we shall have to make a comparison of it to the testicle, let us note the facts. A definite inherent law of balance and mutual dependence of action in the minute cell elements of the ovaries, the Graafian vesicles, the blood vessels, the blood, the lymphatics and the nerves, exists. This balance is primarily identical with the vital essence or spark and so delicately and accurately fixed that the ovary completes its work at regular intervals, giving rise to its natural product, the ovum. The Graafian vesicle gradually rises in the ovary to its surface, where it ruptures, liberating its perhaps precious contents, the ovum, which is seized by the fimbriated extremity of the Fallopian tube or *morsus diaboli* and conveyed through this tube into the uterus, where it may grow, or wither, as many a flower, and come away with the general flow of the catamenial discharge in from one to seven days. Now we contend that there exists in the testicles this same balance among the minute cell elements of reciprocal action and dependence as we have shown necessarily to be the case in the ovaries or *testes muliebres*.

"If the testis is the male ovary, it will comport itself in all essential respects as an ovary. Semination is a distinct function corresponding to that of ovulation. By minute morphologic studies the con-

viction of the identity of testes and ovaries has been confirmed. Identity of structure carries with it identity of function." (Lewes). Under comparatively similar circumstances it will take a certain length of time for the testicles to produce a given amount of semination, *the work equivalent of the ovaries as represented by the ovum*. "One striking result of modern histology is that germ-cell and sperm-cell, ovum and spermatozoön, are identical, only modifications of one and the same anatomic element and in the earlier phases of their development they are indistinguishable." (Lewes.) The other organs of the body, under the same conditions of activity, produce each a *fixed result*, the brain of speech or thought, the liver of bile, and why should not also the testes? Moreover, taking the *temporary* destination of the testicular seminal product to be the vesiculæ seminales, these being in *this respect* the analogue of the uterus, there must needs be for it a corresponding capacity, we find this in the system of double reservoirs represented by the vesiculæ on the one hand and the epididymis with its annex tubuli on the other. Allowing for the small amount of secretion by the vesicles the main bulk of it remains to be attributed to the testicles working, as already shown, under periodic limitation. It follows therefore that the amount of product by the testicles in the given period of one month, which we have assumed, will require the capacity of these two reservoirs. Hence, if these were entirely drained they would refill in exactly the same period, that is, under absolutely physiologic or normal conditions. That this is so our observations and experience fully convince us, and if it could be carefully noted and recorded, we have no hesitation in asserting our belief that ample statistics would back us up in the truth of it. Statistics are, however, fallacious, and especially hard in these matters to get. Unless it be in the payment of the doctor for his care of genito-urinary diseases, there is no field in practice so given over to the lie as mankind's sexual orgies. But why *two* reservoirs? The first, vesiculæ, supply the earlier and the second the later orgasms of a period one to seven, say five days, of what may be called in the mammalia, the phenomena of heat or rut. This takes place physiologically when the two reservoirs are full. The first one either overflowing or being drained by coitus, or perhaps by masturbation. Coincident with the orgasm the semen flows from the vesiculæ, filling the empty space in front of them, priapism usually being already well advanced. As the orgasm approaches its climax the powerful prostate gland joins in the chase and in harmonious sympathy with "pushing a good thing along," adds its quota of fluid and contracts violently. This latter has the effect of dividing the seminal current. The strong involuntary muscular fibers of the prostate are intimately associated with those of the ductus communis seminalis passing through it and these conjointly acting as a sphincter stop the further flow from the vesiculæ and turn it backward, for future reference: while the forward current, reënforced from the glands of Cowper and of Littré is forced onward in its career of destination or destiny as the case may be, to the germinal spot, the shrine of Hygeia; or to the fate of Cæsar's ambition:

"Swift fly the joys to anxious mortals known,
Swiftest the sweetest, ere yet tasted, gone."

The first (vesiculæ) reservoir is now presnably nearly empty, but may yet, however, be still the

source of supply of one or more orgasms. The period, so to speak, of heat or rut continuing the second reservoir is drawn on to complete the physiologic periodic cycle and drained to the ultimate tubuli seminiferi within the testicles during the remaining days of the rut. The five days' work, product of the testicles during the rutting period is also drained, reducing the time of the periods to nearer the true twenty-eight day mark as we find it in point of fact to be, as with women in their menstruation. After the emptying of the first reservoir there is no difficulty in seeing how the draining of the second reservoir will occupy the remaining days of the cycle, constituted as it is of over 9,670 feet of fine, mostly capillary tubing, in which fluid is of comparatively slow movement. It is made up of the vas deferens, 4 feet; epididymis and globus minor, 40 feet; coni vasculosi, 26 feet, and the tubuli seminiferi, 9,600 feet (3,780 feet, Lauth). A physiologic period of quiet should now ensue and continue until the reservoirs are again filled, when another series of eliminations should take place as before, accompanied by a correlation or concurrence of action between the different parts of the body, both premonitory and concurrent, as observed in the female at menstruation. This law of periodicity in its sociologic issue admits of almost infinite application. It furnishes a criterion where now there is no criterion. There is no page or paragraph in the whole range of medical books which we can cite in the elucidation of any criterion bearing upon this subject, and yet we find man seeking to know what is reasonable and natural in this regard. As many men as might discuss this subject would have as many different opinions concerning it. None would agree for there is no common ground to rest opinion on, all is chaos. False premises, self interest, erroneous notions, misguided experience, solitairism and chance are among the chief factors which determine the drift of this matter. *Sub rosa* indulgences, criminal opportunity and ignorance come in for their share. Indeed, man, as we find him, knows no law save that of the Billy Goat. The law of "know thyself" does not primarily occur to him, and so that gynocracy of advantage enjoyed by women through her knowledge of herself is denied to man. Like the radicle of the mistletoe he avoids the light, becomes a victim of his ignorance and perhaps to crime. He becomes miserable, has fears for the present and the future. He may become superstitious and seek solace in religion only to be disappointed with some such platitude as this: "He truly Lent observes who makes the inward man To fast, as well as make the outward feed on bran."—Howell.

He may then seek some one "who quacks of universal cures." (Hudibras.) Should he seek a physician, what is the latter's criterion for advice? As well might he say a tight rope between two chimneys when wetted will not pull over one of them as to say the seminal emission must not be of frequent recurrence, as is usually done and the patient dismissed with a little vague general talk about it and a placebo prescription. Disappointed again and without a guide he is thrown onto the world's buffoonery to learn. He may marry and the domestic relations suffer. We recall the case of a young man whose wife, seven months *eniente*, gave birth, or aborted. The babe which came, *notens volens*, was small and with umbilical hernia, capable of enduring only about three months. The "husband" said he had held sexual intercourse with his wife every night from the

hymenial to the night of the birth, inclusive. "No organs of the body are so prolific and none so quiescent, *mutatis mutandis*, as the testicles." (Ultzmann.) This latitude, according to Ultzmann and which we know to be true, illustrates *à fortiori* the importance of physiologic periodicity if there be any such a law or anything approaching to it in this our vast sea of trouble. Parents and progeny as well as the commonwealth are mutually interested in such natural physiologic laws as have the least bearing on their welfare. That departure on the part of the parent from the physiologic principles of his being can not fail to have a corresponding effect upon the progeny, and as those suffer so suffers the commonwealth. According as such laws are departed from for any length of time there will be a corresponding defect in the product of the physiologic part, and in the case we are considering, the semen, spermatozoa chiefly. The quality of this may be thus varied considerably. The fertilization by the sperm-cell of the germ-cell in every relation of physiologic law is thus seen to be of fundamental importance. "The phenomena which occur even in the simplest of so-called 'direct' cell-division, are of themselves enough to prove that the process is vital or physiologic." (G. J. Romane's "Darwin and After Darwin," Vol. i, p. 106.) "The form of the embryo varies with the *quality* and the *quantity* of the sperm." (Haller, Bonnet.) The spermatozoa are potentially of the same nature as the whole body, and hence contain the possibilities of all its organs. Both parents furnish their quota to every part of the offspring. Soon after Leenwenhoeek discovered the spermatozoa the wildest and most preposterous ideas arose regarding them until the facts became known. For instance: "Following Audry, each one was supposed to set out to find the ovary, and to glide into an egg, close the door behind it with its tail and develop itself; if several wished to enter at one time into the same egg, they became angered, fighting together, breaking and luxating their members, which gave rise to monstrosities." (Burdach, "Traité de Physiologie," Vol. ii, 287, Paris, 1838.)

We are familiar with the laws of heredity. We know that there are transmitted from the parents in whatever relation to physiologic law, both their good and their bad qualities: their taints, such as the alcoholic for instance, and their diseases; whence come these unless by the elementary anatomic product of the original prototype? The spermatazoa are the primary motor, and in their mysterious power have the quality of communicating movement long after their original impulse has ceased, "as the twig is bent the tree is inclined." They are the cause primarily of development, and in them are the conditions which determine the subsequent development. "It is not contact alone, but the entrance of the spermatozoön into the ovum which determines fecundation. An exceedingly minute quantity of spermatozoa suffices, but the development takes place much more slowly than when the quantity is abundant, and below a certain minimum the impregnation is only partial, the yolk is imperfectly segmented and in extreme cases the formative principle is so far checked that the child ceases to resemble human beings." (Lewes, Aristotle.) When fertilized as we have seen by the spermatozoa the ovum gives rise to the whole body. By a series of successive differentiations of cells, or power or tendency impressed on cells whereby they grow into different forms, epigenesis, the embryo

arises from a simple homogeneous mass into a complex heterogeneous organism. This unknown power or tendency impressed on cells varies, as we have seen, with the quality and quantity of the primary motor, the spermatozoa, and continues to operate long after its original impulse has ceased; exerting its influence in the formation of all the tissues, histogenesis, in the new being, and even long after the latter's independent life. Continuing in the life of the individual this unknown power or tendency impressed on the cells and later on the tissues, and which science may reasonably seek to know, may have been so checked or diverted as to bring about an imperfect segmentation in the ovum, with what diversity of result no one may presume to say. It would range from slight effect upon the size of the individual, a malformation, a monstrosity, or even idiocy, or any other macroscopic evidences to those involving the microscopic tissues of the circulation, brain, liver, ganglia or any section of the body. The interferences in function corresponding to these defects would likewise be unlimited. To such matters then as these do we find the question of a law of periodicity in the male, in the issues, having logical effect. Surely these are matters of personal and public interest. Modern science has given to microscopic research all germs but the chief of germs, spermatazoa.

How do we know how these would comport themselves in variegated coats of methylene blue and fuchsin red, or Bismarck brown and gentian violet? Much has been learned of other microorganisms by these methods, and why should we not so learn more of these? It is to this radical point of investigation that we must direct our attention for the understanding and alleviation of many of our human ills. How do we know but many defects in spermatozoa may yet be demonstrated under the microscope? Almost insurmountable obstacles seem to stand in the way of this method of research; but less than twenty years ago bacteriology, which now has thousands of volumes written on myriads of all sorts of wonderful cocci, bacilli and spirilla, was scarcely the subject of an hour's study by the average medical man. Until bacteriology was established in its highest sphere of practical utility to man by Robert Koch, that splendid confrère and pioneer in this field of research, its resources were unknown and its obstacles insurmountable. But recent research through exact methods by trained investigators has changed all this, and now bacteriology is one of the first and most essential "stones" laid in the construction of a medical education. Closely allied to this method of study of the spermatozoa is the study in the fertilized ovum of the nucleus formed by the union of the male and female pronuclei, as already pursued. It is but a step from the latter to the former.

"These researches, chiefly due to Fleming, have shown that the nucleus, in very many tissues of higher plants and animals, consists of a capsule containing a plasma of 'achromatin,' *not deeply stained by reagents*, ramifying in which is a reticulum of 'chromatin' consisting of fibers which readily *take a deep stain*." (Romanes.)

In conclusion, let us add that whatever research may show to be modifications in the qualifying properties of the spermatozoa by reason of departures from physiologic law, it is hardly to be expected these would be altogether heeded, nor would we be able to prescribe one fixed remedy, such for instance as exci-

sion of the vas aberrans. We have heard of a nervous, timid person having pinned to his shirt these words: "My appendix has been cut out," and we would not wish to drive another to the words: "My aberrant oats have been sown." Just here it would seem the finger of medical science may point the way, and the profession constitute itself of right a veritable *corps de garde*.

No man can do the work of humanity; no one man can anticipate the labor of ages. It was by a succession of labors that the works of Harvey, of Jenner, of Pasteur and many others, reached their climax. Gravitation and evolution had to run the gauntlet of "ist" and "ism," but now are undeniable laws. The medical man has now, so to speak, to devote himself to the astronomy of microscopic bodies. When we consider the remarkable phenomena set up by the spermatozoon on entering the ovum, and the ultimate result of its deficiencies to individual and world at large, we can not inquire too closely into the physiologic laws, however remote, which affect them.

Should the physiologic law we are considering land us in an improved condition of sociology somewhere between the perfect ideal organism of Plato, and the best possible under existing conditions, of Aristotle, it would be as much as might now be hoped for along the lines of our argument on its periodicity.

DILATATION OF THE STOMACH.

A Clinical Lecture delivered in Rush Medical College.

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I place before you, this morning, a patient whose sallow complexion and expression of distress declare him to be a sufferer from chronic disease. He is about 50 years of age, though his whitened locks and bald crown seem to indicate a greater number of years. He is quite thin; his muscles are flaccid, and readily discernible through the dry and inelastic skin. In the left side of the scrotum hangs a considerable varicocele; the veins of the lower extremities are enlarged and tortuous; he is constipated and has long been a sufferer with internal piles. During the winter he complains of a hacking cough, but his thorax is everywhere extremely resonant; he has a chronic bronchitis with some degree of vesicular emphysema. The heart is not enlarged; there are no valvular murmurs, but the second sound is decidedly accentuated over the right ventricle. The liver is of normal size, though somewhat displaced upward. The spleen is also normal. But the abdomen is decidedly prominent and resonant.

The patient tells us that he has been for many years employed as a mechanic, both in Germany, where he was born, and in this country. His occupation compelled him to stand at a work-bench for many hours each day, with only such intermissions as were required for two or three luncheons, consisting chiefly of bread and beer. About twenty years ago he began to feel an uncomfortable sense of distension in the stomach after eating, and there was frequent eructation of gas for several hours after meals. The bowels were not then constipated as they have been during the last four years, in which he has ceased to drink beer, and has resorted to whisky instead of the four or five quarts of malt liquor that previously formed his regular daily allowance. Gradually, his appetite failed,

his tongue became coated, his breath exhaled an offensive odor, and his weight fell off from 210 pounds, till he now tips the scale at 130 pounds. You can observe for yourselves the anxious expression of his countenance; he is thirsty, though frequently drinking water in considerable quantity. His urine is scanty, slightly alkaline in reaction, deficient in chlorids, and its sediment contains crystals of the triple phosphates. He has been told that he was suffering from Bright's disease, but the urine today contains no albumin, nor any renal casts or epithelia.

The history of the patient should attract our attention to the condition of the abdominal viscera. From what has been already said we may proceed to exclude the liver, spleen and kidneys from further consideration. The greater part of the abdomen is resonant with retained gases, and no tumor can be anywhere discovered. Introduction of a long rectal tube permits the escape of considerable gas from the colon, but the upper half of the belly remains unchanged by this operation. Still, there is no excessive abdominal distension. Let us proceed to an investigation of the stomach. In the first place we will inspect the belly while the patient stands erect. This gives no positive result. Percussion over the abdomen elicits a tympanitic resonance over the epigastric and left hypochondriac region. At the level of the navel, and for two inches downward and to the right of the median line, is a somewhat cup-shaped region of dulness, with intestinal resonance below it and in both flanks. Now, causing the patient to lie down, the area of dulness disappears, and every part of the anterior wall of the abdomen returns a resonant sound. Palpation discovers nothing. Auscultation reveals a variety of bubbling and gurgling sounds in the gastric region, and on shaking the patient with considerable force, a distinctly audible splash, as of water shaken in a bottle, can be heard at quite a distance. These facts point toward dilatation of the stomach. Introducing a sound through the esophagus, we find it arrested at a depth of twenty-five inches, whereas in a normal subject it is only sixteen or eighteen inches from the lips to the lower wall of the gastric fundus. But, inasmuch as there may be an element of doubt due to the possibility that the sound may have moved upon itself, slipping along the wall of the stomach till it was arrested at the pylorus, let us employ another method of measurement. We will blow air with a pair of bellows through the tube until the stomach is fully inflated. By this method the organ is readily inflated, and as the man lies upon his back, you can see the outlines of the gas bag into which it has been converted bulging distinctly under the abdominal wall. This is one of the best methods of ascertaining the fact and the extent of stomach dilatation. When the normal stomach is inflated, its lower border reaches only about halfway down from the tip of the xiphoid cartilage toward the umbilicus. If it be found on or below the level of the navel, dilatation exists, unless you are dealing with a case of normally large stomach, such as occasionally is found in health.

The method which you have just seen illustrated has, however, one rather serious objection to its general use. You observed the retching and involuntary resistance that was excited by the introduction of the gastric tube. This can be often prevented by the administration of half a dram of potassium bromid an hour before the operation. The patient can be taught to accustom his fauces to the presence of the

tube by carrying it himself through the sensitive pharynx, and then making the movements of swallowing. In this way, with a little practice, many patients learn to introduce the syphon tube without difficulty. But you will generally find it impossible, in dealing with a delicate woman or a neurotic man, to pass any kind of sound or catheter through the fauces into the stomach. You must then have recourse to the method of inflation by the liberation of gas in the stomach. This can be easily accomplished by giving two teaspoonfuls of sodium bicarbonate dissolved in half a glass of water, followed immediately by the same quantity of tartaric acid similarly dissolved. The union of these two solutions liberates carbonic acid gas enough to distend the stomach, which can be then examined by inspection, palpation, and percussion through the walls of the abdomen. This method enables us to dispense with the use of the stomach tube, and it is practically devoid of danger. Only in cases of gastric ulcer or advanced cancer, when it would be imprudent to sound the stomach, would I advise you to abstain from this mode of investigation.

Returning to the patient before you, we will withdraw the tube after syphoning out such liquids as are stagnant in the gastric cavity. The patient has eaten nothing since last evening, yet in the foul, sour-smelling fluid thus brought to view, you can see various remnants of former feasts. There are visible fibers of meat and shreds of vegetable matter—probably apple parings and potato skins. I once discovered in such ejecta a recognizable fragment of the kernel of a cocoa nut which could not have been swallowed less than a month previously. The reaction of this fluid is strongly acid. Testing it, after filtration, with litmus paper, we find the blue paper instantly reddened. This indicates the presence of something clearly acid—either a free acid or an acid salt. A piece of red Congo paper is turned blue on immersion, so we know that free acids are present. Adding to a few drops of the phloro-glucin-vannilin reagent in a porcelain dish a drop of the filtrate from the stomach, and heating it over the flame of a Bunsen burner, we at once get the bright carmin color that indicates the presence of free hydrochloric acid. That it is present in less than the normal proportion can be shown by diluting the filtrate with water. Under ordinary conditions, eight or ten parts of water to one of the filtrate would be needed to extinguish the reaction, but with this specimen the color fails to appear when only three or four parts of water have been added to one of the filtered juice. The smell of the liquid renders it probable that lactic and butyric acids are also present. In fact, in the laboratory the other day, from this patient was obtained an appreciable quantity of those acids, together with a trace of acetic acid.

Turning now from this patient, let us consider more fully the subject of gastric dilatation. It is evident that over-distension of the stomach may at any time follow excessive eating. This is not uncommon among children and childish adults, but it is a transitory condition which soon relieves itself by evacuation of the stomach upward or downward. It may be considered an acute dilatation of the organ. But there are causes that produce long continued, yes, even permanent dilatation of the stomach, either because of deficient energy in the gastric muscles, or by reason of pyloric obstruction to the onward passage of food into the duodenum. Most frequent among the causes of such obstruction are the scars of gastric or duodenal ulcers

that have encroached upon the pyloric orifice in the course of their contraction. Polypi that grow in the vicinity of the pylorus, sometimes reach a size that permits them to fall into the pyloric passage, and to obstruct it after the manner of a valve. This, and somewhat analogous obstructions caused by chronic gastritis, may occasion true hypertrophy of the muscular coat of the stomach, comparable to cardiac muscular hypertrophy. But, after a time, such overgrowth will be followed by degenerative atrophy, and then dilatation is developed. A similar effect is sometimes induced by pressure from without, when tumors in the adjacent organs are large enough to compress the pylorus or the upper end of the duodenum. It has been asserted that the right kidney can be so displaced as to produce pressure upon the outlet of the stomach and thus occasion dilatation of its cavity; but it is more probable that in such cases both conditions—floating kidney and gastric enlargement—are due to the same general laxity of the tissues. It is conceivable that under such conditions the pylorus might be displaced and twisted to such an extent as to interfere with its proper mode of opening for the passage of food, and thus the stomach might become dilated without actual constriction of its orifice.

Dilatation of the stomach may be occasioned by diseases affecting the muscular coat of the viscus. This often occurs as a consequence of chronic catarrhal gastritis, or by extensive ulceration or cancerous growths in the gastric wall. If the branches of the pneumogastric nerves are involved, there may be a loss of normal muscular tone, and dilatation will follow. A relaxed condition of the abdominal walls, permitting the stomach to gravitate downward, localized peritoneal adhesions, internal hernie and violent concussions, are all mentioned among the possible causes of progressive dilatation. The general loss of tone throughout the muscular apparatus that follows the course of infective diseases, chlorosis, anemia, consumption, neurasthenia, hysteria, hypochondria and nearly all chronic diseases, is often the occasion of gastric dilatation. Especially true is this in diseases of nutrition like diabetes, where the patient habitually consumes an inordinate quantity of food and drink. Great eaters, who take little exercise, and vegetable feeders who consume roots and herbs like the cattle in a meadow, are liable to be similarly affected. Children who have the free run of an orchard, particularly those who have been rachitic in early infancy, and who are frequent victims of gastric catarrh, are often sufferers with dilatation, which may be recognized by the abnormal size of the abdomen. Since the male sex is most subject to gastric disorders, it is among men, from the age of puberty till the forty-fifth year, that the disease is most common.

The extent to which dilatation may reach is exceedingly variable. Sometimes the enlarged stomach seems to fill the whole abdominal cavity, crowding the liver and spleen upward, and pushing the intestines backward and into the flanks. Sometimes the lesser curvature of the stomach is dragged down below the border of the liver, and the pylorus may be found in the region of the cecum. In recent cases, the cardiac end of the organ is usually the first to yield; occasionally, the stomach presents a pouched appearance as a consequence of local traction through peritoneal adhesions, dragging outward a portion of the gastric wall, just as diverticula from the esophagus are sometimes formed. When there is great pyloric obstruction the

esophagus shares in the consequent dilatation of the stomach.

The gastric mucosa exhibits the appearances of catarrhal inflammation. When there is pyloric stenosis the muscular coat of the stomach is sometimes considerably thickened; but when dilatation is dependent upon general causes of a debilitating character, the muscular layers are atrophied.

The symptoms of gastric dilatation depend upon physical changes in the stomach itself, and upon chemie changes in its contents. Mere enlargement of the organ does not necessarily indicate dilatation, for we occasionally meet with congenitally large stomachs that are perfectly healthy. In like manner, fermentation, or even putrefaction, of the substances that have been swallowed as food and drink, may occur as an accident without permanent dilatation. Again, these symptoms may be so insignificant that they are ascribed to catarrh alone, and the fact of incipient enlargement of the stomach may be for a long time overlooked. But when physical and chemie changes persist for any length of time, there can be no doubt of the existence of the disease. As it progresses, the patient slowly emaciates, becomes pale and cachectic, with a countenance expressive of suffering and exhaustion, and finally presents all the appearances of slow starvation. Appetite usually fails; but when there is obstruction of the pylorus, and consequent vomiting, hunger and thirst are experienced in a high degree. In many cases there is hiccough, pyrosis, and belching of gases that are sometimes odorless, but which are sometimes highly charged with hydrogen sulphid. Occasionally, the gas that is thus eructated is actually inflammable from the presence of marsh-gas among the products of fermentation. It is probable that the old stories of the spontaneous combustion of the human body had their origin in such occurrence of conflagration from too near approach of a lighted candle at the moment of eructation, setting fire to the beard and neck-cloth, and so producing suffocation, with more or less charring of the flesh as the clothing was consumed.

Prominent among the symptoms is vomiting. This is particularly common when the pylorus is obstructed. As the stomach enlarges it is thus evacuated less frequently, but the quantity thrown off is proportionately increased. The act of vomiting also often degenerates into a mere form of retching, so that the contents of the stomach are returned with very little effort. Many patients thus bring to light considerable masses of undigested food, hawked up every morning as they clear their throats on rising from bed. The vomited matter is usually very acid, sometimes setting the teeth on edge, and taking the color out of cloth with which it has been brought in contact. Sometimes, on the other hand, it may be rancid or sweetish, or, if there be cancer of the stomach, of an offensive character. The consistence and color of the vomitus depends largely upon the quality of the food—it is usually thin and watery, containing macerated and partly decomposed fibers of meat and particles of vegetable food. In cancerous cases, the liquid may be of a chocolate or coffee-ground color, from the presence of altered blood pigment and corpuscles. Allowed to settle in a test-glass, the upper portion is usually frothy, the middle portion is a slimy liquid, while the sediment contains the débris of food, numerous epithelial masses, exudative products and microbic organisms. Among these, *sarcinæ ventriculi* and yeast

cells are commonly present, giving rise to fermentation that continues in the vessel, sometimes causing it to overflow like a fermenting beer keg. Chemie examination reveals the presence of lactic, butyric and acetic acids, together with peptones, unchanged albumin, sugar and starch.

On inspection of the patient an unusual swelling of the abdomen, often extending below the navel, is visible. When there is considerable emaciation, it is sometimes possible to discern the outlines of the stomach through the abdominal wall. When there is obstruction of the pyloric orifice, the peristaltic movements of the muscular coat from the cardia toward the pylorus, are occasionally visible in like manner. These movements are sometimes attended with considerable uneasiness, which has been described as *peristaltic restlessness* of the stomach. Their appearance below the navel is diagnostic of gastric dilatation, because in a healthy condition the lower border of the organ lies wholly above the umbilicus. By careful pressure or percussion over the stomach it is sometimes possible to make out the line of the greatest curvature of the organ as it lies in the lower part of the abdomen; and on smartly shaking the patient, it is often possible to hear loud splashing sounds, caused by the commotion of air and water in the stomach. This, however, is not a diagnostic symptom, for the reason that similar splashing and gurgling sounds are often produced in stomachs that are not enlarged—notably among women who lace themselves tightly. But, in connection with other signs of dilatation, it is a valuable symptom. Sometimes the stomach contains so much air and water that actual fluctuation can be detected when the palm of one hand is pressed against the side of the abdomen while with the other hand the opposite side is tapped with short, quick strokes from the ends of the fingers.

Percussion of the abdominal wall, after inflation of the stomach with gas, affords the most satisfactory evidence regarding its dimensions. Only in the exceptional cases of congenital enlargement, or low position of the viscus, will the greater curvature of the stomach descend to the level of the navel when distended with gas. Air may be forced through a syphon tube by the aid of a bellows, so as to fill the cavity of the organ; but by far the most convenient method consists in the administration of a glass of water in which two teaspoonfuls of sodium bicarbonate have been dissolved. This should be followed by an equal quantity of tartaric acid similarly dissolved, or by the juice of one or two lemons, diluted with sufficient water. Unless there be evidence of severe ulceration in the gastric walls, this treatment is devoid of danger, and seldom causes any feeling of inconvenience on the part of the patient. Occasionally, the gas passes, as soon as it is liberated, into the intestines, indicating pyloric insufficiency, but it is almost always retained in the stomach, which distends like a rubber balloon, so that often its outlines can be readily discerned through the abdominal wall, or can be easily defined by percussion. If the ear, or the stethoscope, be applied to the abdomen, it is possible to hear the bubbling and sizzling that is produced by liberation of gas in the liquid contents of the stomach. Sometimes it is difficult to decide whether resonance in the abdomen is due to dilatation of the stomach, or to distension of the colon with air. In such doubtful cases, the colon may be filled with water from a fountain syringe, while the stomach is inflated with gas. Or the experiment

may be reversed by causing the patient to drink a considerable quantity of water after the colon has been inflated by pumping air into the rectum with a spray-balloon.

Other ingenious methods of determining the dimensions of the stomach have been devised, and some of them give very satisfactory results in the laboratory; but in private practice, so far as possible, it is desirable to avoid the use of sounds and stomach tubes until you have secured the confidence of the patient, and are fully assured of his loyalty under all circumstances. Some idea of the capacity of the stomach might be obtained from the administration of measured quantities of water, were it not the fact that in many cases the patient feels so much discomfort from drinking, even before the limit of repletion is reached, that it is impossible thus to measure the cavity of the organ. Dr. Einhorn has devised an ingenious method of electric illumination of the gastric interior so that its outlines become visible like those of a shade over the flame of a lamp. But the apparatus is expensive, and its use necessitates the disagreeable introduction of a tube through the esophagus.

In all cases of gastric dilatation the functional power of the stomach is seriously reduced. Six or seven hours after a meal the healthy stomach contains no trace of food; but when dilatation exists, remnants of previous meals, sometimes even after the lapse of several days, can be brought up from the depths in which they have stagnated. The absorptive power of the mucosa is reduced, under such conditions, so that if iodid of potassium be taken, instead of ten or fifteen minutes, as in health, it will be two hours before the drug can be detected in the saliva of the patient. As a consequence of the diminished mobility of the muscular coat and the resultant stagnation of food, the stomach becomes a receptacle in which takes place an inordinate fermentation of carbohydrates, and even putrefactive decomposition. Hence the appearance of alcohol, carbonic acid, marsh-gas, acetic, butyric and lactic acid in the gastric contents. If a carcinoma be present, the gastric juice will cease to contain free hydrochloric acid; but when dilatation is due to obstruction by round ulcer of the stomach, the opposite condition obtains, and there will be found an excess of the free acid.

Constipation of the bowels is usually experienced; partly because of general intestinal atony and partly by reason of vomiting, when that occurs, so as to hinder the entrance of food into the intestinal canal. For similar reasons the quantity of urine is often reduced. Its reaction is usually alkaline and its solid constituents are diminished, just as they are in any case of slow starvation. The sediment contains triple phosphates and the phosphate of calcinm. With the appearance of cachexia, traces of albumin and peptones are discovered in the urine.

As the disease progresses the symptoms of indigestion and mal-nutrition become more pronounced. The patient feels incapable of effort and complains of oppression in the precordial region, with palpitation of the heart and breathlessness on slight exertion. These sensations are aggravated by the accumulation of gas in the stomach, crowding the diaphragm upward against the heart and lungs so that the apex beat may be found in the fourth intercostal space, while the upper surface of the liver approaches the level of the right nipple.

The course of the disease is lingering and tedious.

If dependent upon cancerous obstruction of the pylorus, its duration will be limited only by the termination of the carcinomatous disease. Under other circumstances a miserable existence may be prolonged indefinitely. Sometimes death occurs after an experience of painful cramps in the muscles ushering in collapse and death from exhaustion. This mode of dissolution is probably the result of profound auto-intoxication with products of decomposition formed in the alimentary canal. In such intoxication of the nervous system is to be found the explanation of the attacks of tetany that are sometimes experienced during the course of dilatation of the stomach. The danger of death, in such cases, is very great—the majority of them prove fatal. In certain other cases, where convulsive phenomena are absent, the brain shows evidence of disturbance in the form of delirium, perversion of sensation and transient mania or melancholia.

The recognition of well-marked dilatation of the stomach is not difficult. Congenital enlargement or normally low position of the stomach may be differentiated from morbid dilatation by the fact that they are not attended with ill health. Gastric dilatation that is dependent upon duodenal obstruction may be recognized by the fact that the patient vomits bile—since the obstruction is usually placed below the orifice of the common bile duct—while in cases of pyloric stenosis the vomited matters are free from admixture with the biliary excretion.

The prognosis in this disease is always doubtful. When dilatation is caused by malignant obstruction of the pylorus, death is inevitable. Under the most favorable circumstances, relapses are frequent and cures are uncertain.

For the treatment of gastric dilatation, the first thing to be attempted is the emptying of the stomach. This can be most easily and safely accomplished by the use of a soft rubber stomach tube, to the upper end of which a funnel is attached. Considerable difficulty usually attends the introduction of the tube before the patient has become accustomed to its intrusion into the pharynx, but with a little practice he learns to swallow the pliable syphon without irritating the nervous centers for retching and vomiting. Once carried to the bottom of the stomach, warm water, of a temperature of about 90 degrees F., should be poured into the funnel until it ceases to flow rapidly into the tube, or until the patient complains of too great pressure. The funnel should then be inverted and lowered below the level of the stomach, the tube being compressed by the thumb and finger of the operator, until the necessary adjustment of everything has been completed. Removal of pressure from the tube is then promptly followed by the evacuation of the contents of the stomach through the tube which is thus converted into a syphon. If the opening of the tube should be obstructed by the entrance of fragments of food, it may be cleared by pouring a little water into the funnel or by raising it up and down or by making pressure with the hand over the gastric region. So long as the water that returns is turbid the operation should be repeated—filling and emptying the stomach until its cavity is thoroughly cleared. It may then be washed out with a solution of table salt—a drachm to the pint, or with a similar solution of Carlsbad salt—a half drachm to the pint. In this way the stomach may be completely relieved of its fermenting contents. The syphon tube is preferable

for this purpose rather than the stomach pump, which is less convenient and much more liable to wound the gastric mucous membrane. In all these operations great care must be taken to avoid violence to the mucosa, otherwise the appearance of detached fragments of membrane in the wash-water will not be uncommon. Certain experts would have us believe that such evidences of injury are symptomatic of special forms of disease within the stomach, but this is doubtful. Under any circumstances the passage of sounds and tubes into an unsophisticated stomach is no trifling matter. Patients sometimes become convulsed and unconscious when thus treated for the first time; but, usually, they soon become accustomed to the contact of a syphon tube and find great relief through the removal of the offending matters. The renewal of decomposition may then be at least delayed by the administration of drugs that arrest fermentation, such as sodium salicylate, resorcin, creosote, benzosol and carbolic acid. The daily use of the syphon should be continued until satisfactory evidence of improvement is apparent. It may then be introduced every other day, and with less frequency as the case progresses more favorably. In all cases the treatment must be continued for a long time, and when the disease is caused by pyloric obstruction it is impossible to lay aside the tube before the end of life, unless the difficulty can be removed by a surgical operation upon the pylorus. Patients can be taught to introduce the tube and to wash out the stomach themselves, but as a general thing the physician should maintain a careful supervision of the case in order to prevent mechanical injury of the food passages or to avoid the effects of ignorant use of healing methods.

Having provided for the cleansing of the stomach, it is needful to take measures for increasing the tone and vigor of its muscular coat. For this purpose the patient should remain in bed for several hours after each operation of lavage, and should apply to the epigastrium and gastric region an ice bag wrapped in a napkin. A sponge bath with cold water should be taken every morning on rising and on retiring at night. If so situated that he can use shower baths of cold water they should be taken every day—preferably in the morning. If the patient is feeble and oversensitive he should stand in a little warm water while taking the bath. Daily massage of the whole body is another valuable means of increasing the muscular tone of weakly individuals. Light gymnastic exercises and walking in the open air must be enjoined, and the patient must be taught to aim at procuring at least two hours of such exercise—an hour in the morning and another in the evening. If the heart and kidneys are free from disease, horseback exercise and moderate bicycling will be found useful. The daily application of faradic electricity—placing one pole behind the spleen and moving the other over the region of the stomach for five minutes once or twice a day—is often very beneficial. Good results are also derived from intra-ventricular faradization—passing one electrode into the stomach while the other is applied externally in the usual way. But one should be very sure of the loyalty of his patient before employing this method.

The patient must receive his food in small quantities every two hours. Liquids must be largely withdrawn from the diet list. Thirst may be relieved by rectal injections of cold water thrown high up into

the colon with a long tube. Sugar, starch and fat should be given in very small quantity, because of their tendency to fermentation. The food should consist chiefly of tender meat well minced, toasted bread, milk, soft-boiled eggs, oysters and concentrated broths. As improvement appears a larger variety may be gradually introduced.

In the administration of medicine it is necessary to provide for an increase of motor and digestive power while endeavoring to prevent the process of fermentation in the gastric contents. For the first object, one-fiftieth of a grain of nitrate of strychnin may be injected hypodermically every six hours. Ten drops of dilute hydrochloric acid should be taken in four ounces of hot water after the three principal meals each day. One-half hour before each of those meals the patient should take five grains of salol or of salicylic acid, or a grain of resorcin or of carbolic acid, or five grains of sodium hyposulphite, to check the fermentative process during the approaching period of attempted digestion. As soon as the patient begins to feel able to remain for a considerable time in the open air the anemia that is present may be controlled with large doses of carbonate of iron.

Recently, the aid of surgery has been invoked with some degree of success in the relief of those forms of gastric dilatation that are dependent upon stenosis of the pylorus. Notwithstanding the high degree of mortality, it is sometimes the only resource, and, fortunately, with increasing experience the death rate is slightly diminished. In certain obstinate cases without pyloric obstruction, the operation of folding the anterior wall of the stomach upon itself and sewing the border of the greatest curvature to the margin of the upper curve of the organ—just as a sailor takes a reef in a sail—has been performed with tolerable success.

TREATMENT OF PERIUTERINE SEPTIC DISEASES.

Read at the Richmond meeting of the American Association of Obstetricians and Gynecologists.

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Only recently has the extremely radical procedure of hysterectomy been practiced in this country for septic diseases of the internal genitals. A wave, which had its origin in Paris at the hands of Péan, aided by Richelot, Segond, Jacobs and others, reached our shores three years ago and has found a considerable following among our leading operators. There has been much rivalry for some years in this country as to who could do the largest number of hysterectomies most successfully, but I will not say that it is possible this innovation was more readily embraced as it afforded great opportunity for such ambitious ones, who had almost ceased to be interested in the more simple operation of salpingo-oöphorectomy, to increase their cases of hysterectomy more rapidly. They claim that there is no use in leaving the uterus behind after the removal of the appendages; that "in every operation for septic diseases of the generative organs which demands the removal of the tubes and ovaries hysterectomy should also be performed, unless there are plain contradictions forbidding it."

It should be the aim and pride of the surgeon to preserve everything consistent with thorough surgical work, and not to sacrifice important organs because it

can be done with only a small mortality. We are told that the uterus has no function after the removal of the appendages, but this has not been demonstrated; and, on the contrary, we know that the sexual life of the woman is very much better preserved by leaving the uterus, and that the mental effect is also much better. A slow convalescence, or even a second operation, is preferable to its removal, unless very much diseased. It is a reflection on the correctness of the reports of complete recoveries of such a large per cent. of cases by many most excellent surgeons, when the uterus was not removed, to accept the argument now being used in favor of hysterectomy in all these cases. As stated at the last meeting of the AMERICAN MEDICAL ASSOCIATION, "I can not agree with Dr. Sutton and others that pus in the tubes is due to gonorrhea in 75 per cent. of cases. I think that puerperal infection is the cause of more than 50 per cent. Tubercular infection is rarely the cause, and is not so important as has been claimed. However, the importance which has been attached to gonorrhea is against the argument for the removal of the uterus, as the infection from this source is not deep and can be removed with the curette. Because some cases are not completely cured by the removal of the appendages is no argument for hysterectomy in every case where the bilateral operation is required, for nearly all these can be relieved by a thorough curettage. Some large uteri will require, in addition to this, a high amputation of the cervix. Only a small number will need hysterectomy."

It is a notable fact that some of the surgeons who claimed most for curettment of the uterus a few years ago and who taught that total ablation of the appendages was seldom necessary are now the most enthusiastic advocates of hysterectomy. It is granted that there are some cases in which it is best to remove the uterus, those in which the uterus is flaccid and its walls infiltrated with pus, surrounded with pus tubes and ovarian abscesses. However, such cases are rare. Tubercular infection of the uterus, too, is sufficient cause to require its removal. Extreme injury and mutilation of the organ in removing the tubes and ovaries would also call for the operation. Vaginal incision for the drainage of pus in the pelvis not confined to the tubes and ovaries has been practiced for a long time with very gratifying results. This procedure is so old that it is hard to say when it was not resorted to. Such cases would recover, almost without exception, from the immediate attack and a large number recovered completely and bore children afterward. This result was due to the drainage of the tube or ovary through the peritubal and periovarian abscess, just as cases of appendicitis are cured by the rupture of the diseased appendix producing an abscess, which is evacuated by the surgeon, the appendix being drained through the abscess. In cases of abscess from lymphangitis and phlebitis this treatment was all that was required, but cases of abscess due to the tube or ovary were not all entirely relieved, due to the fact that the pus tube or ovarian abscess was not drained satisfactorily.

More recently pus tubes and ovarian abscesses have been incised and drained through the vagina with permanent recoveries in a good proportion of cases. These are the very cases where the vaginal operation and hysterectomy have been commended so highly by the French surgeons. Yet a large per cent. of these cases can be relieved by vaginal incision and drain-

age. If not relieved the patient's condition will be made better by getting rid of the pus, and later on an abdominal operation can be done and the patient cured by the removal of the appendages—and perhaps of one side only.

The French surgeons, in some cases, when unable to remove the diseased tubes and ovaries after hysterectomy, have been contented to open the masses containing the diseased appendages and to pack with gauze. The drainage in such cases has brought about complete cures. The same result could have been accomplished without the removal of the uterus, by vaginal section and the breaking up of adhesions with drainage. I would not be misunderstood as believing that all cases can be cured by incision and drainage, but so large a per cent. can be relieved, without the loss of the uterus and adnexa, our cases should be given the benefit of this conservative procedure before more radical measures are resorted to. Especially should this be done in young women, to whom the loss of the appendages and uterus means the loss of so much that is necessary to their happiness. This treatment has been highly commended by Henrotin, Pryor and Kelly, and my own experience with it, which is limited, has been so satisfactory that I am convinced of its great value and the necessity of its more general adoption. The following is the plan I have adopted:

Peritubal and periovarian abscesses.—When there is a considerable collection of pus and the patient is suffering from marked sepsis the uterus is not curetted and no attempt is made to find the tube or ovary. An incision is made into the abscess, hugging the posterior-uterine wall, and after thorough irrigation gauze is packed in the cavity, the vaginal incision being well filled so as to keep a large opening to allow the gradual withdrawal of the gauze—permitting of the escape of any collection that may occur in the cavity. The vagina is also filled with sterilized gauze. The gauze in the vagina is removed in twenty-four hours and from the abscess cavity in forty-eight hours. A rubber tube is introduced into the abscess cavity at the end of a week and kept in place from four to eight weeks. Douches are given twice a day after the removal of the gauze from the vagina. Water is passed through the tube twice a day. Carbolic acid may be used with advantage in the wash. In small peritubal and periovarian abscesses the same treatment should be adopted as in cases of tubal and ovarian abscesses, which I will describe. If there is a considerable mass some weeks after the drainage of large pelvic abscesses (peritubal and periovarian abscesses) the same treatment will be indicated as for tubal and ovarian abscesses.

Tubal and ovarian abscesses.—In these cases the uterus is always curetted and pure carbolic acid applied to the cavity. The cervix is grasped by a strong vulsellum forceps and pulled down and lifted to the front. An incision, with scissors, is made in the posterior vaginal wall, hugging the cervix and large enough to admit two fingers. When the peritoneum is reached the mass or masses can be easily outlined by bimanual palpation and can be opened with scissors or uterine forceps, the finger being used as a guide. The cavity is thoroughly dried with gauze and irrigated. If the general abdominal cavity is entered it is best to make the opening large so as to prevent a secondary abscess. Gauze should be packed into the tube and extend into the abdominal cavity, a

large quantity being used in the vaginal incision. The vagina should also be packed with gauze. The gauze is removed from the vagina in forty-eight hours, and from the abdomen and tube in five or six days, except the withdrawal of a few inches each day to keep the vaginal opening patent for the escape of fluid. A rubber tube is introduced after the removal of the gauze and managed as directed for peritubal abscess. As Henrotin says: "It seems only reasonable that such operations may be successful, even in the most chronic forms of pyosalpinx. What happens in such cases? Septic material traveling up the Fallopian tube, when the process is not too rapid, finds itself arrested at the abdominal opening by a closure of the ostium abdominale. An abscess cavity is developed in the walls of the tube proper. After a time the uterine end becomes closed, and then we have independent pus sac, not communicating with either the serous or the uterine cavity. This may rupture into the fold of the broad ligament and work its way toward the vagina. If widely opened and drained and packed, after a time all the so-called pyogenic lining membrane disappears, granulations fill the gap, the Fallopian tube becomes obsolete and the patient is cured."

Hydrosalpinx and hematosalpinx should be dealt with as outlined for pyosalpinx. I have treated some cases of ectopic gestation by this method, and was recently consulted by a young woman who had become pregnant in the uterus after recovery from such an operation for pregnancy in the right tube.

Pelvic masses following an abortion or delivery at term should be treated in this way. Pus should not be waited for. I have treated a good number of such cases by incision and gauze packing before pus formation, and thus cut short a protracted illness.

I have operated a few times in cases where the uterus was retrodisplaced and bound down by adhesions. The adhesions were broken up, the uterus replaced, the tubes and ovaries lifted up and gauze packing resorted to as heretofore described. The results so far have been quite satisfactory, but I am of the opinion that a large number of such cases will require salpingo-oöphorectomy before they are entirely relieved.

When double salpingo-oöphorectomy is necessary the choice of operation will depend largely upon the decision as to the disposition of the uterus. If the uterus is to be removed, in such cases the vaginal route could be adopted with advantage in a good proportion of operations. Fortunately that is not necessary and hence the abdominal operation is preferable, "as the aid of positive sight is given, thus affording a wider field of operation and an opportunity for conservatism."

EFFECTIVE REMEDIES IN TYPHOID FEVER.

BY THOMAS B. HEIMSTREET, M.D.

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About five years ago, being called to a patient who had prodromic symptoms of typhoid fever, and insisted on some prompt remedy, I gave him a half-grain pill of hydrarg. protiodid, knowing it to be one of the most powerful antiseptics and having frequently prescribed it in cases of specific disease, for several days in succession, without causing any trouble. After one pill daily for two days he was so much improved

that nothing more was given and on the fourth day he went out and remained well.

Later, in two similar cases, it was used with like results. Some time after, I was sent for at night to see a young man who had diarrhea and had been sick for a week, but not in bed. His family had considered it as merely a bilious attack, until the delirium alarmed them. I found him with a temperature of 104, pulse 118, wandering delirium and distinct rose-colored eruption. Anticipating that if he recovered quickly, that the diagnosis might be doubted, I caused the parents to note the various symptoms, and being educated people they fully understood. I gave that night a half-grain pill of hydrarg. protiodid, prescribed phenacetin 5 grs. and a mouth wash of sodium salicylate in water. Next day his temperature was morning, 101, evening, 102.5. Number of passages the same but thicker. No delirium, tongue moist; gave at night another half-grain protiodid pill. Third day, morning temperature was 100, evening, 101.8; brain clear, tongue clearing, passages less in number and contained some solid matter. Pill and phenacetin were omitted. Fourth day, morning temperature was 99.5, evening 101.6; three solid passages, tongue nearly clean, but red. Fifth day, morning temperature was 99, evening 101.2. Two nearly solid passages, felt and looked well. Sixth day, morning temperature was 97.8, subnormal, evening 99.6. Seventh day, morning temperature was 98.5, evening 99. He felt well, was up all day and had two nearly natural passages. Two days after he went out and had no further trouble. This case was in the second week of typhoid fever and is a fair example of the general course of symptoms under the use of mercuric protiodid. Two pills were sufficient to determine recovery in nine days. I have since used this remedy in typhoid cases, some with pneumonic complications, and found that in ten days or less from the time of taking the first pill, they were practically well. None were seen later than the second week, by that time a person is sick enough to call a physician. As what would otherwise have been a third week was one of convalescence, I can not say how it would act late in the disease, but should not hesitate to use it, perhaps in smaller doses combined with opium or whatever else seemed indicated. If ulcerations were present they would be converted into aseptic ones.

Fears of a hypercathartic action seem groundless. In only one case griping happened, which soon passed off with a nearly solid evacuation. The old method of "locking up the bowels" simply converted the individual into a vast bacterial culture field. It is the typhotoxin which causes the diarrhea, and when the bacilli are eliminated or destroyed, the passages gradually become thicker and approach their normal condition.

But few doses are required; I have never in any one case, given more than three half-grain and two quarter-grain pills at intervals of twenty-four to thirty hours. They are small and if placed on the center of the tongue, and a drink of water taken, are easily swallowed. The pill form is preferable, as it is not likely to all dissolve in the stomach, but acts as a local antiseptic in passing through the intestines. Mineral acids are incompatible.

Miquel found mercuric iodids to be the strongest of all antiseptic substances. Sternberg places mercuric biniodid first; bichlorid second; protiodid third, and rates them all lower than Miquel.

The Woodbridge carbonate of guaiacol treatment is at present prominent and, I fully believe, will do all that is claimed for it.

The chlorids are valuable from the strong affinity of chlorin for hydrogen, causing it to break up and destroy morbid material. In the JOURNAL of March 14, 1896, Dr. W. L. Schenk cites cases of typhoid fever showing the direct effect of tinct. chlorid of iron and hydrochloric acid, evidently taken in volume and thereby reaching the seat of the disease. Previous to using the protiodid I found the following gave the best results. Chlorid of lime 10 or 15 grs. to a pint of water drank freely, the intent being to fill the intestinal tube with it, as astringents and aromatics for tympanites and diarrhea, cinnamon and clove teas; morphia and potassium bromid for delirium; phenacetin as an antipyretic; castor oil and turpentine as needed. Some cases seemed aborted by the chlorid of lime solution, the bowels being kept open by castor oil and turpentine. The antiseptic powers of some of the above remedies is as follows: Nissen found that the typhoid bacillus and the cholera spirillum are destroyed with certainty in five minutes by a solution containing 0.12 per cent. of chlorid of lime. Kitasato states that the same germs are killed in five hours by a 12 per cent. solution of potassium bromid. Cadéac and Meunier found that essence of Ceylon cinnamon kills the typhoid bacillus in twelve minutes; essence of cloves in twenty-five minutes. In bacterial diseases there is a tendency to rely on quinin, founded on its positive antidotal effects in malaria.

The plasmodium malarie of Laveran is an animal-cule of the monad family, which enters and destroys the blood corpuscles, while the bacteria are vegetable microorganisms multiplying rapidly, the pathogenic species secreting virulent poisons. The cause and actions differ. Quinin is not a strong germicide. Most authors have considered it useless in fevers, some as an unsafe remedy. Bartholow says "the subsultus and delirium are increased by it." I remember a case, over twenty-five years ago, in which mania, coma and death in a few hours, was the sequel of a 10 gr. dose of quinin. Congesting poisoned blood at the base of the brain can hardly be beneficial. As some bacteria have less resisting power than others, notably that of croupous pneumonia stated by Sternberg, its discoverer, to be "very sensitive to the action of germicidal agents," it is not improbable that some of the previously mentioned substances would be efficient in that disease and perhaps in what has some similarity, membranous croup.

In 1862, Dr. A. Tweedie suggested that the rarity of typhoid fever after fifty years of age (being about 1 per cent. of cases reported), was due to the atrophy of Peyer's patches, which takes place at that time of life.

CONTINUED AND EPHEMERAL FEVERS. A NOTE ON THE SERUM TEST FOR TYPHOID.

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There have been two disease names in common use which are nothing but names, and are in no true sense of the term diagnoses. These are *ephemeral* and *continued* fever. Cases of this nature (or of these natures?) may be explained as due to intestinal fer-

mentation or to some other form of sui-intoxication, and they have been regarded, respectively, as abortive and atypical manifestations of some other disease. In some parts of the country, continued fever is regarded as malarial; in Buffalo there is seldom any suspicion of malaria, since typhoid is, for practical purposes, the only definite protracted but acute fever, aside from the exanthemata and miliary tuberculosis. The writer does not care to discuss the merits of the arguments for and against classifying ephemeral and continued fever as manifestations of typhoid. Repeatedly have febrile cases been diagnosed as typhoid from the temperature curve, the subjective symptoms and the prevalence of this disease, and have disproved the diagnosis—at least so far as a typical course of the disease is concerned—by defervescing within a week without producing the cardiac weakness or conferring the immunity of the genuine disease. The writer has seen such cases in which the diagnosis has been confirmed by four or five physicians. Again, there are cases which have had fever for weeks, which have been kept on typhoid regimen and which have finally recovered, but which have never shown an abdominal spot, which have not been marked off into periods by differences in the temperature range, which have shown no delirium nor other evidences of the typhoid state. Are these typhoid or not? The difficulties of cultivating and of differentiating the typhoid bacillus and the trouble of making routine bacteriologic examinations, have thus far left the question to the arguments of theorizers.

A short time ago, the writer was asked to see J. D., aged 20, male, single. He had been well till the day before, but now complained of pain in head and back, of slight constipation and of chilly sensations. At 4 P.M., the pulse was 90, the temperature 100.4 degrees F. Physical examination was negative. The next day at noon the pulse was 81, the temperature 99.5 degrees. At 4 P.M. the temperature was 100.2 degrees. On the third day, at noon, the pulse was 62, the temperature 98.5 degrees; at 4 P.M., 98.7 degrees; at 9:30 P.M. 99.3 degrees. Thereafter, the temperature was normal, and after a day or two, the patient was allowed to get up. During the fever, milk diet and intestinal antiseptics were employed. The urine of the second and third days of attendance showed what seemed to be a plain Ehrlich reaction, namely, a marked garnet-red ring. The first sample also showed a little indican, otherwise the urine was practically normal. The serum test, applied by Dr. Frank J. Thornbury of the University of Buffalo, resulted negatively from blood taken on all three days of the fever. The Ehrlich test was certainly misleading here. It is possible that some one more expert in this test would have said that the shade of red was not the proper one on which to base a diagnosis. Such statements are sometimes seen, but they only go to show that the test is worthless except in the hands of those who have opportunities for extensive observation, while authorities apparently equally good have reported, as the writer has observed, marked Ehrlich reactions in urine from non-typhoid patients. In contrast with this, the results obtained from the examination of blood serum seem, from the reports of Johnston and others, to be almost positive, while the technique is simple and the test conspicuous.

Last fall, the writer had what he supposed to be a case of typhoid fever, though the spots noted were not absolutely typical and the temperature was com-

paratively low after the first few days. The favorable temperature range was, however, attributed to the use of intestinal anti- and asepsis. The case was somewhat protracted for this method of treatment, a temperature of about 99.5 degrees persisting for a month after the subsidence of serious symptoms, so that the possibility of tuberculosis or of malaria was entertained. Although the parasites were not demonstrable in the blood, the case yielded to quinin after a total duration of about ten weeks from the beginning of the typhoid (?) fever. In this case, indican was absent. The Ehrlich test, through a misprint, was performed with sodium nitrate instead of sodium nitrite, hence its failure is not significant. In February, two samples of serum were examined by Dr. Thornbury, with negative result. It is questionable what is to be considered the minimum duration of antitoxic material in the blood after typhoid. In another case treated by the writer, Dr. Thornbury demonstrated the reaction two years and a half after convalescence, and much longer persistence has been noted by him as well as by others. At least, the result throws some doubt on the diagnosis of typhoid.

The serum test for typhoid is one which should be added to the repertoire of all municipal boards of health, since neither the expense nor the labor involved compares with that for the diphtheria test, and since very little care is necessary in transmitting the suspected material to the bacteriologist. If future study shall confirm the argument of those who have upheld the individuality of ephemeral and of continued fever, the profession will be in a position to attack the problem of the nature of these diseases and to determine whether they are due to specific or varying causes, and whether they are identical except in duration.

REPORT OF SEVENTY-SIX CASES OF CATARACT EXTRACTION, WITH REMARKS.

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Although the operation for cataract extraction is the most important in the field of ophthalmology, still it may not require more, and probably not as much skill and judgment as many other eye operations, but the beneficial results of restoring vision to the blind are so great and marvelous to the patient and gratifying to the physician, that the operation takes first rank in surgery and its value can not be overestimated.

In this paper I wish to report the results in seventy-six consecutive cataract extractions, including complicated and uncomplicated cases, that have been done by me since November, 1891, in individuals ranging in age from 18 months to 87 years.

In all cases where the party has passed the age of 25 or 30 and the opacity interferes with useful vision, whether the cataract is mature or not, it is my practice to remove it.

However, some of the cortex is likely to be left behind, but experience has taught that when it has free access to the aqueous humor, absorption rapidly takes place. I do not think that any who have tried it will regret the removal of an immature cataract. I prefer operating with the patient on a table or something about that height, and as soon after the operation as possible get the patient into bed, where absolute

rest may be had. In the seventy-six operations a general anesthetic was not used in a single instance, and today is rarely ever resorted to by any oculist in cataract extractions, but, of course, occasionally it is indicated. Two fresh cocain solutions are made, one 4 per cent. and a 10 per cent., the cocain being dissolved in a saturated boracic acid solution. Instillations of the 4 per cent. are begun about twenty minutes before operating, several being made during that time. And before beginning the operation two or three drops of the 10 per cent. is used. The lids are thoroughly cleansed with soap and water, followed by douching outside and inside the lids with a bichlorid solution (1-6000). To prevent the corrosive action on the sublimate on the instruments, the eye is deluged with boric acid solution. Hands and finger nails are made scrupulously clean. All instruments are carefully sterilized by boiling and then placed in an alcohol bath, and by the assistant again dipped in boiling water when handed to me. Usually the operation on either eye is done while standing behind the patient, using the right and left hands, but occasionally I find it better to do the right eye standing behind the patient and the left standing in front. Fixation forceps and a spring speculum with stop screw is preferred. In nervous cases the speculum, or rather lid elevator, invented by Dr. Edward Swasey of Worcester, Mass., will be found a most useful instrument. With this the upper lid is held completely out of the way without exerting the slightest pressure on the eyeball; the lower lid is kept back by the fixation forceps. With this in place it is impossible for the patient to close the eye. The instrument is made by Geo. Tiemann & Co., New York. The incision is made upward with the Graefe knife in the limbus, and is made to include about two-fifths of the circumference of the cornea. This gives an opening large enough to permit of the easy exit of the lens. The Graefe cystotome is used to open the capsule; the edge of the short fine hook being made very sharp, is carried under the margin of the iris, bringing it across the pupil, making the opening as large as possible. If I am using the spring speculum, it and the fixation forceps are removed as soon as capsulotomy is done, thus, in a measure, preventing the rupture of the zonula and escape of vitreous when ready to remove the speculum after exit of cataract.

I impress upon the patient the necessity of not tightly pressing the lids together, as is the tendency after being stretched apart, but let them close slowly and gently. In expressing the lens the tortoise-shell spoon is generally used by pressure on the lower border of the cornea. And sometimes counter-pressure above the wound, which appears to make the escape of lens easier. It is made steadily until the lens has passed its greatest diameter, and then the pressure is released and the spoon follows the lens upward over the cornea, causing as much of the soft cortex to escape as possible. If much lens substance remains an attempt is sometimes made to remove it by Weeker's spoon or lavage with a boric acid solution, but usually it is left alone as it is rather quickly absorbed, and I have seen it give rise to no bad results; the restoration of good vision being simply retarded. The presence of cortical remains is recognized by the pupil not having become quite black, or the vision not being as good as it should be. Oblique illumination may also be used for its detection, or an examination of the removed cataract. In cases where the

iris remains in the wound or is partially prolapsed I endeavor to replace it by gently manipulating the upper lid of the closed eye, and where not successful in this way the spatula is used, and by this method I have never experienced any of the bad results claimed by some of introducing the spatula into the anterior chamber.

Too much importance can not be attached to the toilet of the wound; every particle of blood clot, tag of capsule, etc., are carefully removed. The lips of the wound are made to lie in as close apposition as possible, and it usually can be done so perfectly that it is difficult to see where the incision has been made. In every case of simple extraction I formerly used a drop of a 1 per cent. eserine solution, but this has been abandoned excepting in cases where there is a possible paralysis of the sphincter in the passage of the lens. In a few cases after the use of eserine iritis has been observed, but it is a question whether the eserine was responsible for it or not. In dressing the eyes a little vaselin, made up with yellow oxid or bichlorid, is applied to the lids to keep them from sticking together, then a pad of gauze is placed over both eyes, then a wad of cotton, and over this the four-tailed bandage as used in the Royal Ophthalmic Hospital, London, and lastly the shield suggested by Dr. Ring.

Unless pain is complained of in the eye or the bandage is too tight, or irritation of some kind is present, no inspection is made until about forty-eight hours have elapsed. If the eye is doing well, both are washed and re-dressed as at first. On the third day the use of atropia is begun and continued twice daily. The eyes are kept bandaged for four or five days, or until the wound is thoroughly healed, for, if the well eye is left uncovered and moves about, irritation of the operated one will be caused and delay the healing, and possibly produce other complications. The operated eye is kept covered until about the eighth or tenth day, and then smoked glasses prescribed. The fitting of reading-glasses is deferred until all redness has passed away from the eye. The simple extraction is always done where possible; but in cataract with glaucoma and extensive posterior synechia, iridectomy becomes necessary, as well as from accidents occurring during the operation and other indications; some of which may be a severe wounding of the iris when making the incision, great difficulty in expelling the lens, a persistent tendency of the iris to prolapse, etc. In cases of a thickened and opaque anterior capsule, as much as possible is removed with the forceps.

Of the seventy-six extractions, ten were of a complicated nature, including detachment of the retina, three, none of which could be determined before operating; foreign body in eye, one; total posterior synechia, one; adherent leucoma, one; dislocated lens, one; penetrating wound, one; chorio-retinitis, one; disseminate choroiditis, one. In one case of detached retina, the projection was so imperfect and the results of visual improvement so uncertain, that it was only at the request of the patient that I consented to remove the lens, and that for the cosmetic effect alone. Almost complete detachment was found, which probably occurred some years previous from a piece of flying wood, as from that time he dates the beginning of impaired vision. After the operation perception of light was better and by turning the eye outward he could count fingers. In the other two cases the pro-

jection was fairly good, and after operating vision in one eye was 20/70 and the other 10/200. The results in the other cases of complicated cataracts were, foreign body 20/20, total posterior synechia 20/100, adherent leucoma 18/200, dislocated lens 20/30, penetrating wound 20/20, chorio-retinitis 10/200, disseminate chorioiditis 18/200. In case of the foreign body it was found imbedded in the lens substance. In seven of the above cases iridectomy was done.

In my sixty-six cases of uncomplicated cataracts done by simple extraction the visual results were as follows: 20/15 in three eyes, 20/20 in twenty-eight eyes, or nearly 50 per cent. with full vision or better; 20/30 in ten, 20/40 in twelve, 20/50 in seven, 20/70 in one, 20/100 in two, 20/200 in two eyes, and in one case no vision. Two of these cases were zonular cataract in children, one 18 months old and the other 7 years, both boys. In both eyes of the infant I needled three times, getting complete absorption and perfect vision. In the boy discission was performed on the right eye twice and on the left three times, obtaining vision 20/15. An exceedingly small particle of opaque anterior capsule lies in the lower part of the pupil, but causes no inconvenience or deformity. The case that resulted in no vision was produced by the firm pressure of lids together, expelling lens and considerable vitreous and prolapse of iris, which was at once excised, but later it became incarcerated, covering the entire pupil. Iridectomy was done by de Wecker's method, but was unsuccessful. The secondary operation of discission was done in about one half the cases, in all of which vision was improved. Beside the above-mentioned cases, there was slight loss of vitreous in two cases of simple extraction, and in one with iridectomy, but the patients made good recoveries. Prolapse of the iris followed in three cases, and was excised in two, one eight days after extraction. Twice during the operation the iris fell before the knife and was wounded.

In looking over the report I find that about 90 per cent. of the operations were successful; that is, giving vision of 20/200 and better to about seventy of those operated on, which is about the usual average among good operators.

SURGERY ONE HUNDRED YEARS AGO.

AN HISTORICAL STUDY

BY DR. GEORGE FISCHER.

DEDICATED TO THE GERMAN SURGICAL ASSOCIATION.

TRANSLATED FOR THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

BY CARL H. VON KLEIN, A.M., M.D.

CHAPTER IV.—NOTICE ON HOSPITALS.

(Continued from page 694.)

The oldest, largest, richest and worst hospital in Europe was the *Hôtel Dieu* in Paris. It is said to have been founded in 660 A.D. by St. Landry, the Bishop of Paris; it is certain that Louis the Good and Henry IV. enriched it considerably. The old building was situated on the Island of Notre Dame, the new one on the opposite side of the river, connected with the old part by a bridge. In 1783 the old house contained twenty-three halls, the largest of which accommodated 400 patients. There were almost always in the hospital about three or four thousand patients, sometimes even more, but there were only 1,233 beds. Therefore there were often four or five in one bed: it even happened that a dead man, two dying and a convalescent lay together. In spite of the order of the king that each one should have

his own bed, and only when the hospital was overcrowded should two be put in one bed, it was thought sufficient to separate the patients by a board slipped between them so they could not touch each other. Patients were admitted without distinction; only those with skin diseases and syphilis were sent to Bicêtre. The surgeon on duty (*chir. de la porte*), who was changed every month, examined the new-comers. There were special wards for patients who had been operated upon, ophthalmia patients, the wounded and those with scurvy, although the medical and surgical patients, to whom hospital clothes were furnished, were often promiscuously put into the same room. There were 92 nuns with 50 novices and 18 other women engaged for attendance. The nuns dispensed the food, but troubled themselves so little over the orders of the physicians that many patients died simply because of the boundless disorder. They used 4,000 pounds of bread a day. Eight physicians and a chief surgeon (*chir. major*), with a hundred student surgeons, were entrusted with the treatment of patients. Of these, 13 were called surgeons internes because they had board and lodging in the hospital, and 15 surgeons externes, who ate in the hospital but lived outside. The other 72 did not enjoy these benefits, but must appear punctually for visits, which were made at six o'clock in the morning, in the winter at daylight, and at five in the afternoon. Two of the oldest internes were, after several years' service, called *gagnants maîtrise*, that is, they treated the patients by themselves and referred only the most important cases to the first surgeon for advice. This position they held a few years, when they were advanced to *maître*. As a rule there were more than 500 surgical patients in the hospital. Nevertheless the students learned little, because during the visits the chief surgeon did not remain long by a patient's bed, and seldom spoke. Most of the operations occurred in spring and autumn, often ten or twelve in one day. The bad plan prevailed here as in the other large French hospitals, of operating upon all the stone patients on a certain day; therefore many must wait weeks, even months, and in consequence of the bad air and food in the hospital they became much weakened. In 1761 Moreau performed fifteen operations for stone in the *Hôtel Dieu* in a single day. A few days before the operation they gave especially the younger patients worm cake, because many would be killed by the worms! The mortality was frightful, as we shall see later; the people died like flies in the infected air. This statement of the Vienna physician Hunczovsky was not exaggerated, and was confirmed by French authorities. The Academy of Sciences commissioned some of its members to make a report on the *Hôtel Dieu* (1786). They called attention to the fact that it was situated on a street where the whole day long wagons with wood and stone, sometimes 168 in an hour, were driven. For 4,800 patients there were only 2,000 beds, and at times six lay together. Here one found three wounded men in one and the same dirty bed, these three in delirium, who could maim or kill themselves in their frenzy. Convalescents lay between the sick and the dead. Two or three hundred wounded were crowded together in St. Paul's Hall, which was the sole passage to the kitchen and cellar. The operating room was situated close to this ill-smelling hole, and over the morgue. The French commissioners declared publicly, with the consent of the government, that the *Hôtel Dieu* was

the most unhealthful of all hospitals. Let us look at one more picture from the hand of G. Wardenburg in 1796, of this ill-famed house, called at that time, with the greatest irony, "*Grand hospice de l'humanité*." Even before one passed the door of death, he was met at a considerable distance by a smell of cadavers. In the house, daily falling to ruin, the number of patients had decreased since the revolution to some 2,000 or 2,500 and, chiefly through the influence of Desault, more comfortable beds were in use. More than two patients were never in one bed, separated by a board. The nuns still held their powerful influence, and they were never more intriguing than here. The refuse was carried to the outhouses in narrow pipes, but they leaked, and a dreadful smell was the consequence. But most horrible of all was the fact that the morgue and the anatomic room were situated at the end of two wards, opening into them. The dead were all carried through these wards, and the odor infected everything. The low, dark operating room was just as bad, where the patients were operated upon by candle light on the clearest days. Smoky lamps burned at night. The noise of the street was so great that neither the internes could work quietly in their rooms, nor the patients find rest. Tenon reckoned that ninety-two carts and freight wagons were driven under the operating room every hour; for this reason Desault performed operations in the amphitheater. The Hôtel Dieu has him to thank for a better arrangement of the wards and distribution of provisions. At his instigation the archepiscopal residence, chapel and church were annexed to the hospital, and a great amphitheater erected in the chapel. Beside twelve physicians, for the most part unknown men who had received the positions by preferment, Peletan directed the surgical clinic at that time. The hospital also employed an oculist and a special truss-maker (*chir. herniaire*).

Next to the Hôtel Dieu, the Charité, later called *Hospice de l'Unité*, was the most important hospital in Paris for practitioners, as in the two were gathered generally the difficult surgical cases. It was the oldest of the thirty-two hospitals in France belonging to the Brothers of Mercy, who were themselves the physicians and surgeons there. The revolution drove them out because they would not take the oath, though the Charité brothers were everywhere among the best nurses. The hospital, with somewhat more than 200 beds, took no women patients and no patients with syphilis, contagious diseases or rupture; further, priests were excluded, because they could live from their masses, and soldiers because they were paid. All other sick and poor were admitted at any time, not, as in many hospitals, only on certain days and hours. The larger of the wards, which were all connected, were separated from one another by iron gratings, while the smaller ones communicated with the larger by open doors. The patient had his own bed; between two beds stood a basin which was cleansed between 2 and 3 o'clock at night. The monks also held free polyclinics which were attended by large crowds. In the Hôtel Dieu, indeed, there was a greater variety of surgical cases, but in the Charité the visits were much more thoroughgoing; each patient was examined daily. Unfortunately there was no special operating room, so that with the exception of stone patients, those with hare-lips and so forth, all the patients were operated upon in the beds. With the so-called Hospice de Charité, which was established in an old monastery, in 1779, for 120

patients, the experiment was first made to learn whether it would be advantageous to put a small hospital in every parish for the poor patients found within it. The Hospital of St. Louis was for contagious diseases, the Hospital of St. Anna especially for the plague stricken. The Hospice de St. Sulpice was among the the best hospitals, as was also the Hôpital Necker, which was founded at her own expense in 1778 by Susanne Necker, wife of the Necker afterward Minister of Finance.

Among the provincial cities Rouen, since 1754, had a Hôtel Dieu with 400 beds; there, too, several patients often lay in one bed. Le Cat officiated as surgeon, and after him his son-in-law David. Whoever, in this ill-smelling hospital, was not cured after a six-months' sojourn was taken to another hospital. In Brest the patients were so crowded in large, poorly ventilated halls, that people used to call the hospital "the grave of sailors." Lyons, Bordeaux and Montpellier had larger hospitals. There were also hospitals only for stone patients, for example in Luneville, where within fifty years 1,483 operations for stone were performed.

Let us end our travels in Northern Europe. *Stockholm* owed its hospital to the suggestion of Dr. Bäck and the surgeon Acrel. For several years collections were taken at weddings and christenings, at first only in the capital, but later throughout the whole country, till King Adolphus Frederick had a building bought, in which in 1752 a hospital with eight beds was opened. Two Knights of the Order of Seraphine directed it. The number of beds increased in the following thirty years to forty-four, each of which cost 1,744 thalers a year. In 1775 the contributions amounted to 67,500 thalers, including the proceeds of the royal lottery and of concerts and plays. For the conferring of the Order of Seraphine on the Empress of Russia she gave the hospital 70,000 thalers. It was a model institution in respect to cleanliness and administration; each patient had his own bed with curtains, and hospital clothing. When in 1780 the King of Sweden broke his arm, in the region of Loulais, the citizens for joy at his fortunate recovery, collected 4,000 thalers, to keep always in the hospital a few surgeons for special instruction in treating fractures of the arm and leg; these were called Loulais-physicians. *Copenhagen* followed the example of her sister city, and built in 1757 the Friedrich's Hospital for 280 patients, with the same number of beds. The annual cost of 25,000 thalers the government of Friedrich V. defrayed, among other ways, by reserving a monopoly of the printing and sale of playing cards. Winslow was surgeon, and he lectured once a week in the Danish language, on the cases as they came up, while Callisen, the professor of surgery, and first surgeon at the Marine Hospital, lectured in the German language. St. Petersburg possessed, in 1786, a hospital with 300 beds, a house of refuge and a hospital for syphilis, beside two smallpox hospitals, a school of obstetrics and an electrical institution of medicine. Likewise in *Moscow* the Empress had built hospitals, and Emperor Alexander gave the considerable revenues of two starosts to the hospital in Wilna. Russian noblemen followed the royal example. Count Scheremeteff set aside a capital of two and a half million rubles, the interest of which was to be turned over to the hospitals and charitable institutions. Von Demidoff gave the University of Moscow a million rubles for a library and natural

history collection, and for schools; he would also lend 1,500 serfs if the Emperor decided to found a university in Jaroslow. The following table may give an idea respecting the diet in the different hospitals:

| Hospital. | Rigid Diet. | Full Portion. | Small Portion. |
|--------------------------------------|---|---|---|
| Charité in Berlin (1727). | | Daily fresh meat, soup with entrées. Brown or white beer, occasionally wine. | |
| General Hospital in Vienna (1785). | In morning broth; at noon <i>trinkpanatet</i> ; in the afternoon, when necessary, broth; in the evening, soup with pieces of bread. | In morning burnt flour soup with pieces of bread; at noon soup with barley, rice, grits or meal pudding, 1½ viertling of beef, vegetables; in the evening, soup, beer or wine (one maass for 8 kreuzer) according to orders of physician. | ¼, ½, ¾ portions. (This diet was especially for those who paid nothing, or only 10 kreuzer daily; in higher classes it was better.) |
| French Hospital regulation (1781). | Broth, three or four times daily. | Daily one pound of meat ($\frac{2}{3}$ beef, $\frac{1}{3}$ veal or mutton), which must be weighed in presence of the <i>Controleur</i> , and which, boiled, must weigh ten ounces without bones; 24 ounces of bread, out of white flour, one pint of red or white wine or beer, salt and vinegar, extra food according to order. | |
| Charité in Paris (Huneczovsky 1783). | Clear soup, light milk or fruit foods. | Soup, 8 ounces of meat, 10 ounces of bread, noon and evening; $\frac{1}{3}$ maass of wine. | ½ and ¼ portions. |
| Hospital in Portsmouth (1780). | Warm milk with water or pomade soup, barley water as a drink. | One pound of boiled beef, one maass of beer. | ½ portion. |

Although these regulations were not strenuously opposed in general, yet it must be remembered that in consequence of the gross irregularities and the farming out of certain hospitals, the contractors not only kept back fuel and linen, but even preyed upon the food for the patients, and supplied a poor quality in order to make as much money as possible. By comparing the two French tables of diet it appears that the patients were not furnished the full legal rations of bread and meat.

The following table shows the attendance and *mortality* at the various hospitals:

| Hospital. | Year. | Total Number. | Deaths. | Percentage of mortality. | Surgical Patients. | Deaths. | Percentage of mortality. |
|--------------------------------|-----------|---------------|------------|--------------------------|--------------------|----------|--------------------------|
| Charité in Berlin | 1796-1806 | 39,270 | with 6,230 | 16 | 5,288 | with 821 | 15.5 |
| " | 1801 | 4,726 | " 472 | 10 | 523 | " 68 | 13 |
| " | 1802 | 4,783 | " 318 | 6 | | | |
| " | 1803 | 5,001 | " 457 | 9 | 798 | " 81 | 10 |
| " | 1804 | | | | | | |
| Gen'l Hosp., Vienna. | 1781 | 8,824 | " 864 | 9.7 | | | |
| " | 1784-1787 | 30,764 | " 2,642 | 8 | | | |
| " | 1799 | | | 10 | | | |
| Kiel | 1797 | 348 | " 46 | 13 | | | |
| Bartholomew's Hospital, London | 1771 | | | 8 | | | |
| Bartholomew's Hospital, London | 1787 | 3,836 | " | | | | |
| Thomas Hospital, London | 1787 | | | 8 | | | |
| Maternity House, London | 1771 | | | 2 | | | |
| Northampton | 1787 | | | 5 | | | |
| Manchester | 1787 | | | 4.5 | | | |
| Edinburgh | 1787 | | | 4 | | | |
| Hôtel Dieu, Paris | 1771 | 22,000 | " 20 | | | | |
| " | 1783 | 30,000 | " 6,000 | 20 | | | |
| Charité, Paris | 1783 | 2,500 | " | | | | |
| " | 1786 | | | 13 | | | |
| St. Sulpice, Paris | 1786 | | | 15 | | | |
| Hospital in Lyons | 1786 | | | 8 | | | |
| Rome | 1783 | | | 9 | | | |
| Stockholm | 1752-1775 | 8,261 | " 967 | 11 | | | |
| Copenhagen | 1783 | | | | 593 | " 51 | 8 |
| " | 1785 | | | | 639 | " 39 | 6 |
| " | 1799 | | | 10 | | | |

(To be continued.)

PECULIARITIES OF THE SURGICAL DISEASES AND INJURIES OF THE NECK.

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(Concluded from page 697.)

PECULIARITIES OF THE SURGICAL DISEASES AND INJURIES OF THE SUPRA-CLAVICULAR REGION.

Congenital atrophic malformations.—A sort of atrophy of the region is presented in subjects, young and old, in which the supra-clavicular fossa is unusually deep, causing the deformity called "salt-cellar neck." Orifices of congenital branchial fistulæ are sometimes met with in this region.

Acquired atrophies call for no special remarks. As for *hypertrophic malformations* it sometimes happens that carriers, especially plank-carriers, develop a thickening of the skin and connective tissue of the region called a pad. In emphysema the hollow of the region is filled by the apex of the lung; also, in pneumatocele; also in aneurysms and other tumors.

Swellings of the region are rather frequent but present nothing peculiar, except what has been said.

Burns or frost-bites are rare, as the region is usually well protected.

Contusions sometimes present hematomata so large as to painfully compress the branches of the brachial plexus. In fractures of the clavicle the brachial plexus may be injured.

Punctured or superficial *wounds* may open the external jugular, the terminal part of the external and anterior jugulars and of the cephalic, but they are seldom serious unless infected. Punctured wounds of the subclavian vein and artery may also give rise to serious hematomata. When persistent they should be aspirated or incised. We should bear in mind that hematoma may be due to a wound of the vein, and that the connection may still exist. This will surely be the case if after aspiration it fills up again. In case of incision the deeper clots should not be disturbed, so as not to open the wound in the vein in case that lesion has occurred.

Injury to the subclavian artery is recognized by the pulsations of the hematoma; it is then a traumatic aneurysm. The artery should be ligated. When the swelling is moderate, the ligation should be made in the supraclavicular region, using, if necessary, an aneurysmal needle with a detachable point. In the majority of cases this simple ligation will suffice to cure the aneurysm; if not, compression of the axillary or its ligation should also be done; then the sac incised and the injured points ligated above and below. When on the right side, the artery can only be reached and encircled in its second portion after dividing the anterior scalene; no permanent ligature should be applied there; a provisional loop ligature should be placed, the sac incised, and the injured point of the third portion ligated permanently above and below. On the left side the ligation of the second portion can be made permanent at once, as it is as safe on this side as a permanent ligature is unsafe on the second portion of the right side. When the swelling is so great as to cause the failure of the above procedure, or so as to discourage even the attempt, but only then, a provisional ligature should be applied upon the first portion of the subclavian; the axillary should be compressed or treated in the same way, then the

sac is incised and the two ends ligated. In some cases these ends can not be found; packing with bits of aseptic sponges should then be resorted to, with compression over it. Should the hemorrhage return, the clavicle should be sawed through and the two ends secured. When the artery on the right side is wounded close to the scalene so as to compel ligation of the second portion, this should be done with double catgut, without rupturing the coats and with a bloodless space between the ligatures. On the left side the second portion can be ligated with safety after the old method; but the new method should be applied there also in preference. The permanent ligation of the first portion on either side should not be done unless it can be done thoroughly with double catgut, without rupturing the coats and with a bloodless space between. As this can not be safely done, as a rule, without resecting the inner extremity of the clavicle and the corresponding part of the sternum, this should only be done when the ligation of the second portion can not be performed satisfactorily as above described. Arterio-venous aneurysm, due to punctured wounds of both the vein and artery simultaneously, should not be interfered with unless they grow or cause serious pressure symptoms. Then both the artery and the veins should be ligated above and below and the sac extirpated unless too adherent to surrounding structures; if left in place it should be incised to diminish its pressure effects, sometimes these continue although abated.

Punctured wounds of the nerves rarely cause paralysis, but may cause persistent pain, neuralgia and trophic changes in the area of distribution.

Punctured wounds of the lymphatic duct on the right and of the thoracic duct on the left, may produce a chyloma, which should be treated as a venous hematoma; usually it is only then that it is recognized.

Punctured wounds of the apex of the lung may be followed by emphysema, at first limited and then generalized.

Incised superficial wounds, are not serious unless infected. The wounding of the external and interior jugulars and of the cephalic is easily arrested; however the wounding of these veins near their point of discharge into the subclavian may be followed by severe hemorrhage and by entrance of air into the veins.

Incised wounds of the third portion of the subclavian artery when large are followed by rapid death; when smaller they often cause traumatic aneurysms; the treatment is the same as indicated for punctured penetrating wounds. Incised wounds of the subclavian vein are most serious because of the amount of bleeding often causing rapid death, and also because of the quick penetration of air into the vein. The vein should be at once plugged with the finger, or better, an aseptic packing; then an attempt should be made to enlarge the wound and to clamp it and then ligate the two ends. When this is impossible, a provisional loop ligature should be applied on the first portion of the vein; also compression should be made on the axilla and the two ends ligated; the ligation of the proximal end is to secure against hemorrhage and also entrance of air, but the ligation also of the distal end is of course indispensable.

Incised wounds of the lymphatic duct on the right side and of the thoracic duct on the left are diagnosed by the oozing of the peculiar fluid they contain. If possible, the distal end should be ligated, and this

usually stops the flow, since there is a valve on the proximal end. There is seldom if ever any, discharge from it. When ligation is impossible, compression will often suffice. It is very seldom that any further trouble is noticed, because there exists usually two or three branches of that duct, and the uninjured ones carry on the circulation. When this fails and a chyle fistula is established, then the patient loses flesh and succumbs.

Incised wounds of the brachial plexus are followed by paralysis of the affected area; they should be stitched at once. The lesions from whatever cause, may affect only one branch. Those neuroses never affect the internal, anterior, and posterior surfaces of the arm, because these are supplied by the anastomoses of the intercostal filaments with the internal brachial cutaneous. They must not be confounded with the anesthesia and paralysis resulting from contusions of the shoulder in hysteric subjects (hystero-traumatism). The treatment is by electricity. If a callus includes a nerve it must be resected.

Incised wounds of the phrenic nerve are most serious. However, when the nerve has been pressed upon by a tumor for some time, the wounding of it is not so dangerous. Incised wounds of the apex of the lungs are not so apt to be followed by emphysema as the punctured wounds.

Contused and lacerated wounds are much more serious than clean wounds because of the impossibility of primary union and because they expose more to secondary hemorrhage. Gunshot wounds also are serious for similar reasons.

Poisoned wounds, stings, bites, present no peculiarities here, nor do foreign bodies in wounds of this region.

Dislocations of the head of the clavicle are a frequent cause of serious contusion of the region.

Fractures of the clavicle sometimes cause wounds of the vein or of the artery or of the brachial plexus. Shock accompanying the injuries of this region is sometimes very great on account of the large nerves of the region.

Neuroses.—Sometimes the callus of a fracture of the clavicle includes a nervous branch, hence neuralgia or paralysis, requiring resection of the callus. A simple contusion without fracture, may produce a paralysis of the plexus. Repeated slight contusions may produce paralysis, as in the case of the strap of the carriers, especially water carriers. *Softening and induration* present no peculiarities. *Congestion* of this region present nothing special. *Acute inflammation* of the skin presents no peculiarities. Superficial or supraponeurotic cellulitis and abscess present no special characters.

Deep or subaponeurotic cellulitis and abscess are not rare; they may develop in the region and burrow in the axilla. They may be the continuation of abscesses of the neck or axilla; these abscesses have a great tendency to burrow because of the resistance of the fascia of the region. In some cases the vessels raise the abscess and this may cause errors of diagnosis. Pneumonia of the apex may give rise to an abscess of the region. Superficial adenitis presents no peculiarities beyond being the most frequent starting point of primary cellulitis as a result of some affection of the upper extremity, side of chest and posterior region of neck and head. Deep adenitis also; these are more painful, being bound down by the fascia. Chronic inflammation of any of the tissues of the

region presents no peculiarities, except when propagated from the lung.

Gangrene from whatever cause may be serious if it penetrates to the vessels and nerves. A number of cases of gangrene are recorded as following the compression of the artery for aneurysms below; many of them terminated fatally from hemorrhage. Gangrene may be propagated from gangrene of the lung.

Ulcers are rare in the region and present no peculiarities.

Fistulae are sometimes congenital, they are most commonly due to chronic tuberculous glands; rarely to bony lesions; more rarely still to tubercles of the apex of the lung.

Tumors of the supra-clavicular region—Gaseous tumors are represented by pneumatocele of the apex of the lung; also by emphysema in cases of wounds, and of general pulmonary emphysema. Liquid tumors—liquid hematoma is not rare on account of the frequency of the wounds of the region. Varix or dilatation of the subclavian vein is not rare in some forms of disease of the heart. Angioma presents nothing peculiar. Idiopathic aneurysms are comparatively frequent; the modern treatment is thorough asepsis, more especially here than anywhere else; resection of the inner extremity of the clavicle and corresponding part of the sternum; ligation of the first portion of the subclavian with double catgut ligatures without rupturing the coats and leaving a bloodless space between; also ligation of the vertebral in a like manner at the same sitting. Recurrent aneurysms should be treated by the ligation of the vertebral (if not already done) and of the axillary artery above the subscapular.

Inflamed aneurysms should be treated by placing a provisional loop ligature around the first portion of the subclavian, also a permanent ligation around the axillary above the origin of the subscapular; then incision of the sac, clamping and ligating the subclavian where it enters the sac and also of the other bleeding points; extirpation of the sac if not too adherent to important surrounding structures. Lymphangioma is not rare and presents no peculiarity. Serous cysts are frequent in children; they are very soft and feel reducible, but they are not. Mucoid, soft dermoid cysts present no peculiarities. Bursal cysts may develop under a "pad." Hydatid cysts are most rare. Purulent cysts or chronic abscesses usually come from other glands, most seldom from the lungs. Abscesses by congestion are not comparatively rare in this region, coming from the base of the skull, or from the neck, and on their way to the axilla following the sheaths of the vessels and nerves more particularly.

Solid tumors.—Cicatricial keloids are not so rare here, when the cicatrices draw the head to one side. Clotted hematoma may follow injuries of vessels as explained above. A fibrinous hematoma following a cured aneurysm was removed by Dr. Shopf. Sebaceous cysts and hard dermoid cysts present no peculiarities. Simple adenoma or lymphadenoma presents nothing peculiar. Adenoma of Hodgkin's disease is commonly met with here; also strumous adenoma, tuberculous adenoma, syphilitic adenoma; adenoma of glanders rarely. Lipoma may be superficial or deep. There exists here a pseudo-lipoma occurring in women over 40, due to arthritism and diabetes; it is diffused, projects between the sternomastoid and trapezius, and causes serious pressure

symptoms; it may reach the mediastinum; it should be operated upon if pressure symptoms occur. Fibroma, myoma, myxoma, neuroma present no peculiarities. Chondroma is rare. Osteoma may arise from the first or second ribs, clavicle or vertebrae; seven cases of the last are recorded; they must not be confounded with an anomalous "cervical rib." Encephaloid, melanotic, colloid, pulsating, encephaloid, epithelioma, carcinoma, sarcoma, scirrhus, are very rarely primary; they are mostly consecutive and most often come from the glands of the axilla, themselves commonly affected by cancers of the mammary glands. A peculiar tumor in this region is a possible aberrant goitre, already described with the thyroid region.

PECULIARITIES OF THE SURGICAL DISEASES AND INJURIES OF THE POSTERIOR REGION OF THE NECK.

Congenital atrophy and hypertrophic malformations of the posterior region of the neck are rare. The most common is rare and is represented by a peculiar form of spina bifida. Congenital deviations are due to the congenital affections of the vertebrae and to torticollis.

Acquired or post-natal malformations, atrophic and hypertrophic deviations are due to neuroses (torticollis, paralysis), to injuries, to inflammations, gangrene, ulcers, fistulae, tumors, operations, cicatrices.

Swellings of all kinds, due to the same causes, may be observed, but present nothing peculiar; the most common is the one produced by the chronic arthritis of the articulations between the occipital and the vertebrae, and between the first vertebrae themselves, and called the post-cervical or occipital arthritis or suboccipital disease.

Burns and frost-bites are only particularly important here because of the cicatrices which may follow, causing disfigurement in an exposed part, and also possibly causing deviations of the head from retraction.

Contusions are more frequent than in front; they are particularly painful because the muscles contused are those which keep the head in balance; they are often accompanied by fracture of the spinous processes and laminae, contusion and concussion of the spinal cord and even of the brain.

Punctured, non-penetrating wounds, *i. e.*, not penetrating the vertebral artery and the spinal cord, are simple wounds and seldom give rise to any trouble. However, should they be large punctured wounds and strike the deep cervical artery, or the posterior jugular vein, they may give rise to serious hematoma. When this persists, it should be aspirated or incised. When it pulsates it is a traumatic aneurysm of the said artery and it should be treated as such. Punctured wounds of the vertebral artery may give rise to an aneurysm also which must be treated as such, that is, by ligating above or below, or both, when possible, and then incised. Much hemorrhage must be expected from the untied end and the surgeon must plug tight with aseptic sponge and make firm pressure with a bandage.

Punctured wounds of the spinal canal through the interlaminar spaces, when the head is flexed forcibly, or through a fracture of the laminae, are serious only if becoming infected. Incised wounds reaching the spinal cord itself are followed by paralysis of the parts below. If the wound is and remains uninfected, the cicatrization by primary union may take place and the paralysis disappear; if not, it will be perma-

ment. If between the occipital and the atlas or axis the oblong medulla is severed, death is instantaneous. Infanticide is often produced by a long needle or pin driven between the occiput and the vertebra. If the lesion is above the origin of the phrenic, death follows quickly by paralysis of the diaphragm. Incised wounds of muscles are usually due to saber cuts; they may include almost all the muscles; they may reach the vertebrae when the head drops forward; the hemorrhage is great. Incised wounds of the vertebral artery give rise to profuse hemorrhage. The peculiarities of the treatment of these wounds is prompt attention to the vertebral, the impossibility of ligating both ends if it has been wounded high up, the suturing of the large muscles, the difficulty of keeping the head steady and to secure drainage; a liquid glass bandage or a jury-mast apparatus will assist materially.

Wounds of the posterior region are said to be followed by sexual impotency when the membranes of the cord are involved; also by paresis and wasting of the lower extremities; also of the testicle. Larrey contends that this may take place even when the cord is not affected. Contused or lacerated wounds present nothing particular.

Gunshot wounds are usually serious if they reach the membranes on the cord. When pressure symptoms are present, very extensive and deliberate dissections must be done to remove the ball, the fragments of broken lamellae, or clots, or foreign bodies, which cause the pressure. Poisoned wounds, stings, bites present no peculiarities. Foreign bodies causing pressure symptoms on the cord must be removed at almost any cost.

Ruptures of the muscles of the nucha are reported in those who carry heavy loads on the head; the symptoms are those of other muscular ruptures.

Ruptures of the attachments of the rhomboid and of the elevator of the angle of the scapula have been seen in farm laborers. Sprains, dislocations, fractures of bone belong to another chapter. Shock accompanying the injuries of the posterior region is usually great, being often complicated with concussion and contusion of the cord or of the cerebellum or of the whole brain.

Neuroses are represented by the acute torticollis (posterior) of the trapezius. It is said to be even more frequent than the torticollis of the sterno-mastoid. When in the trapezius and complexus the head is inclined on the affected side, but the face is turned toward the opposite side; the head is slightly thrown backward. There is no cord, no diffuse induration, no atrophy of the face; the pain is near the atlas and is increased by pressure; under anesthesia the head can be straightened. This torticollis may be confounded with occipital arthritis with inclination of the head. The treatment consists in applying a liquid glass bandage or plaster apparatus; it should be worn one year. When both the trapezius muscles are affected the head is thrown back. In cases of torticollis of the trapezius the sterno-mastoid is often also contracted, but it is a contraction of immobilization; the pain is along the trapezius and not along the sterno-mastoid. Very often the torticollis affects also simultaneously the deeper muscles, the splenius, the elevator muscles of the scapula, the rhomboid. The scalenes and the platysma are sometimes the site of torticollis. Chronic or permanent trapezius torticollis is rare.

Softening or induration present nothing of special interest.

Congestion of the posterior region presents nothing special.

Acute inflammation of the skin is represented specially by large boils and carbuncles; they are comparatively very painful; they give great pain because the tissues are inextensible; sometimes they are followed by extensive sloughing, when the general health is low, specially if diabetes be present; they are also serious because the veins of the upper part of the region open into the sinuses of the dura mater. The circumscribed anthrax is not as grave and is usually amenable to ordinary treatment. Diffused anthrax extends continuously from the superior curve line of the occipital to the seventh cervical and from one ear to the other; nothing stops it, not even the largest or deepest incisions, until it has reached the above limits. It is as though a certain extent of tissue was infiltrated with microbes or as when an artery is obliterated and gangrene continues until all the area of the artery is mortified (Tillaux). Extensive incisions are even hurtful until limitation has been established, on account of the shock of the operation. When limitation has taken place, then incisions or the curette assist in removing the mortified tissues. Acute cellulitis, extensive gangrene or post-cervical abscess, phlegmons, are sometimes observed here when the general health is low, specially if diabetes be present, and for the other reasons explained above. They are really adeno-cellulitis or phlegmons because all inflammation here begins in the glands; they are usually due to disease of the scalp and skin; they may be superficial or deep; deep abscesses usually cause great pain on account of the thickness of the skin, they give rise to but very little redness and edema; they have a tendency to flatten and spread because of the thickness of the skin; they are slow in becoming superficial for the same reason; the knife must penetrate deeply to reach them. Acute lymphadenitis, however, is itself rare; it is due to lesions of the scalp and skin. Chronic inflammations are represented specially by acne, by syphilitic eruptions and by the well-known syphilitic adenitis of the suboccipital and mastoid regions; these lesions are so constant in syphilis that Ricord used to say that was the place to feel the pulse of syphilis.

Gangrene of the region is serious when extensive or deep, on account of the cicatrices and their consequences. *Ulcers* are rare and present no peculiarities. The same is true of *fistulae*.

Tumors of the posterior region of the neck.—Gaseous tumors are represented only by the extension of an emphysema.

Liquid tumors.—Liquid hematoma presents no peculiarity. Varix and angioma are very rare. Aneurysms of the vertebral artery are not rare in this region; they are usually traumatic and are often high up. The artery should be ligated above and below, if possible; or above or below whenever possible, and the sac incised and immediately plugged with aseptic sponges; if possible, the distal bleeding end should be ligated. In case a secondary hemorrhage should occur through the distal end and be uncontrollable by plugging, the ligation of the vertebral on the other side must be considered and weighed.

Lymphangiomas are rare here. Serous cysts and congenital cysts are sometimes median and sometimes lateral; they may reach as low down as the dorsal region and from the rachis to the acromion; they are

usually met with in children born prematurely and presenting other malformations; they are sometimes transformed into lipoma: according to Lannelongue they are congenital cystic lymphangioma. Mucoid cysts and dermoids are rare and present no peculiarities. Bursal cysts or hygromata are sometimes met with over the spinous processes of the seventh cervical. Purnlent cysts or chronic abscesses, idiopathic or symptomatic, or by congestion, are rare here.

Solid tumors.—Comedones are not rare, neither is keloid. Clotted and solidified hematomas present no peculiarities. Sebaceous and dermoid cysts are usually difficult to dissect because they are so intimately adherent to the surrounding tissues. Simple adenoma or lymphadenoma, adenoma of Hodgkin's disease, strumous and tuberculous adenoma are comparatively rare. Adenomata syphilitica, *i. e.*, the chronic enlargements spoken of above, are very common and almost pathognomonic of syphilis. A case of gumma of the trapezius has been recorded. Adenoma due to glands is most rare.

Lipoma is common. The circumscribed form is the most frequent; this region is a site of predilection; it sometimes sends fibrous processes to the vertebrae. A peculiar circumscribed form of lipoma is described in prostitutes over the point of junction of the neck and back of the curve seen there, and due, it is said, to the position they so often have to assume. Diffuse lipoma is sometimes limited to the region and sometimes a part of the diffuse kind of lipoma which occupies the whole circumference of the neck like a cravat: it is such in some cases that it is impossible to fix the limit of its margin, *i. e.*, to say where it ends and where the natural fat begins. Fibroma of the region sometimes also presents adhesions to the vertebrae. Cervico-dorsal fibromata are common (Guyon): myxema, myoma, neuroma, chondroma, osteoma are rare. The same is true of encephaloid, melanotic, colloid pulsating sarcoma, epithelioma, carcinoma, scirrhus and they present no peculiarities.

The surgical operations of the posterior region of the neck present no peculiarities.

SOCIETY PROCEEDINGS.

Chicago Academy of Medicine.

Regular Meeting held March 12, 1897, at the Leland Hotel.

Dr. W. X. SUDNUTH in the Chair.

AUTO-INTOXICATION IN ITS MEDICAL AND SURGICAL ASPECTS.

(Concluded from page 701.)

Dr. WM. L. BALLENGER—I shall briefly refer to a few conditions which result from pathologic processes in the nose and throat, and to some which manifest themselves in the nose and throat, but which have their origin elsewhere.

AUTO-INTOXICATION RESULTING FROM DISEASE OF THE NOSE AND THROAT.

Guye, of Amsterdam, first called attention to a mental disturbance occurring as a result of lymphatic obstruction in the nasal mucous membrane. In the cases he reported there was hypertrophy of the turbinated bodies which pressed against the septum, thereby occluding the lymphatic circulation. A symptom common to all his cases was inability or difficulty in fixing attention. He called the condition "aproxexia," which means difficult attention. Axel Key and Retzius have shown that the lymphatics beneath the dura mater and those of the nasal mucous membrane communicate.

Guye based his conclusions upon his clinical observation of *a*, stenosis and mental disturbances; *b*, the rapid relief following the reduction of the hypertrophy; *c*, the experimental work of Key and Retzius demonstrating the communication between the lymphatics of the nose and dura mater. He

described three types of aproxexia: 1, physiologic aproxexia resulting from brain strain and overwork; 2, neurasthenic aproxexia in which nervous debility plays a part; 3, nasal aproxexia, where the chief pathologic condition is hypertrophy of the inferior turbinated body, or post-nasal adenoids. In the type denominated nasal aproxexia he claims lympho stasis with resulting absorption of the static lymph by the brain tissue; that reduction of the hypertrophies, adenoids, etc., overcame the lympho-stasis and the resulting intoxication of the brain cells.

Scanes Spencer (1890) has shown us that chronic rhinitis, hypertrophic rhinitis, post-nasal adenoids, etc., in children are attended by one or more of the following symptoms: Derangement of sleep, temper, spirits, energy and intellectual power. He also found that relief from the above pathologic conditions greatly improved all the foregoing conditions. Whether the explanation is lympho-stasis, or veno-stasis, or over-production of carbon dioxide, the general proposition of auto intoxication resulting from stenosis of the nasal air channels can scarcely be denied.

Ziem has produced scoliosis of the vertebral column in high degree in rabbits by obstruction of one-half of the nose. He observed one patient who became scoliotic after a traumatic stenosis of the nose. I mention his experiments as suggestive at least.

The thyroid gland is thought to excrete a fluid which is taken up by the lymphatics and finally emptied into the general circulation and distributed to all parts of the body. This substance, although its chemical nature is unknown, seems to perform a very important function, for when the thyroid gland is removed a grave systemic condition results, which is known as myxedema. This excretion may act as an antitoxin to other poisons in the circulation, or it may act as a stimulus to the activity of certain cellular functions. My deduction is that auto intoxication may result from extensive destruction of the gland by disease or traumatism.

Stenosis of the nasal respiratory tract results in an over-production of carbon dioxide. To explain: The function of the respiratory tract of the nose is to warm, moisten and filter the air; if it fails on account of stenosis to sufficiently warm, moisten and filter the inspired air, an irritation is excited in the air cells of the lungs. When these cells are thus irritated they do not abstract enough oxygen from the air to completely oxygenate the tissues and carbon dioxide is a result. Carbon dioxide is a violent poison to the leucocytes, hence their germicidal power is impaired and the system is open to the invasion of the various morbid germs. Then stenosis of the respiratory tract of the nose causes auto-intoxication by the over-production of carbon dioxide.

In 1893 Professor C., aged 36, a scientist, consulted me for relief of a headache which had been with him constantly for two years. He said: "I do not care so much for the headaches as I do for the inability to fix my attention as I used to do." Upon examination I found great hypertrophy of the inferior turbinates. I removed the major part of the one on the left side, and although nearly four years have elapsed since that time he has been free from headaches and is relieved of the aproxexia.

Feb. 27, 1897, Mr. John N., aged 42, janitor, consulted me at the Polyclinic, stating that he had "catarrh of the nose." I obtained the following history: Has had nasal catarrh for years, but about two years ago it became much worse. Complained of pain across bridge of nose. Said he could not remember little duties as he did formerly. Had dull headaches in frontal and parietal regions. This has continued up to the present time. Examination showed that he had ethmoiditis. The middle turbinated bodies were much swollen, pressing against the septum. In this case there was in all probability a lympho stasis, and a morbid secretion which was reabsorbed in part, thereby poisoning the brain cells, the clinical expression of this auto-intoxication being the headache and mental hebetude.

To one who is clinically familiar with hypertrophic rhinitis, post-nasal adenoids, etc., the relief following operative procedures is a familiar picture. That the relief is due in part to improved oxygenation of the blood I can heartily endorse. The retained, decomposed secretions are undoubtedly reabsorbed in a measure and act as toxic agents. I have seen children who were pale, emaciated, stupid and peevish, who after an operation for post-nasal adenoids rapidly regained robust health and mental vigor. That this happy result is in part due to relief from absorption of static lymph and decomposed or modified secretions I think is a reasonable proposition. I believe it is also due in part to the lessened production of carbon dioxide, and the consequent increased activity of the leucocytes.

AUTO-INTOXICATIONS OF THE NOSE AND THROAT WHICH HAVE THEIR ORIGIN ELSEWHERE.

Rheumatism is recognized as an auto-intoxication, unless we except the acute inflammatory type which is caused by germs entering the system, starting chemic laboratories and emptying the products of their skill into the rivulets, streams and rivers of blood as they flow past the laboratory doors.

In one of my clinics this winter I saw a case of lacunar inflammation of the pharyngeal tonsil during an attack of rheumatism. The patient said she had had several attacks of rheumatism of a mild nature, and each time it was attended by an "ulcerated sore throat." Anti-rheumatic treatment promptly relieved her of the lacunar tonsillitis.

There is a condition in which the inferior turbinated bodies are red and turgescient, but which will not collapse under local applications of cocaine, but which will yield very kindly to colchicum.

Gouty intoxications or irritations have been observed in the nose, pharynx and larynx, especially by English specialists.

Morell Mackenzie records two cases of gouty deposit around the crico-arytenoid joints causing permanent dysphonia, and another producing fungous ulceration of the ventricular bands.

Conclusions.—There are other conditions which might be mentioned if time permitted, but I am content if I have succeeded in suggesting the strong probability that nasal or nasopharyngeal stenosis is attended by serious poisoning (or intoxication) to the general system, and that poisons or toxic agents which pervade the general system are sometimes the cause of local pathologic conditions in the nose, throat and larynx.

EPILEPSY AND NEURASTHENIA IN THEIR RELATIONS TO AUTO INTOXICATION.

Dr. H. C. B. ALEXANDER—It has now been proved that under normal circumstances the toxins and ptomains which are produced in the organism are eliminated by various channels. These poisons are necessarily produced in the splitting up of proteids: but under conditions of strain the normal elimination is interfered with. The great organ concerned in the destruction of poisons is the liver. This is true alike of the poisons generated in the system, as well as of those introduced. The bowel very often, through a conservative diarrhea, carries off the excess which if absorbed would poison the organism as a whole.

The lungs oxidize these poisons and change their character, while the kidneys may eliminate nearly all the products except the gases. Under conditions of strain of a mental or nervous type every one of these organs has its functions interfered with, and a vicious circle results. The atonic condition of the nervous system produced by strain checks the normal elimination, and is in its turn increased by the influence of the retained toxins; furthermore, the organs themselves fail to do even their ordinary duty because of the strain put upon them in the attempt to supplement each other.

Thus, the same toxins, which are either broken up in the liver or pass off through the bowel, are in cases of neurasthenia found in the urine, the quantity of which is reduced, at the same time, below normal. In this way not only are the nervous symptoms of neurasthenia—the helmet sensation, etc., produced by a blood surcharged with toxins, but metabolism is interfered with and temporary states of lithemia, oxaluria and glycosuria result, which increase the nervous exhaustion and increase also the overwork of the digestive and eliminative organs, producing by the accumulations of gas enteroptosis, etc., which Glenard claimed as a cause of neurasthenia, but which is one of the results of the disease, long ago recognized (by alienists) as occurring in melancholia.

As the effects of these toxins are generalized or localized in the nervous system, so will prominent features of the clinical picture vary from stupor to general depression and from vertigo to epileptiform attacks. Indeed, it is by no means improbable that a recurrent epileptiform condition may be set up which closely simulates true epilepsy and, it is by no means improbable, ultimately passes, in some cases, into that condition. In some cases of neurasthenia the action of the toxins seems to be largely localized in the spinal cord, and in these cases demarcation from locomotor ataxia is by no means easy, but the rapid disappearance of the spinal symptoms under treatment leaves no doubt as to their source. The relationship of neurasthenia to epilepsy, just described, leads to a clearer idea of the exciting factor of both the epileptic attack and the epileptic status.

Meynert pointed out that the epileptic status was best explained by the presence of, as he called it, a cyanid-like, or as it would be called today, a proteid body in the cerebral circulation. The researches of Féré on the urine of epileptics have since demonstrated the correctness of Meynert's proposi-

tion. The long continued action of toxins can safely be accepted as producing secondary sclerosis, and in long continued cases of epilepsy these secondary scleroses have sometimes been found. These influences of auto-intoxication in producing the various symptoms of neurasthenia and epilepsy give an excellent indication for treatment which is too often neglected. The dietetic and hygienic treatment is eminently calculated to remove many of the links of the vicious circle which tends to keep up both these conditions. Furthermore, the proper regulation of elimination by all the organs, so as to prevent undue strain on any one, is preëminently indicated. Herein is found at once the explanation and the indication of balneotherapy. The last of the eliminative factors explains the evil effects of nervins like the bromids.

THE RELATION OF AUTO-INTOXICATION TO THE PSYCHO-NEUROSES

Dr. DANIEL R. BROWER—I shall present a few conclusions which I think may be safely asserted with reference to this subject:

1. That some of the psychoses, especially those that occur in the fully developed normal brain—mania, melancholia, stuporous insanity—are the products sometimes of auto-infection.

2. That this auto-toxis in its effects on the nervous system, acute or chronic, may result in destruction of the structure and functions of the nerve cells.

3. The peculiar arrangement of the lymph channels in the nervous system makes auto intoxication possible by the blocking up of these canals.

4. The principal factors in auto-toxis are a disordered gastro-intestinal tract and renal insufficiency.

5. Dilatation of the stomach and colonic impaction are conditions producing gastro-intestinal intoxication in some cases.

6. The diagnosis is to be made, 1, by regional examination; 2, by examination of the gastric juice and contents; and 3, by examination of the urine.

7. The urine will show an increased amount of indican, diminished total sulphates, and an increase in the amount of atherial sulphates.

8. There will also be found, in consequence of this auto-toxis, a diminished hemoglobin record and red blood corpuscles.

9. The treatment should consist of lavage, enteroclysis, gastric and intestinal antiseptics and hematinics.

THE NEUROSES IN RELATION TO AUTO INTOXICATION.

Dr. SANGER BROWN—I am content to adopt the very concise and clear definition of auto-intoxication laid down by Dr. Evans, and yet there is a lingering skepticism in my mind as to whether it would really bear investigation. It might bear investigation in the present state of our knowledge; at the same time, there are a great many so-called auto-intoxications which we can not demonstrate, and yet may be part of something that is introduced into the system from without. As it stands now, it simply shuts out what we regard as the products of bacteria, something that the bacteria develops of itself. I do not think it is conclusively proved that bacteria necessarily do anything more than derange the metabolic processes, and that, after all, the poison of the bacteria is the result of metabolic changes. Here is a fine point that it would be hard to settle definitely. But at present, I believe it has been accepted by those who have taken part in this discussion, that gout, uremia, diabetes, myxedema, acromegaly and perhaps exophthalmus, are auto-intoxications. Limiting ourselves to those, so much importance pertains to them as nervous diseases that they are included and discussed in nearly all works on nervous diseases at more or less length, and it is mainly the functional aspects of these subjects that are dwelt upon. Now, to take up each subject *seriatim* and discuss it would consume more time than present circumstances will permit.

In a general way, it may be said that in all these diseases, the reduction they cause in the general health of the individual, and the extent to which they depress all the functions of the body, the nervous system included, tend to the development of functional disease of the nervous system, more especially if any predisposition to such disease exists. We will get in most of these conditions in people who are predisposed to hysteria, hysterical manifestations, and sometimes we will get neurasthenia. This may be said of any disease which tends to lower the vitality very much, whether it be an auto intoxication or not. The main point for consideration in this connection is, however, the functional disorders which are peculiar to the auto-intoxications. Time will only permit the mention, not the discussion, of a few of these. In diabetes a coma often develops very rapidly, sometimes preceded by distressing dyspnea or delirium, and frequently fatal within forty-eight hours. Then, too, severe and obstinate neuralgia is not infrequent. Convulsions and coma are more frequent in uremia than in diabetes, but are less immediately fatal. Each may have to be

diagnosticated from the other, and from coma due to other causes.

I will only mention the rapid pulse, flushing and local sweating of Graves' disease, and the slow pulse, dry skin and mucoid discharge from the mouth in myxedema. The active mental state of the former disease might be contrasted with the apathy of the latter.

THE ANESTHETIC AND SURGICAL RELATIONS OF AUTO-INTOXICATION.

Dr. ALEXANDER HUGH FERGUSON—Without saying anything about anesthesia at present, I shall touch upon it incidentally in connection with the surgical relations of auto-intoxication. From the remarks that have been made, one would suppose that surgery and auto-intoxication have no relationship one to the other. I wish to point out, however, that the surgeon is as much interested in auto-intoxication as any of the other specialists. Auto-intoxication was forced upon the surgeon long before physiologic, pathologic, and bacteriologic chemistry were known. From time immemorial it was learned that certain cases operated upon did not do well after the operations and many of the phenomena shown by them have since been cleared up by the researches of pathologists in laboratories.

Auto-intoxication and its relation to general surgery is allied with the preparation of the patient for operation. It was noticed that patients who were operated upon without preparation, without thorough purgation, without the body being properly cleansed by baths and attention paid to the condition of the kidneys, did not do well afterward; that there was a tendency to sapremia, to septicemia, and pyemia; that there was a greater tendency to suppuration, and that all the waste substances in the body were not properly eliminated. It was also found that even antiseptics and asepsis did not completely fulfil the desired wish of surgeons in securing excellent results; therefore we must look to the preparation of the patient before operation and also to the after-treatment. The relationship of surgery to the excrementitious substance by the kidneys, the urine, has been known for a long time. Cases that were operated upon were immediately followed by anuria. When a patient is properly prepared there is less tendency to it. If there should be kidney complications we should call in a physician to treat and fortify the patient before operation.

Venesection and intravenous transfusion are closely related with anuria, and very frequently the surgeon deems it wise to perform venesection. It is pretty well established that second to the excretion of poisons by the kidneys themselves, it is more rapidly done by venesection than by purgation or sweating; but we can not repeat venesection many times. It is only of temporary use, and intra-venous transfusion should be done at the same time. Here I wish to report the case of a man upon whom I performed the operation of amputation above the knee joint and complete suppression of urine followed. His pulse was full and bounding. I performed phlebotomy twice with saline transfusion, and even had to do it a third time when the kidneys began to properly perform their functions and the patient got well. Of course, he might have gotten well without this, but I fancy he would not. Suppression of urine and its poisonous effects of the system is also allied to surgical procedures.

The presence of indican in the urine is brought before the surgeon in a very forcible manner, and although we are told tonight that indican is caused by bacteria, which is new to me still the surgeon even from the standpoint of auto-intoxication has to make use of it in a negative way by excluding such a thing as obstruction of the bowels. If we have complete obstruction due to strangulation, then we have indican in the urine, while in coprostasis we are likely to have none. A good deal more might be said regarding the surgical relations to the excretion of urine, but we will pass on and briefly consider bile.

The surgery of the gall bladder and bile ducts is to be considered in connection with auto-intoxication from bile. When the common duct becomes obstructed with gallstones the bile is absorbed, threatens the life of the patient from cholemia, and the surgeon has to give relief by performing an operation. The bile is poisonous; it produces a true toxemia, and were it not for the modifying influence of the liver upon it again, death would shortly ensue. It is mentioned, I think, by Roswell Park that the liver secretes sufficient poison in eight hours to kill the individual. The excrementitious substances in the bile, particularly the toxic portions of it, have been made the subject of a good deal of investigation. We know that chloroform is taken very badly by patients who are poisoned with bile or with urine. We know, too, that hemorrhage is much more liable to take place from operations performed upon patients who are cholemic.

When we come to the alimentary canal, there the definition that has been laid down by Dr. Evans is very clear, but too restricting. Entero-intoxication and entero-sepsis are so closely associated that I think it would be difficult to draw a sharp, practical line of demarkation. For instance, in a case of ileus, how are we to tell whether it is an auto-intoxication that causes death? We operate on a case of strangulated hernia the blood returns to the parts, but the patient dies not from inflammation as the postmortem shows and the surgeons call it auto-intoxication. How are we to tell whether that poisoning is caused by the germs which happen to be present in the alimentary canal, or whether it is caused by the absorption of partially digested food and the reabsorption of the secretions and excretions pouring into the alimentary canal. This is a snag which I think we are compelled to take cognizance of. There is another form of auto-intoxication which I should like to mention briefly, and that is the form which follows aseptic operations, which we now designate for want of a better term, surgical fever. Notwithstanding that the work was well done, we find a certain amount of fever following operative interference. This fever comes on soon after the operation; it reaches its acme in a short time and passes away about the third day. At present we attribute it to absorption of the secretions which have taken place into the wound cavity from the blood and tissues. This form of intoxication is brought before the surgeon more or less frequently, and it was in fear of this surgical fever predisposing to sapremia and to septicemia that drainage was so freely resorted to by surgeons in the early days. Since the antiseptic era began surgeons went to the other extreme and used no drainage at all, but we have more surgical fever unless we employ some method of drainage, and now we resort to capillary drainage in large wounds. This form of constitutional disturbance may be caused by the absorption of the fibrin-forming elements. That is what I have been teaching; I do not know whether I am correct or not.

Chloroform disturbs the digestion, interferes with the secretions of bile and urine, causing auto-intoxication. It disturbs the alimentary canal and causes auto-intoxication, which a free purge clears away. The system is already engorged with effete matter and there is an extra tax on its eliminating powers. Auto-intoxication in this connection predisposes to suppuration, sapremia, septicemia, etc.

In regard to urethral fever we know that soon after passing a catheter or after doing an operation upon the urethra, there is no fever, until the urine passes over the raw surface. It may be in a few hours the temperature runs up to 103 or 104. If the catheter be retained in the bladder, we have no urethral fever until the catheter is removed and the urine comes in contact with the raw surface. The question before us is whether this fever is due to the absorption of poisonous materials in the normal urine, or the germs of ptomaines which may be present in it.

Another subject that has been attracting the attention of surgeons of late years, is the thyroid gland. Whether the thyroid gland secretes that colloid material which is always inside of it for the purpose of body metabolism or excretion, the two theories being put before us, I am not prepared to say. The close relationship between exophthalmic goitre and the condition of the thyroid gland, probably causing an auto-intoxication, is not clear. Surgeons have been so bold as to cut down and remove a portion of the thyroid gland for exophthalmic goitre with good results. Some surgeons claim to have had 50 per cent. of successes. So that the subject of auto-intoxication is forced upon the surgeon at every turn. Even in the surgery of the prostate gland, I do not know but that auto-intoxication may have something to do with it.

There is perhaps no doubt that rickets is caused in a measure by malnutrition. The various deformities in children caused by rickets such as coxa vera, genu valgum, and so on, may be directly or indirectly influenced by some form of auto-intoxication.

PEDIATRIC RELATIONS OF AUTO-INTOXICATION.

Dr. ROSA ENGELMANN—It is difficult to discuss this subject within the limitations assigned by Dr. Evans, since he excludes a bacterial genesis of the auto-intoxications. My conception of the gastro-intestinal diseases of children has been that of an auto-intoxication, namely, a poisoning within the body, from food decomposition to begin with and a later and consequent cellular perversion. I can not see how the question of intestinal intoxication can be at all discussed without including the decomposition of foods and the relation of the body through the intestinal canal to the outside world. I can not see why the pathologic cellular metabolism in this location is not as much of an auto-intoxication as the poisoning from a syphilitic tumor of the brain, for syphilis comes from without.

A cell perversion and toxemia obtains in the first as well as in the second instance, except that the one has a closer, but more superficial connection to external causes. The results of pustulation in smallpox was mentioned as an auto-intoxication. Is it not true that the pyogenic germs in the skin simply penetrate a region of minor resistance, namely, come from without as truly as do the many intestinal bacteria, perfectly innocuous until some perversion or disease of the intestinal mucous membrane causes them to assume a pathogenic role?

Another speaker named the auto-intoxication of rickets as productive of the bone lesions. We know nothing of the etiology of this disease and can as well speak of the lesions of any and all diseases as auto-intoxications, for whatever produces diseased cell action will produce diseased cellular products for absorption. I am, therefore, with those members of the society who believe that the line has been too closely drawn.

AUTO-INTOXICATION IN RELATION TO THE JAWS AND TEETH.

Dr. EUGENE S. TALBOT—From what has been said to night we might say that the entire practice of dentistry is based upon the results of auto-intoxication, including the initial cause of decay of the teeth and all diseases resulting therefrom. School-strain, over-work, mental anxiety, mental and spinal diseases, such as parietic dementia, locomotor ataxia, injuries to the spine and improper mastication of food, producing trophic neurosis and also affect the peripheral nerves to such an extent that decay attacks the teeth with more vigor and disastrous results. Abrasion and erosion of the teeth are also due to these causes. After the pulp becomes exposed, toothache with neuralgia, extending over the face, the head, neck and sometimes arms takes place. When death of the pulp occurs, alveolar abscesses form and pus may accumulate in remote parts, frequently producing blood poisoning, as observed in similar conditions in other parts of the body. Deposits of tartar, scurvy, mercurial and lead poisoning, produce pyorrhea, with destruction of the periodontal membrane and alveolar process, thus causing the teeth to loosen and drop out.

Diseased teeth and gums produce indigestion and fermentation in the stomach and small intestine, due to a want of proper mastication and proper hygienic condition of the oral cavity. Thus we have malnutrition and trophic neuroses affecting all parts of the body.

The teeth and jaws, unlike other structures of the body, register their defect, due to auto-intoxication in the mother and after birth in the child. They remain living examples throughout life of malnutrition and the date of such poisoning.

Deficiencies in nerve centers produce excessive and arrested development of the jaws and teeth. Inherited diseases produce malformed teeth, hastening decay. Thus defects in tooth structure produce malnutrition and vice versa.

TREATMENT OF OBSTETRIC RELATIONS OF AUTO-INTOXICATION.

Dr. WM. H. RUMPF—The various forms of post-partum infections, as also the intoxications arising from death of the fetus, might well be classed under auto-intoxications, but I shall confine my remarks only to the condition known as eclampsia.

At the International Gynecological Congress, held at Geneva in September of last year, the question of treatment was thoroughly discussed by various authorities, and it may be of interest to note a few of the conclusions arrived at. We must formulate our methods of treatment in accordance with the practical experience of those who have large clinical material to work with. Charpentier of Paris, sums up his experience in the following sentences:

1. As on the one hand every pregnant woman whose urine contains albumin is in danger of eclampsia, and on the other hand, an exclusive milk diet in Bright's disease and the common nephritis of pregnancy has given excellent results, it is necessary to examine the urine with the greatest care and on the least suspicion of albumin insist on an exclusive milk diet.

2. In all cases of eclampsia venesection is indicated when the patient has a robust constitution and is cyanosed. After that chloral hydrate with milk per os, or if necessary stomach tube, gives the best results.

3. The eclamptic attacks themselves are best subdued by chloroform: at the same time diuresis should be increased by subcutaneous injections of normal salt solution.

4. If the patient is weak, the cyanosis less pronounced, and the attacks infrequent, the chloral treatment alone should be tried. Whenever it is possible, the confinement should be allowed to continue without artificial help. Premature labor should be induced in the most extreme cases only.

Halbertsma, of Utrecht, arrives at the following:

He recommends an active procedure in the following cases: a, When the prognosis is very grave in consequence of very frequent and very pronounced attacks or complete anuria. b,

When good reason exists to believe that labor pains will not begin, or that the pains will last a very long time as in old primipara, twins or narrow pelvis. c, At the end of pregnancy, under the above conditions, Caesarean section should be performed. He also advocates deep cervix incisions to increase the labor pains when there is a possibility of a spontaneous birth.

Veit, of Leyden, concludes:

1. It is impossible at the present state of our knowledge of the etiology of the disease to recommend any definite treatment of eclampsia. A large number of cases certainly get well with any kind of therapy.

2. The proof that a forcible termination of labor with rubber dilators, cervix incisions, Caesarean section, etc., visibly improves the prognosis, has not yet been brought.

3. The reported results of venesection are not sufficiently numerous to be able to judge of its merits.

4. The results obtained by systematic treatment with large doses of morphia seem to be the most satisfactory.

5. As long as the pathology of eclampsia is undecided we can not decide upon any rational therapy. It is very probable that there are various etiologic factors that produce it.

6. Hastening delivery without endangering mother and child, as rupturing the bag of water, forceps after complete dilatation, giving large doses of morphia to lessen the attack, avoiding all food by mouth in patients who are unconscious, and exciting diaphoresis by external means, promise the best results.

7. There is no reason for regarding eclampsia as a cause for some immediate active procedure and to recommend dangerous operations which are not in the scope of the general run of physicians.

In conclusion, I should again lay particular stress on the prophylaxis. Examine the urine frequently from the first months of pregnancy, and at the least indication of albumin or of edema, order an exclusive milk diet, diuretics and mild salines. When the symptoms of eclampsia have arisen, I should incline rather to procrastination and conservatism than to radical operative procedures. We must not be misled by a few brilliant results from one particular form of treatment. Many cases get well with no medication, you might almost sometimes say in spite of all medication, and it is difficult to say whether venesection, veratrum, chloral, or whatever agent may have been employed, is the real cause of the cure. When our methods of chemic examination of the blood and urine will have been more perfected, and when we have a clearer understanding of all the etiologic factors at play, we shall be able to find a more rational therapy.

SELECTIONS.

Diagnosis of Malarial Fevers.—Dr. William Osler, in the *Medical News* for March 6, treats of the diagnosis of malarial fevers. He prepares his way by declaring his belief as to the undeniable facts that have great clinical interest. Whether his fourth postulate is as firmly founded as the others will be a question to stir up those who deal in the statistics in our boards of health. The four postulates are: "1. It was the disease best known to the old Greek and Roman physicians, some of whom gave very clear clinical pictures of the chief varieties. 2. It remains, after 200 years, the only acute infectious disease for which we have a positive specific. 3. It is the most important known disease due to protozoön parasites. 4. North of Mason and Dixon's line physicians are prone to diagnose malaria for other diseases; south of the line they are more prone to diagnose other diseases for malaria; in both regions it is a source of greater errors in vital statistics than any other affection."

Dr. Osler considers the rarity of a double infection by the hematozoa and bacillus of Eberth. He has had 1,500 cases of malarial and typhoid fevers, passing through his wards, nearly every one of which has had a careful blood examination; and only one case of dual infection was detected. It is an important subject and it is well worth while that in doubtful cases coverslips be preserved for examination by an expert.

"Certain symptoms, particularly chills and sweats, are prone to deceive the physician who has not learned to recognize them as not infrequent events in typhoid fever, associated with complications or with septic infection. I need scarcely here refer

to other forms of irregular malarial fever—the more pernicious types. They are not very common with us, though in the autumn we have to be on guard constantly to avoid mistakes, and we have, as a rule, one or two fatal cases a year.”

In his last paragraph he treats of what he curiously styles the “spurious malaria of the health boards,” meaning the supposed inexact diagnosis of physicians whose certificates of death are uncritically accepted by the registration officers of boards of health. The registrars of New York and Brooklyn are especially referred to, but we “suspect,” to use Dr. Osler’s own verb, that they are not sinners above others, the certificate of death being seldom anywhere the subject of verification, except possibly where malpraxis or other criminality or vagueness is surmised. But this is Dr. Osler’s view of the case:

“What is spurious malaria (meaning malarial fever)? I do not know. One form of it the health board form—is a serious and very fatal disease, killing according to the last United States Census Report in New York city as many persons as does typhoid fever; in Brooklyn about one-third as many more. I suspect the Eberth bacillus, not the plasmodium malaria, is responsible for the major part of these cases. Other maladies, a motley host, from headache to biliousness, from keratitis to chilblains, are attributed to ‘a touch of malaria.’ Any slight ailment with a periodic tendency, any dubious trouble for which a diagnosis is not forthcoming, is put in the same category. While I do not deny that in regions where malaria is endemic and everybody comes under its influence, many obscure troubles follow in its train, I claim that the disease in the temperate regions of this country is well defined and easily recognizable, that north of the Chesapeake the fatal forms have become so rare that no health board should take a death certificate signed ‘malaria’ without investigation, and, lastly, that the widespread belief in an occult influence of the disease, in masked forms, and the modification by it of other affections, has no rational basis of support. It is just eleven years since I began the study of malarial fever in Blockley Hospital, Philadelphia—a skeptic as to the value of Laveran’s work, to which attention was called in this country by Surgeon-General Sternberg and Dr. Councilman. I soon became convinced of its truth, and the results of my study of seventy cases was published in 1887. Since that time, at certain seasons, I have had almost daily opportunity to see malarial fever, and I have of late years been fortunate in having as my associate Dr. Thayer, who has made a special study of the disease, and in Baltimore has kept us in touch with the progress of knowledge in this department. A widened experience has only served to strengthen the conviction that in the practical diagnosis of the infectious diseases, the discovery of the hematozoa of malaria by Laveran takes rank with the finding of the tuberculosis bacillus by Koch.”

Medico-Legal Testimony in Cases of Drowning. Professor Brouardel, the dean of the Paris faculty, commenced a series of lectures on Medical Jurisprudence in 1895, which may possibly prove the crowning work of his career. He is devoting a year to each of the following subjects, and hopes to complete the series with the century: 1. Death and Sudden Death. 2. Asphyxia. 3. Hanging. Strangulation, Suffocation and Drowning. 4. Explosions. 5. Infanticide. He is considered the greatest living authority on Medical Jurisprudence in Europe, and his experience is based on innumerable observations, experiments and researches, assisted by the light of recent discoveries in science, which have thrown light on many subjects still inexplicable even in Tardieu’s day. We translate his lecture on drowning in full as it appeared in the *Jour. de M. de Paris*, January 3.

The expert is summoned to state whether the person was drowned accidentally or committed suicide, or whether it is a case of homicide.

1. *Accidents.* Generally speaking, when a person is accidentally drowned, the presumption is that there should be no traces of violence on the body. But there are cases in which they are found and incorrect interpretation of them has led many an expert to false conclusions. When a body is taken from the water, naked, and without traces of violence, the presumption is inevitable that the case is an accident. But it sometimes happens that persons are accidentally drowned

under circumstances that convey the idea of homicide. Chausier describes the case of a man found lying in the road with his face in a rut filled with water. Devergie relates a similar case, an individual drowned in a ditch containing only a foot of water. Another person, mentioned by Taylor, was drowned in a little melted snow. Tourdes also relates the case of a soldier who fell from the top of the ramparts at Strasburg into the fosse, which was frozen over, breaking the ice with his head as he fell, and drowning with absolutely nothing but his face in the water. In these cases the persons were drunk, and they were not only unable to rise, but even to make the slightest movement which would have removed them from danger. Similar accidents may happen to epileptics falling during an attack, or to persons seized with vertigo, or temporary loss of sight. Drunkards can even be drowned in their own vomit. An individual is found drowned, his head lying in a little water; the rest of the body is free. Is it an accident, a homicide or a suicide?

It is easy for a strong man to plunge and hold the head of a weak person in a pail of water. Should we therefore conclude that it is a case of homicide? Not absolutely. One old woman had the courage to drown herself by plunging her head into a pail of water. A letter she wrote just before committing the deed left no doubt as to her intentions. One can even be drowned with only the nose and mouth submerged. Even in cases of accident, traces of violence may be found on the body, which may have been acquired before, during or after the fall into the water. It is possible that the individual may have been engaged in a brawl the day before. It is necessary to be able to differentiate between the lesions made anterior to the submersion and those which may have been made at the moment. You know the story of the two students who had invited a couple of girls to supper. One of them becoming unbearable, they took her home, each holding her by the arm, as policemen take criminals to the station. When the girl awoke, in despair at finding herself cast off, she went and drowned herself in the canal. The police carried the body to the morgue as the arms were covered with ecchymoses. I performed the necropsy and testified that the ecchymoses had been made while she was alive, probably several hours before death; they were clear and circumscribed, but there was a slight suffusion around them, an extension produced by blood which had begun to change color. To determine the age of ecchymoses we have only vague data. In these cases we can only found our opinion on what we observe in the ecchymosis that follows a blow on the eye. “A black eye” varies in its dimensions and coloring for twenty-five days. It first presents a radiating aspect and a black coloration, after which it turns blue, then green and finally yellow, like bile, as the extravasated blood changes its color. Virchow has established the fact that in ecchymoses the final coloration of the blood is identical with that of the bile. When you find colored zones encircling ecchymoses you can assert that they were made prior to the drowning.

A person may make lesions on himself by falling into the water and they may be more or less serious and more or less singular. Taylor relates the case of a man who dived from London Bridge into the Thames. Instead of holding his arms together above his head as customary, he leaped into the water with his arms spread like a cross, dislocating both humeri. I have frequently had occasion to note the existence of fractures and enormous sanguine suffusions on the drowned. I remember especially one case. He had jumped into the water from the top of a bridge and struck his shoulders against the side of a boat. The ribs were fractured and there was a large accumulation of blood in the dorsal region. Sometimes the person falls on pointed objects, or on stones below the surface of the water. In other cases the skull is fractured by hitting the bottom of the river, shallower than anticipated. Tourdes relates the case of a man who was diving when another person dived on top of him: the contusions were very violent and he was only revived with great difficulty. Even after death the victims of an accident might receive lesions. In certain rivers, the Seine particularly, where there are numerous ferries, singular accidents might be produced in this way. Delens has published a very interesting work on the subject of the fractures and osseous lesions that are found on bodies taken from the Seine. His purpose was to prevent the errors in expert testimony which had been due to this cause. One case he describes was that of a body taken from the water, with a lesion of the mastoid apophysis, perforation of the parietal bone, and lesion of the breast, as the expert ascertained. Drawing his conclusions from these facts he deduced a crime and asserted that the individual in question had been stabbed in the breast and afterward shot, the bullet entering by the mastoid apophysis and emerging through the parietal bone. He failed to notice that the wound in the breast was 21 cm. long,

which is rather extensive for a stab wound. He also overlooked the fact that the mastoid apophysis was not fractured but worn through, and that the parietal bone had not been perforated. He also failed to notice that the fourth and fifth cervical vertebrae had disappeared. It was not difficult to explain these lesions; the idea of a crime should have been abandoned at once. The body had been caught on some towing chains and the movements of these chains had gradually produced the lesions, by friction. Delens relates other cases of the same description. I have seen entire limbs cut off by the screws of steamboats; the body of an infant was completely emptied of its viscera, in one case, by the stroke of a paddle wheel. Bodies may be dashed against the piers of a bridge; they may be mutilated by an oar or boat hook, or the grappling irons with which they are taken from the water. The body may be caught between two boats at the moment it rises to the surface of the water; it may be caught in the lock of a canal or mill dam and the head or a limb be cut off. After the Billoir murder when the victim was cut up into small pieces, every mutilated cadaver taken from the water was assumed to be a crime of the same nature.

I wish to call your attention to one other point; a lesion which is not made in the water, but which it is important to bear in mind. When a drowned person is taken from the water, attempts are made to restore him to life. If he has not been too long in the water, he is frictioned vigorously. These frictions rub off the epidermis and in the course of a few hours the body assumes a peculiar aspect which might mislead an inexperienced expert, causing him to ascribe them to lesions which do not exist in fact.

2. *Suicides*.—The presumption is also that there should be no traces of violence in drowning from suicide. But in reality all the lesions I have just been describing may be found on the body, and others besides, which it is well to note. In England the women who commit suicide by throwing themselves into the water, often wrap their heads in their skirts, and the impression arises that they might have been suffocated and then thrown into the water. Persons are found drowned with their members tied in front or at the back; sometimes the arms are tied to the legs. This suggests again the idea of a murder, but I do not believe that murderers could tie their victims in this way without considerable trouble, unless they had previously made resistance impossible, and in that case traces of violence would be found on the body. These ligatures must be regarded as precautions taken by the person who wishes to commit suicide. He knows that he can swim perhaps, and mistrusts his ability to resist the instinct of self-preservation. Other suicides have been known to tie a stone or a heavy weight with a rope around their neck, to prevent the body from rising to the surface. The neck in these cases shows the mark of the rope. Tourdes relates the case of a student who drowned himself after fastening a 25 pound weight around his neck: the body remained seventeen days in the water. The mark of the rope is not very evident as long as the skin is still softened from the effect of soaking in the water, but it grows more distinct and shows a deeper groove as putrefaction swells the cellular tissue.

It is important also to note the presence of the menses. Tourdes states that one-third of all the women he has examined who had drowned themselves, were found to be in the menstrual period. Some women at this period are peculiarly depressed with melancholy, even maniacal ideas, which may lead them to commit suicide. Double or family suicides present no medico-legal complications.

3. *Homicides*.—It seems as if the assassin must be much stronger than the victim to drown a person. However, this is not necessarily the case, as the victim may be taken unawares, and pushed into the water without a chance to defend himself. Casper mentions a case where a husband and wife were seated on the brink of a river, quietly conversing. Suddenly the husband pushed the wife, who fell forward into the river and was drowned. There was not a trace of violence on the body. *It is well never to reply in a positive manner to the question of the authorities in such cases.* Never say: "There are no traces of violence, consequently there has been no crime." Nor: "There are signs of violence, consequently there has been a crime committed here." Be satisfied to reply: "There are traces of violence. They can be explained variously." Or: "There are no signs of violence." Leave it to the authorities to interpret the facts you present. That is their task, not yours. As an example I mention a case that occurred a few years ago. A young man was found drowned in the Seine. The body showed no indications of violence, and the medical expert who examined it stated in his report his conclusion that it was a case of accidental drowning. It was not an accident, it was a crime. The young man had been amusing himself with another by

climbing on the parapet of the quay, and his companion had suddenly pushed him into the water. The scene had been witnessed by others who testified to the fact. The medical expert therefore, who had been so positive in his report, found himself in an awkward predicament.

I had a similar experience recently when summoned to testify in the case of the Marquis de Naye. You remember that the Marquis was accused of having murdered the young Menaldo, as the husband killed his wife. The Marquis had been out with Menaldo all day, and in the evening they reached an elevated spot on the road between Naples and Sorrento, where there is a sheer descent of 30 meters to the sea. Menaldo's body was found at the foot of this precipice. I was asked to state whether it was an accident or a homicide. It was too late to inspect the body. The report of the Italian medico-legal expert described the lesions that had resulted from the fall; fracture of the arm and fracture of the skull, such as characterize falls from an elevation. I stated that it was impossible for me to form a decision from the evidence. The question was also asked in this case whether a young man of Menaldo's age could have contemplated suicide. We know that the suicide of children is unfortunately by no means exceptional. The idea was also suggested that Menaldo might have been the victim of pederasty followed by assassination. The first expert asserted thirty-six hours after death, that all organs, especially the anus and penis were in perfect condition. The second expert who saw the body three months later, stated that the widely dilated anus denoted long established habits of passive pederasty. When gaseous putrefaction occurs, it dilated the anal orifice and obliterates the folds. By the end of three months all the characteristics of the skin and the rectal mucosa are effaced; all is uniformly green.

Homicide by drowning is frequently the result of a surprise. Hencke relates the case of a man who after seducing the daughter, invited the father to supper, under pretext of a reconciliation, and took advantage of his intoxication to push him into the water. The case is also known of a lad of 10 years in a boat with his weakly 5 year old sister; he lifted her in his arms and threw her into the water.

Zacchias remarks that a *necropsy imperfectly performed can never be performed over again*. This axiom should be graven on the memory, as it is of the utmost importance. An instructive instance is the case of a wealthy butcher who had retired from business and settled down at Cabourg. One day he went crab-fishing with his housekeeper and drowned her by holding her head under water. Some fisherwomen, behind a rock near by had witnessed the scene, and exclaimed: "That man is drowning that woman." The butcher went home alone, followed at some distance by the fisherwomen who wanted to find out where he lived. One stayed near the house, while the rest went to inform the mayor. He came and asked the man what he had done with his housekeeper, and finally had him arrested. The woman's body was found next day at low tide. A medical expert from Caen, inexperienced in such matters, stated that the woman had been drowned. His local colleague was astonished that the expert did not perform the necropsy, and that he did not consider worthy of notice certain lesions on the chin and lower part of the face, but assumed that these were caused by crab bites. He opened the chest, found the lungs congested, but did not remove them from the body and considered his diagnosis of death from drowning established.

Skin from the chin was sent to me for examination. I found it covered with small irregular excoriations, with a sanguine suffusion in the subcutaneous cellular tissue. It was evident to me that these small wounds had been made by the skin having been pressed violently against some hard and irregular substance, such as sand. I have repeated this experience on cadavers and have always secured the same cutaneous lesions, but of course without the suffusion of blood. When the affair came into court, something very instructive for us happened. The lawyer for the defense asserted: "This woman died of cerebral hemorrhage, and I defy the experts to prove the contrary!" As the necropsy had not been made, they were unable to bring any proof to the contrary, and it was even impossible to prove that the woman had died from being drowned. The medical experts connected with the case were severely censured by the authorities. The moral to be drawn from this affair is, always to perform a complete necropsy when such a case is placed in your hands, no matter what the evidence of the facts may be.

As a general thing the affair is not a homicide by drowning, but the victim is thrown into the water to conceal a homicide. A few years ago Mme. Penayrou, wishing to be relieved of Aubert, who was her lover, accompanied him to Chaton with her husband and her brother-in-law. Like a thrifty woman, she bought return tickets for herself and her family, but only a ticket one way

for Aubert, who was not to return. In their house at Chatou Aubert was killed by being pounded on the head with a hammer, and Fenayrou, drawing a sword cane, passed it three or four times through his heart, "that heart which has caused me so much sorrow!" as he exclaimed. To get rid of the corpse, they removed the clothing and wound around it 8 meters of lead pipe the size of gas piping, and threw it into the Seine from the bridge, never expecting to see it again. But in eleven days Aubert was found floating on the water near Pecq, dragging his 8 meters of lead pipe with him, buoyed up by the might of gaseous putrefaction. If Fenayrou before throwing him into the water had made an opening into the abdomen, the gases of putrefaction would not have accumulated there and altered the specific gravity of the body. It would have remained at the bottom of the river and Aubert would probably have vanished for ever. I relate this affair to show you the rapidity and power of gaseous putrefaction. The Fualdés sensational affair in 1817 was due to this cause. The victim was bled to death and the corpse thrown into the water, where it came to the surface in a few days.

One point more. When a physician without much experience in expert medical work is summoned to examine a body found in or near water, he prefers to accept the case as a drowning. If the body is putrefied, he shrinks from the necropsy. As an instance I mention the case of two physicians of La Manche, summoned to examine a body that had been found on the ground with the head in a pool of water. They concluded—without investigation—that the case was one of cerebral congestion, which had caused the person to fall into the water, when death had ensued from suffocation. The authorities, however, were informed of other details which rendered the assumption of a crime probable. Another expert was summoned, who was amazed that any one could draw the conclusion of cerebral congestion without having opened the cranium, which he proceeded to do, ascertaining that it was fractured. The two physicians were arrested and prosecuted for false testimony. This is the only instance of criminal prosecution on record in medical jurisprudence. They were acquitted on the ground that an error had been committed in entrusting them with a task which they were incapable of properly fulfilling.

4. *Survivals.*—The question arises when several members of a family lose their lives in an accident: Which member of the family survived the longest? It is often to decide the question of inheritance that medico-legal advice is sought, and this question seems to be the prerogative of accidents from drowning. In an accident that occurred between Honfleur and Havre, more than 200 persons were drowned—whole families wiped out of existence—and medico-legal testimony became of great importance to decide the settlement of estates. Fortunately for the expert, who is often unable to form any opinion in the matter, the French law states explicitly that when several persons due to succeed each other in turn all perish in the same accident, . . . the presumption is that survival depends upon the strength of age or sex. . . . If those who perished were all under 15, the presumption is that the oldest survived the longest. . . . If they were all over 60, the presumption is that the youngest survived. . . . If some were under 15 and others over 60, the presumption is that the former survived the longest. . . . If those who perished together were over 15 and under 60, the presumption is always that the male survived the longest, when the ages are equal or when there is only one year's difference. . . . If they were of the same sex, the presumption is always in the order of natural succession, that the younger survived the elder. . . . The presumption that under 15 the oldest survives, is contrary to the experience of science, which shows that infants survive longer than adults, especially in submersion.

The Levainville case is an example of the questions that arise in such cases. M. Levainville was mayor of Finisterre. Accompanied by his wife and daughter and others he went for a walk along the shore in very stormy weather, in October, 1870. The whole party ventured out on a narrow strip of land to an abandoned coast-guard building. A tremendous wave broke over the peninsula and washed away seven or eight persons, among them his wife and daughter. All perished. According to the law, if Mme. Levainville died first, all her property passed to her daughter, and from her to her husband. But if the daughter died before the mother the property reverted to Mme. Levainville's family and the husband did not inherit. The code referred to above was applied in absence of knowledge of the fact and the daughter was assumed to have survived the mother, and Levainville was declared the inheritor. The wife's family protested and Tardieu was summoned by them to investigate the case. Strange to say, his investigations established the fact that the wave did not sweep the

whole peninsula simultaneously, but dashed over one part of the crest and carried off the group there before it swept the rest. The mother was in the first group and was dashed against the wall of the building. The authorities therefore decided that the mother died first, as she was swept away first and the severe lesions she received must have hastened her death before the daughter perished.

I was consulted in an analogous case. A husband and wife were boating in a small river when the boat sank and both were thrown into the water. The husband was seen struggling on the surface again and again, trying to save his wife, and then both disappeared. The question of inheritance then arose. Should the property pass to the husband's family or to that of the wife. Beauvais testified that the wife must have died first and the husband afterward, as he rose several times to the surface. The wife's family resided at Marseilles, and experts there testified that a person struggling at the surface drowns sooner than a person lying in a syncope at the bottom. They asserted that the wife survived the husband. I was called upon to decide the case, but I declared that I could not find anything in the evidence submitted to decide the case either way. It was possible that the wife may have been in a syncope, but there was nothing to prove this and no necropsy had been made. The general trend of opinion, however, was in favor of the husband's family, and the families finally compromised the matter out of court. It would have saved them considerable trouble and expense if they had done this in the first place. I do not wish to criticise the opinions of the experts who had preceded me, but I want to warn you against what I may call moral influences; it is very easy to allow one's self to be convinced by the arguments of the interested party who lays the facts before you, presenting them in the most favorable light and biasing the expert's opinion unconsciously to himself. In cases of this kind we must have courage to state frankly that we can not decide; we do not know, and let the articles of the code be applied. Tourdes in his excellent article in the "Dictionnaire Encyclopédique" gives some points on which a decision of the kind may be based, but they are not satisfactory. He says that we must bear in mind the relative strength and emotivity, and that the most impressionable are the most likely to survive as they are the most likely to succumb to syncope. Heart disease or any previous affection of the kind diminishes the resistance. He believes that a woman would survive a man as her garments would buoy her up for a while. Fodéré asserts that persons who know how to swim survive those who do not, which is evident. In accidents at sea we must ascertain, if possible, which person had life-saving appliances, and if they were injured by falling upon rocks.

These are all the data I can give you upon which to found your decision. In the vast majority of cases when you are summoned to decide the question of survival all you can do is to state your inability to decide the matter, and say frankly: We do not know.

Dr. Hughes on "Homeopathic" Physicians to the Insane.—Dr. C. H. Hughes makes the following reply to the contentions of Dr. W. A. Wilcox, the homeopathist, with regard to introducing homeopathic treatment in the Missouri State Insane Asylum at Fulton.

"I make no war on homeopathy. I plead only the rights of the insane. And what I claim I concede. It is the insane man's right in a State hospital to have such medical treatment as he would have chosen for himself when sane and free to choose. Where the institution can have but one medical head, the rights of the majority interested should rule in the selection. The minority interest might be provided for in an annex institution restricted to homeopathic practice for the followers of that faith only. It might even be justifiable for the State to construct and provide a new institution conducted on that theory only, if it be sound policy now to do so after the light of clarifying science has dawned so full and free and with such dissipating force on this quasi-therapeutic delusion of the past, when visions of the fancy and fanciful personal 'proving' rose out of the scientific darkness of the first decade of the century.

"The searchlight of scientific observation and deduction has dispelled the delusion that disease implicates the spiritual nature of man; that drugs contain spiritual essences or dynamic potentialities evolved by trituration and dilution, and not sufficient of the apparent law of *similia* now remains on which to longer justify the maintenance of even the semblance of a sectarian medicine.

"Today in other States, as in New York, the more enlightened homeopathists have forsaken this dogma as an exclusive tenet of medical practice, dropping their distinctive homeo-

pathic designation, which is more suitable as a business man's trade-mark than as the proper title of a doctor of medicine, and, practicing on the broader precepts of a more liberal practice, simply as physicians, they are admitted to equal fellowship with the regular practitioners. The law of *similia similibus curantur morbi* had some appearance of a truth in therapeutics at the time that Hahnemann published his organum 80 years ago. But the revelations of physiologic science and the provings of biologic experiment, the lens of modern bacteriology and the crucible of bio-chemistry have enabled all but the blind to see the fallacy of the Hahnemannian law and the foolishness of the homeopathic dictum, 'the smaller the dose the greater the effect.' The high potentist is a *rara avis* now, even in the ranks of homeopathy.

"The present asylums were provided for under regular medical auspices. The newer school of scientific medicine, always called the old school, or allopathic school by sectarian physicians, was instrumental in providing them for the mentally afflicted of the State, just as it was the first to strike the shackles from the lunatic, bringing him from his darkened and neglected dungeon into the light of day, and treating him as a mentally maimed and afflicted friend and brother.

"Regular medicine refuses to be dominated by any exclusive dogma, visionary theory or rule of practice as too restrictive, inadequate and unscientific in the light of modern medical progress for a profession whose mission is to rescue and restore by all and every possible means potent to save.

"If the believers in homeopathy or any other theoretical system of sectarian medicine wish a State institution founded for their benefit, the proper way to secure one is to induce the Legislature to vote a new building for that purpose. The homeopathic asylum at Middleton, N. Y., was built for such purpose by authority of the Legislature of that State as an exclusive homeopathic institution. It was not built as a regular institution, then seized and appropriated to homeopathy with its hundreds of inmates and thousands of tax-payers supporting it, all opposed to the system, yet forced to accept homeopathic ministrations.

"In the present instance it is proposed to seize and divert to a purpose not originally designed, without due notice or legislative action. Governor Stephens will not on mature reflection I think do this. To seize the Fulton Asylum for the purpose proposed would be executive robbery and assassination of the rights of the insane there domiciled.

"The relative merit of homeopathy and regular medicine is not the question. Nor is the question one of 'crushing truth to earth'; nor of curing by similars or contraries, but of justice to the insane now in the Fulton Asylum. Nor are my qualifications as an alienist and neurologist germane to this question though I hold a parchment, not held by any other in this vicinity, of honorary membership in the British Medico-Physiological Association, never that I know of bestowed upon the unqualified, unless it be in my own case.

"My friend, Dr. Wilcox, was a pretty good regular practitioner before he put the new wine into the old bottles of regular medical experience. He practiced the regular way the best he knew how, pretty much, as he does now. In fact, most of my homeopathic medical acquaintances who have achieved success in practice in this city have been regular practitioners and do not disdain to use the elegant tabloids and tablets hypodermically, and the alkaloidal pilules of modern regular medicine. They are naughty fellows and steal our thunder and ought not to do it, and call it homeopathy. But they do it all the same.

"But in medicine as in theology a man may go in as a hard-shell Baptist and have to stay with his brethren, even though his views of salvation may broaden as he grows older in Christian experience."—*St. Louis Republic*.

PRACTICAL NOTES.

The Antitoxic Power of the Thyroid Gland.—Recent experiments on dogs have shown that after extirpation of the thyroid gland toxic substances are found to much greater extent in the circulation than before, and that administration of thyroid extract will diminish this amount.—*Cbl. f. Chir.*, March 13, from *Rivista Md. e Terap.*, 1896, No. 9.

Menorrhagia due to Uterine Arterio-sclerosis.—Reinicke has become convinced by the information derived from several necropsies that menorrhagia is frequently produced by sclerous degeneration of the uterine arteries. The impossibility to contract is therefore the cause of the continuous sanguine flow

from the arteries, and the usual methods of treatment are necessarily impotent. He states that the failure of ergotin to arrest the flow may be considered presumptive evidence of the sclerosis. The only cure is ablation of the uterus. Except in very severe cases, he advises waiting for the menopause, with repose in the horizontal decubitus if possible, and vaginal tampons in the case of workingwomen.—*Semaine Méd.*, March 17.

Coccionella in Whooping Cough and Asthma.—A Swiss physician has found in an experience of 80 cases that whooping cough disappeared in six to eight days with the following treatment. It also relieved bronchial asthma when all other remedies had failed: Coccionell. sublt. pulv., 0.05 to 0.2; ammon. carbon., 1.0 to 2.0; syr. aurant., 20.0; aq. dest. q. s. ad 100.—*Therap. Woch.*, March 7.

Treatment of Metritis with Intra-uterine Applications of Airol.—The simplicity and harmlessness of this treatment recommends it as well as its efficacy. It does not require repose in bed, and the improvement is manifest in a couple of days. A tampon moistened with an emulsion made of 4 c. c. of glycerin mixed with 1 gram of airol, is inserted into the cervix, $\frac{1}{2}$ cm. from the external orifice, and the vagina plugged with a large cotton tampon dipped in the same emulsion diluted one-half with glycerin. Extreme gentleness in dilating the cervix and antiseptic precautions are imperative. The tampons are renewed every other day.—*Semaine Méd.*, March 17.

De Marsi's Operation for Vaginal Cystocele.—He first makes a longitudinal, median incision through the mucous and submucous tissues of the anterior vaginal wall, extending from the fornix to the suburethral tuberculum, if necessary, and then two small transverse incisions, perpendicular to the first incision, at each end of it, and raises the square side flaps thus formed. He next sutures the two attached edges of these square side flaps together, and reduces the prolapsus, completing the operation by suturing the free edges of the flaps. By this means a solid foundation for the vaginal wall is secured and threatening prolapsus uteri averted. The same process could be applied to rectocele, with slight variations.—*Gaz. d. Osp. e d. Clin.*, March 7.

Therapeutics of Epilepsy.—Dr. F. C. Müller concludes an article on this theme in the *Wien. klin. Rundschau*, March 21, with an urgent appeal to the physician in such cases to bend every energy to seek and remove the cause, instead of blindly prescribing bromid in every case. He describes a typical and puzzling case, a girl of 16, who was immediately cured by appropriate treatment after the discovery of large numbers of the oxyuris in her intestines; others by putting an end to unsuspected onanism, or alcoholism or mental over-exertion, that had been the predisposing cause.

Extirpation of the Gall Bladder and Part of the Liver.—Ullmann presented a patient at the meeting of the Vienna k. k. Med. Gesellschaft, March 12, whose gall bladder he had removed six weeks before, on account of a tumor and accumulation of stones. The neoplasm involved the liver also and the corresponding portion was resected. After using the Paquelin the hemorrhage was serious until a wedge shaped piece was resected, and the liver tissue folded and laterally compressed, fastening the stump extraperitoneally. The *Wien. klin. Rundschau* remarks that it is the fourth case of extirpation of a tumor of the liver on record.

Medico-legal Importance of the Excrements. Prof. Moeller has an article in the *Wien. klin. Rundschau* of March 14, calling attention to the value of the testimony afforded in criminal proceedings by microscopic examination of the dejecta. He suggests that criminals arrested on suspicion should be interrogated as to what and where they had eaten recently, and the feces will confirm the truth of their assertions or the reverse, disprove an alibi, etc. He mentions two separate

instances where the criminals were traced and brought to justice by casual discovery of fig seeds in their excreta, and adds that the microscope should be used more frequently than at present in criminal proceedings.

Favorable Effect of Laparotomy on Tuberculous Peritonitis.—Gatti has produced experimentally tuberculous peritonitis and then cured it with a laparotomy; gradually the tuberculous cells and the bacilli disappear, the products of degeneration are absorbed and a process of reorganization ensues, in the course of which the peritoneum becomes normal not only to the eye, but to histologic and bacteriologic tests also. The process requires six to eight months, and the laparotomy, to succeed, must be performed at the proper moment, neither too soon nor too late, the tubercle fully developed and before the caseous degeneration has begun. As it is difficult in the clinic to determine the exact moment when the operation is needed, Gatti recommends a second laparotomy if the first proves ineffectual, and it was noticed that caseous degeneration had not begun. Burci ascribes the effect of the laparotomy to the combination of trauma, change of temperature, admission of light and air, etc.—*Gaz. d. Osp. e d. Clin.*, No. 13, 1897.

Resection and Extirpation of the Larynx for Malignant Tumors.—Many lives could be saved if the diagnosis of malignant tumors could be made earlier. A writer in the *Beiträge z. klin. Chir.* urges physicians and students to master more thoroughly and universally the technique of laryngoscopy, so that malignant neoplasms could be discovered more frequently and removed in their incipient stages. Mikulicz has found that a normal function can be retained if two-thirds of the larynx can be saved. Important in this respect is the secondary suture to decrease the size of the wound, and the prevention of the formation of epidermis from the edges in. In thirteen cases operated, four have remained in good health since, one and one-half to eight and one-half years. One succumbed shortly after the operation; another died later of phthisis. In five cases the tumor grew again in three to ten months, with a fatal result in four. In six cases superior tracheotomy was performed, and inferior in the rest. Hemostasis was secured by ligatures and lateral compression; only once was the thermo-cautery necessary. He considers frequent changing of the bandages very important. Food was taken by the sound through the wound or lower nasal passages. He has never applied an artificial larynx.—*Cbl. f. Chir.*, March 13.

Diagnosis of Primary Malignant Tumors of the Pleura and Lungs.

Dr. G. Zagari of Naples, having had occasion to observe seven cases of this character, has made a special study of the difficult subject of diagnosis *intra vitam*, and groups the special clinical symptoms as follows: 1, insidious commencement of the affection; 2, marked general debility; 3, absence of fever; 4, persistent, increasing pain; 5, circumscribed edema of the chest; 6, development of the lymphatic ganglia on one side of the thorax, exclusively or more prominently; possible turgescence of the veins in the anterior and lateral parts of this side; 7, sweats and more elevated temperature on one side of the thorax; 8, distress in breathing and more intense oppression than can be ascribed to the quantity of fluid obtained by puncture; 9, irregular distension of the thoracic cage, especially in the superior and anterior region of the chest; 10, intercostal spaces neither prominent nor dilated; 11, complete dulness, without the slightest elasticity, in the superior and anterior region of the thorax; zones of dulness close to zones of resonance; 12, dulness over the manubrium or the sides of the sternum, which indicates not only the displacement of the mediastinum toward the sound side, but also the irregularity of this displacement; 13, Skodaic resonance over the clavicle and sternum; 14, the laryngo-tracheal murmur distinctly transmitted to the superior regions; 15, persistence of the plessimetric and acoustic phenomena even after evacuation of the

fluid in the pleural cavity: 16, this fluid is very thick, rich in fibrin, hemorrhagic, with histologic elements special to the neoplasm; 17, peculiar sensation of having penetrated into a compact, deep, thick mass, when inserting the needle; 18, puncture is without effect, or the fluid forms rapidly again; 19, displacement of the heart and liver, out of all proportion to the amount of liquid withdrawn.—*Arch. Clin. de Bordeaux*, March, 1897.

Treatment of Persistent Vomiting in Pregnancy.—The pulse and the loss of weight must be carefully watched by the physician after he has established the fact of pregnancy. If the pulse is still normal and the emaciation is not extreme, he still has time to attempt mild therapeutic means, but if the pulse has increased and the emaciation is approaching the inevitably fatal limit (loss of 40 per cent. of the original weight), then the uterus must be treated locally, first with digital dilation of the cervix and straightening the uterus. It sometimes happens that straightening a slight flexion will arrest the vomiting at once. The last resort is abortion, which should never be done without the presence and advice of one or more other physicians. The mild means are inhalations of oxygen, spraying the epigastrium with ether, application of a bag of hot sand along the spine, purgative and nutrient enemata, hypodermic injections of artificial serum, etc., and especially galvanization of the pneumogastric. The positive pole of an apparatus with continuous current is applied above the clavicle at the attachment of the sterno-mastoid, while the negative electrode, a plate 9 by 13 cm., is placed on the epigastrium. The current should not be strong, 8, 10 or 15 ma., and it should commence and end very weak, to avoid irritation and excitement of any kind. The séance should last fifteen to thirty minutes and be repeated several times in the course of the day. This electric treatment is perfectly harmless.—*Delbert in Jour. de Prat.*, 6, 1897.

Phosphorus in the Treatment of Rickets and Neurasthenic Conditions.—Hartcop, in conformity with other observers, finds that rickets has been declining in frequency within the last twenty years, a result that is doubtless due to the more or less rigid prophylaxis that is maintained in families by the practitioner. There can be no doubt that at every suitable opportunity the mother should be enlightened as to the nature and results of the disease, but should at the same time be instructed as to its curability. The instruction of midwives on this and similar questions, would do away with much prejudice, but the physician himself should demolish the old fable, that painful teething is a cause of rachitis, when it is well known that it is rather an effect. The treatment of rachitis with phosphorus, since Kassowitz, of Vienna, in 1883, introduced it as a remedy, has given the best results. The failures which have occasionally been reported, were due to its administration during too short a period or to doses that were too small. The remedy is best administered in cod-liver oil, which given from a warmed spoon is usually well taken; in summer, or when it is not well borne (which is rare) it may be given in an emulsion of linseed oil. A cure is always obtained even in the most stubborn cases, not only of the bone symptoms, but of all the complications, which are so numerous in rachitis. Even intestinal catarrh is no contraindication to its use; it is only necessary to add a small amount of opium to the mixture. It is of the greatest importance, however, that both parents and the physician have patience enough to carry on the treatment for a long period. He orders children from 1 to 5 years of age, 0.0006 grm. of phosphorus twice daily, one hour after meals; and 0.0006 grm. to children 5 to 12 years old in increasing doses. Proper food, fresh air, and attention to the skin are adjuvants which must not be neglected. The improvement in their mental condition was particularly noteworthy. Sleep became quieter, sweating disappeared, their nervous irritability improved, and the intelligence increased. This induced him to administer phosphorus to other cases without rachitis, but suffering from brain irritation, and also to others who were suffering from brain fag, notably with a tired feeling and continual headache. The result was very satisfactory.—*Münchener med. Wochenschrift*.

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SATURDAY, APRIL 17, 1897.

DRINK AND HARD TIMES.

An admirable trade journal, the *American Grocer*, has published, with comments, the figures furnished by the Government, the Internal Revenue and the Customs Bureau, chiefly the former, as to the consumption of liquors in the United States. It finds that there has been a marked decrease, so that in 1896 the amount of spirits used is almost one gallon per capita less than it was in 1888, thus discrediting apparently the theory so often advanced that in hard times when men are out of work they drink more to drown their troubles. It also claims that the decrease in spirit consumption is not compensated for by an increased usage of fermented liquors, such as beer; in support of this it shows that while the consumption of these rose to about sixteen gallons per head in 1892, it has since fallen off to about fifteen and a half gallons, not a very striking but still a perceptible decrease. The total expense for intoxicants in the country, it states, has decreased from over a billion in 1892 to less than nine hundred millions in the year just closed. From these it draws the conclusion that hard times make men less dissipated perforce and, for the time being at least, cause this to be a more temperate nation.

There is no just reason why the liquor business should not share in a general business depression, in at least a reduction of its total sales, though it is almost the only line of trade that does not lower its retail prices, on which there is certainly a very large

margin of profit. The average drinker who is not a drunkard ought naturally to be hardly expected to indulge his occasional appetite as freely as in flush times, and the remarkable fact that these figures indicate is not that they show this to be the case, but that the consumption of beer, the popular drink, has decreased so little. A loss of a little over three per cent. in four years of hard times after a rise of over thirty per cent. in the preceding six years is not a very striking decrease, as it still leaves us using annually nearly one-third more per capita than was the case ten years ago.

The decrease in spirit consumption is more striking, but it is a question whether that means all that it might appear to. The general depression in trade and manufactures would necessarily affect the amount of alcohol used in the arts and generally for other purposes than that of drink. What proportion of the whole decrease is thus to be accounted for, we have no ready means of estimating, but it must be a very appreciable one. The apparent fact that over seventy million people in this country used less strong liquor in 1896 than did about sixty million in 1887 is, however, encouraging, and is in accordance with the probabilities. The average moderate drinker when overtaken by hard times naturally would give up his most expensive drinks first, and we therefore can probably account for some of the 30 per cent. decrease in our national whisky bill since 1892 in this way. But while a large part of this has to be reckoned as due to the lessened usage of alcohol in the arts, etc., and our total drink bill is only reduced some fourteen per cent. in the same period, one can not so certainly assume that we are very rapidly progressing toward a higher practical temperance standard.

These facts have a medical as well as a sociological bearing, since the drinking habits of a people bear directly upon their physical as well as their moral and economic welfare. It is somewhat encouraging to think that the milder intoxicants are replacing in common use the stronger alcoholic beverages, and there is, from an analysis of the figures, perhaps some reason to hope that this is the case. The excessive use of beer is not to be recommended from a medical point of view, but it is better than the excessive use of whisky or other stronger distilled liquors. Whether the greater extension of the habit of beer-drinking among the general population, which the statistics might be held to indicate, has a lesser tendency to produce a race degeneration than the less extended but individually more disastrous habit of spirituous imbibition, may be a question for settlement by the experts. But if hard times will do anything in any way to check the ever aggressive evil of intemperance, it will be some compensation for what we at present have to endure and another instance of the chastening uses of adversity.

THE ETIOLOGY OF CHOLELITHIASIS.

A very convenient classification of the causes of cholelithiasis is that of GUMPRECHT (*Deutsch. Med. Woch.*, 1895, 224). He divides them into: first, *physical*, such as age and sex; second, as *sequelæ* of other diseases; third, *chemic* alterations in the composition of the bile; and fourth, *bacteriologic*.

Age is an important predisposing factor. With advancing years we find an increase in the proportion of cholesterin in the blood, and gallstones are recognized as an appendage of middle and late life. BRINTON gives the average age at which they are found as 53½ years. They are occasionally seen even in newborn children, though of 395 cases collected by HEIN only 15 were under 25, and only 3 were under 20 years of age.

As regards sex, all authorities seem to agree that they occur more frequently in the female. Authors differ, however, as to the relative proportion; thus BRINTON says they are four times more frequent, others give five to two, three to two, two to one, etc. The predilection for the female sex would seem to be due to sedentary habits, which are universally recognized as a potent factor. Obesity is closely allied to the foregoing, and BUDD and MURCHISON state that they are more common in persons of stout habit. FRERICHS, however, makes no mention of obesity apart from sedentary habits, and some authorities advance the view that obesity is merely a coincidence of cholelithiasis and depends on the same causes as the latter.

Confinement has been noticed to favor gallstone formation, for instance, in prisoners and stall-fed cattle. According to THUDICHUM these calculi are not found in wild animals until they have been in captivity for some time. Lunatics lead rather sedentary lives, so we may expect to find biliary concretions more frequent in them, if this factor has any influence. On examining the statistics we find this to be the case. BEADLES (*Jour. Mental Science*) found them in 36 per cent. of necropsies on insane females. GORSTELL stated that in 1,400 examinations at the West Riding Asylum calculi were found in 20.28 per cent. SNELL (*Neurolog. Centralbl.* June 1, 1893) in 1,000 necropsies found them in 9.2 per cent. of the 500 examinations of the insane males, and 19.4 per cent. of females. The forms in which cholelithiasis most frequently occurred were dementia following melancholia, epilepsy and senile dementia.

Here it may be pointed out that statistics as to the frequency of gallstones vary. THOMA, in his General Pathology, says they occur in 25 per cent. of all bodies over sixty years of age. MAYO ROBSON and NAUNYN in 10 per cent. and SCHRODER, from the necropsies at the Strassburg hospital, 4.4 per cent. of males and 20.16 per cent. of females. PAULSEN (*Centralb. f. Chirurg.*, Feb. 4, 1893) calls attention

to their infrequency in Denmark. From 1870-90 only 111 cases (30 males) were treated in the Copenhagen hospital, and during the same period 9,172 necropsies were performed. Of the 5,448 males calculi were found in 2.34 per cent., and of the 3,724 females in 5.9 per cent. HARLEY thinks the influence of locality, if there is any, is due to the dietary and states that in his experience patients suffering from this affection are usually fond of fatty foods. He found these calculi very frequent and of large size in Russia, where oleaginous food is much used, while in Finland, Sweden and Denmark, where fish is the main article of diet, he states they are much less common.

In regard to gallstones as sequelæ of other diseases FRERICHS states that they frequently develop after long illness. In most instances they are apparently due to the long confinement to bed, which would seem to corroborate the theory of sedentary habits being a factor. The frequent association of gout and cholelithiasis is looked upon by several authors (HARLEY, MURCHISON, TROSSEAU) as pointing to a close relationship between these two affections. As calculi are usually found in carcinoma of the gall bladder, the question arose as to which was the primary affection. At first opinions differed on this point, but recent statistics all agree in looking upon the calculi as the cause, not the result. COURVOISIER found them in 74 out of 84 cases, BRODOWSKI in all of 40 cases, BERTRAND 14 of 15, and SIEGERT believes they occur in 95 per cent. of primary carcinoma. ROGER WILLIAMS, in a note to the *British Medical Journal* (Sept. 9, 1893) says in his experience gallstones are more frequently found associated with cancer of the breast than that of most other parts of the body. According to DUFORT (*Rev. de Med.*, 1893, p. 274) phlegmonous or gangrenous cholecystitis is sometimes met with following an attack of typhoid fever. HAGENMULLER collected eighteen of these cases in 1876. BERNHEIM states that he has seen the first attack of biliary colic occur during the course of typhoid. As we shall see later, CHIARI found the typhoid bacillus in the gall bladder in several cases of typhoid. DUFORT thinks the *B. coli* may also cause the cystitis in typhoid.

Coming now to the *chemic* causes of cholelithiasis it is evident that all the constituents of gallstones can be found in normal bile, save mucus, epithelium and foreign bodies, such as parasites and their eggs. It is also probable that if the bile continues healthy, the elements forming the calculi will remain in solution and not separate. What then causes the formation of these concretions? According to NAUNYN biliary stasis is the primary cause. As we have seen they are more common in the aged and in persons of obese or sedentary habit, all conditions favoring stagnation. With biliary stasis we get a catarrh with casting off of the epithelial cells; these furnish quan-

ties of albumin. This albumin leads to the precipitation of bilirubin, which combines with the lime salts. In addition we have cholesterin, which is usually the principal component of gallstones. Cholesterin is found in many vegetables, in eggs, red blood cells and the brain. As it is so important a feature in the production of calculi it has been suggested that the use of foods containing it be restricted as much as possible in persons subject to cholelithiasis.

With the catarrh it is possible to have infection of the contents of the gall bladder, so we may have *bacteriologic* causes added. When the normal bile of man or animals is contained in the healthy biliary passages and periodically discharged it is sterile (GILBERT and GIRODE). While bile is aseptic it is not antiseptic, so pathologic changes allow the entrance of microorganisms from the duodenum or from the blood, thus infecting the bile. Microbes have been found both in calculi and in the contents of the gall bladder. GALLIPA in 1886 was the first to announce "il y a des parasites dans les calculs biliaires." LETIENNE found *B. coli*, *S. albus* and *S. megatherium*, and DUPRE found the *S. albus* in three cases. CHARCOT and GOMBAULT, after ligating the common duct, found that the bile above the ligature became infected. Here as elsewhere in the intestinal tract the *B. coli* plays an important role. NAUNYN, after ligating the ductus communis so as to produce stasis, injected *B. coli* into the gall bladders of healthy dogs and found the animals speedily died with evidences of acute cholangitis and general septic infection. NETTER, GILBERT and GIRODE also found the *B. coli*.

CHIARI has lately investigated a series of twenty-two cases of typhoid fever. In all these cases save three typhoid bacilli were obtained from the gall bladder. They were generally present in considerable numbers and in fifteen were obtained in pure culture. In thirteen out of the nineteen cases there was inflammation of the gall bladder with infiltration of small cells, edema and hyperemia. Cultures from the heart's blood, the contents of the thoracic duct, and the cerebro-spinal fluid were all negative. The diagnosis of typhoid was confirmed in the entire series of twenty-two cases by cultures from the spleen, mesenteric glands, etc. The routes by which the bacilli reach the gall bladder may be, according to this author, either by the blood, by the bile ducts, or directly through the walls of the gall bladder itself. CHIARI regards the last method as very unusual and owing to the difficulties in experimentation he does not attempt to decide between the other two. The bacilli undoubtedly multiply in the gall bladder and thinks they possibly may cause post-typhoid cholecystitis, gallstones and relapses of typhoid.

GILBERT and FOURNIER have lately published a paper (*C. R. Soc. de Biologie*, Feb. 14, 1896) on the role of microorganisms in the formation of gallstones.

These observers examined a number of stones from human beings mostly, with a few from cattle, and of different ages. In the old stones the cultures were sterile, save in one case. In more recent stone, coverslips showed organisms from time to time which could not be cultivated. The fresh stones gave cultures and coverslips of *B. coli*. As a result of their observations these authors conclude that the gallstones are due to the action of the microbes contained in them. They are also of the opinion that while different organisms may cause cholelithiasis the *B. coli* is most frequently found.

INSANE KINGS.

BISMARCK, who opposed the marriage of Frederick (Crown Prince of Prussia), with the daughter of Queen Victoria (on the ground that she was a scion of the "crazy and scrofulous Guelphs") showed a prophetic insight into the results of those hereditary defects which Dr. E. S. TALBOT of Chicago demonstrated to exist in aristocracies and royalties generally.¹ The eccentricities of William II. of Germany seem to fully justify BISMARCK's objection. The recent performances are curiously like those of King Ludwig of Bavaria antecedent to that suicide and homicide which resulted in a great loss to medical science through the death of the cerebral anatomist GUDDEN. The socialist newspapers outline the artistic, architectural, sartorial, musical and pugilistic performances of William II. in a style that strikingly resembles the Suetonian sketch in 1884 of Ludwig's performances and which testimony taken in 1886 by the Bavarian Lunacy Commission (Drs. GUDDEN, HAGEN, GRASHEY and HUBRICH) demonstrated to be correct. The stigmata of degeneracy notoriously present in William II. of Germany, the insanity of his grand-uncle Frederick William IV. and that present in his paternal grandmother's ancestry lend emphasis to the fear BISMARCK expressed of the taint in the Guelph-Wettin blood, which extends even to the inheritance of hemophilia. The *British Medical Journal* (a decade ago, ament the political complications consequent on the larynx cancer of Frederick) remarked that the short reign of a wise ruler stricken with a fatal disease is better than the long rule of a half-imbecile ruler affected with chronic disorder. The *British Medical Journal* here recognizes fully the difficulties, even in constitutional monarchies, of securing regencies in case of even notoriously insane kings. The sea-kings were able to ravage Christendom through the mental defects consequent on epilepsy of the Carolingian and Merovingian dynasties. The lucid period of the paroxysmally excited paranoiac is peculiarly dangerous in this respect, as witness the cases of Wencelaus (Emperor of Germany and King of Bohemia), Charles VI. of France, Richard II. and

¹ JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, vol. XX, p. 111.

Henry VI. of England, Eric XIV. of Sweden, Christian VII. of Denmark and Ivan the Terrible of Russia. Much stress has been laid on the case of Charles II. of Spain, who concluded the dynasty which ruled Spain for nearly four centuries; but the European difficulties resulting therefrom would probably have occurred on the extinction of the dynasty irrespective of the mental state of its last member. The instances of most importance were those of George III., Christian VII. of Denmark and Ludwig of Bavaria. George III., though the scion of a dynasty created by a parliament representative of the people and destitute of hereditary right, attempted throughout his reign to be an absolute king. His shrewd grandfather gave him credit in boyhood for just sufficient intelligence to read to his mother. In mental make-up he resembled closely his famous insane ancestor, Ernest the Pious of Hanover. His mother had filled him with religious cant just sufficient to make him conceal his liaisons in brutal fashion. He had an admiration for art of the artificial, weak, classic style; for music of the street band style; for drama of practical joke, realistic type, and for church architecture of packing-box type. In these proclivities he displayed less intellectual power than his morally insane son, George IV., than Christian VII. of Denmark, or than Ludwig of Bavaria. In all these particulars he closely resembled his descendant, William II. of Germany. George III. was several times violently insane and died chronically insane.

The country was ruled as a regency for several years by the moral imbecile afterward George IV., who himself had delusions about having won the battle of Waterloo. George III. was, like all paranoiacs, most dangerous when least demonstrably insane. During his periods of seeming lucidity he had all the cunning, inventive, stupid egotism of the paranoiac and, as GREEN ("History of the English People") remarks, the shame of the darkest hours of English history lie wholly at his door. Lord CHATHAM, whose counsels might have thwarted much of this shame, was stricken down with gouty insanity during the critical period of the American troubles. The Americans were taxed in defiance of CHATHAM's denunciation of the unconstitutionality of this and King George III. ruled the country through the ministry formed by CHATHAM. Harsh laws, repellant to the spirit of the English common law, made death the penalty for almost all offenses against prosperity of person, in order to swell the coffers of the King with goods confiscated from the felon.

George III., when he became demonstrably insane, was placed under the care of Dr. WILLIS, who kept a private insane hospital conducted on excellent principles. When the paroxysmal excitement quieted down, the tories asserted the king had recovered, and in this were supported by Dr. WILLIS and his son,

and opposed by Dr. WARREN. George III. was declared sane by the English judges. Dr. WILLIS was given a pension of 7,500 annually for twenty-one years, and his son one of 3,250 annually, for life. Insane paroxysms recurred from time to time, until it became demonstrated that the case was a chronic one, and a regency was established. George III. reigned fifty-eight years.

The same arbitrary characteristics and artistic tendencies, but with greater demonstrable sexual perversion and greater intellectual powers were legally shown to be present in Ludwig of Bavaria and Christian VII. of Denmark.

Christian VII. was coarser but less hypocritical in sexual debauchery than George III. He was equally suspicious, and while he had greater intellectual power than George III. in art, science, music and architecture, he was as inventively stupid in political matters. Neither of the two compared for political foresight with Ludwig of Bavaria, the patron of WAGNER. WAGNER would probably not have risen to the height he did but for Ludwig, whose musical and artistic criticism of the performances he insisted on enjoying alone, prepared WAGNER for the onslaught he later encountered.

Ludwig, in 1867, then at the height of his renown, courted at once by France, Prussia and the ultramontanes, highly esteemed as a discerning patron of art and music, met MOREL, whose keen eye saw the mental and physical stigmata of degeneracy, and who prophesied the coming catastrophe. Ludwig, by siding with Prussia, enraged the ultramontanes. All the material they had collected was (like that collected by the Prussian agrarian party against William II.) placed in the hands of the socialists. In 1884, the *Zurich Social Demokrat* detailed his mental and moral defects and paralleled them with those of Nero. By June, 1886, Prince Luitpold, the king's uncle, was pronounced regent, the immediate heir to the throne, Otho, Ludwig's brother, being a paranoiac with homicidal tendencies. June 12, 1886, Ludwig drowned Dr. GUDDEN and himself. Otho became king, but Luitpold remained regent.

LEGISLATION AGAINST DEGENERACY.

One of the results of the vulgarization of the Lombrosian theories of human degeneracy by such works as those of NORDAU and others, has been to give rise to a number of rather noteworthy propositions, some of which it has been proposed to realize by legislation. A bill is said to be now before the Texas legislature, prohibiting the marriage of those affected with any serious hereditary disease or taint; an act has, it is said, been passed in Connecticut forbidding the marriage of epileptics, and other similar legislation will probably be attempted in other quarters. The difficulty with all these propositions is not that they are not

good in themselves, at least in purpose, but that they are all more or less impracticable. Besides the difficulty of quelling or restricting the strongest animal impulses, that is met with everywhere in the endeavor to keep up and improve the moral standard and meet the needs of ordinary social morality, we have in this case an attempt to meet much less tangible conditions which can sometimes even altogether escape detection. Moreover, the public sense of justice would revolt sometimes against a strict construction and execution of laws that restrict natural rights in cases where there is, as there may easily be, a possible doubt of their applicability. In case of tuberculosis, for example, which is one of the diseases it is proposed to make a bar to marriage, we have learned to recognize, of late years more than ever before, that it is an almost universally disseminated infection from which few of us entirely escape and yet from which also the recoveries are much more numerous and complete than had hitherto been supposed. Epilepsy also is a symptom indicating cerebral instability, but it by no means invariably indicates an incurable organic defect. How is a law against the marriage of epileptics to be enforced strictly when we know that there are many individuals who have had perhaps only one or two fits in the course of a long life; or who have perhaps at some critical period had them frequently and none at any time thereafter? Nevertheless they can never be said to be absolutely free from the liability to the taint of epilepsy. As regards insanity, we yet know comparatively little of the real conditions underlying most types of mental disease, and there are very many cases where injustice might be done by the legal disability imposed by the proposed legislation.

The chief defect of all these proposals is that they are too vaguely stated and provide no method for the rational carrying out of the reforms they advocate. The difficulties in their way seem to be not fully appreciated and the legislation is in this respect inconsiderate. One of the most elaborate and complete of these projects is reported from France, where Dr. TOULOUSE, a well known writer on mental diseases, who has recently also been prominently before the public as the author of a rather sensational analysis of a noted French novelist, is the author. He proposes that epilepsy, mental weakness, cancer, syphilis, alcoholism, and tuberculosis should be made legal obstacles to marriage, and that persons intending to marry should declare these diseases before the marriage, and failure to do so shall be a legal ground for divorce or for fine in case a defective offspring results. If marriage is insisted upon in spite of and after declaration, the State shall have the right to interfere and prevent its consummation.

It is further proposed in Dr. TOULOUSE's plan that physicians shall be compelled by law to report to the authorities all cases of these disorders, so that a record

can be kept of every individual's disabilities. This will not be open to the public, but is intended to serve as a check upon the declarations made by the parties, so that the State can intervene and prevent dangerous alliances, for the public good.

Dr. TOULOUSE's plan is in some respects better considered than most of the others, but will be of interest to see how it is received in France where the question of population is at the present time an important one, and such a check on marriage and the consequent legitimate multiplication of citizens is hardly in the line of the reforms for which French economists are mostly concerned. It is for quantity rather than quality of population that they appear to be now most anxious, and the demands of modern European militarism will have to be first considered. Even were such plans perfectly satisfactory and practicable it is doubtful whether they could be adequately carried out so as to yield results that will show their utility, and this is true of the comparatively well considered proposition of the French alienist as well as of the cruder attempts of the Texas and Connecticut legislators. It is a question as open to differences of opinion as are any of the economic questions of the day, and it is hard to say whether after all a *laissez faire* policy is not the best. The prohibition of the marriage of idiots, imbeciles, and the actual or periodic insane may be a legitimate and practicable method of preventing the propagation of degeneracy, and the same may be said of the legal prohibition of consanguineous marriages, though this is to some yet an open question; but any such wholesale enactments as those proposed are questionable. Degeneracy is largely an incident of evolution, at least in some of its details, and according to the law of natural selection so far as it applies to men, carries with it its own cure. It is a direct result of human progress, a necessary concomitant of our civilization, and the increase of insanity and other evils just now so prominent and alarming are only incidents in the general line of human advance. They are partly, at least, only signs of the higher standards of philanthropy that now prevail, as compared with those of former periods, and the better statistical information of the present day. As yet our information as to the causes of human defectiveness is incomplete, and we do not know that it would greatly add to the sum of human happiness to interfere very radically with the ordinary course of events in these respects.

We will have, however, to expect more propositions of this kind in the future, as an inevitable result of the diffusion of information or misinformation on scientific or pseudo-scientific subjects, which always has as one of its first effects the starting up of reformers. But while we are unable to legally suppress sexual immorality the possible danger of such reforms is that they would only increase the number of illegiti-

mate degenerates. The only real safeguards against the propagation of degenerates are to be looked for in the higher moral education of the public, and the cultivation of higher practical moral standards.

RAILROAD RATES TO THE JUBILEE MEETING.

Advices have been received from the Traffic Association of a uniform rate of a fare and one-third for railways in the territory east of the Missouri River and west of Chicago, Peoria and St. Louis, on the certificate plan. This includes:

Atchison, Topeka & Santa Fe Railway; Burlington, Cedar Rapids & Northern Railway; Chicago & Alton Railroad; Chicago & Northwestern Railway; Chicago, Burlington & Northern Railroad; Chicago, Burlington & Quincy; Chicago Great Western Railway; Chicago, Milwaukee & St. Paul Railway; Chicago, Rock Island & Pacific Railway; Chicago, St. Paul, Minneapolis & Omaha Railway; Hannibal & St. Joseph Railroad; Illinois Central Railroad; Iowa Central Railway; Jacksonville & St. Louis Railway; Minneapolis & St. Louis Railroad Co.; Missouri Pacific Railway; Rock Island & Peoria Railway; St. Louis & San Francisco Railroad; Sioux City & Pacific Railroad; Wabash Railroad; Wisconsin Central Lines.

CORRESPONDENCE.

Railroad Rates.

RANKIN, ILL., April 12, 1897.

To the Editor: Will you please inform me what rates can be secured for physicians and their wives for transportation to attend the meeting of the AMERICAN MEDICAL ASSOCIATION in June and oblige? Yours truly, J. R. LYTLE, M.D.

ANSWER.—One and one-third fare from all points for the round trip.

ASSOCIATION NEWS.

Dinner of the Section of the Practice of Medicine. The dinner of the Section of the Practice of Medicine of the AMERICAN MEDICAL ASSOCIATION will take place at 7 o'clock on the evening of June 1, 1897. Gentlemen desiring to attend this dinner will please send in their names at once to Dr. J. H. Musser, 1927 Chestnut street, Philadelphia, Chairman of the Section. The subscription will be \$2.00 if one hundred attend, and \$3.00 if less than one hundred attend, so that it will be necessary for the subscription list to be filled as early as possible.

Section on Surgery and Anatomy.—Preliminary program.

1. Address of the Chairman. Reginald H. Sayre, New York, N. Y.
2. *a*, Ligation of the Common Carotid Artery for Trifacial Neuralgia, with Experiments and Observations on Dogs; *b*, Specimens and Charts of the Arterial and Nervous Systems, illustrating the paper. B. Merrill Ricketts, Cincinnati, Ohio.
3. The Nerve Element in Surgical Pathology. J. McF. Gaston, Atlanta, Ga.
4. Operative Procedure for the relief of Occlusion of the Jaws. I. Ewing Mears, Philadelphia, Pa.
5. Improvement of Brain Function by Surgical Interference. Ernest La Place, Philadelphia, Pa.
6. Demonstration on the Cadaver of a new Surgical Engine. M. H. Cryer, Philadelphia, Pa.
7. Hernia of the Cecum. J. H. Gibbon, Philadelphia, Pa.
8. One of the Rarer Forms of Hernia. Frank Stahl, Chicago, Ill.

9. Two hundred and fifty Bassini Operations for the Cure of Hernia without Mortality. W. B. Degarmo, New York, N. Y.
10. The Sac in Inguinal Hernia. D. W. Graham, Chicago, Ill.
11. Animal Suture, Its Preparation and Technique of Application. H. O. Marcy, Boston, Mass.
12. The Diagnosis of Minor Personal Injuries and their Relation to Accident and Insurance Associations (with illustrations). L. H. Montgomery, Chicago, Ill.
13. Appendicitis in its Relation to Life Insurance. D. W. Graham, Chicago, Ill.
14. Report of a Case of Cyst of the Appendix with Presentation of Specimen. E. E. Montgomery, Philadelphia, Pa.
15. Surgical Managements of Appendicitis. Joseph Price, Philadelphia, Pa.
16. Pelvic Surgery. Mordecai Price, Philadelphia, Pa.
17. The Differential Diagnosis of Surgical Lesions in the Right Half of the Abdomen and Pelvis. George R. Fowler, Brooklyn, N. Y.
18. Anchoring the Kidney. R. Harvey Reed, Columbus, Ohio.
19. Calculi in the Ureter. Weller Van Hook, Chicago, Ill.
20. The Comparative Merits of Different Operations for Stone in the Bladder. J. B. Deaver, Philadelphia, Pa.
21. Suprapubic Cystotomy, with a Report of Fifty Cases. John A. Wyeth, New York, N. Y.
22. Photography of the Bladder. W. K. Otis, New York, N. Y.
23. A Hypospadias Operation. R. T. Morris, New York, N. Y.
24. Ligation of the Dorsal Vein of the Penis for the Cure of Functional Impotence. J. A. Murray, Clearfield, Pa.
25. The Dangers of Clap. F. C. Valentine, New York, N. Y.
26. Stone in the Common Duct. W. E. B. Davis, Birmingham, Ala.
27. Demonstration of Technique of the Roentgen Rays, with the Practical Application to Surgery. Illustrated by Stereopticon Views. A. W. Goodspeed, Philadelphia, Pa.
28. The Treatment of Ununited Fractures. Edward Martin, Philadelphia, Pa.
29. Ichthyosis Papillaris Linguae, with Report of Case. Joseph Ransohoff, Cincinnati, Ohio.
30. Treatment of Abscess of the Lung. Carl Beck, New York, N. Y.
31. The Use of Dry Heat and a High Temperature for the Treatment of Chronic Joint Affections, with a Report of Cases. W. E. Wirt, Cleveland, Ohio.
32. Unnecessary Complications in Operative Surgery. John B. Roberts, Philadelphia, Pa.
33. The Present Status of the Injection Treatment of Hemorrhoids. L. H. Alder, Jr., Philadelphia, Pa.
34. Transperitoneal Ligation of the Iliac Artery, with Report of Cases. T. S. K. Morton, Philadelphia, Pa.
35. The Etiology and Classification of Tumors. S. H. Friend, Milwaukee, Wis.
36. Report of 200 Cases of Inoperable Sarcomata Treated by Injections of Mixed Toxins. W. B. Coley, New York, N. Y.
37. Serum Therapy in Acute Surgical Infectious Diseases. Howard Lilienthal, New York, N. Y.
38. Amputation in the Treatment of Malignant Disease. C. A. Wheaton, St. Paul, Minn.
39. The Technique of Pirogoff's Amputation. G. G. Davis, Philadelphia, Pa.
40. *a*, The Treatment of Colles Fracture; *b*, The Passing of Plaster. E. A. Tracy, Boston, Mass.
41. Morbus Coxarius, Exsection with Movable Joint; Case. J. B. Cokenover, Des Moines, Iowa.
42. Gangrene of the Foot due to Uterine Myoma. S. H. Weeks, Portland, Me.
43. Cicatricial Stenosis and Valve Formation as a Cause of Pyloric Obstruction, with Report of Five Cases Relieved by Operation. W. J. Mayo, Rochester, Minn.

SECTION DINNER, TUESDAY, JUNE 1; 7:30 P. M.

Price of tickets \$3, without wine. Those desiring to attend the dinner who have not already notified the Chairman will please send their names to Dr. Reginald H. Sayre, 285 Fifth Avenue, New York, N. Y.

Section on Obstetrics and Diseases of Women.—Preliminary program:

1. Address of Chairman. Milo B. Ward, Topeka, Kans.
2. A Consideration of Some of the Conditions Influencing the Results of the Surgical Treatment of Uterine Retroposition. Augustus P. Clarke, Cambridge, Mass.
3. Pathological and Surgical Complication in Abdominal and Pelvic Disease Requiring Supra-pubic Sections for their Removal. Joseph Price, Philadelphia, Pa.
4. The Technique of Vaginal Section, Exclusive or Hysterectomy, for Diseased Appendages and Small Pelvic Tumors. Augustin Goelet, New York City.

5. The Choice of Methods in the Operative Treatment of Fibroid Tumors of the Uterus. L. S. McMurtry, Louisville, Ky.

6. The Element of Diagnosis in Intra-Uterine Growths. Thomas B. Manley, New York City.

7. Hemato-salpinx with Congenital Uterine Atresia. Alex. Hugh Ferguson, Chicago, Ill.

8. The Treatment of Puerperal Sepsis. E. E. Montgomery, Philadelphia, Pa.

9. Tapping and Drainage of Tubal Abscess Instead of Removal of Same. J. W. Heddens, St. Joseph, Mo.

10. Obstetric Delivery by Abdominal Section. W. G. MacDonald, Albany, N. Y.

11. The Destiny of Vaginal Hysterectomy for Malignant Disease. Lester C. Hall, Kansas City, Mo.

12. The Treatment of Circumscribed Pelvic Hemorrhage. M. Rassenwasser, Cleveland, Ohio.

13. Rational Gynecology. J. H. Kellogg, Battle Creek, Mich.

14. Closure of the Abdominal Incision. Philander A. Harris, Paterson, N. J.

15. The Closure of Wounds of the Bladder by the Use of the Buried Tendon Suture; with Special Reference to a New Method for the Cure of Difficult Cases of Vesico-vaginal Fistula. Henry O. Marcy, Boston, Mass.

16. The Broad Coaptation Suture in the Radical Operation for Umbilical Hernia. G. M. Edebohls, New York City.

17. The Midwife Question in America. C. S. Bacon, Chicago, Ill.

18. Vaginal Puncture in Extra-Uterine Pregnancy. Lewis Schooler, Des Moines, Iowa.

19. Some Interesting Cases in Gynecological Practice. Henry P. Newman, Chicago, Ill.

20. New Advances in the Treatment of Fibroid Uteri. Howard A. Kelly, Baltimore, Md.

21. Puerperal Infection. J. E. Cowles, Los Angeles, Cal.

22. Technique of Abdominal Hysterectomy. J. F. Baldwin, Columbus, Ohio.

23. Treatment of Retroversion of the Uterus. Franklin H. Martin, Chicago, Ill.

24. A Method for the Radical Cure of Gonorrheal Salpingitis. Robert T. Morris, New York City.

25. Relative Merits of the Cesarean and Porro's Operations. J. H. Carstens, Detroit, Mich.

26. Treatment of Pelvic Inflammations by Vaginal Incision. W. E. B. Davis, Birmingham, Ala.

27. The Anal Sphincter in Pelvic Surgery. Joseph Eastman, Indianapolis, Ind.

28. Some Methods of Suspending the Uterus. George H. Noble, Atlanta, Ga.

29. Fibroid Tumors of the Vagina with Report of a Case. J. M. Emmert, Atlantic, Iowa.

30. Is Gynecology a Narrow Specialty? Thomas Opie, Baltimore, Md.

31. Tubercular Peritonitis Surgically Considered. J. W. Felty, Abilene, Kans.

32. Electricity in the Treatment of Fibroid Tumors: its Ultimate Results and Comparative Value. G. Betton Massey, Philadelphia, Pa.

33. Toxicity of Urine in Pregnancy. Robert W. Stewart, Cincinnati, Ohio.

34. Studies in Gynecology from the Service of the Woman's Hospital of Philadelphia. Anna M. Fullerton, Philadelphia, Pa.

35. Some Reflex Disturbances Due to Pelvic Disease, with Report of Cases. J. M. Duff, Pittsburg, Pa.

36. The Conditions and Accidents of Cnretage. W. W. Grant, Denver, Col.

37. How to Avoid Drainage in Pelvic Surgery. I. S. Stone, Washington, D. C.

38. Vagino-abdominal Section. Thomas H. Hawkins, Denver, Col.

39. The non-operative Treatment of Puerperal infections. Joseph B. De Lee, Chicago, Ill.

40. A Report of Three Cases of Ovarian Cyst with Appendicitis Resembling Torsion of Pedicle. X. O. Werder, Pittsburg, Pa.

41. Treatment of Pus Tubes and Pelvic Abscess per Vaginum. W. H. Wathen, Louisville, Ky.

42. A Synopsis of Plastic Surgery Now Practised. Joseph Price, Philadelphia, Pa.

43. One Hundred Cases of Atresia and Stenosis of Vagina in Labor with Thirteen Fatal Cases. J. J. E. Maher, New York City.

44. Which is the Preferable Operative Method of Holding the Uterus in Normal Position. C. C. Frederick, Buffalo, N. Y.

45. Antelexion of the Uterus. Russell G. Floyd, Eureka Springs, Ark.

SECTION DINNER.

Through the advice of the executive committee of the Section on Obstetrics and Diseases of Women, the chairman has arranged with the manager of the Hotel Walton, to give a Section dinner, Tuesday, June 1st, at 8 p.m. The price to be \$3 per plate; wines extra. In order to make this important feature of the Association a signal success, it will be necessary for each member of the Section who will be present, and desires to enjoy this social occasion, to signify his intention by promptly notifying the chairman, so that arrangements can be made to accommodate all. Please mail postal card to the undersigned as soon as you read this article, and state the number of plates for which you will be responsible. The dinner will be given in the Hotel Walton, and no member of the Section will be able to resist the pleasure when the time comes, but we must know how many will be present so that every detail may be previously arranged.

MILB B. WARD, Chairman.

707 Kansas Avenue, Topeka, Kan.

Section on Neurology and Medical Jurisprudence.—Members will please send in the titles of their papers to the Secretary of the Section promptly, that the permanent program may be arranged. The following is the preliminary announcement of papers already promised:

1. Aphasia. Charles K. Mills, Philadelphia. Discussion: F. X. Dercum, Hugh T. Patrick, William G. Spiller, Barney Sachs, J. J. Putnam and C. W. Burr.

2. French and Motor Aphasia in a Polyglot. Frederick Peterson, New York City.

3. Some States of Disturbed Consciousness. J. T. Eskridge, Denver, Colo.

4. The Status of the Present Treatment of Alcoholism. J. K. Bauduy, St. Louis.

5. Meningo-myelitis with Special Reference to the Tubercular Form. William G. Spiller, Philadelphia.

6. The Medico-legal Aspect of Choreic Insanities. C. C. Hersman, Pittsburg.

7. Expertism. S. V. Clevenger, Chicago.

8. The Differential Diagnosis between Cerebral Syphilis and General Paresis. Hugh T. Patrick, Chicago.

9. Trunk Anesthesia in Locomotor Ataxia. Charles W. Burr, Philadelphia.

10. Habit Spasms of Children. Samuel J. Fort, Ellicott City, Md.

11. The Rest Cure. Landon Carter Gray, New York City. Discussion: E. S. Pettyjohn, C. H. Hughes, Chas. K. Mills.

12. Treatment of Graves' Disease. Harold N. Moyer, Chicago. Discussion: A. A. Eshner, Philadelphia, and C. H. Hughes, St. Louis.

13. Melancholia and Its Treatment. W. S. Watson, Fishkill-on-Hudson, N. Y.

14. The Subconscious Mind. Clark Bell, Esq., New York City.

15. Internal Cerebral Meningitis Chronica. E. S. Pettyjohn, Alma, Mich.

16. Stigmata in Young American Degenerates. Eugene S. Talbot, Chicago, Ill.

17. Pain Traumatism. Thos. H. Manley, New York.

18. A Synopsis of the Duestrow Case. L. Bremer, St. Louis.

19. Insanity and Pulmonary Consumption Among the Negro Population of the South Since the War. Thomas J. Mays, Philadelphia, Pa.

20. Inebriety and Tuberculosis as Allied Diseases. T. D. Crothers, Hartford, Conn.

21. Alcohol as a Causative Factor in Disease of the Central Nervous System. T. D. Crothers, Hartford, Conn.

22. On the Pathogenesis of Locomotor Ataxia. L. Harrison Mettler, Chicago, Ill.

23. The Use and Abuse of Electricity in the Treatment of the so-called Neuroses. L. Harrison Mettler, Chicago, Ill.

24. A Study of the Symptomatology of Neurasthenia in Women. Louis F. Bishop, New York City.

25. Clinical Evidences of Neurasthenia as an Abdominal Neurosis. G. Betton Massey, Philadelphia, Pa.

26. Hereditary Lateral Sclerosis. Augustus A. Eshner, Philadelphia, Pa.

27. History of the Section on Neurology and Medical Jurisprudence. J. C. Kiernan, Chicago, Ill.

28. Chairman's Address. W. J. Herdman, Ann Arbor, Mich.

29. History of American Neurology. C. H. Hughes, St. Louis.

30. Remarks on the Curability of Insanity. John Punton, Kansas City, Mo.

31. Bilateral Psychomotor Myo-synchrony. C. H. Hughes, St. Louis, Mo.
 32. Rest and Northern Lake Air for Neurotics. E. S. Pettyjohn, Alma, Mich.

Papers have also been promised by the following: F. X. Dercum, Philadelphia; Henry W. Coe, Portland, Ore.; John K. Mitchell, Philadelphia, Pa.; A. O. J. Kelly, Philadelphia, Pa.

SECTION DINNER.

The Section on Neurology and Medical Jurisprudence will give a dinner on the evening of the first day. The price of tickets is three dollars per plate. Members of the Association wishing to attend will please sign the accompanying slip and mail it at once to the Secretary of the Section, Dr. C. H. Hughes, 3857 Olive Street, St. Louis, Mo., that proper arrangements can be made in accordance with the number to be present.

To the Secretary, Neurological Section, A. M. A. Sir:—I wish . . . plate placed for me at the dinner of the Section on Neurology and Medical Jurisprudence of the American Medical Association at Philadelphia, June 1, proximo.

Signed

Address C. H. HUGHES, Secretary.

Section on Dental and Oral Surgery.—Preliminary program:

1. Chairman's Address. R. R. Andrews, Cambridge, Mass.
2. Resection and Reproduction of the Maxilla. G. Lenox Curtis, New York City, N. Y.
3. Sterilized Roots of Beast's Teeth as Supports for Porcelain Crowns. W. E. Walker, Pass Christian, Miss.
4. Tumors of the Maxilla. Wm. Knight, Cincinnati, Ohio.
5. The Influence of Diseased Teeth upon the Adjacent Structures. J. Taft, Cincinnati, Ohio.
6. Etiology and Treatment of Inflammation of the Anterior Pillars of the Fauces. George T. Carpenter, Chicago, Ill.
7. Pathologic Conditions of the Throat and Contiguous Structures During Early Childhood. Prince.
8. Factors in the Causation of Irregularities of the Maxilla and Teeth. Wm. A. Mills, Baltimore, Md.
9. Dental Faculties in Medical Schools. Richard Grady, Baltimore, Md.
10. The Need of Dental Instruction in Medical Schools. Edward Branigan, Boston, Mass.
11. A Series of Clinical Cases. Vida A. Latham, Chicago, Ill.
12. Hyperkinesis of the Muscles of Mastication a Symptom and an Etiologic Factor in Nervous Affections, Particularly Neuralgia of the Trigemini and Diseases of the Jaws. G. V. I. Brown, Duluth, Minn.
13. The Relation of Dentistry to General Medicine. George F. Eames, Boston, Mass.
14. Cataphoresis, *i. e.*, The Use of Electricity Alone for the Obtunding Sensitive Dentine. W. A. G. Bonwill, Philadelphia.
15. Fraternity. A. C. McCurdy, Towson, Md.
16. Pyorrhea Alveolaris in Mercurial and Lead Poisoning and Scurvy. Paper No. 4. Eugene S. Talbot, Chicago, Ill.

R. R. ANDREWS, Chairman, Cambridge, Mass.

EUGENE S. TALBOT, Secretary, Chicago, Ill.

SOCIETY NEWS.

The French Congress of Alienists and Neurologists will be held in August at Toulouse. Questions to be discussed: Diagnosis of general paralysis: infantile hysteria: medical service in insane asylums.

International Medical Congress. Germany has notified the Russian government that it will withdraw its representation unless all restrictions with regard to the passports of the Hebrew members of the German delegation are at once withdrawn. It is insisted that the Jewish members of the Congress shall receive from the Muscovite authorities identically the same treatment as their Christian colleagues.

International Congress of Forensic Medicine. In connection with the Exposition at Brussels the local society announce an international medico legal congress to meet August 2 to 7, to discuss the following questions: Internal factors in the putrefaction of cadavers: the medico-legal expert in cases of accidents caused by the ingestion of food; toxicology of acetylene; in-

toxication with carbonic oxid; the criminal insane; medical professional secrecy before the law; pulmonary docimasia; medico legal significance of subserous ecchymoses: responsibility, especially partial responsibility; hypnotism in relation to criminality. For further particulars address Dr. Dewez, Mons, Belgium.

Atlantic City Academy of Medicine.—The active regular physicians of Atlantic City, N. J., met April 9, and organized a permanent organization to be known as the Atlantic City Academy of Medicine, the objects of which shall be to encourage interchange of opinion upon medical and surgical cases; to consider all subjects bearing upon the health and sanitation of our "City-by-the-Sea;" and to promote a greater spirit of sociability among the fraternity. There are three classes of members, viz., first, active members who must be regular, registered, and practicing physicians in Atlantic City; second, contributing members, who must be legally qualified regular practitioners, druggists or dentists; third, honorary members, regular physicians or professors who have attained high honors in the profession or who have especially contributed to the valuable literature of the profession. The Academy was organized with a membership of twenty and will hold its regular meetings the second Friday of each month, with the exception of July and August, at 9 p.m. The following officers were elected to serve until January, 1898: President, William M. Pollard; vice-president, W. Blair Stewart; secretary, E. C. Chew; corresponding secretary, Joseph F. Edwards; treasurer, Walter Reynolds. Board of governors, the president, Boardman Reed and E. A. Reiley.

BOOK NOTICE.

Retinoscopy (or Shadow-test) in the Determination of Refraction at One Meter Distance with a Plane Mirror. By JAMES THORINGTON, M.D., Adjunct Professor of Diseases of the Eye in the Philadelphia Polyclinic and College for Graduates in Medicine, etc. Sixty-six pages and 24 illustrations. Price \$1.00. Philadelphia: P. Blakiston, Son & Co., 1012 Walnut St., 1897.

The author of this well written little book has very satisfactorily described the most approved methods of retinoscopy. The work is especially valuable in that for a great part it details the results of personal investigation of such a well known authority on this subject as Dr. Thorington. Oculists accustomed to casually use retinoscopy as practiced in the old way with the concave mirror or with the ophthalmoscopic mirror, will be surprised to note the marked evolution of the modus operandi of this test as developed by Drs. Jackson and Thorington. With perfected instruments and strict attention to arrangement of light, distance, and other details, a surprising degree of proficiency and accuracy is possible. Any one pursuing the modern methods of retinoscopy will soon be convinced of its superiority over all other objective tests, and every worker in ophthalmology realizes the necessity of at least one reliable objective method of refraction.

Dr. Thorington has described in the plainest manner every important detail of the test, and has lucidly illustrated his text with diagrams and photographs (several of original instruments). His book will prove a welcome and useful addition to ophthalmologic literature. We are pleased to note the preference given to the term retinoscopy. The test is best known by this name, and since the publicity of the X rays, its common synonym skiascopy is liable to be confused with skiagraphy: besides skiascopy and the shadow-test are inappropriate terms, as it is the movement of the illumination rather than the shadow that is studied in the modern method with the plane mirror. We are somewhat surprised at the statement that satisfactory refraction without a cycloplegic "can be quickly and accurately obtained" by retinoscopy, in cases of myopia and mixed astigmatism in which the pupil is large, but we are glad to read that the author does not advise this as a routine procedure.

PUBLIC HEALTH.

The Utilization of Garbage.—New York city contracted last June with the New York Sanitary Utilization Company on a five year basis to receive the garbage delivered to it at Barren Island, the long established depot of animal cadavers. Brooklyn's garbage has the same destination. The garbage towed by the city's scows to the island is dumped into hoppers, from which it slides into the receiving tank, where it is cooked. The mass is then dropped into tanks and carried by elevator buckets to the presses which separate the grease and water. The grease, after partial purification, becomes a salable article to be made into soaps, lubricants, etc. The residue is changed into fertilizing products. Without the dead-animal contingent it would be difficult to make the garbage contract pay on the terms which the city allows. New York's garbage averages 800 tons a day, Brooklyn's is not nearly as great. The latter city has a contract with another company. The aim of both these cities is to dispense with sea dumpings, which prove such a serious impediment to navigation, as well as menace to the health of the shore dwellers. After years of lethargy the metropolitan center bestirs itself with a commendable activity.

For International Measures Against Leprosy.—Max Joseph (*Berliner klinische Wochenschrift*), considering the danger to the State, advises prophylactic measures, consisting in the duty for physicians to report every case, isolation of the patients, and international regulation for their internation. (*Janus*.) Professor Neumann (*Wiener medicinischen Wochenschrift*)—as the increase of leprosy, which, according to him, propagates itself as well by heredity as by direct contact, has been undoubted in Europe during the last decades—thinks that international measures of protection are necessary. The measures recommended by him are the following: 1. Strong control over all the cases, by compelling the physicians to report each case coming to their knowledge. 2. Isolation of the lepers in special asylums, like those of Norway. 3. Interdiction of marriage between them, and separation of the inmates of the asylums according to sex. 4. Appointment of special professionally educated physicians in the asylums. The latter being so arranged that they are not only places of nursing for the sick, but also seminaries for the scientific study of leprosy. (*Janus*.)

Entitled to Certificate to Practice Medicine.—A peremptory writ of mandamus, to compel the State Board of Health of Missouri to issue a certificate authorising one Charles E. Johnston to practice medicine and surgery in that State, was granted by the supreme court of Missouri, Dec. 23, 1896, in the case of *State v. Lutz*. Johnston was graduated at the Physio Medical College of Indiana, located at Indianapolis, Ind., March 18, 1896, when he received a diploma, which he presented to the State Board of Health of Missouri, in July, with his application for a certificate to practice in the latter State. This was refused on the ground, it was stated, that the college issuing the diploma was not, in the judgment of the board, a "medical institution in good standing," within the meaning of the statute; the grounds of this conclusion being that the board had, prior to the presentation of the diploma, passed a resolution, and mailed a copy of same to each medical college in the United States, requiring them to furnish the board, on or before Jan. 1, 1896, a list of their respective matriculates and the basis of their matriculation, and that the Physio-Medical College had not complied with this order; and also upon the further ground, that, upon announcing its refusal to grant the certificate, the board stated to the applicant that it would permit him to be examined, and, if found qualified, grant him a certificate. The weight of evidence was to the effect that the notice referred to was not sent to the college until June 23, 1896, and Johnston having theretofore graduated, the supreme court says, that he

was in no way affected by the failure of the college to comply with the rule in question. Moreover, as to the college being in good standing, the court says, was settled by the testimony of the president of the State Board of Health that he found its name of record in the list of colleges furnished by the Illinois State Board of Health, which he said was considered standard in the United States. Good standing, as used in the statute, the supreme court goes on to state, simply means good reputation, and must be proven in the same way. Had the certificate been refused upon the ground that the Physio-Medical College was not of good standing, as required by section 6872, of the Revised Statutes of Missouri of 1889, it was conceded that mandamus would not lie to compel the board to issue it, because that question is, under the statute, within the judgment and discretion of the board to determine. But it was refused upon entirely different grounds, which did not involve matters of discretion or of judgment. The board undertook to establish a rule of its own, by which such good standing should be shown; that is, by requiring all medical colleges to furnish to it a list of their respective matriculates and the basis of their matriculation. In this, the supreme court says that it went beyond the power conferred upon it by statute, from which it derives its origin, and by which its duties and authority are defined. While the members of the medical board are to be commended for their endeavors to elevate the standard of practitioners of medicine and surgery, in passing as a board upon the applications of such persons for certificates to practice their profession, and in prescribing rules and regulations to that end, the supreme court continues, they must keep within the limits of the statute creating it, and this they did not do in this instance. And as Johnston had a diploma from a medical college in good standing, the court holds, he was under no obligations to submit to an examination by the board, nor had it any authority to require him to do so, as a prerequisite to granting him a certificate to practice medicine in Missouri. Mr. Justice Barclay raises the only dissenting voice, and that only to the extent of suggesting that, as the validity of the rule of the board had not been called in question by Johnston, it seemed to him preferable not to express an opinion upon it.

An International Sanitary Code.—The Fourth International Sanitary Conference, held at Venice, after a session of five weeks, adjourned on March 19. Sixteen of the European powers concurred in the findings, which together with the conclusions arrived at by the Conferences of 1892, 1893 and 1894, held respectively at Venice, Dresden and Paris, will furnish the nucleus of a code for all civilized nations. The *Lancet*, March 29, states that while the action taken has not been officially promulgated, there has enough transpired to show that British sanitary ideas have triumphed. One British idea is to interfere in the least possible degree with commerce and thus discard the "antiquated" forms of quarantine detention. "It is altogether probable that the very eccentricities of sanitary administration which in a moment of panic were resorted to have had the effect of causing a marked change of opinion among some of the leading authorities of Europe in favor of the methods which have so long been adopted in England: some of these authorities have not failed to contrast the perfect quietude with which this country recently met not only an importation of a few cases of plague, but almost simultaneously the arrival of a batch of cholera cases at one of our southern ports, with the panic which was manifested in the Mediterranean—not because disease had been imported, but merely because it was thought such a thing might occur. It is, perhaps, due to this more than anything else that sound progress has been made in Venice, and as typical of this progress we may mention the fact that shipping from British India will no longer be detained at Suez merely on the chance that someone on board may sicken of plague, but will be at once allowed to

pass the canal under the care of guards, provided there is no plague on board. This in itself is a gain of the first magnitude, for the detention of ships at Suez, merely because that place is, as it has been termed, the neck of the bottle by which disease can be prevented from passing from the East into Europe, is a hindrance to British commerce and navigation of a serious character, and one which long years of experience have shown to be quite useless. India has been styled 'the home of cholera'; plague has, alas, been epidemic in Bombay for several months. But during all these years and months British shipping which passes from India to our ports in one unceasing line has always failed to convey disease to our populations, and this experience is at last telling on other nations beside ourselves. The protests which have been made by the leading medical advisers of the French Government, for example against the attitude of Marseilles, have been proved to be right. Marseilles is the main sufferer, for the shipping and merchandise which would otherwise have gone to that port have gone elsewhere and some of the inhabitants are now crying out for government support of those who have deprived themselves and their unhappy families of their means of existence. Another point of importance that has been gained at Venice relates to merchandise. No country is required to prohibit the importation of any article of merchandise, and yet the failure to impose such prohibition is in no way to bring about restrictions against any such country by reason of its free admission of merchandise. Before the Conference met we heard that nearly every conceivable article might convey the infection of plague and was therefore to be avoided. Thus corn, rice, cotton, skins, Eastern carpets and numberless other things were looked upon with suspicion and even with fear; but the Conference has not supported this view, and the result is that, while freedom of action within certain limits is allowed to each of the contracting governments, every one of the articles which had been regarded as dangerous may, under the Convention, be admitted into any country at the will of the country concerned. The governments which prefer to subject certain articles to disinfection before receiving them are free to do so; but in former Conventions there has always been a list of merchandise, produce, etc., which was either altogether prohibited or which could only be admitted after disinfection."

NECROLOGY.

CARL EISENLOHR, M.D., Hamburg, eminent neuropathologist and anatomist; author of "Spinal lesions in pernicious anemia"; "Pathologic anatomy of central paralysis of the larynx"; "Simulation of tabes by specific chronic meningitic affections of the spinal cord," etc. In the study of the pathologic anatomy of athetosis, he found in a case of congenital athetosis that there was no diffuse lesion of the cortex, no bilateral focus, no miliary encephalitis, but a chronic myelitis of the central gray matter with the bordering regions of the lateral columns and of certain zones of the posterior columns, which he asserts is the anatomic foundation of the disease. In another monograph he called attention to the peculiar forms of neuritis characterized by eruptions of herpes zoster and the development of circumscribed perineuritic swellings. A study of the physiologic importance of the thalami optici and of their significance to the mimic functions, in 1890, was followed by a most comprehensive study of aphasia in which he added much to our knowledge of the localization of different forms of aphasia. The *Mitt. a. d. Hamburg. St.*, February, contains a detailed review of his works and an eulogy of his character. He died at the Madeiras of tuberculosis, in his 51st year.

CHARLES HAMMER, M.D., of Schenectady, N. Y., aged 65. He was born at Goslar in the duchy of Brunswick, Germany, Jan. 29, 1832, and was descended from a family whose

origin dates from the twelfth century and whose members were university men for generations. He served as volunteer in 1848 and was afterward exempted from military duty in Germany. He studied at Heidelberg University in 1852 and Goettingen in 1854. He then came to this country and lived for a time at Philadelphia, and for several years kept a drug store at Uniontown, Ala. He traveled extensively during the ten years prior to the civil war and spent a year in South America. At the outbreak of the war he was commissioned as surgeon of the First California Cavalry, with the rank of major, but did not see active service. He went to Schenectady in 1867 and has resided there ever since. He was a member of the Schenectady County Medical Society and the AMERICAN MEDICAL ASSOCIATION.

LEVERETT SILLIMAN KELSEY, M.D., died at Mount Vernon, Ohio, April 9. He was born Sept. 4, 1854; was graduated at the Medical College of Ohio, 1879; was resident physician of the Hospital of the Good Samaritan until March, 1880. In 1882 he took a degree at the Bellevue Hospital Medical College, New York. Subsequently practiced medicine for fifteen years with great success at Richmond, Ind. He was loved by his friends, honored by his associates and respected by his profession. F. C. L.

CHARLES R. WILEY, M.D., Jefferson Medical College, 1864, of Vineland, N. J., died of pneumonia April 2, aged about 53 years.

MISCELLANY.

Instance of Longevity.—"Uncle Josie" Field died April 1 in Middletown township, two miles from Red Bank, N. J. One of the incidents in his life was that he did not marry until he was 75 years of age, his wife being fifty years his junior. The couple had three children, who are still living. Mrs. Field is dead. Contrary to the theory that poverty is conducive to longevity he left considerable money and a farm of 4,000 acres.

A Cosmetic of Course.—The following is going the rounds of the secular press: "The oldest medical recipe is said by a French medical journal to be that of a hair tonic for an Egyptian queen. It is dated 400 B. C., and directs that dogs' paws and asses' hoofs be boiled with dates in oil." Perhaps it were well to investigate the chronology.

Medical Badges.—Russian doctors are hereafter to wear as a sign that they are legally qualified to practice, a little *zuak* or badge, a silver oval plate an inch and a half long by an inch wide, on which is a design of two intertwined serpents. The object is to increase the safety of the wearer in the less civilized parts of the country. This is according to the *N. Y. Sun*, and "must be so." Chicago physicians have had similar badges for about one year.

Urano-staphylorrhaphy.—Le Dentu reports 46 observations of congenital or cleft palate operated, and remarks that success is certain unless the chasm is of extraordinary width; 36 operations resulted in 31 complete successes, 3 satisfactory and 2 failures (acquired). In 11 cases of fistulas and acquired clefts, 8 were completely cured, 1 partially, and 2 proved unsuccessful. In each case of congenital cleft palate without complications, success was complete. He was also successful in all but 2 of 15 cases of congenital cleft palate with simple or double hare lip. In these 2 a slight communication persisted between the mouth and the nasal fossæ. He followed Trélat's instructions, with a special needle and scraper of his own design, and completed the operation at one sitting.—*Bulletin de l'Académie de Méd.*, March 9.

The Bubonic Plague in Literature.—"Chambers Encyclopedia," London, 1881, under the caption of "Black Death," beside mentioning Hecker's "Epidemics of the Middle Ages," refers to the "Decameron" of Boccaccio for a description of the

plague at Florence, "which for vividness and particularity of observation, almost equals Thucydides' account of the plague at Athens." In Bulwer's "Rienzi" an account of the plague will also be found. There seems to be no confusion of opinion regarding identities, but the meager resources of what little scientific language which abounded during the fourteenth century furnish appalling corroborations though really in a much mitigated form; to which may be added DeFoe's history of the London plague.

Effect of Fats on the Gastric Secretion.—Lobassow announces as the result of extensive experimentation with dogs, etc., that fat or grease coats the secreting surface of the stomach and diminishes the secreting power, and that it also coats the food taken into it and prevents the specific excitation of the mucosa, which normally favors secretion. He further states that this action of fat is not direct, but is due to a peculiar depressing influence exerted by the fats on the central nervous system. Aside from its theoretic interest, these conclusions may be found of practical value in controlling hypersecretion of the gastric juice by the administration of fats. Damaskin's experiments have confirmed Dolinski's assertion that fats stimulate the secretion of the pancreatic secretions.—*Ann. de la Soc. Méd.-Chir. de Liège*, February from *Wratsch*.

A Chilly Day for Willie.—The Reverend Dean Hole of Rochester, England, in his little book "A Little Town in America," says that he picked up the following bit of poesy in Cincinnati:

Little Willie from his mirror
Sucked the mercury all off,
Thinking, in his childish error,
It would cure his whooping-cough.
At the funeral Willie's mother
Smartly said to Mrs. Brown,
"Twas a chilly day for William
When the mercury went down."

Medico-legal Expert sued for Damages.—A woman was arrested March 18, 1896, on the accusation of infanticide. She was examined the 20th by Dr. Meloche in prison, who asserted that she presented every indication of a recent confinement. The day afterward she was delivered of a stillborn child. She instituted proceedings against the medical expert, and he has been condemned by the civil tribunal to pay her 1,000 francs damages, notwithstanding the contrary decision of the *ministère public*.—*Progrès Méd.*, March 6.

Action of Antitoxins.—Ehrlich has been experimenting to decide the question of the *modus operandi* of the antitoxins, whether they act by neutralizing directly the toxins or by stimulating the cells of the organism to action. He used for the purpose a vegetable toxalbumin, ricin, which possesses the property of producing, even in small amounts, coagulation of the blood. He found that antiricin—the serum of animals immunized against the effects of the ricin—possesses the power to suspend the coagulating property of the ricin *in vitro*. This result favors the theory that the antitoxins neutralize the toxins by direct chemic action.—*Therap. Week.*, March 7, from *Fortseh. der M.*, January 15.

Cases of Carcinoma Under 20.—A writer in the *Mittheilungen aus der Hamburg. Staatskrankenanstalten*, the new periodical designed to supplement the year-book published by the Hamburg institutions, has been collecting the reports of carcinoma occurring under 20, as four of such cases had come under his observation, and finds the figures as follows:

| | Carcinoma. | Under 20. |
|--|------------|-----------|
| Gürtl's Statistics | 4,769 | 10 |
| Glasser: Erlangen University Statistics | 527 | 1 |
| Winiwarter: Billroth's Vienna Clinic | 548 | 2 |
| Fischer, Zurich | 119 | |
| Gusserow, Hough, Blau, Dittrich, Schröder: | | |
| Carcinoma uteri | 3,419 | 2 |
| Hamburg Neues Allg. Hospital | 524 | 4 |
| Total | 9,906 | 19 |

Cardiac Tracings in Basedow's Disease.—C. Ferrari has been studying the peculiar exaggeration and acceleration of the diastolic wave in nearly all of the cardiograms taken in this disease, which he ascribes to a modification in the nature of the cardiac contraction. The curve of the cardiac tetanus in Basedow's disease is not like that of the normal heart, which implies that the nerve impulses transmitted to the heart differ in some way from the normal, as in cases of stimulation of the pneumogastric. But there is also some special factor in the contraction of the myocardium in this disease; not only the rhythm but the form of the cardiac contraction is altered; instead of one single tetanic contraction in which the single beats succeed each other with an interval rather longer than usual, the second impulse follows so rapidly upon the first, that it seems to start even before the first has reached its extreme elevation. In his opinion this fact constitutes the significance of the cardiograms in this disease, and he asserts that we are not justified in assuming from the resemblance between these curves and those produced by stimulation of the pneumogastric, that the peculiarities are caused by modifications in the nervous mechanism. Too many important facts are arrayed against this assumption, among them the familiar fact that stimulating the pneumogastric *retards* the action of the heart.—*Gaz. degli Osp. e delle Clin.*, February 28.

Damage Suit for Syphilis Contagion.—Much adverse discussion has been caused by a recent judicial decision in France. An apparently healthy child was given to a healthy woman to nurse. In a few weeks the child developed hereditary syphilis, and the nurse contracted it, also her husband and child, with severe manifestations of the disease. She sued the parents for damages, but as neither of the parents showed the slightest trace of syphilitic lesions, past or present, no criminality could be fastened upon them and the plaintiff's claim for damages was refused. The case aroused much interest as the child of the nurse died and she committed suicide. The question has been raised whether nurses in future may not be tempted to sue the physician who countenances the introduction of such a child into their families. It behooves all to exercise extreme caution in such cases, and to refrain from countenancing them in any way when there is the slightest reason to fear possible syphilitic complications.

Amount of Iodin in Various Organs.—We notice the following table in an article on the various organ-preparations in the market (*Pharm. Ztg.*, No. 15, 1897).

| Organ. | Average Weight. | Percentage of Iodine in organ. | Amount of Iodine in organ in grms. | Iodine soluble in physiologic salt solution. | Proportion of soluble Iodine to total Iodine. |
|---------------------|-----------------|--------------------------------|------------------------------------|--|---|
| Thyroid Gland. | 10 grms. | 0.04 | 0.004 | 0.04 | 1:1 |
| Spleen | 1 kgm. | 0.00152 | 0.015—0.020 | 0.00152 | |
| | to | to | to | to | |
| Pig's ovary | 5 kgm. | 0.00203 | 0.0225—0.030 | 0.00203 | 1:1 |
| Cow's ovary | 5 grms. | 0.000648 | 0.0006324 | 0.0002413 | 5:13 |
| Suprarenal capsules | 10 grms. | 0.000609 | 0.000609 | 0.0003381 | 1:16 |
| | | 0.0003048 | 0.0003048 | 0.0003048 | 1:1 |

—*Nouv. Remèdes*, March 8.

Death from Apoplexy Not Covered by Accident Policy.—An "accident policy" of insurance covenanted for the payment of an indemnity if death resulted from injuries through "external, violent and accidental means alone, independently of all other causes," and expressly stipulated that it should "not cover injuries of which there is no visible mark, nor death resulting wholly or partly, directly or indirectly, from disease or bodily infirmity." Death resulted from apoplexy, an attack of which followed certain work that required stooping and a run up a little hill. Under these circumstances, the United States

court of appeals holds, *Travelers' Insurance Co. v. Selden*, Feb. 2, 1897, that the case should have been taken from the jury and a verdict for the insurance company directed. It says that the sense in which the word "accident" was used in the policy, as shown by the context, and as expounded in similar cases, was as meaning "an event which proceeds from an unknown cause or as an unusual effect of a known cause, and therefore unexpected," something casual and fortuitous. Where an event occurs which can be readily explained as an operation of nature, working through natural, usual and ordinary laws, that, it declares, can not be called an accident. Consequently, the death in question must be attributed to disease, and not to "accident."

Leprosy Bacillus.—The presence of the lepra bacillus was reported in the medulla of a man 46 years old, who died of syringomyelia (Royal Bacteriological Institute, Lisbon, Dr. Camara Pestana and Dr. A. Beltencourt). At the necropsy there was found a gliomatous new formation of the medulla, which extended from the bulbous to the middle of the dorsal part, and showed strongest development in the neck region. The medulla was here strongly swollen, and presented a central cavity while the nerve substance was reduced to a thin bundle, formed mostly by degenerated anterior columns. In the substance which coated the medullary cavity inside, the authors found bacilli, which colored with carbol fuchsin, according to Ziehl, and also with aqueous fuchsin solution at 30 to 60 degrees, according to Gram, and which inoculated into the peritoneum of a guinea pig, produced no tuberculosis, and were, according to the opinion of the authors, undoubtedly lepra bacilli. We do not think, says Scheube in his review in *Janus*, this one essay at transmission to decide the question, whether the case was leprosy or tuberculosis, sufficient; whether the bacilli were isolated or aggregated, whether they were found in or between the cells is not indicated. In the nerves—the nerves examined were medianus and radiatus—no bacilli were found.

Restoration of the Vagina, Bladder, Urethra and Rectum.—Péan recently performed a successful anaplastic operation to relieve a woman who at her first confinement, age 28, had such a difficult delivery, the fetal head resting on the perineum four days, that part of the perineum and the recto-vaginal and vesico-vaginal septa were completely torn away. The urine, fecal matters and menstrual flow all issued uncontrolled from the cavern thus formed. The various steps of the operation are described with 10 cuts in the *Bulletin de l'Académie de Méd.* of March 9. The patient is now able to control her functions and lead a normal existence once more, although the menstrual flow issues through the same orifice as the urine. In case this produces trouble later, removal of the uterus and ovaries will put an end to the menstruation, as has been done in certain cases of vesico-vaginal fistulas.

Practical Radiography in Esophageal Surgery.—Péan, the Parisian surgeon, reports an interesting case in which the X rays were employed with great advantage to determine the exact position of a coin swallowed by a child. The following are the conclusions of Péan: 1. Foreign bodies up to 15 millimeters in diameter can be swallowed by infants with great facility. 2. Such bodies are generally arrested in the narrow part of the esophagus, of which the caliber in the adult does not exceed three-quarters of an inch, while in early life it is considerably less. 3. The difficulty of diagnosing the exact site of the foreign body is often very great, especially when the child can swallow liquids and does not complain of pain. 4. Radiography not only assists the surgeon by deciding the point as to whether the body has been swallowed or not, but also indicates the exact spot where it has lodged, and thus indicating where to operate. 5. Thanks to external manipulation, it is possible to cause a rounded and smooth object to travel from

below upward, until it can be extracted by the mouth. This mode of procedure is incontestably preferable to extraction through an incision in the tube. When once the exact position of a lodged coin has been determined in the esophagus, massage, in conjunction with position, might in some cases suffice for its removal, without recourse to the knife being necessary.—*The Scalpel*, February.

The Mission of the Microbe.—The history of science shows that a fact soon formulates itself into the dignity of a discovery, which in turn yields the palm to an explanation with the usual interdependencies of cause and effect. How easily at one time was said, "Eliminate the microbe, cure the disease;" how readily was the boon clutched after until Roux and Yersin proved the presence of the diphtheria bacillus in normal throats and Metschnikoff found the cholera bacillus widely spread in water. Then perhaps it began to dawn upon the intellect that Pythagoras once rushed naked from the bath to proclaim to the multitude an "eureka," which in his exhalation he doubtless exalted into a panacea. Afterward the world discovered that he had promulgated a mode without establishing a principle. Now a virulent condition is made to do duty for an aggressive rod and health boards have begun to lose faith in their transferred cultures. Next antitoxic methods are in vogue to give way in turn to other theories, for such are these attempts to solve the biologic mystery still to be termed. Of course it were easy to offer the consolation to balked hopes that after the manner of certain transcendental philosophers "spirits may be bad as well as good—probabilities are to determine." Verily the equilibrium is hardly to be maintained when a dual life is concerned, the more especially when there is brought into the controversy the experiments of the Hygienic Institute of the Berlin University, which seem to convince that animals may live without depending at all upon the gratitude of parasites. "We might spend months in speaking of the beneficent ways of the products" says Dr. E. A. de Schweinitz in a recent Presidential address before the Chemical Society of Washington, "but these germs are only waiting man's bidding to become valuable subjects and to show that as has been instanced in the history of nations, conquered people often make the best and wisest citizens." After all what is really proven is that complex man has only a wider and busier field for his own particular warfare.

Walcher's Position in Parturition.—M. E. Fothergill of Edinburgh, in the *British Medical Journal* of October 31, says that Walcher's position—the *Walchersche Hängelege*—was first described by Walcher in 1889 in a short article in the *Centralblatt für Gynecologie (Therapeutic Gazette)*, February, 1897. By placing the parturient patient in the lithotomy posture, and then allowing the legs to hang freely down so that the feet do not touch the floor, the true conjugate is increased about one centimeter; this statement has been proved by numerous observers abroad, and the posture is now in use as a matter of routine in several German hospitals. It is employed in all high forceps operations, in extractions after turning, and after perforation of the head. Fothergill has found the posture extremely useful in several cases, which are briefly noted. In posing the patient, all that is necessary is to see that the buttocks are quite at the edge of the bed or table used, and high enough to allow of the feet hanging clear of the floor; pillows may be placed under the buttocks if the bed is low. There is a tendency to pull the patient off the bed; but she may be held by the anesthetist, or bands may be passed under the arms and fastened to the bed or table-legs so as to hold her in position. In this posture the axis of the pelvic brim presents downward at an angle of about 40 degrees; therefore, in order to exert traction in the proper direction with forceps, the operator must sit on a low stool, or on a cushion placed on the floor. In high forceps cases and after perforation, the position

saves, 1, the strength of the operator; 2, pressure on the head; 3, pressure on the symphysis; 4, pressure on the perineum by forceps. In cases of difficulty at the brim not needing forceps, and in breech cases, the position saves, 1, exertion to the uterus and abdominal muscles; 2, pressure on the head; 3, pressure on the pubic symphysis. In all cases, with or without forceps, where the perineum is in danger, extension of the legs at the hips is of advantage in relaxing the integument and subjacent structures at the vulvar orifice.

Inoculations of Erysipelas.—In order to determine the value of inoculations of erysipelas as a therapeutic measure in cases of carcinoma, Koch and Petruschky have been conducting a series of experiments, described in the *Ztschft. f. Hyg. u. Inf.*, Vol. 23, No. 3. Their conclusions are that the effect of the streptococcus varies very much with different persons. They found that streptococci, made very virulent by repeated passages through rabbits, has no effect on man, and that even human streptococci are not always efficient in producing erysipelas. Different kinds must be tried to ensure success. Erysipelas can be induced in man by cutaneous inoculation of streptococci derived from pure pus processes, such as peritonitis. The fact that one has had several light attacks of erysipelas does not confer immunity against further attacks; neither is it possible to induce positive immunity by previous treatment with anti-streptococcus serum. They conclude by stating that it is impossible to deny the therapeutic influence of several streptococcus infections on the course of a carcinoma, but that this is too slight in comparison with the consequent loss of vital strength, to allow us to cherish any hopes of securing the cure of carcinoma by this means.—*Chl. f. Chir.*, March 6.

Radical Operation for Varicose Veins.—O'Connor (*Annals of Surgery*, April, 1897, p. 526) describes briefly the mode of procedure that he has followed during a year in the radical treatment of varicose veins. The limb having been shaved and disinfected from Poupart's ligament to the ankle, a two-inch incision is made over the saphenous opening and the internal saphenous trunk is doubly ligated and divided; if no varicosity is present above the knee, the wound is closed and dressed at once with iodoform gauze. If the femoral portion is affected, after ligation at the saphenous opening the vein is dissected up and its tributaries seized with pressure-forceps and ligated. In nearly all cases, if varices are present above the knee, there are also some below. Consequently the incision is prolonged downward directly over the vessel until the lowest limit of the disease is reached; the vein is then tied and divided below. In some cases an incision of eighteen or twenty inches is necessary. If the disease does not extend above the knee, after occluding the saphenous trunk in the manner described an incision is made over the affected portion, a ligature is applied above and below and the whole mass is removed by dissection. This maneuver, it is said, may be carried out with surprising ease and rapidity. All branches are caught up with pressure-forceps, and when the main channel is removed they are ligated. As frequently the external saphenous vein is also affected, its varicose portion is dealt with in a similar manner. While to one unaccustomed to an incision of eighteen or twenty inches this plan may seem formidable, it is pointed out that if the vessel is ligated above and below the varicose area there is not the slightest danger of embolism or pyemia, and the hemorrhage is insignificant. The method has also been employed in the removal of large thrombosed veins occurring in the first few months of pregnancy. Under these circumstances above all others it is particularly necessary, before manipulating the diseased portion, to occlude the main vein well above the seat of the disease, so that if thrombi are dislodged they can not pass into the general circulation. The time occupied in this procedure need not be greater than is required in other comparable operations. The wounds made heal just as kindly as do the short ones, and with ordi-

nary surgical cleanliness there is nothing to be feared. The insertion of a strand of iodoform gauze as a drain to every four inches of wound is a useful precaution, for it does away with the risk of any collections of blood. No bad results were observed to follow the employment of this method, and the patients treated are grateful for the results.

A Dwarf Race in Central Asia.—Two Danish explorers, Olufsen and Philippsen, have recently returned from a tour in little known territory lying to the north of the Himalaya ranges, which forms a part of the so-called Pamir plateau. High up on this tableland they found a unique race of men. Not only are they fire-worshippers, but they are also much smaller than the average human being. Of civilization, as we understand the word, they have apparently no conception, being in all respects as primitive as the most savage tribe. Traces of fire-worship may be observed throughout the entire orient and even in civilized Europe. Bonfires are still lit on St. John's eve, and this old custom is said to be a relic of fire-worship. It seems that in this strange country the animals, as well as the human beings, are ludicrously small. Thus, the donkeys, which are used as beasts of burden, are scarcely larger than dogs, and the oxen are never larger than ordinary foals. Scientists claim that the climate has dwarfed the four-footed animals, as well as the human beings, but the majority, while admitting that a rigorous climate may stunt men and women, deny that it can have the same effect on quadrupeds, since nature carefully provides them with adequate armor, even in the worst climate. That these little men and women are entirely uncivilized is shown by the fact that they have no money and carry on all their business by means of barter. It is also evident that the ceremony of marriage plays a very small part in their life, for we are told that the price of a woman is fifteen sheep or five or six cows. From what other travelers tell us it seems clear that the territory inhabited by the dwarfs is very limited. The entire Pamir region is not of any great extent, and we know that for nine and a half months of the year the Alai district is uninhabited owing to the extreme severity of the weather. A sturdy race, too, these dwarfs can hardly be, for more than one authority tells us that the people on this plateau suffer greatly from chills and rheumatism, and also from scorbutic affections, which are the result of their meager diet. In St. Petersburg the travelers have received a hearty welcome, and the opinion is freely expressed that their discoveries will prove to be of unusual interest and importance. They have brought back with them from Asia many curious objects collected during their travels, and these will probably be placed on exhibition in Denmark.

Not Proper Evidence or form of Action Against Office Physician.—Because it is an unsafe practice, in the admission of testimony, to allow witnesses to speak as experts unless the court is well satisfied that they possess the requisite qualifications, especially as the effect of such testimony is most difficult to estimate, from the fact that undue importance not infrequently attaches to it, and gives to it an influence upon the minds of a jury to which it is not fairly or reasonably entitled, the court of appeals of Maryland says that the rule allowing expert evidence will, in its opinion, be less objectionable, and more conducive to justice, if it be somewhat restricted, rather than relaxed. Accordingly, in the malpractice case, entitled *Dashiell V. Griffith*, wherein one George R. Griffith and his wife had obtained a judgment, it holds, Dec. 3, 1896, that a woman who had nursed twenty or thirty cases of "bone fellow" where opening or lancing had been resorted to, was not thereby qualified to say as an expert "that, in her opinion, the finger was not cut half way to the bone," because the wound did not "lay open," and "when an incision is deep, it always lays open." And the court takes pains to state that it has seldom, be it said to the credit of the profession, been required to pass upon question of

medical malpractice. But it thinks that the people are generally agreed upon the proposition that the amount of care, skill, and diligence required is not the highest or greatest, but only such as is ordinarily exercised by others in the profession generally. It also thinks that when a physician is employed to attend upon a sick person, his employment, as well as the relation of physician and patient, continues, in the absence of a stipulation to the contrary, as long as attention is required; and the physician or surgeon must exercise reasonable care in determining when the attendance may be properly, and safely discontinued. The same principles of law control the right of recovery for malpractice whether he goes to the home of the patient to bestow such attention, or renders his services at his own office. But if an office patient fails to come to the office of the physician or surgeon whom he employs, and from whom he has received careful and skilful treatment, and then fails to return to the office for further treatment, and in consequence thereof suffers injury, the court suggests that he is not entitled to maintain an action against the physician, because it is his own default and misfeasance. It further holds that if the defendant had, in his treatment of Mrs. Griffith's finger prior to a certain date, exercised reasonable care, skill, and diligence, and then, because of the illness of his father, had turned his patient over to another physician, a competent one, for the further treatment of her finger, and the woman refused to go to the latter for treatment, then the liability of the defendant ceased, and the patient assumed to herself the consequences of any injury resulting from the neglect of her finger. Aside from this, the court holds that no recovery could be had of damages for the failure of the defendant to be present at his office on and after the date above referred to, because the complaint stopped with the single allegation of "actual misfeasance, negligence, and want of skill" in the treatment of the finger, and no such further cause of action was laid therein. It also holds that the husband and wife could not sue jointly when the cause of action was the mere non-performance of a duty imposed by the contract of employment, which would be solely in right of the husband. For these reasons, the court grants a new trial.

Health of the British Army.—As the yellow-covered report for 1895 of Director General J. Jameson, Army Medical Department, to the Right Honorable the Secretary of State for War, is not to be found on every bookshelf, the following notes may prove of interest as showing how our Army medical statistics and sanitary conditions compare with those of Britain. The British troops serving at home and abroad, not including colonial corps, numbered 200,000 men, one-half of whom were on duty in the United Kingdom and the other in India and the Colonies. The number of cases admitted to sick report among the troops at the home station was equivalent to 702.8 per thousand of the strength, giving a constant sick rate of 41.76, with a death rate of 4.32 and a discharge rate for disability of 16.57. These rates, although somewhat larger than those of the previous year, are under the average of the last ten years. The rates of the U. S. Army compare favorably with these. Our admission rate is larger, because our medical officers are required to report as sick all men who are excused by them from the performance of any part of their military duties; but our rate of constant sickness in 1895 was only 33.89. The average duration of each case among the British troops was 20.64 days as compared with 11.1 in the U. S. Army; and the number of days lost by each British soldier on account of sickness (injuries included) was 21.03 days as compared with 12.4 days among our troops. Enteric fever was reported as the cause of admission in 137 cases, 35 of which were fatal. This number of deaths occurring in a strength of 100,000 men can not be considered large in view of the typhoid death rates that prevail in most of the cities of the United States. Venereal diseases occasioned 173.8 admissions and a constant sick-

ness of 15.28 per thousand of strength. The Channel Islands had the highest admission rate, 230.1; the garrison of Cork the lowest, 103.3. In this respect the United States soldier has a better record, for the admission rate was only 73.72 and the constant sickness only 5 per thousand men. Before discussing the medical statistics of the troops on foreign stations the report gives many interesting data concerning the 55,698 recruits examined in the United Kingdom during the year. In every thousand of these 411.43 were rejected as unfit, this rate being somewhat larger than that of the previous year. Deficient height, weight and chest measurement occasioned 191.66 rejections per thousand examined; defective vision 39.88; varicose veins and varicocele 28.13; heart disease 20.71 and hernia 6.68. Of the 32,782 found fit for service the ages varied from 18 to 25 years, very few being under or over these extremes. One-third of the whole number were between 18 and 19 years of age. In fact the average age was 19.4 years, the height 65.9 inches and the weight 125 pounds. The physique of the young recruits of the United States Army is greatly superior to this. During the year 3,286 native born whites between the ages of 20 and 25 (average 22) were enlisted, and the average height of these was 67.75 inches; weight 143.57 pounds.

The troops in Canada suffered less from sickness than any of the other commands serving abroad. Their rate of constant sickness was only 24.99, and the sick time to each soldier only 9.12 days. Speaking comparatively, the troops in Bermuda also had good rates: constant sickness 39.09 per thousand, with 14.27 days as the time lost through sickness by each soldier; but in all the other commands the rates were high. The rate of constant sickness in India was 93.61 with 14.31 dead, 12.01 discharged and 24.34 sent home as invalids out of every thousand men of the 68,331 serving with the flag in the Indian Empire. The highest admission rate, 2,844.9 per thousand, occurred in the Sind district, more than half of which was caused by malarial fevers. Of individual stations Karachi had the highest rate, 3,008.2, chiefly caused by malarial fevers and venereal diseases. The mortality was highest, 39.63 per thousand, at Barrackpore, nearly half of it due to dysentery. Enteric fever in India caused 322 deaths per 100,000 of strength, the percentage of mortality to attack being 24.8; but this rate of fatality is open to criticism when we find in a subsequent part of the report that 1,427 cases of simple continued fever, with 3 deaths, are recorded. The largest number of cases of enteric fever occurred at Lucknow, 128, with 35 deaths; and this notwithstanding the distribution of a new and pure water supply from the Lucknow waterworks. At Meerut, Umballa, Peshawar and several other stations where the prevalence of this fever was considerable, the benefit derived from boiling the water was by no means well defined. The medical officers in charge considered that the disease was contracted in the bazaars of the city, where ice creams and drinks of all sorts are sold and largely indulged in by the men. At several of the stations it was noted that no officer, married soldier, woman or child belonging to the garrison became affected, and it is remarked that had the milk or water supplies been infected, the women and children would have been among the first to suffer. Cholera touched the troops but slightly during the year, having caused only a total of 44 admissions and 32 deaths. Malarial diseases occasioned an admission rate of 342.2 per thousand, with 12.55 of constant sickness. Venereal diseases added 536.9 to the admission rate, or 127.6 more than the average. The constant sickness from this cause was 46.39, or considerably higher than the disability caused by all diseases and injuries in the army at the home stations. The highest admission rate was reported from Nowgong, 1,013.5; but Cawnpore furnished 967.6 and was followed by many others with rates nearly as high. "Lamentable as are the foregoing figures, they understate as regards secondary syphilis the amount of inefficiency due to that form of the disease, as in several stations

men were treated by hypodermic injections of mercury without admission to hospital." The disability due to injuries must be regarded as small, 99.7 cases with a death rate of 1.75 per thousand of strength. The sanitary condition of barracks and quarters appears from the report to have been excellent, and an occasional statement of primitive and unsatisfactory conditions serves merely to emphasize the excellence of the whole. Take, for instance, from the report on the Rangoon District: "At Meiktila the water is taken from a lake by means of water carts drawn by bullocks; these are driven into the lake, and it is said that the *bheesties* frequently wash themselves and their bullocks before filling the water carts." In one instance (at Jubbulpore), the sand for the Macnamara filter was found to have been obtained "from a *nullah* contaminated by human excreta and washings from neighboring villages." The recommendations concerning water supplies made in the report are: "That in all stations not supplied with pipe-water from reservoirs certain wells be set apart for drinking water, and be put into thorough repair and covered in and fitted with pumps and reservoirs from which the water be laid on to barracks in pipes. That wherever reservoirs exist, the greatest care be taken to prevent the pollution of the water in the reservoir and during its distribution. That the Macnamara filters be replaced by the Pasteur-Chamberland filters in all stations." Concerning enteric fever and cholera the recommendations are: "That all drinking water and milk be boiled during the prevalence of these diseases in any station, and that the latrines be freely and regularly disinfected. That all wells used for drinking be disinfected with permanganate of potash." The rate of constant sickness in Egypt was 63.13 per thousand, chiefly due to fevers and venereal diseases. The presence of cholera in the country caused the strictest supervision to be maintained, and a set of instructions for guidance as to general sanitary and hygienic measures was issued. Pasteur-Chamberland filters were provided for many of the garrisons. The troops in China had a constant sickness of 73.39 per thousand, nearly half of it occasioned by venereal diseases. Only five cases of enteric fever were reported from this command of over 1,500 men, although "the insanitary condition of Victoria and the abominable stench in which it abounded probably lowered the standard of health, and if they did not actually cause, they at least predisposed to the occurrence of sickness. These stench were in a great measure due to the absence of flushing of the drains and sewers, owing to the insufficiency of water—the rainfall for the year having been 35 inches below the average and 15 inches below the lowest recorded."

The Appendix to the Report contains a paper on the progress of hygiene during the year 1896, by the professor of sanitary hygiene at the Army Medical School, Surgeon-Colonel J. Lane Notter, with reports on cholera and enteric fever and a number of excellent papers on surgical cases. The most interesting paper, however, is probably Surgeon Major General W. Taylor's "Report on the Medical Transactions of the Ashanti Expeditionary Force," during the period from Dec. 14, 1895, to Feb. 7, 1896. A full account is given of the care exercised in the selection of the men, their clothing, food, water supplies and personal hygiene, and of the organization of the hospitals.

New York.

THE MANHATTAN STATE HOSPITAL FOR THE INSANE.—The damage done by the recent fire in the Manhattan State Hospital for the Insane, on Ward's Island, is greater than was at first estimated. The contemplated repairs will cost \$100,000. The patients placed temporarily in other institutions will remain subject to further disposal.

THE CENTENNIAL OF THE WESTCHESTER COUNTY MEDICAL SOCIETY.—Dr H. Ernst Schmid, of White Plains, N. Y., is to deliver during the coming month an historical address before this society, which will reflect the methods of practice and the manners of the period. He is reputed to be a philosophic and exhaustive writer.

THE HOSPITAL FOR THE RUPTURED AND CRIPPLED in New York City, is to be enlarged. The present buildings at Lexington Avenue and 42d Street will be given up entirely for administration purposes. The exterior of the new structure will be of gray brick, with elevations of buff Indiana limestone. An architectural feature will be the semi-circular tower-like end at Lexington Avenue and 43d Street. About the only external ornamentation will be the scrollwork over the entrance doorway at Lexington Avenue and 43d Street. The main building will be five and a half stories in height. The

end flanking Lexington Avenue, a single story in height, will be used for the dispensary. Around the south end of the dispensary, a driveway is to lead from Lexington Avenue into a spacious court for receiving supplies. In the basements will be large workshops and sewing rooms, together with many appliances to enable the inmates to engage in light occupation. On the top floor will be the operating theater, with its adjuncts of necessary rooms. A large kitchen has been centrally arranged for the easy distribution of food to all the buildings.

THE BELLEVUE HOSPITAL MEDICAL COLLEGE and the University Medical Department have concluded to join forces. When the former school lost its dissecting room by fire, a few weeks ago, the latter tendered the use of its accommodations to the students. Growing out of that courtesy, harmony and consolidation have resulted, and the sanction of the State Board of Regents has been obtained for the union, under the title of the "New York University-Bellevue Hospital Medical College." As the lease of the Bellevue College site on the hospital grounds has not long to run, the trustees of that institution have recently obtained by purchase a valuable plot of ground on the southwest corner of 26th Street and 1st Avenue, which will probably be utilized as the site for additional laboratory accommodations.

Detroit.

THE STATE BOARD OF HEALTH meets in Detroit some time this month.

DETROIT has been having an epidemic of measles for some time. In a great many cases the type of the disease is very severe, bronchial and pulmonary inflammations being the most grave. Some deaths have been reported.

AT THE DETROIT MEDICAL AND LIBRARY ASSOCIATION, Monday evening April 5, Dr. John Flinterman read a paper entitled, "Carcinoma of the Duodenum, with Report of a Case." The doctor presented a specimen of the case reported, which showed a carcinomatous involvement of the descending portion of the duodenum with metastasis of the liver. The valvulae conniventes were not closed. The hepatic duct was greatly hypertrophied. The ductus communis choledochus was considerably enlarged further down. Upon microscopic examination the hepatic cells were found to be atrophied; the liver itself atrophied; the stomach quite small. The doctor in his report stated that the patient suffered greatly from jaundice, and that the symptoms were unusual for cancer of the duodenum, which led him to rather suspect primary cancer of the liver. The writer also took the stand that cases of cancer of the duodenum give the same symptoms as those with cancer of the pylorus. The case under discussion was an exception to the rule and the doctor thought that it was due to the non-obstruction in the duodenum. The speaker took up the statistics on the subject showing how rarely carcinomas appear in this region, giving the records of the large hospital in Vienna, the Institute des Wiener Allgemeinen Krankenhauses as proof, where, during the last twenty-four years, 343 cases of cancer of the intestines were reported, and out of this number only three were of the duodenum.

THE WAYNE COUNTY MEDICAL SOCIETY had a very interesting meeting Thursday evening, April 1. Dr. David Inglis on the subject of, "Some Practical Points in Therapeutics" gave some very good suggestions, of which the following are the most important: In treating cases of inflammatory croup which are not diphtheritic, the administration of quinin in comparatively large and frequent doses is indicated. To a child of 5 years, 2 grains every hour for three to five times may be given. Should the physician be called early in the day, say at 1 p.m., the exhibition of 2 grains every two hours until 7 o'clock, and then every hour for a few times, will almost certainly insure a good night's rest for the child as well as for the doctor. On the following day the dose of 2 grains every three or four hours will almost certainly complete the cure. A very good way to administer quinin is by inunction, the quinin having been rubbed up with lanolin. This latter has been found to assist

the absorption of the remedy better than any other oily preparation. The treatment of chorea by sulphonal has been found to result satisfactorily. The author of the paper prefers trional to sulphonal for its hypnotic effect, as it produces more natural sleep and is more readily soluble. Acetanilid is preferable to the bromids for the treatment of epilepsy, as it has the same power to control the convulsions without the undesirable mental effects which the bromids produce. As to the objections which some raise to all coal-tar preparations, that collapse, cyanosis and excessive perspiration too often result from their use, the doctor believed that this was of no material consequence and never resulted disastrously. For burns, the use of castor oil and lime water, in place of linseed oil and lime water, has the advantage of a perfectly bland protective application which does not dry upon the surface as the "carron oil" is known to do. In the writer's experience no cathartic effect results from such use of the castor oil.

Washington.

QUARANTINE REGULATIONS.—The Secretary of the Treasury has added the following paragraph to the United States quarantine laws and regulations: "All bedding provided for steerage passengers must be destroyed or disinfected before being landed. Bedticking or other covering of mattresses and pillows used by passengers or crew shall not be landed unless disinfected at the quarantine station in accordance with these regulations, and tagged with the labels certifying to said disinfection."

MEDICAL AND SURGICAL SOCIETY.—At the April meeting of the Society Dr. P. C. Hunt read the paper of the evening, entitled the "Therapy of Phthisis." He said the only means of eradicating the disease was prophylaxis, and emphasized the fact that it is only through an early diagnosis that we may hope to accomplish a cure. He recommended the use of tuberculin as a means of early diagnosis in suspected cases of human tuberculosis. He mentioned a case where it had been so used as early as 1892. He does not believe in serotherapy in phthisis—though advises tuberculin in incipient cases, and creosote in small doses as a stomachic tonic. He does not believe this has any direct action on the bacilli in the body; has obtained the best results from strychnin in doses of 1-40 grain. He believes hygiene and alimentation one of more importance than drugs or climate, though each plays an important part in the treatment of the disease. The paper was discussed by Drs. Vincent, J. Eliot, Kober, Moran, Chamberlin, Mayfield and others. Dr. Chamberlin reported a case of nasal cystoma which he had successfully removed. He presented the specimen. An interesting discussion followed.

TO CHECK EXPECTORATION IN STREET CARS.—The Commissioners will shortly promulgate a police regulation prohibiting people from expectorating in or on any part of a street car. The new regulation will compel the railroad companies to keep posted notices of the regulation in each car, and will endeavor as far as possible to see to it that the regulation is faithfully observed. A fine of not less than \$10, and in default imprisonment in the workhouse not exceeding fifteen days, is provided.

FINE FOR VIOLATING THE MEDICAL PRACTICE ACT.—Simon Ford, colored, a so-called voodoo doctor, was fined \$50 and sentenced to ten days' imprisonment in jail in default for "practicing medicine" in the District without a license from the medical supervisors. The law will be pushed vigorously in the future, and it is hoped will soon rid the District of all "irregulars." The health officer has his eye on a number of such cases and will soon bring them into court.

STATED MEETING OF THE MEDICAL ASSOCIATION.—At a meeting of the Medical Association for the District of Columbia held on the 6th inst. the following officers for the ensuing year were elected, viz.: President, Dr. G. Wythe Cook; vice-presidents, Drs. Bowen and Ruffin; secretary, Dr. Wellington; treasurer, Dr. Deeble; councillors, Drs. McLain, Holden, Ober, Acker, Kober, Carr, T. R. Stone, H. L. E. Johnson and D. O. Leech; censors, Drs. Woodward, Frank Leech and Mayfield. Delegates to the meeting of the AMERICAN MEDICAL ASSOCIATION to be held in Philadelphia June 1 to 4 as follows: Drs. Cook, Barrie, Busey, Mayfield, L. Eliot, Deale, J. T. Johnson, H. L. E. Johnson, Ruffin, Barker, Acker, Hunt, Brown, Heiberger, Scott, S. S. Adams, Bovee, Nordhoff, Jung, Carr, I. S. Stone, McLaughlin, Glazebrook, Belt, F. Leech, Bogan, Wellington, D. O. Leech, Franzoni, Magruder, Tompkins, Sohn, Kleinschmidt, Moran, W. P. C. Hazen, Kober, Woodward, J. Eliot and Reyburn. The following new mem-

bers were elected: C. Neil Barry, Edmund Barry, Frank W. Braden, Durces Desmus Carter, Marion B. Carter, Edward Francis Cumiskey, Hub'd Gillette, Franz A. R. Jung, Robert L. Lynch, Bernard Francis McGrath, Robert Daniel Mayer, Frank A. Mazzei, Homer Sanford Medford, Thomas Miller, Leonard W. Munson, James Richard Tuhman and William O. Wetmore.

THE EPISCOPAL EYE, EAR AND THROAT HOSPITAL.—The new hospital known as the Episcopal Eye, Ear and Throat Hospital was formally dedicated on the 7th inst. Addresses were made by Bishop Satterlee, D.D., Drs. N. H. Nicken and W. W. Johnston. The hospital will be open every day for the treatment of dispensary cases.

THE PUBLIC SERVICES.

Army Changes. Official List of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from April 3 to 9, 1897.

Capt. Eugene L. Swift, Asst. Surgeon, is relieved from duty at Ft. Yates, N. Dak., to take effect upon the expiration of his present sick leave, and ordered to Ft. Slocum, N. Y., for duty.

Capt. Edward R. Morris, Asst. Surgeon (Ft. Spokane, Washington), is granted leave of absence for six months, to take effect on or about May 18, 1897.

Capt. Henry S. T. Harris, Asst. Surgeon (Ft. Preble, Maine), leave of absence granted for seven days is extended twenty-three days.

Navy Changes. Changes in the Medical Corps of the U. S. Navy for two weeks ending April 10, 1897.

Surgeon C. U. Gravatt, ordered to examination for promotion, Washington, D. C., April 5.

Asst. Surgeon J. C. Prior, ordered to the naval laboratory and department of instruction, New York, April 5.

Asst. Surgeon F. C. Cooke, ordered to examination for promotion, New York, April 5.

Asst. Surgeon G. D. Costigan, detached from the "Vermont" April 6 and ordered to the "Lancaster" per steamer of April 7.

Asst. Surgeon D. H. Morgan, detached from the naval laboratory, New York, April 6, and ordered to the naval academy April 8.

Surgeon C. U. Gravatt, when finished with examination for promotion April 5, detached from the Museum of Hygiene, ordered home and then hold himself in readiness for sea.

P. A. Surgeon J. A. Guthrie, detached from the "Katahdin" and ordered to the "Alliance."

Asst. Surgeon J. F. Leys, detached from the "Alliance" on relief and ordered to the "Vermont."

Medical Director T. N. Penrose, detached from the New York hospital June 5 and placed on waiting orders.

Medical Director G. W. Woods, detached from the Mare Island hospital May 10 and ordered to the New York hospital June 5.

Medical Inspector G. P. Bradley, ordered to the Mare Island hospital May 10.

P. A. Surgeon E. P. Stone, detached from the "Indiana" April 12 and ordered to the "Bennington."

Change of Address.

Ayres, S., from 247 Shady Av. to 326 Moorewood Av., Pittsburg, Pa.

Cresswell, G. H., from Chicago, Ill. to Awada, Wyo.; Clark, J. F., from 871 to 788 Jackson Boul., Chicago, Ill.

Deutsch, J., from 215 Main St. to 30 Monroe St., Memphis, Tenn.

Eckman, L. N., from 2229 Fairmount St. to 624 N. 22d St., Philadelphia.

Gamble, W. E., from 264 S. Halsted St. to Blue Island Av. and Harrison St., "New Era Building," Chicago, Ill.

Harlan, Herbert, new address, 516 Cathedral St., Baltimore, Md.; Henkle, C. K., from Independence, Ore., to Juliaetta, Idaho.

Moody, J. A., from Mobile to Bailey Springs, Ala.

Norton, J. J., from Biloxi, Miss., to Monroe City, Mo.

Renn, T. H., from 227 Townsend St. to 1240 Milwaukee Av., Chicago, Ill.

Still, H. M., from Evanston, Ill., to Kirksville, Mo.; Silverberg, Geo. M., from 330 Blue Island Av. to 465 Marshall Av., Chicago, Ill.

Thornbury, F. J., from 610 Main St. 401 Delaware Av., Buffalo, N. Y.

Whithorn, R. A., from 303 W. 77th St. to 410 E. 26th St., New York, N. Y.; Wilson, F. P., 922 A. Sutler Av. to 1101 Van Ness Av., San Francisco, Cal.

LETTERS RECEIVED.

Adams, M. M., Greenfield, Ind.; Alma Sanitarium Co., Alma, Mich.

Bogie, M. A., Kansas City, Mo.; Bansch & Lomb Optical Co., Rochester, N. Y.

Caldwell, John, Los Angeles, Cal.

Dibrell, J. A., Little Rock, Ark.; Duryee, Chas. C., Schenectady, N. Y.

Eugene Field Monument Fund, Chicago, Ill.; Edwards, T. L., Cuba City, Wis.

Fairchild Bros. & Foster, New York, N. Y.; Finlayson, D. W., Des Moines, Iowa; Fuller, Chas. H., Advertising Agency, Chicago, Ill.

Graham, J. T., Booneville, Tenn.

Hughes, C. H., St. Louis, Mo.; Harvey, G. F., Co., The, (2) Saratoga Springs, N. Y.; Hummel, A. L., Advertising Agency, New York, N. Y.

John, J. W., Princeton, Ark.

Kentucky School of Medicine, Louisville, Ky.

Lempke, A. E., Hospital, Ill.

Mayo, W. L., Rochester, Minn.; McGuire, C. A., Topeka, Kan.; Mitchell, Jno. T., Kansas City, Mo.; Montgomery, E. E., Philadelphia, Pa.

Pepper Laboratory of Clinical Medicine, University of Pa., Philadelphia, Pa.; Phenique Chemical Co., St. Louis, Mo.; Platt, H. B., New York, N. Y.

Richey, S. O., Washington, D. C.; Reed & Carnrick, (2) New York, N. Y.

Shippey, F. M., Waterloo, Iowa; Smart, Chas., Washington, D. C.; Stephens, S. S., Dover, Del.; Sampson, E. S., North Syracuse, N. Y.; Sternberg, Geo. M., Washington, D. C.

Tobey, H. A., Toledo, Ohio; Talbot, Eugene S., Chicago, Ill.; Tyson, James, Philadelphia, Pa.; Tyree, J. S., Washington, D. C.

Watkins, T. J., Chicago, Ill.; Ward, Milo B., Topeka, Kan.

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No. 17.

ORIGINAL ARTICLES.

THE OCCURRENCE OF SUGAR IN THE URINE; ITS CLASSIFICATION, ETI- OLOGY AND PATHOLOGY.

NUMBER I.

BY EDWARD L. MUNSON, M.A., M.D.

ASSISTANT SURGEON, U. S. ARMY, FORT ASSINNIBOINE, MONTANA.

The term diabetes mellitus is usually indiscriminately applied to a disease prominently characterized by an excess of sugar in the blood and by the occurrence of this body in the urine in varying amounts, this condition persisting over a greater or less length of time.

The occurrence of sugar in the urine may be primarily divided into the physiologic and the pathologic, the former being again separated into two classes: 1. That condition in which, as ordinarily found in health, the quantity of sugar present in the urine is too small to be detected by the usual clinical tests as by Fehling's solution, by fermentation, etc. That a certain amount is, however, normally present in health has been repeatedly demonstrated by the more delicate gravimetric method, so that the increased amount of sugar often found in a urine may be simply due to the increased activity of a perfectly physiologic process, which under certain abnormal conditions, may become pathologic. 2. Those cases, much more numerous than usually supposed, the urines of which will be found to contain sugar in such increased amounts as to be appreciable by the common clinical tests. This condition may extend over a considerable period, perhaps many years, the patient in the meanwhile continuing in perfect health and the katabolic processes, to which the term diabetes mellitus is only to be applied, never ensuing. In such a patient the ingestion of carbohydrates does not in the least affect the excretion of sugar. The pathologic division is also to be separated into two main classes, glycosuria and diabetes mellitus proper.

Glycosuria, by which is to be understood a temporary increase, as the result of certain abnormal conditions, in the quantity of sugar present in the urine; this sugar disappearing on the removal of the etiologic factors is to be classified as follows:

1. Nervous glycosuria, induced by prolonged and excessive emotions, by great nervous excitement or depression or by brain exhaustion. Thus it may be consequent to overstudy, excessive venery, fright, anxiety or grief. This condition has been well shown by Cohnheim in the lower animals by simply tying them down to a board, the terror and excitement being followed by the presence of sugar in the urine.

2. Febrile, as when sugar tests are obtained during or immediately following many pathologic processes, such as acute fevers or phthisis.

3. Traumatic.—Sugar is observed in urines passed soon after injuries affecting the cranium and its con-

tents, such as hemorrhages into the brain substance, fractures of the tables, blows producing unconsciousness, etc. It may continue during inflammatory conditions of the brain or its meninges. Experimentally, it may be shown by the well-known "puncture of the fourth ventricle." Glycosuria also frequently follows any severe traumatism even if it be unassociated with cranial injury. Its occurrence in such a case is probably due to similar influences to those which induce the condition recognized as "shock."

4. Toxic.—Glycosuria may be produced by the action of many chemical and medicinal bodies, as curare or phloridzin, by the administration of anesthetics, etc. It is probably caused by the depressing and paralyzing effect of the drugs upon the peripheral and central nervous system.

5. Dietetic glycosuria is induced in some individuals by excesses of diet, more especially by the inordinate use of carbohydrates but also by the use of alcohol particularly in the form of the dry wines. It is caused in the first instance, by the sudden entrance into the system of more sugar than the organism is able to burn or store up in a given time with the consequent appearance of the unburned portion in the urine. In the second case, the toxic action of the alcohol on the nervous system may be considered as the cause.

6. The glycosuria of lactation immediately precedes the secretion of milk in the puerperal woman. It disappears on the flow becoming established to again appear if the quantity of milk produced is in excess of its consumption. It is, without a doubt, due to a reabsorption of the milk-sugar.

Glycosuria, then, is a transient affection depending on the presence of certain exciting conditions, the removal of which is at once followed by a return to the normal. It has no more clinical importance than has a slight variation of temperature except as its presence may temporarily give rise to apprehensions of a true diabetes.

Diabetes mellitus proper is a disease depending upon deep-seated nervous processes which can not be traced to any known cause and which are not followed by any constant anatomic changes. It is to be considered purely as a neurosis and may be divided, clinically, under the following heads.

1. The mild form, in which the sugar excreted is consequent upon the ingestion of carbohydrates and in which, on a return to carbohydrates from a strictly proteid diet, the temporarily latent dyscrasia reasserts itself. An individual, therefore, under certain artificial conditions of diet may temporarily excrete no sugar without the abnormal systemic processes, to which alone the name diabetes should be applied, becoming cured. This stage is accompanied by comparatively little body waste and trivial nervous symptoms. Sooner or later it becomes the—

2. Severe form, in which, on a rigid proteid diet, a large sugar excretion persists as a result of the split-

ting off of the carbohydrate radical from the ingested and systemic albumins. In this stage there is great and progressive body waste with muscular weakness. There is also a great liability to coma, induced by the action of the toxic bodies resulting as by-products in the cleavage of the albumin molecule.

The cerebral and nervous symptoms are strongly marked, while the excessive tissue waste predisposes to a fatal termination by asthenia or by the inception of an intercurrent affection. It will be observed from the foregoing that it is believed that glycosuria and diabetes are two entirely distinct affections, having but a single symptom in common—and that symptom, as will be shown in a subsequent article, attributable to entirely different causes. The occurrence of sugar in the urines of both glycosuria and diabetes is no more presumptive evidence of the identity of the diseases than would the febrile movement in scarlatina and uremia prove them like affections. It is simply a prominent symptom common to both, but a symptom which in true diabetes is only of secondary clinical importance outside its value in diagnosis. The gravity of a diabetes can not be estimated in the percentage of glucose excreted as the sugar output may vary or even entirely disappear under artificial conditions without the true pathologic processes of diabetes being in the least influenced.

In its etiology, diabetes mellitus occurs so frequently in families having a general tendency toward neuroses of various types that its inception seems to be favored by an hereditary predisposition not necessarily to the diabetes itself but to other affections of the nervous system as neuralgia, hysteria and various psychoses.

Diabetes is much more liable to occur during the time of greatest nervous activity. This is to be explained by the greater mental strain of that period and by the higher development of the nervous system, which at the extremes of life, is undergoing evolution and involution. That diabetes is never caused by organic disease of the stomach and liver, will be agreed by nearly all modern pathologists. After death the quantity of glycogen present in the liver has been found to be normal, the production of glycogen not appearing to be greatly affected by the disease. According to Cohnheim, the amount of sugar excreted in certain cases appears far too large to be accounted for by liver glycogen alone. The glycogen stored up in other parts of the body, particularly the muscles, must therefore be called upon and it may perhaps be an intermediate product in the production of sugar in the decomposition of the albumins. The liver, however, plays but a minor role in the essential phenomena of diabetes. Even if the liver glycogen be referred to as the source of the excreted sugar, upon what basis is the excessive tissue waste and abnormal metabolism to be explained? The mere presence of sugar in the blood can not induce the marked clinical symptoms of diabetes, else the same effects would also occur in glycosuria, in which the excretion of sugar may for a time be larger than in a case of true diabetes. The cause should be sought deeper. Either there is such a condition of mal-nutrition induced that the processes of anabolism and katabolism no longer balance one another, or there is an abnormal breaking down of the body albumin. That this albumin decomposition occurs has been demonstrated by Voit and Pettenkofer by showing that the amount of urea excreted on a known diet, in diabetes, consider-

ably exceeds the quantity which could be produced from the nitrogen of the ingested foods. That the diabetic has, to a greater or less extent, lost the power of burning blood sugar is also true. Voit and Pettenkofer have shown that in this disease less oxygen is taken in than by the healthy system and that the quantity of CO_2 excreted is less than normal, in some cases being but a third that of health.

The importance of pancreatic disease in the occurrence of sugar in the urine has been strongly urged. Minkowski was able to produce diabetes in dogs by extirpation of the pancreas, but found that this disease did not ensue if a small portion of the gland was left *in situ* or transplanted to some other part of the body. This result has been confirmed by other observers. Unfortunately for the theory that diabetes is entirely dependent upon disease of the pancreas, only relatively few of the undoubted cases of diabetes examined *postmortem* show any pancreatic lesions whatever, while in many other instances in which the function of the gland was entirely destroyed by cancer or otherwise no diabetes ever ensued. He believes that a ferment produced by the gland is the great factor in the combustion of sugar, but what this ferment is he is unable to demonstrate. Lepine has also shown that a sugar solution on being treated with pancreatic juice loses a certain proportion of its sugar in the form of water and carbon dioxide. To offset this, in all idiopathic cases of diabetes, the administration of the pancreatic gland cooked or raw, fresh or in the form of various extracts, by stomach or subcutaneously, has so far been absolutely without influence either upon the sugar excretion or the progress of the disease itself. It is said, however, that in animals suffering with diabetes as a result of extirpation of the pancreas the administration of either the gland or its extracts will produce a temporary removal or amelioration of symptoms.

Cohnheim refers the excessive thirst to a morbid nervous condition manifesting itself especially in the nerve supply of the mouth, pharynx and alimentary tract and believes that the diabetic does not drink because he micturates but micturates because he drinks. He does not admit the polyuria to be due to the presence of sugar in the urine but attributes polyuria in diabetes mellitus to the same causes which prevail in diabetes insipidus. The disease may then be defined as follows.

Diabetes is a disease characterized by and dangerous on account of an excessive tissue-waste and systemic katabolism, excessive thirst, and the appearance of sugar in the urine being also diagnostic but of less clinical importance. In all its symptoms it is the result of a generally depressed nervous system acting through the inhibitory centers which normally control and retard these tissue changes. There are two causes which coöperate in diabetes to produce the presence of sugar in the urine in excessive amounts, an increased production and a diminished oxidation. Unlike glycosuria this disease is not dependent upon the constant presence of a certain irritant condition nor does it disappear under varying conditions of diet.

In its pathology it is agreed by nearly all authorities that there are no constant anatomic changes which can be observed in the diabetic organism after death. The liver, generally of a dusky hue, may be large, small or of normal size; anemic, hyperemic or of normal vascularity, the hepatic cells being fatty, atrophic or normal. Rarely an occlusion of the portal vein has been observed. Cirrhosis and phosphorus

poisoning do not cause and are not followed by diabetes even if carbohydrates in considerable amount are administered. The amount of glycogen may be either normal or slightly decreased. A diminution of fat in the liver, together with amyloid degeneration, has been observed in many cases. Abscesses may be present. The pancreas has so frequently been found affected that it has been claimed that nearly half of all cases of diabetes are associated with pancreatic disease. This is probably somewhat too high an estimate. The most frequent of the pathologic changes in the pancreas are carcinoma, generally secondary, and atrophy, accompanied by a fatty degeneration of the gland cells.

This degeneration may be induced by carcinoma, formation of calculi and by obstruction of the efferent ducts, leading to a cystic dilatation in the body of the gland. Sometimes the wasting of the gland has progressed so far that no remnants of the parenchyma can be discovered. The co-existence of diabetes and disease of the pancreas may depend upon lesions of the celiac plexus, especially since it has been experimentally shown that a diabetes can be readily produced in dogs by prolonged irritation of this plexus. In such a case a disease, such as cancer, starting from the pancreas may encroach upon and implicate the plexus to such a degree as to destroy the ganglia and so produce a diabetes, or, the plexus is first affected and in consequence the circulatory disturbances, which arise in the regions supplied by the celiac axis may result in the degeneration and atrophy of the pancreas. Diabetes complicated by pancreatic disease is thought to run an unusually rapid course.

The kidneys, which usually show slight pathologic changes, are generally very large and of soft consistency, a state of things which should be considered as a functional hypertrophy. A glycogenic or hyaline degeneration of the epithelial cells lining the loop tubules of Henle is said to be a constant change; and hyaline degeneration of the arterioles has been frequently observed. These changes are, however, probably secondary. There are rarely any changes in the spleen. It has been described as enlarged, firm and rich in blood. The stomach usually presents the appearance of a chronic catarrh, thickening of the muscular and mucous coats, slaty pigmentation and hemorrhagic erosions. The stomach contents possess a sweet, ethereal odor. Dysenteric ulcers are frequently observed in the intestines.

Changes in the central nervous system are often found. There may be tumors in, or pressing upon, the brain substance or there may be more or less marked sclerosis of the medulla and cerebellum. A lesion which has been claimed as constant is a dilatation of the arteries and perivascular spaces in various parts of the brain and spinal cord, especially in the medulla and pons. Small capillary hemorrhages of more or less recent occurrence and minute myelitic foci can often be observed. With regard to the spinal cord no satisfactory conclusions have been reached. Both softening and sclerosis may take place. A striking but rather infrequent change is a dilatation of the central canal in the lumbar and dorsal portions, accompanied by a great proliferation of the lining epithelium.

Changes are found in the sympathetic system, more especially in the abdominal plexuses. Thickening, induration, atrophy of the ganglion cells and great pigmentation have frequently been observed in the

celiac plexus. Tumors implicating the vagi have been found in several cases. Several observers have noticed that the blood during, or previous to, an attack of coma is much thicker and more viscid than normal. This is probably due to the withdrawal of the fluid constituents of the blood as a result of the increased functional activity of the kidneys. The blood of the diabetic often appears yellowish on account of the excessive amount of fats present. The presence of a body which yields or gives the reactions of acetone has been frequently demonstrated. Sugar appears to be present in nearly all organs, secretions and exudations. Glycogen has been found in the brain, inflamed pia mater, inflamed lung, testis and spleen. Since its presence in health, however, has also been satisfactorily demonstrated, only a quantitative determination would be of value, but this exact estimation would be practically impossible on account of the great rapidity with which glycogen is converted into sugar after death. The fact that glycogen is present in the diabetic liver in apparently normal amount shows that the power of manufacturing glycogen is not lost in diabetes.

In view, then, of the many and varied changes which may or may not be found postmortem in the diabetic, it will readily be admitted that both gross and microscopic pathology have utterly failed to furnish any anatomic basis upon which either the occurrence or phenomena of diabetes can be explained. As has already been stated, it must be considered as purely functional in character and classed among the neuroses.

SURGERY OF THE KIDNEY.

BEING A STUDY OF A SERIES OF CASES IN WHICH
METHODS OF DIAGNOSIS AND TREATMENT
ARE ILLUSTRATED.

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CONGENITAL ERRORS IN THE DEVELOPMENT OF THE KIDNEYS AND THEIR ADNEXA.

There are many errors in the development of the kidneys which are of great surgical and pathologic interest. Most of these errors are easily explainable by the remarkable evolutions which attend the development of the urinary apparatus. If any one doubts the utility of a careful study of this subject, let him contemplate the feelings of the surgeon who has removed the only kidney a patient possessed, or of one who has explored the loin and found no kidney below the supra-renal capsule.

Congenital errors in the development of the kidney occur with about the same frequency as do malformations elsewhere in the body. In 13,478 autopsies, one kidney was entirely absent in 4 cases, and atrophic in 59 cases. Klebs places the ratio of the absence of the right kidney to that of the left as 7:2, while Beumer thinks there is no difference in frequency.

The malformations of the kidney which are macroscopic in kind are logically separated into *a*, anomalies in form or size and, *b*, anomalies of position. The normal size, form and position can be learned from any text-book of anatomy.

1. Absence of both kidneys. Only in non-viable children are both kidneys absent. This malformation is usually accompanied by defects in the abdom-

inal wall, in the wall of the thorax or in the cranium and its contents. Acephalus and anencephalous monsters are often without kidneys. In some cases where the head and thorax are perfectly developed the pelvis and lower extremities are deformed and the kidneys entirely absent. Béclard considers the development of the kidneys related to the development of the lumbar vertebral segments and therefore to the development of the lumbar vertebrae and cord. Meyer of Bonn, describes the following stillborn child, which is a case illustrating this connection of development.

The lower extremities were contracted and the toes were rudimentary. The external genitals and the rectum were absent, and the anus opened into a small skin-covered sack. The intestine ended at the descending colon in a blind sack. The kidneys were both absent and the adrenals (supra-renal bodies) both twice the normal size. Both renal arteries were absent, as well as both ureters and the bladder and urethra. Near the adrenals were the small testicles and their epididymus. All the other abdominal and the thoracic organs were normally developed. The spinal cord ended at the twelfth dorsal vertebra. The coccyx and the lowest sacral vertebra were absent. The skull was unusually fattened from the forehead to the occiput. In the right eye there was a congenital cataract. The brain was much compressed and its cortex was almost as hard as cartilage.

A curious report was made by Moulon of Trieste, of a postmortem examination of a girl fourteen years old, who discharged her urine through an umbilicus just above the symphysis pubis. Moulon could find no kidney at all and he concluded that the urine was secreted by the umbilical vein! In commenting on this slovenly observation, Rayer concludes that it was a case of ectopy of the bladder in which the kidneys or kidney was overlooked.

Occasionally in unviable children both kidneys and the urinary bladder have been found but wholly unconnected on account of the complete absence of the two ureters. Such an observation was recently reported by Friderici.

2. *Complete absence of one kidney.*—The absence of one kidney arises either from the suppression of one kidney matrix or anlage, or by the coalescence of the two matrices with one another. Morris calls the former condition the unsymmetrical kidney and the latter the solitary kidney. He also makes another distinction when one kidney is represented by some remnant. This he calls the atrophied kidney. It would really seem better to call that kidney a solitary kidney which is formed from a single matrix and of normal proportion and parts, the other kidney being absent; and to call that kidney a coalesced kidney which is formed by the union of two matrices, having more than one artery or vein, or ureter. These anomalies are consistent with life.

The complete absence of one kidney is usually accompanied by the absence or defective development of the ureter, the seminal vesicles, the cord and the testicle on the same side or in women of corresponding sexual organs. The supra-renal body does not usually share in these defects, but is present and even enlarged where the kidney is absent. Morris found it absent in one out of ten cases where the kidney was absent. The solitary kidney (the unsymmetrical kidney of Morris) is usually hypertrophied, is larger and heavier than normal, and is sometimes supplied with

accessory arteries, veins or ureters; but occasionally the solitary kidney is smaller even than the normal. One such case at least has been reported by Wrisburg, in whose patient the skin took on the function of the kidney and the perspiration had a urinous odor (Haller's "Physiology").

We do not yet know just how radical the hypertrophy of the solitary kidney is. Some investigators hold that the absolute number of glomeruli is greatly increased, even doubled, while others have not been able to verify this observation.

We do not know yet whether the solitary kidney is more or less liable to disease than one of a pair of kidneys. It certainly would seem *a priori* that it is no advantage to a patient to have a solitary kidney.

The following interesting cases may be useful in getting an idea of this malformation:

Chaffrey, W. C.—Solitary kidney. (Transactions of the Pathological Society of London. Vol. 36, 1885.) In a boy five and a half years old, dead of tuberculosis, the normal left kidney was normally placed, but the right kidney was entirely absent. This kidney was $4\frac{3}{8}$ inches long, $1\frac{5}{8}$ inches broad and weighed $4\frac{3}{8}$ ounces. The ureter had a diameter of $\frac{3}{8}$ of an inch. It traversed the wall of the bladder less obliquely than usual and opened near the middle line by a slit-like aperture.

Prudden, T. Mitchell.—Congenital absence of left kidney, (N. Y. Medical Record, Vol. 29, p. 314.) The man died of tuberculosis of the lungs and tubercular meningitis. There had been no renal disease. At the postmortem, the left supra-renal gland was found in about its normal size and position, but there was no left kidney or ureter or renal artery to go with it. The right kidney was slightly larger than normal.



FIG. 1.—The left kidney in its fetal condition. (Kuster.)

Wood, J. W.—Absence of one kidney and carcinoma of the other. (N. Y. Medical Record, Vol. 29, p. 625.) A little girl three months old died after suppression of urine for five days. At the autopsy, the left kidney was absent, and the right was at large mass adherent to the intestines all about and cancerous. It was five inches long. The ureter was seven inches long and greatly dilated.

This might have been a case of epithelioma growing out of a matrix of supra-renal body left in the kidney (Grawitz).

3. *The incomplete development of one kidney.*—The growth of one kidney is sometimes arrested in early fetal life. Then the ureter leads to a small pelvis to which a few urinary canals open or none at all. The renal artery is either absent or very small. The opposite kidney is hypertrophied. The atrophic condition is sometimes confined to a part of the kidney. Sometimes two or more pyramids are normal and secrete normal urine (Morris) and sometimes only one pyramid (Birch-Hirschfeld). There are also anomalies in the formation of the calices which may result from the hypertrophy of existing pyramids or the coalescence of two or more pyramids.

A common arrest of development shows itself in the so-called "fetal kidney." The kidney is then of normal size and weight, but is divided into several lobules, 5-10, as in the fetus and in the cow. These kidneys have a normal function. The divisions are

not very deep and are held together by the fibrous tissue which forms the capsule. The divisions of the fetal kidney resembles somewhat scars left from destructive disease of the cortex. It is very possible that the fetal kidney is more liable to disease than the mature organ, especially to cystic atrophy through valve formation (Fenger). It has been noticed also that fetal kidneys are prone to tubercular disease (Küster).

Wolkowitsch (1895) describes an interesting case of rudimentary kidney in a surgical case. The patient was a man 49 years old with a pyuria six months after typhoid, for which the left kidney was examined by lumbar incision. There was an abscess

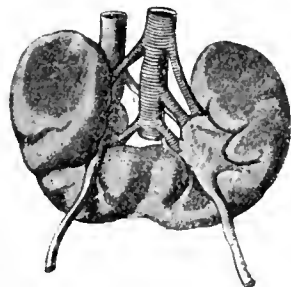


FIG. 2.—A typical horseshoe kidney viewed from before. From the Marburg collection. (Küster.)

in the lower end as large as an apple which was opened and drained. The abscess was thought to be tubercular. The upper pole of the kidney was also opened. The patient died of uremia on the twelfth day. At the autopsy the large left kidney was found full of small abscesses. The right kidney was rudimentary, 4 cm. long, cystic and suppurating. The right ureter was impervious except the last 2 cm., where it opened into the bladder. Both vasa deferentia ended 20 cm. from the bladder, blind behind the peritoneum. The right seminal vesicle was absent and the left small and empty. The right testicle was small.

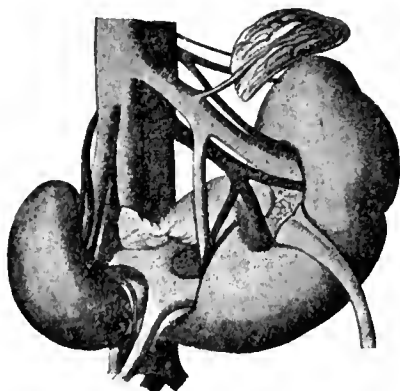


FIG. 3.—An irregular horseshoe kidney from the Marburg collection. Notice the right ureter. (Küster.)

4. *Supernumerary kidneys.*—Such a thing as a supernumerary normally formed kidney is still a matter of tradition or speculation. Depage describes such a case. A tumor in the abdomen was removed and found to be a kidney. The two normal kidneys were found in the normal locations. The right one was so movable that it was sewed back in place. The older authors have reported similar cases, but no specimens are, so far as I know, at hand to support these observations. The possibility of a teratoma kidney-like in structure without function should not be forgotten in considering Depage's case.

5. *Coalesced kidneys or horse-shoe kidney.*—This is the most common of all congenital malformations of the kidneys. It occurs once in about 1,000 autopsies. It presents itself typically in a blending together of the lower poles of the two normally placed kidneys, making one large horse-shoe shaped organ. The accompanying drawing is from a specimen in the museum at Marburg.

Very rarely the union between the two kidneys takes place through the blending of the upper poles,

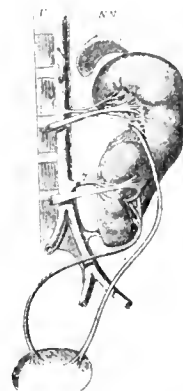


FIG. 4.—A sigmoid kidney. The right and left kidneys united by their lateral borders. (Brösike after Küster.)

making the kidney concave downward. The ureters are frequently more than two. The blood vessels are also more numerous than normal. The union of the two kidneys is sometimes only fibrous. Such a case

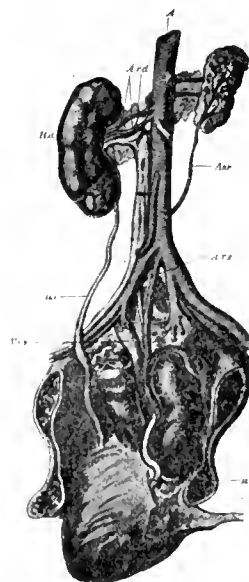


FIG. 5.—Congenital displacement of left kidney in left pelvis. (Rayer.) A, aorta; A.r.d., the double artery of the right kidney; R.d., the right kidney; u.r., the right ureter; V.r.s., the left renal vein; A.s.r., the left adrenal artery; A.r.s., the left renal artery; R.s., the left kidney; u.s., the short left ureter.

is to be found in Report of Guy's Hospital, 1880, and frequently elsewhere in the literature of medicine. The two kidneys are sometimes united into a long kidney lying on one side of the spine. *Ren sigmoides* or *ren elongatus simplex*. And again they are united into irregular masses. These peculiar combinations have received many descriptive names. *Ren scutaneus*, *ren informis*, etc.

Freund (*Arch. f. Gyn.*, Vol. 8, p. 538) found in an old woman with absence of the uterus, a tumor which he recognized through the vagina as a horse-shoe kidney. The diagnosis was made more certain by the

absence of the kidneys from their normal positions. The abdomen was so lax that they could have been easily felt. The hilus lay forward, which position is a rare one, remarks Freund. Out of twenty cases of horse-shoe kidneys only one lay with the hilus forward.

6. *Congenitally displaced kidneys.*—One or both normally formed kidneys are occasionally found congenitally displaced and so more frequently are malformed or coalesced, horse-shoe kidneys. The horse-shoe kidney is usually displaced, the united ends necessarily so. The displaced kidney is usually found in the pelvis, especially at its brim. It has a short ureter and also an unusual number of arteries coming from the adjoining trunks, the iliac, the hypogastric or the crural. In women such a displaced kidney may produce dystocia and in men it may give rise to errors of diagnosis. Runge (*Arch. f. Gyn.*, Vol. 41, p. 99) describes a case of congenitally displaced kidney which it is worth while to remember. A woman had given birth to seven children all living except the fifth which was stillborn, being a transverse presentation and artificially delivered. In the third or fourth month of the eighth pregnancy three tumors were found in the abdomen. The pregnant uterus, a tumor of the right ovary and the left kidney. The tumor of the ovary was removed by laparotomy. The kidney was found immovable on the pelvic wall,

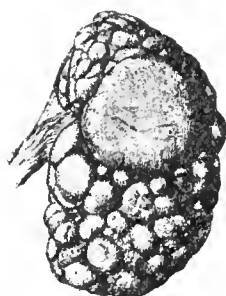


FIG. 6.—Congenital cystic kidney of a newborn child. Two-thirds natural size. (Orth.)

the hilus upward. The child was delivered artificially with a fractured humerus. Two arteries could be felt in the kidney. Only three other cases like this are reported.

Strube, Georg.—“Ueber congenitale Lage- und Bildungs-anomalien der Nieren.” (*Archiv für pathologische Anatomie und Physiologie und für klinische Medizin*, 137, p. 227.) This case presented an absence of the right kidney with the left kidney in the pelvis. It was in a patient 32 years old, who died of an acute nephritis due to laparotomy, undertaken to remove a tumor, which proved to be the movable kidney. Both supra-renal capsules were found of their normal sizes and in their normal places, with a normal blood supply. The only kidney present lay between the fourth lumbar vertebra and the second vertebra of the sacrum. It was twelve centimeters long, eight centimeters wide and four and one-half centimeters thick. It lay in the pelvis especially toward the left side, so that it covered the left iliac vessels. Its highest point was at the bifurcation of the aorta: its lowest point rested deep in the pelvis. The kidney was lobulated. The pelvis of the kidney was made up of four calices, two of them small and two of them large. The ureter was eleven centimeters long and very much dilated. It passed behind the rectum on the left side of the vertebra into the bladder. On the right side of the kidney was a piece of tissue four centimeters long by two or three centimeters wide. It showed upon examination to contain a few glomerules with a colloid mass. From this passed a cord, evidently an obliterated ureter, toward the bladder, about its normal position. The kidney was supplied by two arteries and two veins. The supra-renal artery arose one and one-half centimeters from the bifurcation of the aorta and entered the right upper part of the kidney and distributed itself by means of two branches. The lower renal artery arose from the left

hypogastric and passed directly into the hilum. The renal vein emptied into the left common iliac vein.

Somewhat similar cases have been reported by Chapuis (*Lyon Médical*, 1895), Goullioud (*ibid.*), Fischel (*Prager med. Wochenschrift*, 1895), and the older authors referred to by them.

7. *Congenital cystic kidney.*—Congenital cysts of the kidney seem to be related to other malformations usually inconsistent with a viable child, so that only a few of these kidneys require surgical care. The blood supply of the cystic kidney is usually very small. The ureter remains patent, which easily distinguishes it from hydronephrosis. The cysts are sometimes of enormous size, in the fetus interfering with labor and after birth making respiration impossible or difficult. Many of these children with cystic kidney live a few days or a few weeks and then die of exhaustion; others live and come to surgical interference.

Sutton, J. Bland.—“Tumors, innocent and malignant.” Philadelphia, 1893, p. 253. Sutton copies a sketch from H. Morris which is reduced and presented here. It represents a congenital cystic kidney. Some of the cortical substance is left between the cysts. In typical cases like this, the kidney is converted into cystic masses, so that on section the appearance of a sponge is presented. The cysts vary greatly in size. Some of these project from the surface of the kidney. In early stages they have a covering of epithelium which is difficult to find in advanced cases. Sometimes the renal pelvis is easily recognized, but later it becomes filled with fatty matter. The ureter is usually extremely narrow, but always pervious throughout. The blood supply in the cystic kidney is always very small. Congenital cystic kidneys sometimes attain an

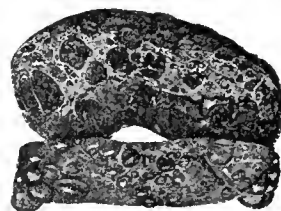


FIG. 7.—Cystic Kidney. (Morris.)

enormous size, so large indeed as to seriously impede labor, and necessitate the destruction of the fetus to enable delivery to be effected. Other congenital defects are usually associated with cystic kidney.

8. *Congenital malformation of the pelvis and ureter.*—One of the most common malformations of the kidney, and one consistent with life and the function of the kidney, is the double or treble pelvis or ureter. It is perfectly natural to expect, in cases of lobulated or fetal kidney, to find one lobule so separate from the other lobules as to require a separate pelvis. If this occurred early in kidney development, then the ureter also might be found double. As a matter of fact, the division of the pelvis and ureter has been found in every grade of division which theory would suggest, from simple division of the pelvis to complete double ureter and double pelvis on both sides of the body. The doubling of the ureter is by no means a rare malformation. It is said to be found, more or less complete, in one out of every thirty-five post-mortems. (Böstrom.) This frequency has not been sustained by other pathologists, perhaps because they have not been careful in examining the ureter. Malformations of the pelvis and ureters are certainly very dangerous to their bearers. Double ureters are apt to become obstructed and dilated and precipitate suppurative disease. They are much more apt than single ureters to be abnormally placed in the bladder and become obstructed by valve formation. They

stand also as a constant terror to the diagnostician who would discover the competency, the health or the disease of a kidney through the act of catheterizing the ureters.

9. *Malformations of the adrenals or supra-renal capsules.*—Complete absence of the adrenals is observed only in cases of unviable malformation, usu-



FIG. 8.—Showing a section of a kidney with a double pelvis and two ureters for a part of the way to the bladder. (Rayer.)

ally with defects in the head. Zander has observed absence or aplasia of the adrenals in connection with malformation of the genitals in nineteen out of fifty-six cases of this malformation. Enormous development of a supra-renal capsule has been observed with the complete absence of the corresponding kidney. The two adrenals are often united into one, especially in horseshoe kidney, and occasionally they are displaced with the kidney in the pelvis.

A remarkable error is found in remnants of the supra-renal body in the substance of the kidney itself. From this displaced tissue paratheliomas of the kidney are thought to grow (Grawitz). Such displaced fragments of the adrenals have been found in the broad ligament, the posterior abdominal wall, the spermatic



FIG. 9.—Double ureters complete on both sides. (Rayer.)

vessels (Marchand), and between the head of the epididymis and the testicle (Dagonet). All of these conditions are to be explained by the early association of the matrix of the spermatic apparatus with the adrenal matrix before the descent of the testicle into the scrotum. This is a subject of such clinical importance that it will be considered later at length.

THE PRESENT STATUS OF VAGINAL SECTION WITH RECORD OF PERSONAL EXPERIENCE.

BY HENRY T. BYFORD, M.D.

CHICAGO.

Much of the improvement in gynecology within the last few years has consisted in the development of vaginal section.

The pioneer in this direction is undoubtedly J. N. Sauter of Constance, Switzerland, who, according to a preconceived plan, similar to that employed at the present day, removed the carcinomatous uterus per vaginam, although K. M. Langenbeck performed the operation in 1813. Blundell did the same in 1828 and Recamier and Delpech in 1830. This ended the first act in the drama. The results were so bad that the operation was practically abandoned until revived by Czerny in 1879.

In 1872 Robert Battey, followed by J. Marion Sims and T. Gaillard Thomas, began removing ovaries and small ovarian tumors per vaginam, and was thus the pioneer in this country. Very soon, however, the success of Tait in performing abdominal section, drew the gynecological world after him, and vaginal section again fell into disfavor.

In 1886 I began removing ovaries and ovarian tumors in this way and for a long time was the only one doing it in this country. But as a result of the performance of vaginal hysterectomy for diseases of the appendages in France, and of anterior colpotomy in Germany, during the last four or five years, vaginal section for diseased uterine appendages has now become a permanently established procedure. The reports of the facility with which Péan cured, by vaginal hysterectomy, cases of pelvic inflammation that had been considered too complicated for operation by abdominal section, as well as of the battle that is still waging over the method, have reached us all. Duehrssen and Mackenrodt's operations for vaginal fixation of the uterus gave a new impetus to vaginal section for diseased appendages, for Mackenrodt and A. Martin soon began to remove the ovaries, tubes, and even the products of ectopic gestation by anterior colpotomy.

The old dictum that vaginal section is inferior in value to abdominal section for pelvic disease because the pelvic cavity is not as accessible, is only true for conditions located at the pelvic brim. To the parts below the pelvic brim vaginal section gives as good and often better access, and without disturbing the abdominal viscera. Its only disadvantage in treating conditions within the pelvic cavity is the danger of hemorrhage. But even this, the greatest danger, is no greater, in my experience, than in an abdominal section. In 161 cases of vaginal section I had difficulty from hemorrhage in two cases only, and these were cases for which vaginal section should not be employed, viz., a large uterine fibroid and a large uterine sarcoma.

The danger of infection is practically no greater than in abdominal section, for the vagina and shaved vulva can be scrubbed with green soap, alcohol and corrosive mercuric chlorid as effectively as the surface of the abdomen, and the uterus can be made clean by curettage. If septic infection takes place, the resulting inflammation is always localized, unless complicated by the rare occurrence of ileus from intestinal adhesions, or unless vaginal section be done for abdominal rather than pelvic conditions.

In illustration of the possibilities and limitations of the method and the possibility of seeing and knowing what one is doing, I will briefly state what procedures have so far been demonstrated to be practicable.

Through a vertical incision in the median line behind the cervix, half an inch long, one finger can be introduced into the peritoneal cavity and the pelvic organs be directly palpated. Through an incision from an inch to an inch and a half long in the same place, diseased uterine appendages and the products of early extrauterine pregnancy, as well as small ovarian tumors, omental tumors and small subserous fibroids on the posterior uterine walls can be removed. I have not removed a fibroid from the posterior uterine wall in this way, but have taken sutures in it for the arrest of hemorrhage due to adhesions, which practically amounts to the same thing. The cul-de-sac can be obliterated by tamponing the sutured vaginal wall against the opposite side of Douglas's pouch and retroversion often be cured. This was a frequent result in my earlier operations.

Through a transverse incision behind the cervix, beside all that which can be done through the vertical incision, the whole posterior pelvic cavity, the fundus uteri, and sometimes the appendix vermiformis can be exposed to view by long retractors that reach almost to the promontory of the sacrum. This has been repeatedly demonstrated by Prior. The sacro-uterine ligaments can be shortened by suture, or the cul-de-sac of Douglas be obliterated by excision of its peritoneal lining, or by packing it with gauze. Prior cures retroversion by the latter method. It is also possible, as I have demonstrated in one case, to extirpate the rectum considerably above the lower reflection of the peritoneum through this incision. By prolonging the incision laterally, or forward beside the uterus, moderate sized intraligamentous fibroids can be taken out either whole or by morcellement. The danger of wounding either the uterine artery or ureter can be avoided by ligaturing the former and placing a flexible bougie in the latter.

By an incision in the anterior vaginal fornix and separation of the bladder, fibroid tumors can be enucleated from the anterior uterine wall, as I have twice done; or by bisection of the anterior uterine wall they can be removed from the uterine cavity or posterior uterine wall and the uterine incision be sutured. Diseased appendages can be readily removed or drawn into the vagina, the ovaries resected, the closed tubes made pervious, and the parts be returned without bad results. The pubic peritoneum, normally lying above the collapsed bladder, can be drawn down into the vagina, and the stumps of removed appendages or the fundus uteri can be sutured to it. The round ligaments can be grasped and those portions near the internal inguinal rings can be drawn down in view and attached to the uterus, thus shortening them as much as is usually done in Alexander's operation. I have shortened the ligaments and attached the fundus or stumps over the bladder in twenty-four cases of retroversion, and have kept watch of most of them since. In but two cases that I know of has there been a return of the retroversion.

All this can be done without removing the uterus. If we remove the uterus the whole pelvic cavity is opened up to sight.

Intestinal and rectal tears can be successfully sutured. Medium sized adherent dermoid, papillary

and other pelvis-bound tumors can be removed, and the beds tamponed with greater safety than by abdominal section. Septic appendages, with adhesions that would make their removal by abdominal section almost unjustifiable, can be cured by vaginal section with but little risk.

Although so much can be done by vaginal section there is danger of extending its limits too far. Péan, Segond, Jacobs and others, in searching for these limits have, with consummate skill, made use of the method in cases for which it is not generally adapted and in which it can only succeed in the hand of such experts. Fibroids larger than a full term fetal head can be removed in this way, but the mortality will be greater than by abdominal section. The duration of the operation is apt to be too long and the loss of blood considerable. Fibro-sarcomas of the uterus of large size are still less suitable. Advanced carcinoma of the body of the uterus should be removed by abdominal section because metastatic deposits can be recognized and managed better. If I were to judge from a single experience, I should say that vaginal section is of but little value in tubercular peritonitis. I removed the tubercular tubes in a case connected with ascites and deposits of tubercles on the surface of the pelvic peritoneum. Although a large quantity of fluid was evacuated, the appendages completely extirpated and the cul-de-sac drained, the tubercular peritonitis increased steadily after the operation. The evacuation of the fluid had but little if any effect.

I have so far performed vaginal section 162 times, including two cases in which I opened the peritoneal cavity by mistake, and including none in which the cavity was not opened. Eighty of these sections were done without removal of the uterus. Of the latter all recovered from the immediate and remote effects of the operation.

I have performed vaginal hysterectomy eighty-one times, with four deaths, and resection of the rectum once, with one death. These represent results as they are, but not as they should have been. One of these deaths was in a case of sarcoma larger than a child's head; the other in the case of a large fibromyoma in an excessively anemic woman 53 years old; neither of them adapted to vaginal section. Had I operated by abdominal section, I should have recognized the futility of removing the first tumor, and would have been able safely to remove the second. If we eliminate these two cases, which ought not to have been operated upon in this way, and the excision of the rectum, which does not belong to the ordinary vaginal section, the mortality instead of being 3.05 per cent. would be 1.22 per cent.; a smaller percentage than I could have hoped for had I performed abdominal section for them. In fact a mortality of 3.05 per cent. in the first 162 cases (and which, including all, includes of course those upon which my experience was gained) is better than I could expect to do in a first series of 162 abdominal sections, and the series included more septic and complicated cases than is the rule in an equally extended series of abdominal sections.

The Roentgen Rays Innocuous.—Prof. Moritz Benedict in the *Medicinishe Wochenschrift* ridicules the notion that the Roentgen rays are injurious to the hair or otherwise. He maintains that a few accidental cases have originated an unmerited notoriety.

PHOTOGRAPHY IN MEDICINE.

BY ELLERSLIE WALLACE, M.D.

PHILADELPHIA, PA.

To speak of the uses of photography in the healing art at the present day makes one immediately think of the great discovery of Roentgen.

This undoubtedly stands at the head of the list of useful achievements that photography can perform. But inasmuch as large pecuniary outlay, and much time and special study must be sacrificed to it, I shall not say anything about it here. My object is rather to refer to simpler things which the camera may be made to do, and to recommend the study of the art of photography to young members of the profession. After years spent in the comparative inaction of the lecture room, and the want of physical exercise, from which we all must suffer more or less, while our brains are absorbing useful knowledge, the active use of the camera will be a very salutary and welcome change. It will not be time lost, but will benefit both mind and body. Nor is it necessary to invest any considerable sum of money in elaborate apparatus; while the expensive forms of lenses and cameras are generally the best, a modest outfit may yet be made to yield excellent results.

Many students, particularly those who have a fondness for physiology, own a microscope. Let them add a photographic outfit for plates measuring five inches by four, get one of Carbutt's "*multum in parvo*" dark-room lanterns, and they will then be in possession of an admirable apparatus for microscopic photography. I can not think of a more pleasurable and useful way of spending an evening than to make negatives of microscopic specimens, and then to print them on plates the right size for projection upon the screen by limelight, *i.e.*, $4\frac{1}{4} \times 3\frac{1}{4}$ inches.

Carbutt's lantern to which I allude is a most conveniently arranged affair for such work; it furnishes the red light in which the sensitive plate is unpacked and set in the holder. By a simple movement, the white light is admitted to the microscope (through a sub-stage condenser if required), and the exposure made. The ruby light is again turned on to develop by, and finally the finished plate is examined by still another kind of light just suited to the photographer's needs. All this is done without moving the lantern, and either kerosene oil or gas is used at pleasure. The camera (5×4) is set at the end of a board of say four feet in length, and the microscope turned over so as to bring the tube horizontal, pointing into the camera at one end and into the lantern at the other. A few bits of black velvet, two or three wooden blocks and some elastic bands complete the apparatus by which endless varieties of microscopic photography may be easily and cheaply done at night, after the toil of the day is over. It is hardly possible for one who has not handled this apparatus to imagine the extent of useful work it is capable of. I will not consume space by suggesting subjects—they are innumerable. I only wish to make it clear that the outfit will make either ordinary paper prints, or "lantern positives" on glass which will show splendidly on the lecture room wall to a class, no matter how large.

Objects not microscopic in size may also be studied in this way. Bones make excellent photographs. They should be carefully set in position on a board covered with black velveteen, and not taken in direct sunlight. A lens of rather long focus, say from six to eleven inches, should be employed, and a rather small stop

(diaphragm) put in, so as to bring all into sharp focus. If the negative is well made, there is nothing to prevent the enlargement of prints to even more than life size.

Greater difficulty will be experienced when photographing any of the soft tissues. Nevertheless, they can often be done successfully. Deformities of every kind, wounds and skin diseases, take well. Among the wonders of modern photography, we may call to mind the fact that some kinds of diseases accompanied by eruption, will show the eruption on the photograph *before* it is visible to the eye. Certainly this ought to be followed up and carefully studied. For instance, in the time of any mild epidemic, a suspected case in hospital should be photographed at regular intervals of time, say eight or twelve hours, in daylight, and the first appearance of the eruption noted. Comparisons could then be made when the eruption was fully developed. But the uses of the *orthochromatic* films and plates should not be overlooked in this connection. Such work as this can be done with the cheapest of apparatus, if only the operator understands how to "light the sitter." Now, in large places, like hospitals, it is seldom hard to find either a corner of the building where the light can be admitted to the sitter from two windows at right angles to each other, or else some position where the walls themselves are white and stand at such angles that the necessary reflection is made upon the shaded side of the sitter's face. Here is where the scientifically educated, amateur photographer is almost sure to fail. He is ignorant of just those elementary points in photography that any professional member of the calling, however poorly schooled otherwise, could teach him in a few moments. I have seen a great deal of just this sort of failure among medical men of superb acquirements. Should any commencing amateurs meet with this article, when they are in trouble, let me advise them, without loss of time, to secure some of the books written on the art of properly posing and lighting the sitter, and carefully study out the principles before wasting another plate. Such firms as Anthony & Co., 591 Broadway, New York, and the Photographic Times Publishing Association, 60 East 11th Street, in the same city, would promptly furnish the right sort of instructive material. Persons who take up photography seem to think, though perhaps they might not care to admit it, that the camera is a sort of machine to grind out "pictures" more or less bad. And the young graduates in medicine are just the ones who would be likely to indulge in quiet sarcasms at the necessity for any real study in such a thing as a "machine for taking likenesses." I will close this portion of my subject by merely hinting at the wonderful works in *monochrome* that all the great masters of art have given to the world, and by reminding the reader that very many such things can be done with the camera, if only its possessor have proper sympathy with artistic studies, and if he have not, his chances of success will be small.

The reports which almost all hospitals and asylums send out will be much more interesting and useful if illustrated with good photographs. This is just the work for young residents to occupy themselves with in their spare hours. A good idea of the perfection to which this can be brought may be had by observing the work in the annual reports of Dr. T. G. Morton, Chairman of the Committee on Lunacy of the State Board of Public Charities (Pennsylvania).

Much is being done every day in the interests of medico-legal matters. This is self-evident, and I need not enlarge upon it, except to remind the beginner that there is a fair possibility of getting presentable pictures of contusions and other marks of violence invisible to the eye, just like the eruptions previously spoken of. In the differential diagnosis of blood corpuscles, the microscope and camera together can be made to give evidence of the uttermost value and exactitude. And in returning for a moment to photomicroscopy, I wish to mention Dr. Woodbury's suggestion, that in diagnosing tumors or cancer in presence of the class, photomicrographs might be made in an adjoining laboratory from a small section taken from the patient, and the result projected on the screen at the close of the lecture by darkening the room for a few moments. Here we should see the diagnosis confirmed before our eyes—an admirable thing for both teacher and student. Pathology and histology will furnish us with plenty of material for such teaching, and this is the kind of instruction that is not apt to be forgotten.

The vitascope, or at all events the camera, for making the endless band of pictures to be afterward shown in this instrument, will some day take its place in medical institutions, just as the Roentgen apparatus is doing now. It seems very little use has thus far been made of ordinary instantaneous photography for the closer study of abnormal movements of every kind, but now that we can obtain exact reproductions of any phase of motion, surely we ought to have full sets of illustrations of chorea, locomotor ataxia and all other matters of the sort. We must not forget that the movement is reproduced with absolute fidelity.

Thus, the art of photography is by no means to be overlooked in teaching to large classes in large halls. But it is perhaps even more successful and fascinating to the solitary student, or to the pair of devotees, who can get a close look at their work. Two earnest men could work together at medical photography far better than either one alone, while even three would be too many. There is no end of work waiting for them. And of fresh matter, too. Why does nobody publish *stereoscopic* proofs of anatomic, pathologic or surgical subjects? How many who do use photography in medicine know how to increase or lessen the amount of relief in the stereoscopic slide? Pictures of operations could be made in this manner that would instantly supersede any other kind of illustration, even if colored. And it would only entail a little more expense to get *colored stereoscopic slides on glass* which would be, in many cases, as instructive as actual presence at the operation.

THE USE AND ABUSE OF EXPERT MEDICAL AND SURGICAL TESTIMONY AND SOME RECOMMENDATIONS FOR INCREASING THE VALUE OF SUCH TESTIMONY.

Read at the Third Annual Meeting of the American Academy of Railway Surgeons, held at Chicago, Sept. 23, 24 and 25, 1896.

BY ROBERT MATHER.

GENERAL ATTORNEY OF THE CHICAGO, ROCK ISLAND AND PACIFIC RAILWAY, CHICAGO, ILL.

(Concluded from page 723.)

Thus far I have generalized, and what I have said is quite as applicable to many other kinds of expert evidence as to medical and surgical testimony. But a

railway lawyer, speaking to railway surgeons on such a topic as the present must be understood by his hearers as having in mind in everything he says the special class of cases in which both are so much and so often interested. While, therefore, my observations have been general in terms, they have, no doubt, come to your minds as having special and direct reference to personal injury cases. Certainly no other class of cases more frequently displays the abuse of expert medical and surgical testimony, or demonstrates more clearly the necessity for improving the method of procuring and presenting such testimony. No doubt it is within the repeated experience of each of you that ignorant or corrupt expert testimony has presented and upheld opinions that you knew were unsound and theories that you knew to be false. The obscurity of many of the injuries which give rise to these cases and the subjective nature of their symptoms render these achievements of the expert comparatively safe, while the sympathy that rests in the jury box for the subject of the injuries and the prejudice or indifference to the rights of the defendant which also there abide render them usually successful. Dishonesty and charlatanism among medical experts have won more cases without merit and magnified more verdicts where merit was slight, than character and learning have defeated in the one case, or diminished in the other. Nothing, more than the uniform and expected result in this class of cases, demonstrates the incapacity of our present system of presenting opinion evidence to lead the jury to a conclusion which speaks the truth. A nearer approximation to even and exact justice in the determination of causes arising out of personal injuries than is now possible under present methods of trial and existing rules of evidence would, I believe, be secured by the plan of selection and appointment of experts by the court.

The adoption of this plan would involve in this class of cases, a further step. The injured person should be compelled to submit himself to a personal examination by the court's experts. The right to require such an examination could not be denied to an officer of the court charged with the duty of ascertaining the truth. It would only furnish the opportunity for the performance of that duty. Indeed, some courts have held, even under the present system, that the power exists to compel such an examination by experts who are not official. *Schroeder v. Chicago, Rock Island & Pacific Railroad Company*, 47 Iowa, 375 (1877), was the pioneer case in that direction. The question was determined, without precedent or authority to guide the court, on lofty ground of principle. It was said: "Whoever is a party to an action in a court, whether a natural person or a corporation, has a right to demand therein the administration of exact justice. This right can only be secured and fully respected by obtaining the exact and full truth touching all matters in issue in the action. If truth be hidden injustice will be done. The right of the suitor, then, to demand the whole truth is unquestioned; it is the correlative of the right to exact justice. It is true, indeed, that on account of the imperfections incident to human nature perfect truth may not always be attained, and it is well understood that exact justice can not, because of the inability of courts to obtain truth in entire fulness, be always administered. We are often compelled to accept approximate justice as the best that courts can do in the administration of the law. But, while the law is

satisfied with approximate justice where exact justice can not be attained, the courts should recognize no rules which stop at the first when the second is in reach. Those rules, too, which lead nearer the first, should be adopted in preference to others which end at points more remote. This doctrine lies at the foundation of the rules of evidence, though it must be confessed that the superstructure does not always fully conform thereto."

Since this decision the right of a defendant in a personal injury case to demand, and the power of the court to compel a personal examination of the injured person has been much mooted, and the decisions of the courts have been not only diverse and contradictory, but wavering and inconsistent. Those States in which the power to compel an examination is admitted either absolutely or under conditions are:

Texas: *M. P. R. Co. v. Johnson*, 72 Texas, 95.

Georgia: *Richmond & Danville R. Co. v. Childress*, 82 Ga., 719.

Alabama: *Alabama Great Southern R. Co. v. Hill*, 90 Ala., 71.

Minnesota: *Hatfield v. St. P. & D. R. Co.*, 33 Minn., 130.

Wisconsin: *White v. Milwaukee City Ry. Co.*, 61 Wis., 536.

Nebraska: *S. C. & P. R. Co. v. Finlayson*, 16 Neb., 578; *Stuart v. Haven*, 17 Neb., 211.

Kansas: *A. T. & S. F. R. Co. v. Thul*, 29 Kas., 466.

Arkansas: *Sibley v. Smith*, 46 Ark., 276.

Ohio: *Miami & M. Turnpike Co. v. Bailey*, 37 Ohio St., 104.

Missouri: *Sidekum v. W. St. L. & P. R. R. Co.*, 93 Mo., 400; *Shepard v. M. P. R. Co.*, 85 Mo., 634; *Owens v. K. C., St. J. & C. B. R. Co.*, 95 Mo., 169.

Both the right of the defendant to demand and the power of the court to require such examination have been denied in Illinois: *Parker v. Enslow*, 102 Ill., 272; *C. & E. I. R. Co. v. Holland*, 122 Ill., 461, S. C., 18 Ill., App. 418; *St. Louis Bridge Co. v. Miller*, 138 Ill., 465, S. C., 39 Ill., App. 366; *Joliet Street Railway Co. v. Call*, 143 Ill., 177, S. C., 42 Ill., App. 41; *P. D. & E. R. Co. v. Rice*, 144 Ill., 227; *City of Galesburg v. Benedict*, 22 Ill., App. 111.

The same result was reached in Indiana: *T. H. & I. R. Co. v. Brunker*, 128 Ind., 542. And by the United States Supreme Court in *Union Pacific R. Co. v. Botsford*, 141 U. S. 250; though Justices Brewer and Brown, in a dissenting opinion by the former, gave their adherence to the doctrine of the *Schroeder* case in Iowa. An opinion by the Supreme Court of New York, rendered in 1868, but not published until after the *Schroeder* case was submitted in the Iowa Supreme Court, asserted the power to compel an examination. (*Walsh v. Sayre*, 52 How. Pr., 334.) This decision was afterward overruled at a general term of the Supreme Court (*Roberts v. Ogdensburg & Lake Champlain R. R. Co.*, 29 Hun. 154) and the question was finally put at rest in that State by a decision in 1891, denying the existence of the power. (*McQuigan v. D. L. & W. R. Co.*, 129 N. Y., 50.)

This vacillation in the courts of New York had its counterpart in the courts of Missouri, where the question as to the existence of the power was first decided in the negative and subsequently, as has been seen, in the affirmative.

The decision in the *McQuigan* case led to the adoption of a statute in the State of New York as follows:

"In every action to recover damages for personal

injuries, the court or judge, in granting an order for the examination of the plaintiff before trial may, if the defendant apply therefor, direct that the plaintiff submit to a physical examination by one or more physicians or surgeons to be designated by the court or judge, and such examination shall be had and made under such restrictions and directions as to the court or judge shall seem proper. In every action brought to recover damages for personal injuries, where the defendant shall present to the court or judge satisfactory evidence that he is ignorant of the nature and extent of the injuries complained of, the court or judge shall order that such physical examination be made."

This statute was enacted as an amendment to that section of the Code of Civil Procedure which provided for an examination of the plaintiff under oath. In construing the amendment, the court held (*Lyon v. Manhattan R. Co.*, 142 N. Y., 298) that the physical examination provided for thereby was designed to be a part of the examination of the plaintiff under the section as it stood before the amendment, and that an order would not issue for the physical examination of the plaintiff, except as a part of the taking of his testimony. In other words, the defendant, in order to obtain a physical examination of the plaintiff, must call him as a witness before a referee for the purpose of taking his testimony, and as a part of this process may compel a physical examination. It was said: "The statute has in terms provided that the physical examination shall be procured in the same way and as part of an examination of the party before trial, and in that way only and by conforming to the general provisions of law on the subject can the object and purpose of the amendment ever be attained. This construction gives effect to every word of the section as amended, and is in harmony with the other sections immediately preceding and following. Then the referee becomes something more than a mere spectator at an idle ceremony. He may take the plaintiff's testimony upon the issue and report to the court as upon an examination before trial. He has, of course, the power to administer an oath and to authenticate the proceedings, and the plaintiff is bound to appear before him and answer all proper questions with respect to the nature and extent of the injuries, whether framed by the medical experts from their own examination, or as a part of it, or by the counsel present. It becomes a fair struggle for truth and both parties may participate."

The "struggle for truth" provided for in this awkward enactment would seem to be an ordeal from which both sides would shrink. The defendant in the ordinary personal injury case would hesitate to make the plaintiff his own witness and, therefore, to be bound by his testimony, even if thereby he should secure the right, which otherwise he would not have, to a physical examination of the plaintiff and his injuries. On the other hand, if, as appears from the report of the case, the physical examination is to be part of an oral examination to be witnessed and participated in by a referee, experts and counsel on either side, it would seem that the plaintiff, especially if a woman, would rather bear the ills her injuries entailed upon her than fly to a method of relief which contemplated such an inquisition. The more satisfactory and seemly way would seem to be to compel an examination of the plaintiff's person by the experts selected by the court under all the circumstances of privacy and of secrecy (except for the purpose of the giving of testimony by the experts at the trial) that would

surround a similar examination by the personal physician of the injured party. Such an examination, conducted for the sole purpose of ascertaining the truth by professional gentlemen of the highest standing, occupying the position of officers of the court, could neither wound the sensibilities of the most acute organism, nor excite alarm on the part of the most suspicious that the examination would be used for anything but the ascertainment and enforcement of even and exact justice.

The indictment here framed against the present abuses of expert testimony would be confessed by the defender of the existing system, if it had a defender. The remedy for the evil, substantially as I have outlined it, was long ago proposed and has been widely approved. The discussion of the mischief and its remedy furnishes a subjective intellectual pleasure to railway surgeons and lawyers on such occasions as this. But I doubt if practical accomplishment of the needed reform will spring from our discussion. We will be looked upon, I fear, too much in the light of special pleaders, advocating our and our client's advantage. Not that we *are*, but only that we *seem* to be to the prejudiced public interested in the question, except with a lively interest in the accomplishment of both abstract and concrete justice. All that has been said, however, of the use and abuse of expert medical and surgical testimony in personal injury cases, applies with as great or greater force to insanity cases and criminal trials. There the selfish and personal point of view is lost in the higher and broader considerations of public interest; for the abortions which the system there produces are not only crimes against justice but injure the health of the body politic. The ear of the public will eventually be caught by appeals for a change in the prevailing system, based on its evil manifestations in that direction, though our more or less selfish cry be not heard.

DISCUSSION.

Dr. R. HARVEY REED—This paper bears on a subject which, beyond all question, is of vital importance not only to the railway attorney and the railway surgeon, but to the railway company and the plaintiff. One thought brought out by the paper was that "the expert did not testify to what he knew, but what he thought." That in the abstract may be true—perhaps judging an expert from the standpoint that he is called in to tell what he thinks of certain facts when the facts are presented to him; yet I think you will hear me out that the average expert has knowledge of the facts as well. I know in the courts in Ohio it is a common occurrence for those who have been called to testify as experts to examine the case and then go before the courts and testify as to the facts in the case. For instance, we will suppose a man has prosecuted a company for injury to a limb; that it is short, or it is crooked, and he claims a certain amount of damages because of this. The experts are called to examine him to see how short or how crooked that limb is, how far it is from a normal condition, and to say whether or not this abnormal condition is an injury to that man, and to what extent it is an injury. Under these circumstances the expert is testifying on facts, and he acts as an expert in making an examination of the case to determine for himself what the facts are. Now it seems to me that the expert may not only tell what he thinks, but in many instances he tells what he knows. In the paper it was stated that an expert was called because of his peculiar or particular knowledge; then, if this is so, he must have knowledge or he wouldn't be called; if he has knowledge he speaks from what he knows, and forms his ideas from the facts in the case because he knows them to be facts.

I call attention to this because it seems to me from what little experience and observation I have had, that it is hardly fair to say that an expert only tells what he thinks.

If we discard the expert from the witness stand, then who shall give this knowledge? I will admit that as expert testimony is handled by our legal brethren and as expert witnesses act themselves of their own volition, expert testimony in a majority of cases is a farce. But because it has proved to be a farce, is that a reason why we should discard it? We must admit there is a value to be obtained from it if we put it in the right channel—if we handle it in the right manner—and I have for years been a strong advocate of calling the expert witness by neither the prosecution or defense. I think the moment you put the expert on the stand with the understanding that he is to testify for either the prosecution or the defense, you put him in a false position. He should be called, as the gentleman says in the paper, to testify to the facts and give his knowledge on these facts as they occurred to him and are presented to him. When medical experts are called on the stand it has been the custom of lawyers—and more by some than others—to commence by trying to show that the medical expert does not know anything, that he is a consummate fool, does not even know his anatomy because he could not tell some little muscle about the eye or nose that he would be supposed to know; and the attorneys have frequently made their cases a great deal worse in many instances by resorting to those little technicalities, if you want to call it, or catch-questions as the schoolboys call them, to give the impression that the expert did not know anything at all. That is wrong, and I think the attorneys on either side would take hold of the expert to find out what he knows about the case, place the questions fairly and squarely before him and get out of his head the idea that he is testifying for anybody, but that he is a sworn witness to tell the truth, the whole truth and nothing but the truth as it bears on the question; do not try to aggravate and entangle the witness by getting him off on a subject absolutely extraneous to the question in court, and then endeavor to make the jury believe that what he said is true or is not true, you would find the medical expert would be of more value than he is under the present system.

As to the pay of the expert, I think we are all agreed that he should be paid, but I most heartily agree with the paper that he should be paid and employed by the court. I do not think the prosecution or defense, either one, should employ him or have anything to do with paying him, except they should foot the general bill, which should come through the court entirely, making him a court official, as has been stated. This, I believe, a most valuable suggestion. I think we should advocate the idea—of course it is an embryonic cell and it needs to be developed into a fixed tissue cell, but it has given us thought that will perhaps help us to remedy this system which has been a detriment to the companies and a detriment to the courts.

Dr. R. S. HARNDEN—I concede the position which the paper takes. I believe we are in disrepute today as a profession—I do not think any physician here or elsewhere disputes that fact—but wherein lies the fault? The gentleman points out the remedy. It seems to me that he has simply quoted and reiterated what we ourselves have claimed for many years. I believe it is the voice of the medical profession as well as the legal profession that the expert witness should be employed by the court and paid by the State, so that his evidence should not be biased by the various attorneys. The gentleman has stated that as a matter of fact that might be the case—the attorney might employ the witness and bias his evidence. We all know that to be so. But I want to say in the defense of my profession, that I will not concede any one in the legal profession as being in advance of my own. I believe that while the legal profession is today studying Blackstone and the tenants' law of years since, that our profession is in advance of the current

of progress of thought throughout the world. (Applause.) I believe that our's is one hundred years or more in advance of the legal profession, and I say that not to their discredit, but I believe it is true. It seems to me, with our profession standing where it does today, that the courts and the legal profession must be far behind us if they can not obtain help for the procurement of justice from our profession. We have the experience, the ability, we have accomplished great ends in the past decade, and if the judge and the court can not receive the benefit of this improvement then where lies the fault? Now, it is my firm belief that, as able as a judge or a lawyer may be, he may be intensely ignorant on some things. The gentleman presented one point that attracted my attention. I do not remember the terms used, but he would not allow the court or the judge to make the selection, but simply to designate. I think that was a proper discrimination between the two terms, and I think I can state for our profession that we would favor the court's making the selection or designation, but I believe the main point, as has been stated by the gentleman, with some exception, is correct, that the litigant should not pay the expert witness. Now I do not believe that medical experts or medical men, as a rule, are biased to the extent that has been stated. I do not think my profession work for large fees. As a rule they do more for charity and honor than any other profession on the face of this earth, and it seems to me that it is a stigma upon us for the legal profession to point the finger of scorn at us simply because of their own ignorance and of the methods of obtaining the evidence which shall assist in the procurement of justice.

Dr. A. D. BEVAN—The statements as outlined in the paper I believe to be absolute facts. I could not see any attack upon the medical profession. I do not think it was so intended. Certainly expert testimony has been, since I have been a member of the profession and appeared as an expert, a farce. I have almost never testified in a trial without feeling that some of the experts were prostituting, not scientific knowledge, but the name of medicine in appearing in those trials—even men of wide reputation—by being the employed partisans on one side or other of the case. I know that personally I feel and always have felt that when a medico-legal case comes to me, when a man comes to me and is willing to pay fifty or a hundred dollars for my testimony, I can not get away from the fact that I am employed; I can not get away from the effort of making the very best of my employer's side of the case. I feel that and always feel it. I always fight against it and always say to myself, "Now I want to present this case and my opinion of it just as I would in a clinic if it were a medical case and I were describing it in class and not a court room," but the fact does remain that the medical expert testimony as it is today is a disgrace to the medical profession in the better sense of the word, or to medical science in any sense of the word. It is simply one of the evidences of human frailty, of bad machinery in bringing about justice. The same applies to any other profession—an engineer's, a real estate man's expert testimony. The same facts apply to all expert testimony and, as I understand the paper, it is not in any sense an attack upon medical progress or knowledge. It is simply a statement of facts as they are, and I believe them thoroughly stated. The remedy is, of course, the great problem. I think it lies more in the hands of the bench and bar than it does in the hands of the medical profession or any class of experts. I believe that they could start the machinery in motion that would bring about the necessary reforms better than we can, but that the fact does exist we can not get away from. I know that every one of the members of this Academy have felt when they have testified in various medical cases where some charlatan was introduced and made some absurd statement, that expert testimony was a disgrace to science and justice, and eventually we must find some means of curing this error. I have often

thought when I have heard this subject discussed, that someone must start the machinery in motion, some one must make an effort and bring about this reform. The Academy of Railway Surgeons can do very little, but I think we could do something, and whatever we can do I believe we should put ourselves definitely on record as doing. I would not submit a plan, but the end must be accomplished by the education and elevation of public opinion until it demands some definite, positive change in this matter.

Dr. MILTON JAY—I do not know of any subject that is more essential or of more interest to the physician than this one. Having been for many years connected with the railways of Chicago, I have been utterly disgusted with the testimony from experts, whether they are posted or not. It is an injury to the cause of railroads that we are surgeons of: it is not one time in ten that the injured individual gets justice, and it is never that the expert gets justice. Now I thoroughly believe what Mr. Mather has said on this subject. You go as an expert, you are the chief of local surgeons of the road and you are one of the experts. Dr. Reed says the lawyer tries to tear their evidence to pieces—the lawyer is not worth a cent if he does not. (Laughter.) What is he there for? How long do you suppose a man suing for an injury would employ a lawyer if he did not do his best to get all the damages he could? And the very fact that I am a railroad surgeon, although I undertake to tell what I honestly think is that man's condition, and has been, do you suppose a jury takes my evidence to be as honestly given as though it were given by a man outside the employ of the road? The jury can not do it, and the lawyer can make the impression that I am a little bit biased—and if I am not a little bit biased in its favor the railroad is not going to keep me. (Laughter.) I acknowledge that what Dr. Bevan says is absolutely true, and I do not like to go as an expert for my own company, while the companies tell us, as they do, "Tell what you believe is the condition of things, but if you have to be biased, try to be biased in our favor and get your witnesses to believe the same way." It is human nature and I do not think that is lying. These are the facts of the case. We do not get our dues and the expert does not get his. If he is employed by the plaintiff it is perfectly natural that he is going to help that plaintiff. I have talked within the last six months with the officers of our railroad from the President down, and said: "Can not we get together and get a petition to the legislature to remedy this evil?" Our attorney says, "You can not do that." I asked why. He said, "Because the legislators will say the railroads want it, and they have got to pay for it," and he said, "Good Lord, you would not expect to get anything through the legislature unless there was boodle in it? Have you got a hundred thousand dollars? If you have, I can get anything through." I do not believe we will ever get it by legislation, but if we could get at it in some way, either as Mr. Mather suggests, or in some other way, so that the judges or an association of judges, three or five, in this city should have a staff of disinterested surgeons or physicians, or whatever they might be called, so that out of them the judge should pick one, or two, or three, and that be the only testimony given, that would be disinterested. The point is to get disinterested evidence before the jury. The jury will not consider an employe as impartial as an outsider. I would rather never be an expert than what you have to be under the present circumstances. The Doctor here (Dr. Harnden), thinks he has got the grandest profession in the world, the medical profession. I have found some lawyers pretty well up in anatomy when they come to the cross-examination, and the doctor does not know anything like as much about legal science as the lawyer does about medical science. It is a subject as broad as the surgeon and the railroad and the lawyers that have to do with it, and I say, and have for years, there ought to be some kind of medical evidence, some way or rule adopted

by which the medical expert could be disinterested, not employed by either the defendant or prosecution.

Dr. W. A. WARD—I would like to have the gentleman in his closing remarks explain one thing that he broached in his paper. If this expert medical witness is made an officer of the court and these intricate medical problems are submitted for solution, and upon submitting that report, either verbally or in writing, as the court might dictate, I would like to know if he should be subjected to a cross-examination upon it. He simply does in that function, as I understand the idea, what the judge does in his charge to the jury. The judge elucidates, or attempts to elucidate the points of the law. Now let this commission, or whatever may be seen fit to call it, that is appointed from the medical profession elucidate the medical or surgical principles involved, and let that be as sacred as the judge's charge. If it were rightly conducted, and the proper rules employed, it would stand to the jury in the same relative position, or could be brought up to that position.

Dr. D. C. BRYANT—I want to state for the paper that the gentleman read, that I believe as he does, that the fault lies not alone with the medical or legal profession, but with the law itself. As the law now stands, we, if employed as experts, stand in the same relation to the plaintiff, or the one that employs us, that the lawyer does—the great difference being in the amount of fee received, the lawyer gets the money and we get very little. Out in the wild and woolly west the lawyer saves us from “prostituting our honor” by interviewing us beforehand; first the man who wishes to employ us holds a private interview with us, asking our opinion about the case; if it pleases him then he sends his lawyer the next evening, and the lawyer interviews us, and if we can answer his questions to his liking he employs us as experts; if not, we are turned down, which saves us from “prostituting our honor.” I do not know whether this is done in the East or not, but it is done in the West. I do not see any remedy except as suggested by the writer of the paper, that is, changing the law and have the expert employed and paid by the court and not by the parties.

Dr. L. E. LEMEN—There is one way in which this whole thing can be settled satisfactorily, and until that is done it never can be settled satisfactorily, and that is, to have the expert—let him be medical or any other department—be an officer of the court the same as the Judge. As long as humanity exists the expert will have a sympathy for the one who calls him; it is utterly impossible to be otherwise. A little further in the West, and perhaps a little woollier than where Dr. Bryant comes from, in Denver, when an attorney comes to see us as expert in any given case, he gives us a retainer and places the case before us, and if our testimony is such that it can benefit him we go on the stand; if not, he seeks some one whose conscience is more elastic.

Dr. C. B. KIBLER—I think it was Holmes who once said, “Strong is the blister that will draw upon the conscience of the man of law.” I believe the legal profession is as much at fault in the manner in which the expert medical testimony is looked upon today as is the expert himself. The attorney takes the expert in his hands and he assails him with the questions he has fortified himself with, and makes it appear that the expert does not understand the case; how does he do it? Simply by not allowing that expert to express his honest opinion. The charge can be laid at the door of the legal profession that the expert is such as he is.

Dr. C. K. COLE—The expert does not need to attempt to do this work unless he feels equipped, unless he feels competent. The expert should go upon the stand with the consciousness that he knows more about the subject than any one else, and he should know the law concerning the subject upon which his evidence is given. If he feels that he is not thus competent he should decline to give the testimony. I think we are agreed

that the writer of the paper has not undertaken to make an attack upon the medical profession. He has given us some plain truths and, as he himself terms it, his paper constitutes an indictment, an arraignment, and we can but acknowledge the truth in the main of what his paper says. I believe the medical profession has a crystallized sentiment upon this subject: we are agreed that our function as medical experts is to be non-partisan, to be absolutely fair, and I believe it is as possible for medical experts to be fair as for the judge on the bench to be impartial in his rulings. Professor Bevan speaks of the better side of the medical profession. There are two sides to the medical profession; the charlatan, the ignorant, who is ready to prostitute his position in the interest of the fee, may be compared to that class of lawyers who today in the butchering business, tomorrow elected justice of the peace and the next day are honored members of the bar; those are the lawyers who may be compared with the ignorant physicians who are incompetent and unworthy. I believe the solution of this question lies with the bar, with the better side of the legal profession, who must make sentiment for a better state of affairs and possibly carry out the suggestion in the address of the President, of a commission of experts appointed by the court, similar to the commission existing in France, which shall be prepared to give absolutely non-partisan testimony in cases of this character.

Mr. MATHER—Mr. President and gentlemen: I appreciate keenly all that has been said about my paper, and I accept it as heartily and welcome the criticism that has been urged against it. I think there will never be anything done to rectify the evils of this matter until the conscience of both professions are pricked by the deplorable situation and both impressed with the necessity for impartial expert testimony, and I think it is well both that I should have said some sharp things of the medical profession and as one of you said, that I should be compelled to take the medicine myself. I had supposed that the charge of prostitution that I brought against the medical profession had been so hedged by limitations that it struck those to whom it properly applied. Dr. Reed I think misconceived that portion of my paper in which I said the expert was called to testify to what he thinks and not what he knows. In a legal sense the expert occupies two positions. He is an ordinary witness as to the facts of which he is advised either through examination or treatment of the case; in so far as he testifies to the actual condition he stands on the apparent facts of the case; as for instance, the length of the limb or the extent of its crookedness, he becomes an ordinary witness; he is not an expert in the ordinary sense in which that is used in the courts until he comes to testify to the unseen and hidden things which the eye can not see and which the court, jury and lawyer know nothing about except as they have the opinion of the medical adviser on that point. So that when I said the expert is called to testify what he thinks and not what he knows, I had differentiated those two positions which he occupies. I do not think it is necessary for me to say that no attack on the medical profession was intended in my paper. I have already been able and eloquently defended on that charge. With reference to the suggestion of an official staff of experts, it has occurred to me there is a great deal of practical difficulty in the way of working out the reform through that means. In Germany, as I understand, there is a complicated system of official experts that work up from the county physician, or what is called county physicians with us, to a sort of court of medical review which passes in the last instance on any medical question. I am hardly prepared to believe that our experiment with republican forms of government has demonstrated the entire feasibility of that sort of system here. I think the medical profession will agree that the character of medical men, the class of medical men either by election or selection of the executive to fill the offices of our public institutions that are

required to be filled by gentlemen of your profession, is of such character as to justify any considerable experimentation of that plan. In other words, I believe the influences which surround political selection for public office, either by ballot boxes or appointment of the executive, are such as would not get a high class of public experts, and therefore I am convinced that aside from the suggestion that I have made, that in each case there should be the designation by the court of the experts who should examine into that case and make a report, we ought not to go any further. (Applause.)

WHY ALL PHYSICIANS SHOULD BE PREPARED FOR SURGICAL EMERGENCIES.

Read before North Texas Medical Association, at Denison, Texas, Dec. 8, 1896.

BY J. E. GILCREEST, M.D.

GAINESVILLE, TEXAS.

It has long been a question of no small importance to me, why all physicians do not carefully prepare themselves for surgical emergencies; and especially does that query apply to men who practice in the remote villages, or in the country, where they will certainly be called to attend all accidents occurring in the immediate vicinity. For the older members, who have had the benefit of experience, there is no excuse. For the younger men who are just starting out, there may be possibly, but I doubt it, gentlemen, seriously doubt it. While we have many noble, conservative, earnest and capable young men in the profession, men who will shine in the scientific firmament, we still have two extremes: 1, the bold ones, who are over-anxious to wield the scalpel and thus roll up a large list of surgical operations, the results of which are more or less cautiously exposed; 2, the timid young men, who make a bad break in the very outset of their professional career, by quieting their consciences with the delusion that they will not be called upon to do any surgery, that they do not fancy it as a science, and consequently think it wholly unnecessary to go to any trouble or expense in preparation. The men comprising the first class are dangerous. With an eye single to reputation, they will rush blindly into an operation, without paying any attention to the minor details, so all-important in the successful treatment of recent wounds. They think more of the skilful use of the scalpel or saw, than of the preparation of those very useful instruments; study more about how nice they could do this amputation, or that resection, than how to dress and care for it properly, after its execution. They can very easily find occasion to operate, where the conservative surgeon could not possibly have done so. In short, if they do not curb their false ambition, these men will sacrifice many human lives in order to glorify themselves, and like a sky-rocket, will go on and up, until the explosion, in shape of some glaring blunder, comes, when their descent will be equally rapid, and remorse alone is all that is left to them.

And now we shall investigate those of the second class. The man who enters the ranks of professional life with an idea that he already knows enough for all practical purposes, would do well to commit suicide, for it will prevent him from doing murder indirectly. This class, if possible, is worse than the former, because people very naturally suppose that they at least understand the simpler details, and in consequence depend upon them to do the thing most necessary until more experienced help can, when required,

be summoned. What is the result? They are wholly unprepared. Their gray matter is a muddle and won't work. They get rattled. Everything they do only serves to make matters worse, and so hopelessly upset things generally, that it is sometimes impossible for the very best surgeon to correct the blunders which, taken with the original trouble, end seriously, if not fatally. Now, there is no excuse for all this. Any man can and should qualify himself to cleanse and dress wounds aseptically and antiseptically. The expense is nothing, really nothing, and the rules are easy to comprehend; true, they are strict, yet simple. Let us see what would be necessary for each physician to do, and have, to treat wounds successfully. First, he should spend a few hours in studying up the aseptic and antiseptic treatment of wounds from some recent text-book on surgery. If he has none, he should borrow one long enough for that. He will need in a small bag scalpel, scissors, dissecting and artery forceps and probe, ten yards bichlorid gauze in a sealed jar, bandages, absorbent cotton, antiseptic catgut and silk in bottles, a few needles, a box of green soap, brush and fountain syringe, some bichlorid solution or tablets. The cost of this need not be more than three or four dollars, and with it, it is possible to put nearly all recent wounds in an aseptic condition. But to return to our men. We would not expect a student of the fine arts, the first time he took up his brush or chisel, to execute a painting like the famous Raphael, or to design and execute a masterpiece in statuary like the immortal Angelo. But by careful study of the most minute details, he can and will master his work, if he keeps everlastingly at it. The same is true of surgery. It has its elementary rules, its fundamental principles, and to ever be successful, we must learn them as thoroughly as a child does its alphabet. The following language emanated, I think, from Sir Isaac Newton, just after the famous discovery which will carry his name in reverence among the learned of all future ages. "For I seemed to have been only a child playing on the seashore, diverting myself by now and then finding a smoother pebble or a prettier shell, while the great ocean of truth lay all undiscovered before me." Think of it! "Only a child." A man whose life entire had been given up to the study of science. The language is worthy the modesty of a great and learned philosopher. Such has been the experience of all men who have achieved either ordinary success, or eternal fame; all of them have been close adherents to the most minute details. Now, the first principles of surgery are those of aseptic and antiseptic preparation, dressing and treatment of wounds, recent or otherwise. Once we have this mastered, and can properly execute all points scientifically, we have then a solid foundation laid whereupon a substantial surgical edifice can be built, against which the storms of time or adversity can beat with all the relentless fury of enraged nature, and there stand, a lasting monument to the man who built as he went. We want no pyrotechnic displays, nothing but simple, earnest, honest, conscientious, hard work. We can not afford to either experiment, or treat with dalliance, the human family. Such is not our mission, and when we do so, we become not only professionally insincere and dishonest, but sin before the most high God of the universe, and to Him will be held responsible for any wrong done in cold-blooded experimental work, or from wilful ignorance; and most ignorance, in this nineteenth century, is little else than wilful.

Let us take the matter to our own rooftop. Suppose parent, wife or child should receive an injury, which of itself had it received proper care, amounted to nothing. One of these "don't-want-to-know" men is called, with his untrimmed finger nails, beneath which several generations of different bacteria have been allowed to thrive unmolested for many days. The wound we will presume to be nearly, if not quite, aseptic. How long do you suppose it will remain so under the following conditions? He very carefully gets a kitchen wash-pan, fills it from the tea-kettle, finds after cautiously inserting his dirty fingers therein, that it is too hot, slaps his hands against a pair of not over-cleaned pantaloons until the pain subsides, cools the water from an ordinary kitchen bucket, with great deliberation and care drops four minims of carbolic acid into the pan, and his antiseptic preparation is completed. He quietly tip-toes back to the injured one, looks very wise and the real trouble begins. He pays little or no attention to the broken and bruised pieces of flesh that, at best are of such low vitality as to offer no resistance whatever, but rather serve as an ideal pabulum for the bacteria. He gets a piece of cloth of doubtful origin, immerses it in his solution, squeezes a little water over the injured parts, pokes it once or twice with a dirty probe, binds it up with a piece of "nice soft old sheet" and his work is done. The wound is now thoroughly infected; it suppurates most beautifully; trouble follows; possibly death. Now this man may be called, and probably is, a thorough conscientious physician; but I maintain, that he is responsible for that death beyond any question. And while the law protects him, he is certainly guilty of an ignorance of those details which would have surely prevented all this, hence, is culpable, and ought to be punished. Here is a fact that is true beyond question. In medicine we often meet with indifferent results as to their action physiologically; but in wound treatment there is none of that uncertainty. Good work is always productive of good results. There are many lives lost annually from a lack of this knowledge, and no man is excusable, who has had time and opportunities to qualify himself for this work. The antiseptic method of wound treatment, has, like all good things, been the subject of ridicule by some men, but without cause. It has stood the test thus far, and will continue to do so. Last year Henle wrote a timely and important paper on the antiseptic treatment of recent wounds. He took up the laboratory study of streptococcus infection. The germs were obtained from erysipelas and phlegmons occurring in the human system and were inoculated in the ears of guinea pigs. In some cases they were rendered excessively virulent by a successive series of inoculation, the spleen pulp of animals dead of streptococcus infection being injected into another, the reinforcements being continued. The results showed that the application of bichlorid solution prevented the development of erysipelas. The ear which was not so treated but simply cleaned with water, after thirty or forty hours, became red, swollen and infiltrated, presenting all the symptoms of local erysipelas, while microscopic section showed wide diffusion of the germs. The disinfected ear remained normal, without reaction, saving that which comes from the healing of a clean wound. Microscopic section revealed a complete absence of germs. Beginning with disinfection carried out a few minutes after infection of the wound, and length-

ening the intervals, he found that if bichlorid be employed three hours after infection, even through the most virulent form of streptococcus be inoculated the wound remains reactionless. In some cases where cleansing was not attempted for eight hours, erysipelas did not develop, or if it did, was more mild and slow in its course. Microscopic section showed that the first four hours the germs remained strictly localized. After that, they begin to penetrate the lymph spaces, and were found at some distance from the surface of the wound, hence beyond the action of the most powerful disinfectants. The clinical application of these facts is very clear, as to the value of antiseptic treatment of recent wounds. It has been demonstrated by laboratory research; and to be effected, must be applied as early as possible after the infliction of the wound, and must penetrate to its deepest part; there should be no hesitancy in enlarging the wound when necessary to allow thorough applications to all its parts. But even if the wound be two, or three, or even four hours old, the surgeon by this treatment may hope to avoid suppuration. Now, gentlemen, if wounds that are septic from their manner of infliction and exposure, can be rendered aseptic, why can not all practitioners, by a few hours' study and preparation, cleanse and put a fresh wound in an aseptic condition? For my part, I can see no reasonable excuse. He can do so if he will; and after having rendered that valuable service, can if he does not care to close the wound or take any further surgical responsibility, dress the wound with plenty of moist bichlorid gauze, cover with rubber tissue, retain the whole by bandage, and keep the wound in good condition for any operation that may be necessary; but unless the work is carried out in every detail, it may as well not be done at all. I could mention a number of cases, that have come under my observation the past few years, where lives and limbs have been lost, that might have been saved by strict antiseptic treatment. Doubtless the majority of the association have had similar experiences, so I will not consume your valuable time by reporting them.

THE RADICAL CURE OF HYDROCELE BY A NEW AMBULATORY METHOD.

BY J. N. BARTHOLOMEW, B.S., M.D.

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The tendency of modern surgery is toward methods that shorten convalescence as much as is compatible with safety and toward ambulatory treatment when possible. As far as I have been able to ascertain no satisfactory ambulatory treatment of hydrocele by any radical method has been described. The nearest approach to it being the old method by injection, which in many instances is far from satisfactory. I wish here very briefly to detail a method of treatment that has been put to the test in a few cases with very gratifying results.

Before describing this method I wish to review briefly the operations that have been most used and are usually employed today; to point out some of the deficiencies of these methods and contrast them with the procedure I am about to describe. In speaking of hydrocele I refer to an abnormal accumulation of fluid in the tunica vaginalis testis, the pathology of which is so well known that it need not here be referred

to. The methods most in use at the present day are by injection and open incision. The injection method consists in withdrawing the fluid by means of a trocar or an aspirating needle and injecting some irritating fluid as tincture of iodine or carbolic acid with a view to setting up an adhesive inflammation that will result in the final obliteration of the cyst by adhesion of the apposing surfaces of the cyst wall. This method is successful in about 85 per cent. of cases, in which it is applicable if rightly carried out. It is almost always successful in children and in recent cases in adults. When this method fails the failure is probably due to one of three causes, either a badly selected case (and what is meant by that will be explained later) or too little irritating fluid being used; the amount should be at least one-fourth as much in volume as the amount of fluid withdrawn from the sac, or a failure in the aseptic technique.

There are several classes of cases in which the injection treatment is not applicable. This fact has long since been discovered and these cases have been classified by various authors as follows:

1. In those in which the vaginal process has not been obliterated or in the so-called congenital hydrocele.
2. In old long standing cases in which the walls of the sac are thickened or infiltrated with calcareous matter which prevents the complete collapse of the sac after the fluid has been withdrawn.
3. When the sac is very large.
4. In cases where the surgeon is desirous of examining the testicle by inspection or palpation.
5. In cases of hydrocele complicated with hernia.
6. In debilitated subjects in which the necessary rise of inflammation is dreaded.
7. In cases of multilocular cysts.

By the injection method the patient is usually confined to bed from one to two weeks and the cure is not complete for from four to six weeks, with uncertainty as to cure at the end of that time.

The injection is often extremely painful and after a few hours following the injection the scrotum has become as large or larger than before the sac was emptied. The inflammation does not entirely disappear before the end of six weeks.

Treatment by incision is of ancient date. It fell into disrepute on account of the resulting inflammation that invariably followed the operation before the days of antiseptics. After the antiseptic methods of surgery were introduced the treatment by incision was reintroduced by Volkmann and has since been variously modified by Von Bergmann, M. Julliard and others.

Volkmann's method briefly given is as follows: The hair having been shaved and the skin made aseptic an incision an inch and a half or two inches in length is made over the anterior and lower parts of the sac down to the tunica and all hemorrhage is checked; then the sac is opened and after the fluid has escaped the edges of the sac are stitched to the edges of the incision in the skin. A drainage tube is introduced, the sac is packed with gauze and allowed to heal by granulation, which it will do in five or six weeks. At least two weeks of this time the patient must remain in the recumbent posture with the scrotum elevated. The wound must be washed out at frequent intervals with an antiseptic solution. Von Bergmann modified the Volkmann method by removing all or a part of the parietal layer of the tunica, putting in a drainage tube and closing the incision.

M. Julliard modified this latter method by having a sufficient amount of the parietal layer of the tunica to stitch over the testicle, thus making a new tunica. Others remove only a portion of the parietal layer of the tunica and paint the remaining portion together with the visceral layer with carbolic acid or some other irritating agent with a view to getting an adhesive inflammation, then closing the wound with drainage. By any of these methods the patient is required to keep the recumbent posture for at least two weeks and a final result is not obtained in less than from four to six weeks.

My experiments have been upon the line of an ambulatory treatment with a view to accomplishing a radical cure. The author does not wish to convey the idea that he considers this the best plan to pursue in all cases. We believe that in many cases, especially in children, a cure can be brought about without resorting to the removal of the sac but we believe it is the best method to pursue in all cases in which the removal of the sac is indicated.

The treatment that has been adopted is as follows:

The skin of the entire scrotum having been shaven and rendered aseptic, an incision a quarter of an inch in length is made in the most dependent portion of the scrotum down to the tunica vaginalis, being careful not to open the sac. Then by means of some blunt instrument, as a grooved director, the sac is dissected from the overlying infundibuliform fascia. This is done by inserting the instrument at the point of incision into the cellular tissue space immediately outside of the tunica vaginalis. By sweeping the instrument around the sac through this cellular tissue space the sac is separated from the overlying structures speedily and with the greatest ease quite down to the epididymis on either side. After this has been accomplished the sac may be opened. After grasping a fold of the sac with a dressing forceps the sac is punctured and the contents allowed to escape. The empty sac walls may now be easily drawn through the small incision and divided close to the margin of the epididymis, although it is not essential to the success of the operation that the sac wall be all removed. In cases in which only half of the sac was removed recovery seemed to be as prompt as in those in which it was all removed. The sac having been disposed of, an examination of the testicle is made, if it is deemed necessary, by palpation and inspection. Any granulations or cartilaginous bodies found are removed.

The quarter of an inch incision will now be found to have contracted to less than half its former length, by contraction of the dartos and will require no attention. The incision being in the most dependent portion of the scrotum serves admirably the purpose of drainage.

An important part of this method of treatment is the dressing. The sac having been disposed of, the assistant grasps the testicle and draws it well down, while by means of adhesive strips three-quarters of an inch wide the testicle is strapped, beginning as high as the hydrocele extended and making circular turns around the testicle, each turn overlapping the former one about one-third of its width, until the entire testicle has been strapped, as in a case of epididymitis. No drainage is necessary, as no effusion or hemorrhage will take place; no swelling will or can occur. The patient may be allowed to go about at will and will experience very little pain. The strapping may be removed at the

end of the first week and a cure may be anticipated in two weeks.

The advantages of this method are: It is extremely simple and applicable in all cases. It does not confine the patient to the bed or to the house. In many cases an anesthetic is not required. The dangers of hemorrhage and sepsis are reduced to a minimum. A cure can be anticipated with almost absolute certainty.

133 Lincoln Avenue.

THE BEST METHOD OF STERILIZING CATGUT.

BY I. S. STONE, M.D.
WASHINGTON, D. C.

The following method of preparing catgut has none of the disadvantages which have heretofore prevented the general use of this valuable suture material.

It is unnecessary to wash the gut in ether. The gut (Nos. 0 and 1) is cut in pieces eighteen to twenty-four inches in length, loosely coiled and placed in water for twelve hours at ordinary room temperature, to "swell it." This suggestion of my friend Dr. Kinyoun is a good one, for the obvious reason that the formalin solution will penetrate the more readily into the interior of the gut. I formerly wound the material on glass spools, but soon abandoned the idea, because it became so tightly and firmly contracted around the spool as to render it possible that the formalin solution could not penetrate to the deeper layers of the gut.

The gut is taken from the water and placed in a 5 per cent. solution of the ordinary 40 per cent. solution of formalin found in the shops, where it may remain twenty-four to thirty-six hours. It is then thrown into a jar containing absolute alcohol, where it may remain indefinitely.

The writer can positively confirm Dr. Senn's recent notice of formalin catgut, and can certify that it will be strong and reliable in every way after boiling for ten minutes in water. This simple method leaves nothing to be desired. Anyone can use it, and there is positively no longer any reason to rely upon such material as we find in the shops. Every surgeon can easily prepare his own material, and do so without loss of time. Catgut prepared in this way will be found to meet every requirement in surgery where absorbable material is required. There is rarely any need for catgut in abdominal operations until we are ready to close the abdomen, then the small size 0 or 00 for everything but the fascia. The No. 1 is best for that. In the skin the smaller size will become soft in ten days or two weeks. In the cervix and vagina the material thus prepared will be found eminently satisfactory. The small number is the proper one for most operations. In hernia the No. 1 is better and should be allowed to remain rather longer in the formalin solution. I have seen Dr. Edebohl's catgut made strong and sterile after his well known formula, but there is very much less trouble by the later method, and the formalin solution does away entirely with the necessity for bichromate of potash or chromic acid hardening. It is not absolutely necessary to boil the gut, as it gives perfect results without this precaution.

1449 Rhode Island Avenue N. W.

Let us have a Department of Public Health!

THE SERUM REACTION IN HOG CHOLERA.

BY JOHN E. CASHIN, M.D.

PROFESSOR OF BACTERIOLOGY, HOSPITAL COLLEGE OF MEDICINE; BACTERIOLOGIST TO STATE BOARD OF HEALTH OF KENTUCKY; PATHOLOGIST TO THE GRAY STREET INFIRMARY, LOUISVILLE, KY.

The success which has been obtained in the serum diagnosis of typhoid fever led me to try an experiment with this method as an aid to the diagnosis of hog cholera, an affection due to a motile bacillus, the lesions of which, in the chronic form of the disease, resemble somewhat typhoid fever of the human subject.

Dawson (New York *Medical Journal*, Feb., 7, 1897) reports having obtained the reaction with the blood of a rabbit after inoculation with a bullion culture of the hog cholera bacillus, the reaction appearing promptly after injection.

An opportunity presenting itself a few weeks ago, I isolated the bacillus from an acute case of hog cholera and tested the agglutinating power of the blood serum of different animals upon it with the following result: Human blood serum from the placenta and dried blood from the finger tip, no effect; horse serum, no effect; rabbit serum, no effect; ox serum agglutinated strongly. A trace of ox serum added to an actively motile culture of the hog cholera bacillus caused immobility before the microscope could be brought into focus. Clumping was noted in from one-half to three minutes.

The normal serum of the hog was found to be without effect. The reaction appeared in the blood of two pigs forty-eight hours after the subcutaneous injection of $\frac{3}{4}$ c.c. of a forty-eight hour old virulent bullion culture of the hog cholera bacillus. No signs of illness have appeared in these pigs, except in one case a small abscess at the site of the needle puncture. Nearly a month has elapsed since the inoculation and the reaction in their blood is as well marked as ever. It is still present in a pig which had a severe attack of cholera four months ago. As to the length of time the reaction persists after experimental infection or after an attack of cholera, I have not yet determined; but inasmuch as pigs are usually killed when ten or twelve months old, it would seem reasonable to suppose from what has been observed that it remains during the brief period of existence allowed to most pigs.

The technique in making the diagnosis of hog cholera does not differ from that used in other infectious diseases to which the method has been applied. An incision is made in the skin of the ear of the pig and a few drops of blood collected upon a glass slide or a piece of smooth stiff paper. The blood, if it has been allowed to dry, is moistened with a drop of water and some of it transferred to a cover glass on which has been placed the hog cholera bacillus, either from an agar tube or a bullion culture about forty-eight hours old. The liquids are mixed and the cover glass inverted over a hollow slide and examined with a magnification of 450 or 500 diameters. Fresh, virulent, highly motile cultures exhibit the reaction as well as more attenuated ones, and it appears to me better, when ox serum was used.

It seems this method will be a valuable one to veterinarians and others, enabling them to make a speedy and correct differentiation between cholera and swine plague, anthrax and other diseases of swine during the life of the animal; and that it will be of service in the study and differentiation of the various bacte-

ria which have been described in swine diseases in this country and abroad. One might be able in this way to determine quickly that a specimen of meat, if fresh, came from an animal with cholera.

The following cases illustrate some practical applications of the reaction which I have made in conjunction with Dr. F. T. Eisenman, V.S. A sick pig, belonging to a herd in which there had been two deaths from what was supposed to be cholera, was donated for study. The reaction was not present. Two days later the pig died. At the postmortem examination a fibrinous pericarditis was found, but no lesions of hog cholera. Cultures from the heart, pericardium and spleen showed the staphylococcus pyogenes albus alone. In another case which we examined, and in which the reaction was not found, diarrhea was the most prominent symptom. The pig recovered. This was probably an intestinal disorder brought about by improper feeding.

In four cases examined I have obtained the reaction during life and verified the existence of cholera by postmortem examination.

The clinical symptoms of hog cholera and other swine diseases are very uncertain, and as by early diagnosis often much can be done to prevent loss, this method should commend itself to veterinary practitioners, should further trial show it to be reliable.

ANTITOXIN—SOME MEDICO-LEGAL ASPECTS OF ITS USE.

BY JAMES L. TAYLOR, A.M., M.D.

WHEELERSBURG, OHIO.

In the issue of the JOURNAL of February 27, Dr. Chas. T. McClintock of Detroit discusses, in an admirable scientific paper, one of the most intensely interesting questions now before the medical profession, viz.: the cause of death in hypodermic serum medication. The doctor shows conclusively that the injection of air along with the serum is not an adequate explanation of the reported accidents. He also points out that carbolic acid or trikresol used as a preservative of the serum is still less likely to be causative of these mishaps, and that experiments seem to show that the serum *per se* is not responsible. What the true cause may be, the doctor believes to be at present unanswerable, and prefers to give definite form to our ignorance by calling it "shock."

The profession will certainly not remain satisfied with thus merely giving a name to our ignorance. The phenomena heretofore reported when accidents have occurred, and which so far as we know are liable to be repeated in any injection hereafter made, are too fearfully significant in their effects on both practitioner and patient, to be thus lightly put away.

No other agent now employed by the profession stands in the same category as antitoxin. It holds the unique distinction of occasionally causing sudden death, or an alarming condition of prolonged collapse, when administered to persons in perfect health. The anesthetics do not belong to this category, for they are not employed as therapeutic agents proper. They simply paralyze temporarily the centers of the nerves of sensation, and it is not strange that this paralyzing action should occasionally extend to other centers than those of sensation. The condition of anesthesia is recognized as one of profound danger and its effects are procured with a due sense of the risks involved. But antitoxin which is an alleged

remedy *per se* stands upon an entirely different footing. The recognized function of an anesthetic is to annul pain, which it invariably does, while the alleged function of the serum is to overcome disease, and its action in this role is in any case more or less problematical. The fact that its effects are not uniform is what gives us pause. When we can not be sure whether it will elevate the temperature of a patient or depress it, retard or accelerate the heart's action, develop albuminuria or erythema, or pustular inflammation at the site of the injection, or perhaps cause symptoms of temporary paralysis, and occasionally an alarming condition bordering on collapse and sometimes instant death, it is far from satisfactory to be told that the statistics of mortality tables are favorable to its use.

Moreover the physician is always believed by the laity to know what he is using, and what the effects of his treatment will be. He is employed and enjoys the confidence of his patrons because of his supposed expert knowledge. And when he employs an alleged remedy which may kill instead of curing without knowing why, can it be said that the confidence reposed in his expert knowledge is justified? Will it serve as an answer, if, in a given case, an accident should occur, to say that the general results of the remedy and the indorsement of the profession warrant its use? The fact being established that the use of the remedy is sometimes followed by unexpected consequences and even death, would such an answer exculpate the practitioner in case legal proceedings were instituted against him? Not long ago the daily papers reported the arrest of two physicians by a husband for causing the death of his wife by the administration of chloroform. Under proper precautions death in such cases is sometimes unavoidable, and in a sense therefore thought to be legitimate. Could an accident following the use of antitoxin be defended on the same grounds as a death from anesthetics? The medico-legal aspects of the question are of profound interest to every practitioner, and in the present state of our knowledge, no one who makes use of the antidiphtheritic serum can know that he will not be confronted with its unexpected and untoward consequences.

From a scientific standpoint it is greatly to be regretted that where accidents have occurred, a portion of the serum used in that particular injection had not been subjected to a careful examination. A resulting accident is the only experimental proof that can be had of its toxicity in the human subject, and unfortunately, from obvious prudential motives, an examination in such cases is not likely to be made. Hence it is difficult to determine experimentally whether a given specimen of the serum possesses toxic properties or not. Obviously the general practitioner can not make tests of each specimen used for himself. He must rely on the guaranties of purity furnished by the manufacturer, and it is from the use of these guaranteed specimens that all the reported accidents have resulted.

Unfortunate results have been ascribed by some to a supposed idiosyncrasy on the part of the subject. This explanation is manifestly inadequate. As the term idiosyncrasy is ordinarily used and understood, it may account for variable physiologic manifestations, but another term is employed where the unexpected phenomena are associated with sudden death. Idiosyncrasy may be properly used to designate such minor constitutional

peculiarities as fainting at the sight of blood, or at the scratch of a vaccination, or a hypodermic injection. But these effects are as transient as they are sudden. Even where unexpected and unusual consequences are more prolonged, as when laudanum purges, or water-melon causes hoarseness and nausea, or green tea acts as a powerful diuretic, or mercury produces pytalism, there is in these cases no menace to life. But when an agent acts upon the nerve centers with the rapidity and energy of concentrated hydrocyanic acid, the term to be used here, we submit, is not idiosyncrasy. Such effects can be produced only by a virulent poison. Indeed the action of the serum in these cases more nearly resembles, than anything else, the effect produced by serpent venom in instantly overpowering the nerve centers when injected in relatively large quantities into the smaller animals.

It seems to me that a much more rational explanation of the ill effects of the serum may be deduced from the fact that it is an animal product, and like all other animal matter has a tendency to undergo change. Indeed the manufacturers of it admit that age changes its composition and diminishes its immunizing power. If it undergoes change therefore, in this respect, how may we know that it does not become profoundly altered also in other particulars? How are we to know that the carbolic acid or trikresol employed to preserve it has in every case done its perfect work, and that some portion of the fluid, even a minute quantity of it, may not have degenerated in the direction of putrefaction? Now it is quite conceivable that a change of this kind should produce exactly the ill effects heretofore noted. If a scratch at the dissecting table induces blood poisoning, what might we expect from the introduction of a quantity of effete matter directly into the blood current?

Whether the use of even a recently prepared serum would in no case be attended with ill consequences may be considered as yet unsettled. Observations as to the physiologic action of antitoxin are too conflicting to warrant conclusions. The fact that it does not neutralize the diphtheria toxin, but stimulates the cells of the body to more effective action, throws no light on those cases where pernicious effects have followed. Dr. McClintock is undoubtedly correct in holding that as to the real cause of these exceptional cases we are still in the dark. But when an agent so perfectly simulates a virulent poison as antitoxin sometimes does, are we not driven to the conclusion that the specimen responsible for that action is a poison? And if there is no means of detecting its toxic nature are we justified in recommending and using as a remedy an agent in which such danger lurks? This question is not raised here as an ethical conundrum or a speculative supposition. It is a problem of intense interest by reason of a horrifying accident having occurred within our cognizance as the readers of the JOURNAL know, and no physician using this remedy can be sure that the same misfortune may not overtake him.

There is another aspect of this question which would seem to merit more consideration than it has heretofore received. When the ill effects of the serum are exhibited in a fatal termination or in the sudden supervention of alarming symptoms, its injurious nature in those particular cases is sufficiently obvious. Now is it conceivable that these gross and pronounced manifestations are the only bad effects following the use of the remedy? Is it according to any analogy

with which we are familiar to suppose that a given therapeutic agent, where it does not kill, will be likely to cure? On the contrary is it not in a manner certain that in a lesser degree there may be any number of gradations in the less obvious ill effects following its administration? Whatever the toxic element may be, is it not reasonable to infer that there may be every degree of variability in the activity of the toxin between the innocuous preparation and that which acts with deadly effects? On what principle can it be assumed that in all cases where it does not endanger life, it of necessity acts in the opposite manner? The only answer that has been given to this question thus far is—statistics. No man can be absolutely sure that any given case of diphtheria where antitoxin has been used would not have recovered without it. For sometimes, as every physician knows, the most desperately malignant cases apparently, recover unexpectedly under the usual methods of treatment. While cases that do not seem so desperate often succumb notwithstanding its employment. So the question again recurs—are statistics a logical basis for determining upon a mode of treatment involving the use of an agent of acknowledged danger?

The serum treatment, as a theory, in view of its splendid possibilities, is one of the most captivating that has ever engaged the scientific mind. Medical men all over the world have watched its rise in almost breathless expectancy, feeling that such a magnificent generalization deserved to be true. And there is no right minded man but would rejoice if its highest claims could be substantiated. The reported casualties therefore attending the treatment have been received in the nature of a profound disappointment. The writer hereof has used the serum in a number of cases, at first with confidence begotten of the sanction extended to it by great names, but more recently with fear and trembling, and never without the expressed authorization of the legal custodians of the patient.

But for one to be thus driven, through motives of self-protection in case of accident, to refer the decision of so important a matter to a family necessarily without expert knowledge, is a unique and most unsatisfactory position to be occupied by the physician. Yet this is the attitude now invariably assumed by a number of physicians in this region, and no doubt by many others of the profession elsewhere. Hence an authoritative decision, if in the nature of the case one could be had, determining ones rights to employ antitoxin as a legitimate remedy, would be hailed as a desideratum. No doubt the matter will finally come up for adjudication, but in the mean time we are all hopeful that the occasion for it will not spring up out of the circumstances of our own practice.

THE AUSCULTOSCOPE OR PHONENDOSCOPE VS. THE BINAURAL STETHOSCOPE.

BY CHARLES DENISON, M.D.

DENVER, COLO.

I am asked my opinion of these new-fangled affairs I have tested them enough to know that they can never supersede the stethoscope, if the latter is properly constructed.

The auscultoscope bell gathers the sound from too large an area, as large as would the bell for stethoscopic percussion which belongs to my stethoscope, diameter three inches. The sounds are thereby con-

fused and not differentiated as they should be. To use the auscultoscope is too much like putting the whole side of your head against the chest wall. This confusion with an admitted exaggeration of impulse sounds, as are the heart sounds, is a positive hindrance to any one who has been used to getting definite information out of a stethoscope. I do not believe it is any credit to a physician to be or appear to be satisfied with any such uncertain and mixed-up results.

If the area of impingement of the bell against the chest wall were one-half or one-third this size, and then this bell were used in a nearly perfect transmitting instrument such as the last make of my stethoscope, by the Denver Surgical Instrument Company, then the exaggeration of sound would be in a degree corrected by definite transmission, which those little, long, soft-rubber tubes can never possess. Even then the sound will be perverted by the vibrations of the diaphragm of the phonendoscope. The kind of a sound needed is an accurate representation, clear and distinct, not some perversion which has to be dissected to get at the real thing. It calls in question the acoustic acuteness and diagnostic proficiency of many self-satisfied physicians to see the useless combination of little pipes and soft-rubber tubes which, under the name of "stethoscope," they carry in their coat-tail pockets. I feel like urging them to put their cheap affairs to the same test I put my own stethoscope several years ago, when comparing it with all those of English or any other make to be found at Down Brothers in London. It is this: Place a watch on a glass counter or any table and cover it with the palm of the hand, while with the other hand you press the bell of the stethoscope firmly on the dorsal surface. If the two bells of the instruments being compared can not be equally imbedded in the flesh so as to alike exclude the outside air, then put the back of the hand on the watch and press the bells in the palm while you listen to the watch ticks. The best results under such conditions—clearness, distinctness and naturalness of sounds—determine the best instrument for cardiac and lung examinations. There is here plenty of reverberation and exaggeration of the watch ticks to make this a very delicate test, especially with weak-ticking watches. At the same time the conditions, as to passing sound through bone and flesh, are very similar to the detection of valvular sounds and murmurs. It is a fair and delicate test by which any physician may gauge the accuracy of his own instrument. Measured by this test, the auscultoscope or the phonendoscope (practically the same thing), even with their too large area of impingement unaccounted for, are not "in it" with my stethoscope with the medium-sized bell. Whether the principle of the auscultoscope can be incorporated in a modified instrument, having a smaller bell and perfect transmitting arms, in a way that undue drum-like reverberation will be displaced by naturalness remains to be seen.

CERUMINOSIS OBTURANS.

BY LEWIS S. SOMERS, M.D.

PHILADELPHIA, PA.

The ceruminous glands of the external auditory canal secrete small quantities of a semi-solid, light yellow substance, called cerumen or wax. The secretion is produced in such small amounts as to be

unnoticed and by the action of the lower jaw is propelled toward the exterior of the canal, entangling small foreign substances and to a certain extent protecting the deeper and more delicate structures. If for any cause the secretion of cerumen is increased in amount or by osseous or other changes, the configuration of the canal become altered; this outward movement is restricted and the cerumen being retained, undergoes change producing the condition known as ceruminosis obturans, or more commonly called impacted cerumen or wax plug.

The size and density of the cerumen mass varies with the secretory activity of the glands and the length of time which it remains in the auditory canal. The increase in size is gradual, depending to some extent upon the location of the foreign body forming the nucleus, or the small amount of inspissated cerumen acting as such. If this foreign body irritates the glands by its immediate relation to them, there will be an increased secretion poured forth, rapidly augmenting the original body in size. The condition is seen most frequently in adults, especially after the age of twenty years. Sex does not seem to exert any influence as a causative agent, the cases seen being about evenly divided between the sexes, although the males slightly preponderate.

The pernicious habit of cleansing the ear with a small sponge or ear spoon is responsible for a large number of cases; the patient endeavoring to remove the small particles of offending material, only succeeds in pushing particles of wax beyond the isthmus of the canal, where it lies acting as a foreign body finally requiring skillful measures for its removal. Children are very apt to insert buttons, small pieces of paper and various other foreign bodies into the ears and forget all about them; probably ten or twenty years later sudden deafness will take place due to a cerumen plug with the foreign body as a nucleus. Some cases are undoubtedly neuro-trophic in source, due to excessive glandular secretion from a purely nervous origin. It has been claimed that the condition is most frequent in those liable to free perspiration, especially of the head; this seems doubtful, but may indirectly be an etiologic factor by associated trophic changes. Most frequently the condition has been seen in my experience, in those in which the entire glandular system was most active and especially in those of dark complexion.

On examination of the removed cerumen it will be found to contain scattered through the mass and especially over the surface, vegetable spores, epithelial cells derived from the canal walls, various kinds of debris and in many cases a foreign body forming a nucleus. The pressure of a large cerumen mass on the canal walls or membrana tympani may produce widely varying results. When the plug is very large in size and remains in situ for a long interval of time, inflammation and atrophy of the canal is apt to take place and finally chronic otitis occur, resulting in obliteration of the posterior wall and mastoid cells with a true osseous sclerosis, the bone becoming of ivory-like hardness. Or a desquamative inflammation may result with bony changes and large dilatation of the canal walls, especially the posterior. The membrana tympani may become inflamed from pressure and even perforated, resulting in morbid changes in the middle ear, which if infected and suppurative otitis results may occasion serious damage. Occasionally the cerumen will adhere in part to the

tympanic membrane, which during removal, unless great care is exercised, will be ruptured.

The symptoms depend upon the size and location of the plug and may conveniently be divided into local and reflex. A large concretion of cerumen may exist for years and produce no symptoms, while minute particles of wax adhering to the drum membrane may produce intolerable discomfort. As a general rule, the disease exists for a considerable period of time without the knowledge of the patient and may only be discovered accidentally, especially after swimming, or come on suddenly after washing the ears, the patient thinking from the sudden deafness or feeling of "stiffness" present that water has gotten into the ear. The usual local symptoms are partial or complete deafness in one or both ears, a feeling of "stiffness" referred to the auditory canal, tinnitus and rarely autophony and pain.

Occasionally there may be a feeling of tension in the head almost amounting to actual vertigo. The degree of impairment of hearing depends upon whether sound waves can pass through the canal or not, this varying with the size of the obstructing mass and degree of adherence to the auditory walls. Tinnitus seems to result from two causes, atmospheric pressure changes due to the obstruction to the free change of air in the external canal and secondly to the pressure exerted by the mass on the blood supply of this region. Autophony occurs when the cerumen plug is very large and entirely obstructs the canal, and is usually observed unilateral. The amount of pain will depend upon the degree of irritation exerted by the wax on the soft tissues of the wall; the pressure may be so great that from simple irritation and congestion we may even have ulceration, the morbid secretions being pent up increasing the discomfort of the patient.

Sudden onset of the symptoms may result from picking the ear or from a sudden jar or concussion, such as a blow over the auricle. In many cases the symptoms come on very gradually, the patient complaining only of a slowly increasing deafness for six months or a year. McBride has reported an interesting case in which there was gradually increasing impairment of hearing due to a cerumen plug, which when removed rendered the loss of hearing much worse; the mass acting as an artificial drum, the membrana tympani having been perforated.

The reflex symptomatology is varied in character and may be dismissed in a few words. As the canal is profusely supplied with nerve branches from the adjacent trunks the variability of the reflex phenomena may be readily explained. Among the more prominent reflex symptoms reported are neuralgia, numbness along the course of the nerves, cough peculiarly hard and spasmodic in character, varied mental disturbances, epileptiform attacks, sneezing, facial paralysis and blepharospasm. These reflex phenomena are comparatively rare, although cough is more or less frequently seen. Some cases where the cerumen obstruction is unilateral present changes in the well ear; these changes have not been thoroughly studied, but are usually due to over stimulation of the nerve apparatus of the well ear, this side doing a compensatory work becomes fatigued, as it were.

The diagnosis of the condition can only be made by a visual examination of the auditory canal. Under proper illumination the mass of cerumen will be seen lying in the canal or entirely filling it. If the con-

dition has existed for a limited time the cerumen will be seen as a brown sticky mass, and if of long duration will be hard and black, or grayish-black in color, the lighter gray color depending upon the amount of desquamated epithelial cells present.

Treatment consists in the removal of the cerumen and attention to any pathologic changes that may have taken place as the result of its presence. Removal may be effected immediately after the diagnosis has been made, or, if the cerumen is very hard, may be postponed until softening of the plug has been effected. The best policy is to remove as soon as possible, as there may be some morbid changes such as an acute or purulent otitis present, and if solutions are instilled into the canal to soften the mass, serious damage may result. About the only class of cases in which removal may be postponed are those where the wax is extremely hard, the patient nervous and an unsuccessful attempt made at removal. In these cases a solution of carbonate of soda in water, or glycerin, or a spoonful of warm water is dropped into the ear for several successive days, when removal can be easily accomplished.

In the majority of cases the mass may be readily removed by syringing. The stream of warm water is directed against the canal walls successively so as to effect dislodgement. If this method is not effectual, a dull curette or ear spoon may be used carefully, to remove small pieces of the cerumen until the canal is clean and free. Extreme care must be exercised in using any instrument in the ear, to avoid injuring the walls, and especially the membrana tympani. In using the dull curette the topography of the parts must be kept in mind, remembering that the upper and posterior parts of the tympanic membrane are nearer to the external meatus than the lower and anterior portions. Should middle ear disease be suspected, with perforation of the drum, mild antiseptic solutions, such as 1-10,000 bichlorid of mercury are indicated, instead of the ordinary fluids used in the syringe. If an external otitis exists, or the canal is unduly sensitive, the central portion of the plug should be taken away with the curette, avoiding the walls as far as possible. After this portion has been removed and a mere shell of cerumen remains adhering to the walls of the canal, gentle syringing will readily remove the rest of the material.

As rare results of the removal of large masses of the cerumen, have been reported rupture of some of the small vessels of the canal, with the formation of a hematoma; or long pressure, diminishing the tonicity of the vessel walls, transudation of serum into the middle ear has occurred. If efforts of removal are long continued, or traumatism inflicted on the canal, hyperemia, inflammation or even furunculosis may result.

After removal of the cerumen mass the membrana tympani will generally be slightly congested, especially over the area of the manubrial plexus. This will disappear in a few hours and need occasion no alarm. The after-treatment consists in inserting a pledget of cotton in the meatus and directing the patient to remove it in twenty-four hours. Should the canal wall be inflamed the case is then treated as one of external otitis.

A LEGACY TO A NEW YORK HOSPITAL.—The treasurer of the German Hospital, New York city, has received a bequest of \$10,645 from the John Roth estate. The executor added a personal gift of \$50 for a tablet in memory of Mr. Roth.

SOME AMUSING INSTANCES OF NASAL REFLEX.

Read before the American Laryngological, Rhinological and Otological Association in New Orleans, March 3, 1897.

BY ARTHUR G. HOBBS, M.D.
ATLANTA, GA.

It was not without some misgivings that I thus christened this little paper, because some might regard it as a too flippant manner of approaching so scientific a subject as nerve reflexes; a subject fraught with such subtleties and as yet so suggestive of unknown quantities. Also because there may be others who can never look upon nature's phenomena as amusing, however, vagarious and unexpected they may at first appear.

While these instances of nerve reflex manifestations that I have dared to call amusing are no more wonderful than many others somewhat similar but more familiar to us all by reason of their frequent occurrence, nevertheless for this very reason, together with the particular organs involved, many of us at first can not avoid seeing the ludicrous side, however easy the scientific explanations, by analogy, may seem. Familiarity with frequent recurrences of nature's perversions does not breed contempt, but it does dull the sense of the ludicrous. Still, I have a feeling even now, that I should have said: "Some Interesting Instances of Nasal Reflex." If they are not *amusing*, I can hope that they may be at least in some degree, interesting.

I had never seen but one case of priapism, and that was in 1879 during my term in the New York Hospital, until by accident the second case came under my observation in 1888. A young cashier was driven from his rooms to my office in a close cab wearing an overcoat on an August day. He had been confined to his rooms more than two days with a painful attack of priapism for which he said he had run the gauntlet of all treatments, from hot and cold water locally to salines, opium and apomorphia internally, without any effect. He looked haggard and pale and in many ways the results of his great suffering were plainly shown. The object of his visit to me was to be relieved of an acute rhinitis accompanied with an almost complete nasal stenosis. I sprayed the nose slowly but persistently with a solution of cocain in albolene until the engorged turbinal tissues relaxed sufficiently, within about five minutes, to allow a comparatively free passage of the spray through both nares. About this time, with an expression of great joy, the young man exclaimed: "Doctor, not only is my nose free, and I am relieved there, but see! it has all gone down, and I am perfectly easy." His cocain exhilaration was scarcely perceptible, and indeed I would not have recognized any but for my anticipation that there might be some. As the nasal turgescence disappeared so did a complete relaxation in the principal organ of erectile tissue follow. How singular it was that a second case of priapism should have followed in the latter part of the same year, and yet in the nine years that since passed I have not seen or known of another case. This second case—a young man aged about 22—was in many respects similar to the first, except that he had suffered only intermittently, but during a longer period, five days. And yet his relief lasted only during a decided opium narcosis and pain gradually returned when the effect of the narcotic began to decline. His exposure to frequent applications of hot and cold water had probably

caused the acute aural catarrh, with a moist and stuffy nose, notwithstanding the large amount of opium he had taken. The subjective symptoms of pain and tinnitus together with the visibly retracted drum membrane suggested a nasal spraying with the same cocain solution in albolene, that I had used in the first case, before inflating. This young man had come to me for his aural and nasal troubles, and I was not aware of his priapism until after I had relieved it indirectly. His exclamation of delight was as prompt and no less decided than the cashier's. I saw both of these cases several times during the succeeding two or three days. There was no intimation of a return of a priapism in the first case, and in the second, only in a slight degree several times.

The soft tissue that covers the turbinal processes is not histologically dissimilar to the corpora cavernosa, hence the question: Was the distal effect by reflex, or through the direct systemic influence of the cocain on the arterial constrictors? Would cocain have produced the same result during its exhilarating stage had it been administered otherwise?

Although I have been using cocain constantly from the early eighties, indeed since I received a consignment of a part of the first half ounce imported from Koller's laboratory, I did not know as much of its potencies, nor did anyone else then, as the novice thinks he knows now. Yet will our present knowledge of the therapeutic properties of this drug explain how it effected these results?

I casually mentioned these two cases of priapism before the Atlanta Academy of Medicine about seven years ago, in a discussion on an allied subject, but do not remember that my remarks were ever published.

An unaccountable sneeze is produced in some persons merely by an erotic thought when accompanied by the desire and the anticipation of its fruition. All whom I have questioned upon this point say that the sneezing reflex passes off long before the usual and more important erectile area has been stimulated to its full limit of distention.

I do not doubt, from the accidental way in which some seven or eight such instances have come to my knowledge, that many more men are endowed with this faculty than we know of. From the descriptions it is characteristic and quite unlike the sneeze that first announces a cold.

A gentleman once described his own case to me more graphically than I can repeat it. While walking, he said, one evening arm in arm with a lady, his wife who was but a short distance in the rear was surprised at hearing a succession of sneezes that she first mistook for his characteristic sneeze, with which she thought she was quite familiar; but later on she was amused and no doubt delighted too, when she realized that what she had heard was only the ordinary commonplace bad cold sneeze (?) that any man might, unfortunately, contract at the wrong time. A young man has confided to me that he was constantly mortified and placed at his wits end in making excuses to his sweetheart on account of his susceptibility when with her, to drafts (?) that she could in no way discover.

Several men, with my encouragement, finally acknowledged that this little tell-tale reflex had been their principal cause for consulting me. A prominent physician very graphically described his own experience with these dual reflexes. It came to him so insidiously, he said, that he could scarcely realize it. Indeed his wife had become quite familiar with

the characteristics of his forerunner long before he would himself acknowledge it.

None of the means that are ordinarily resorted to can suppress this sneeze; it simply means to announce that "Barkis is willin'," or would like to be, at least, that such an idea exists in the brain of its victim whether or not it can be properly and effectually reflected.

In all of the cases without an exception it would appear that the effect on the sneezing area has come and gone before the mental reflex stimulus has had time to reach its usual result of erectile perfection. A sneeze is one of the most typical examples of a nerve reflex and while the neurologist can only construct a beautiful theory to explain its incentive and conductive factors, pathologists agree that the final result is brought about by the swelling of the erectile tissue covering the turbinal bones. The histologic similarity between the turbinal tissues and the corpora cavernosa is quite sufficient to cause no sense of wonder or surprise when a mental impression that excites one should also excite the other even within pathologic bounds, although we are accustomed to regard the one as an entirely physiologic function and the other as distinctly pathologic.

The instances just cited prove, however, that it is only the turbinal tissue that possesses the dual capacity of responding to either a physiologic or a pathologic stimulus, also that its response to a mental stimulus always precedes the more important effect below and is lost before the distention of the corpora cavernosa is complete. It may be answered that a priapism is a pathologic condition and yet its beginning is physiologic.

Is it not fortunate too, that every time we get our feet wet the reflex result on this lower and larger erectile area is not the same that is so often produced on the turbinal tissue by an over stimulus from an external source?

It has not been my intention to treat this subject lightly. It is too closely allied to one that men generally, I believe, do not disregard, "with but a single thought." But seriously, I do think the paper could be more appropriately read before a section on neurology, unless we can claim that rhinologists can be neurologists too, at least in some particular directions when they choose.

I would be glad to receive a short history from any one of any case apropos to this subject of reflexes, and will promise to give due credit to the writer in a future, and I hope more comprehensive paper.

P. S.—During the short interval since I read this paper I have been much gratified by receiving a number of letters from those who have seen its first epitomized report; many of these letters contain promises of short reports to me of cases either bearing directly on, or closely related to, the subject of *erectile tissue reflexes*. This subject is an evolution (so far as it has evolved) of the last six or eight years, and is not one of my choosing. Yet I confess a desire *now* to evolve it still further, if I can obtain sufficient data.

A METHOD OF PRESERVING UNBOUND LITERATURE WITH SUGGESTIONS REGARDING A SYSTEM OF CLASSIFICATION.

BY D. H. GALLOWAY, PH.G., M.D.

CHICAGO, ILL.

Probably the majority of physicians regard the unbound literature in their libraries as an unmitigated

nuisance. They may see much of interest in this literature when received but the likelihood of being able to find it again when wanted is so remote that it is generally consigned to the waste basket. Any plan which will rescue this material from the waste basket and make it useful ought to be received favorably by every one who has realized how difficult the subject is. The problem of preserving unbound literature, so that it is available for convenient reference, is so difficult of solution that few attempt it and those few usually get swamped before the amount of material becomes very great.

A system to be valuable, must conform to the following requirements:

1. The scheme must be so simple that it can easily be carried in the mind and it must require the minimum of labor to establish and to keep it up.

2. Each article or subject must be accessible without delay or inconvenience and without handling or interfering with any other material which is not wanted.

3. The different articles on any subject must come together so that everything on that subject can be obtained as easily as any portion of it.

4. It must be capable of unlimited expansion so that all new material falls naturally in place beside that already in hand on the same subject and so that new subjects may be introduced without interfering with the previous arrangements.

5. The arrangement must be compact; so that the library occupies no unused space. A hundred titles should occupy no more room when they constitute the entire library than they do when included in a library of 10,000 titles.

6. Every article or pamphlet should be a unit and capable of separate classification and of being moved independently of all others. The only exception to this being pamphlets or articles having exactly the same title.

Since the material is so easily damaged or destroyed everything in this library should be protected from injury and even wear, when not in actual use.

I have a system in use in my own library which, while not altogether unique, is entirely original with me. It conforms to all the requirements outlined above and as I know there are many who have felt the need of such a system, I have thought it worth while to publish mine. This system is applicable to any kind of literature and I carry it into all the realms of science included in my library. Unbound pamphlets of all kind are put into large envelopes and each envelope is treated as if it were a book. These envelopes may be sandwiched in with other books on the library shelves or they may be assigned to a section by themselves. I prefer the latter, thus drawing a sharp line between the bound and the unbound library. With this short statement of what I have done in my own library, I will go into the details of my work so that others wishing to do likewise may be saved the great amount of experimental work which I went through before the difficulties were overcome and the system made satisfactory. After many changes and much experimenting, I have selected an envelope $6\frac{1}{2}$ inches wide by $9\frac{1}{2}$ inches long, open on the side and made of manilla paper. The paper should be heavy enough to handle easily and should be tough, so that it will not tear readily; it should be as light as possible, consistent with these two requirements. I have been unable to buy, in the market,

envelopes that were entirely satisfactory, and recently had a lot made for me at an expense of \$3.75 per thousand, but when delivered, these envelopes were so irregular in size as to be unsatisfactory. In this great city of manufactures I feel sure that there is some one who can make them and make them right and I intend to keep looking until I find that person or firm.

The envelopes should have a flap, but be ungummed. I have bought and used gummed envelopes but after some experience with the flaps sticking in hot and damp weather, I took the trouble to wash the mucilage of the rest until I was able to get an envelope ungummed. Ready made envelopes are always gummed.

Now for the preparation of the material which is to go in the envelopes. The ideal form in which to have the literature for this method of classification is the "reprints" of articles which are obtained and distributed by many persons who write for medical journals. While these vary greatly in their value as contributions to medical knowledge and still more in their value to any particular individual, I carefully preserve every one which is sent to me. I also do another thing which is unusual and that is, acknowledge the receipt of them.

As a rule journals pay nothing for contributions from medical men, some give a few hundred reprints in lieu of other compensation and this would seem the least return any of them could make to the author. Since these reprints go only to the profession there can surely be no valid objection, from an ethical standpoint, to their distribution; for my part I would like to have in this form every article which interests me. Since however, not all articles of value are available in this form some other way must be devised for obtaining them. Of course a complete file of all the journals subscribed for, if bound and accompanied by a card index which has been very carefully made and conscientiously kept written up to date, will render available all that they contain. I prefer however the method I employ, which has many advantages and some disadvantages. The advantages will be obvious, the disadvantages I will point out as I proceed. When a journal comes in, I look through it reading all the articles that interest me and then put a check mark on it indicating that it has been read. When I have a little time to spare I take these up one at a time, take out the binding wires, and throw away the advertisements. Then selecting the first article which I wish to preserve. I tear out the leaves containing it and fasten them together at the back with two scraps of gummed label cut for the purpose, and used like a hinge, or instead of the label, small pieces of isinglass plaster. This keeps the leaves together and the articles may be piled up and handled without disturbing the order of the pages or losing any of the leaves. In this way all the original articles are disposed of.

There is one difficulty with the plan which immediately presents itself; one article will end and another begin on the same leaf. Usually one will not be wanted or the least desirable one will be sacrificed. If one of the articles begins a few lines from the bottom of the leaf, or the other ends a few lines from the top of the same leaf, I copy these few lines on the typewriter and thus save both. Or if there is too much to make that practicable and both are of value to me, I make a reference on the bottom of the page stating where the remainder of the article can be found.

This can not be done often, or much of the value of the system will be lost. If a large number of doctors should adopt this scheme there are some improvements in the journals which publishers might be prevailed upon to make which would obviate this objection. Paper is very cheap and postage is almost nothing, still I do not suppose they could be persuaded to leave a part of a leaf blank where one article ended and begin the next one on another leaf. There are some publishers who do this now, particularly in reports of scientific societies. There are in every journal a large number of small items which are of transient interest and they might be used to fill up the waste space: such an arrangement would improve the make-up of the journal. But until publishers are convinced that a large number of their subscribers desire such a change, we will probably be obliged to make the best of things as they are.

On every article, I write the name and date of the journal from which it was taken; this of course is unnecessary where that information is printed at the top of the page, as it is in some journals, and ought to be in all. The articles of a journal may thus be prepared for classification in less time than I have taken to write the description of it. If the journal is magazine size, the pages will be the proper size to go into the envelopes; some may need a little trimming. For this purpose I have a board a foot wide and two or three feet long, a shoe knife with a shoemaker's sandstone on which to sharpen it and a straight edge of wood. The latter may be a thin strip of hard-wood flooring about two feet long. I lay the leaves on the board and trim to the size of a card-board pattern $6\frac{1}{4}$ inches wide and $9\frac{1}{4}$ inches long, using the straight edge as a guide for the knife. Leaves from the double column journals of a larger size like the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION must be folded once.

There are many small items in the back part of all journals which are worth preserving; such as I want are cut out and classified in the same manner; these may be pasted on pieces of manilla paper and the paper folded the proper size to go in the envelopes, under the appropriate subject. Many will object to "destroying" their journals, and where complete files are kept, bound and indexed on cards, it may not be desirable to do so. This scheme is intended to supplement the ordinary library, not to displace it. There are many articles in the literary and scientific magazines which I wish to preserve and by doing it in this manner I have them all where I can lay my fingers on any of them at a moment's notice, and with bulk and weight reduced to a minimum. The pamphlets, articles and clippings being cut, folded or pasted on paper the right size, must be classified before they are ready to go into the envelopes. The decimal classification originated by Mr. Melville Dewey and published by the Library Bureau of Boston, is at once the simplest and most comprehensive system with which I am acquainted. This book costs \$5, and it is almost a necessity in any library. By this method all knowledge is divided into ten classes as follows:

0. General Works. 1. Philosophy. 2. Religion. 3. Sociology. 4. Philology. 5. Natural Science. 6. Useful Arts. 7. Fine Arts. 8. Literature. 9. History.

Each class is separated into ten divisions, each division into ten sections, and each section into ten subsections and so on, each subject being divided into ten to any limit desired. After the first three

figures the number is a decimal fraction. Medicine is classed with the useful arts, 600, and occupies the numbers 610 to 620, divided as shown in the following table.

610. Medicine. 611. Anatomy. 612. Physiology. 613. Personal Hygiene. 614. Public Health. 615. Materia Medica. Therapeutics. 616. Disease. Pathology. Treatment. 617. Surgery. Dentistry. 618. Gynecology. Obstetrics. 619. Comparative Medicine. Veterinary.

In classifying, one can see at a glance into which division an article goes, and with a lead pencil put on the appropriate number. All articles on medicine in general and not treating of any one division more than another are marked 610. In beginning such a classification with a large number of titles to work on, it is better to go through the whole lot, putting on the numbers thus far. Then sort them into ten piles, numbering from 0 to 9 according to the last figure. Tie up and put away all but one lot, take this lot, say Anatomy, 611, and go through it as before, this time putting a decimal point after the number already there and add a decimal number in the following manner:

- 611.1. Circulatory System.
- 611.2. Respiratory System.
- 611.3. Digestive System.
- 611.4. Glandular and Lymphatic System.
- 611.5. ———.
- 611.6. Genito-urinary System.
- 611.7. Motor and Integumentary System.
- 611.8. Nervous System. Sensory Apparatus.
- 611.9. Regional Anatomy.

Now separate this lot according to the last figure, wrap up and label all but one of the divisions (this is to prevent mixing when the work is to be done at odd moments) and classify this division still further. Each paper of this lot now has the number, say, 611.8 and is further classified as follows:

611.8. (Anatomy of the Nervous System. Sensory Apparatus).

- 611.81. Brain and Meninges.
- 611.82. Spinal Cord and its Meninges.
- 611.83. Nerves.
- 611.84. Sight.
- 611.85. Hearing.
- 611.86. Smell.
- 611.87. Taste.
- 611.88. Touch.
- 611.89. Ganglia.

Many subjects, even in a private library, will require a third decimal and in some cases even a fourth. The classification can be continued in this manner to any degree of fineness which individual taste may suggest but it is not advisable usually to go beyond three decimal places.

When no further classification is necessary or desirable, the papers are ready to be put in the envelopes. Now separate the lot as before into smaller lots to correspond with the last figure of the number, put all the papers having the same number into the one envelope and put that number on the outside of the envelope in the upper left hand corner. If there are too many papers to go in one envelope use as many envelopes as may be necessary. It is not necessary to put more than the number on the envelope, but if desired the names of the authors of the various articles it contains may be written on the outside. I lay the envelope on the desk before me, back up, with the open flap toward me, write the number in the

upper left hand corner, put in the material and tuck in the flap. The envelopes are then arranged on edge on the shelves in the book case, flap down and number to the right and in strict numerical order, the short way of the envelope vertical. All book cases are ten inches or more in depth and this allows the shelves to be placed seven or eight inches apart and the case will hold many more envelopes than it would if they stood on end. In arranging the envelopes on the shelves it is convenient to have some contrivance to prevent them from falling down. For this purpose I got a tinner to cut for me some pieces of galvanized iron ten inches long and three or four inches wide, and bend them in the middle to a right angle. One of these on a shelf with the end shoved under the envelopes will prevent their falling down until the shelf is full. An index is made of strips of card board an inch wide and an inch longer than the envelopes, shoved in between them and the appropriate number written on the projecting end; but few of these are necessary. The cataloguer meets with a number of difficulties which ought to be corrected. In the publication of articles which have been read before a society and discussed by the society, the paper and discussion appear in separate places; it would be better if the discussion should immediately follow the paper in the journal.

The authors' post-office address should be appended to the article. "Dr. Smith, N. Y.," is not enough. Authors should be careful to select such titles for their papers as will give some idea of their contents; one does not wish to read an article in order to find out the subject. It is difficult to index a paper with such titles as "Study of a few Suggestive Cases," "An Interesting Case," "A Surgical Fad."

All discoveries and improvements in medicine and surgery are first announced in the periodicals. Text-books are scarcely out of the press before they are "back numbers." Details of original investigations seldom appear anywhere but in the medical journals, and if a doctor would keep abreast of the profession he must read them and not books alone; the one who depends on books will always be several years behind.

The capacity of the average brain for detailed information is soon reached, while the extent of the knowledge a professional man needs to use at one time or another is almost limitless. Since at best no man can have at command in his brain all the knowledge he must use, the best education is the one which enables him to find any available information when he has use for it. Any one who makes a lumber gallery of his mind, trying to crowd into it everything he can pick up, will soon find that his brain is not the workshop it ought to be.

Comparatively few men know the capabilities of their own libraries, and fewer still have any idea how to avail themselves of the vast storehouses of knowledge placed at their disposal in the great libraries of the country. The man who will classify and index his own library will find that he has introduced into the workshop of his mind an instrument of great power, for that itself is an education. If he will preserve in some such manner as I have outlined, the unbound literature which comes to him for almost nothing, his library will be doubled and his ability to profit by its contents will be more than doubled. The fascination of the work is so great that when well begun there is little danger of its being abandoned, for it will be found a pleasure rather than a task.

For twelve years I have used the envelope system for preserving scraps of information on all sorts of subjects, particularly personal ones. A drawer in my desk is divided into four compartments and in these, standing on end, are more than a thousand envelopes (6½) containing all sorts of imaginable information, from teachers' certificates and college tickets to duplicates of ballots voted at various elections and clippings from newspapers and scientific periodicals. After filling some half-dozen scrap books, I found the material so inaccessible as to be next to useless. The envelope system is better than an index rerum for all things that will go into envelopes, for when the reference is found the material itself is at hand. I have kept a diary for over twenty-one years, and there is an entry for each and every day during that time. This record is a log-book rather than a diary, as that term is generally understood. In another book I have an accurate account of all earnings and expenses since I have earned and spent money; I have the name of every person who has paid me money since I began earning money. In one place I have listed all the trips I have made on the railroads during my whole life, with the distance in each case and the total number of miles. In one place the names of all my patients and the names of those to whom I have administered anesthetics.

With lifelong habits of keeping accurate accounts and much experience in all sorts of methods for making available information regarding persons and things, I have come to the conclusion that the envelope system is the most nearly perfect that has yet been devised.

200 Oakwood Boulevard.

SURGERY ONE HUNDRED YEARS AGO.

AN HISTORICAL STUDY

BY DR. GEORGE FISCHER.

DEDICATED TO THE GERMAN SURGICAL ASSOCIATION.

TRANSLATED FOR THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

BY CARL H. VON KLEIN, A.M., M.D.

CHAPTER IV.—NOTICE ON HOSPITALS.

(Continued from page 738.)

In respect to the number of patients the Hôtel Dieu in Paris stood first, the General Hospital in Vienna second. The mortality was also greatest in the first mentioned hospital, so that, with the Berlin Charité, which held the second place; it had the reputation of a den of murder. One-third of all the mortality in Paris was in the hospitals, and one out of five patients in the Hôtel Dieu died. Trephining was no longer done there, for in forty years among a large number of operations, not one case had been successful. Tissot believed that without doubt fewer sick would die if they were allowed to lie under the blue sky and given only fresh water, since the hospital air alone could make every slight wound fatal. The mortality in the Vienna hospital was lower, as it was seldom more than half full. (Of the 30,764 patients received there in three years 24,900 were cared for without charge.) The best hospitals were the English, particularly those in Edinburgh and Manchester, because of their isolated situation and well ventilated buildings. The mortality there amounted to only 4 per cent. Of the surgical patients, concerning whom statistics are unfortunately very meager, in the Charité in Berlin, between 10 and 15 per cent. died. The following figures show the *extraordinarily small number of operations*. In the year 1801, in the Berlin

Charité, among 523 surgical patients there were 30 operations, and two years later among 793, only 23 operations. The facts were similar in Friedrich's Hospital in Copenhagen, where in the year 1783 of 593 surgical patients 34 were operated upon, and two years later of 639 only 30 were operated upon. Among the 34 operations the majority were trephining, 8, a fact very characteristic of that time. An overwhelmingly larger part of the hospitals of the last century were thoroughly bad. Built in unhealthful places, most of them had only small, low rooms, in which the patients, usually medical and surgical cases together, were as if buried. Dirt and stench abounded. The French especially lacked a sense of cleanliness, quite aside from their revolting custom of putting several patients in one bed. This custom was at that time so general that it is always especially mentioned in the descriptions of hospitals if each patient had his own bed. This nation has not to this day been able to free itself from the expensive and at the same time injurious custom of providing beds with curtains. As the directorships were often given by preferment, and to people without merit, who drew their money but left their business to inefficient assistants, abuses not only crowded into all departments, but science was quite extinguished. The cure of most diseases was very difficult, the simplest of them often assumed a malignant character. This was largely due to the neglect of the closets, sewers and ventilation. When one considers that even today a project is urged to alter our hospitals so as to admit fresh, pure air, that the question of ventilation is still everywhere felt to be one of the most important, one might suppose that our forefathers knew nothing of these things. However, this is not true. Even then they recognized in the infected air a source of great mortality, as well as the increasing danger in narrow rooms and the crowding of patients, but the majority of the physicians did little or nothing toward putting these ideas into practice.

One of the first to appreciate the value of *ventilation* and throw doors and windows wide open to admit fresh air, was the English military surgeon J. Pringle. His plans of improvement were originally made for field hospitals. Suffice it to say that his principle was as follows: We may lay it down as a rule that the more fresh air we let into hospitals, the less danger there is of breeding this distemper (hospital fever). The more fresh air, the less danger! He put so few patients in each room that one who did not understand the matter would think there was room for two or three times the number. A part of the boards were taken out of the floors in the field hospitals, and the garrets opened on to the roof. He knew in how incredibly short a time the air in narrow rooms was defiled, but recognized too the difficulty of remedying the evil when neither nurses nor patients could be convinced of the necessity of opening doors and windows. Those rooms were always the most healthful where the air entered through broken windows and other holes in the wall. (Written in the year 1752!) Pringle's contemporary, Stephen Hales, celebrated for his penetrating and accurate experimental researches, invented a ventilator in the form of a great mechanical bellows, in order to improve the air in prisons and ships. Pringle recommended this for the hospitals, and in winter fires in the fireplaces, which acted as ventilators. Only in cases where facilities for ventilation were lacking, would he purify the air with

frankincense, juniper or vinegar. Hales' apparatus was somewhat expensive, so the Prussian surgeon-general Theden devised another kind of ventilator, after he had observed that lockjaw did not readily come into wards with fresh, pure air. He had long wooden pipes, eight inches wide, laid through the wall near the floor, so that they projected on the outside; beside, he had a funnel put in a corner of the room in an opening in the wall. Both could be closed by a cap. Three times a day the caps were opened so that the pure air entered through the pipes, and forced the bad air out through the funnel. He, as well as Baldinger, saw much use made of this method of ventilation in the Seven Years' War, and the smoking out of rooms entirely discontinued, because the air was not improved in that way. For a long time the belief was current, based upon Duhamel's researches (1748), that the exhalations and impurities of the air rise and collect at the ceiling of the room, and therefore it would suffice to make openings there. Overhead the air was said to be so poisoned that a bird would instantly die in it, and fresh meat began to putrefy in a short time. Therefore the rooms in hospitals were built as high as possible, in order to remove the impure air from the patients, and the great hospital in Lyons was provided with a dome. For demonstration of these assertions Maret, in 1782, when the Hôtel Dieu in Paris was about to be rebuilt, had various birds in cages hung in one of the domes; after fourteen days they were entirely well. While a piece of fresh meat fastened there was not in the least spoiled after five days, another placed in a ward at the level of the beds, became putrid in twenty-four hours. He concluded from this that, contrary to the views of Duhamel, only the air about the patients became infected, while that overhead was not at all so, and therefore it was a mistake to build the wards very high. In a long, four-cornered room whose opposite sides had each a large window, the stream of air would flow only through the middle, while the air on both sides was stagnant, but the stream ought to go horizontally through the lower part of the room. On this account, he suggested that hospitals be built in the form of a long ellipse, extending from north to south, and with a vaulted ceiling. At both the truncated ends should be two doors, which would open the entire breadth and height of the hall; further, the walls should be perfectly smooth, and the beds stand in two long rows, two feet from the wall. Every morning, and as often as necessary, both doors should be opened to admit fresh air, the bedridden patients being well covered, while the rest left the room. These suggestions, to Frenchmen, died like voices in the desert; they could not appreciate the value of fresh air. That is shown not only by the pest-holes in the Hôtel Dieu, but also by the official regulations in their hospital order from the year 1781. The only thing which this accomplished in that respect was that the windows were opened on clear days; on the other days, the wards were smoked with juniper at least three times a day.

One at a time, other propositions were submitted to the hospitals. The Englishmen Aikin and Percival suggested (1771) that a hospital be built in an open and healthful locality, and that the builder follow the advice of the physicians more than had heretofore been done, leaving as much vacant space as possible, instead of utilizing every inch. They did not favor a square structure, because this form made the neces-

sary ventilation difficult. The rooms should be small, but high, and the patients placed according to Pringle's principle. They recommended that beside the usual facilities for ventilation, apertures be made in the walls opposite the windows and fireplaces be put in all the rooms. The bandages for suppurating surfaces must be made just as they were needed for use, and the beds frequently made up with fresh linen. In large cities they would have several small hospitals rather than a single large one. A. G. Richter also agreed with this opinion, and when the building of the Vienna Hospital was projected he asserted that instead of combining the existing hospitals in one large one, they should divide them into still more small ones. The professor in Göttingen considered it advisable to provide the beds with castors and move all the patients daily from one room to another, cleaning the first, airing it, and then moving them back into it. He also demanded a separate room for the dying and for patients with bad suppurations, etc. In spite of all the good advice which the two Englishmen gave, they went to the other extreme when they refused admission to the hospital not only to all patients whose cure was not likely to be accomplished in a short time, but also to patients with contagious diseases and such as would contaminate the air of the hospital, and finally to all patients with lung diseases, for whom pure air would be especially necessary. The burning of one wing of the Hôtel Dieu gave the Frenchman A. Petit occasion to come forward with plans for improvement. He would have (1774) all the large hospitals outside of the city, where air and water were purer and where there was more space and less smoke. For accidents a house within the city could be maintained, in which the patients could stay until their removal to the hospital. For the sake of better drainage the structure should be located on high ground, and it should be protected as much as possible from the north wind; the spot should be dry, but in the neighborhood of flowing water. Instead of a square building, he recommended the form of a star, in which the wings with the wards radiate in points and unite in the center in a funnel-shaped dome. Here was to be the residence of the physicians, apothecaries, cooks, clergy, etc. This form facilitated the service very much, because no part of the hospital was far from the central point; the funnel-shaped dome served all the rooms as a ventilator, as they were all connected with it by pipes. He would have the beds stand in single alcoves provided with curtains, and in each alcove a window through which the excreta could be gotten rid of by means of pipes leading outward, without its being carried through the room. (There was invented at that time in France a so-called elastic bed, similar to our present air cushions; it was a mattress made of oiled linen sewed together, waxed over, and then filled with air by means of a valve (1779). Designs were also proposed by the Germans. Fauken made a plan for a general hospital (1784). He estimated 1,600 hospital patients to 200,000 inhabitants, and a daily expense of 24 kreuzer for each. The building must have only one story, but rooms enough to be used alternately and cleaned at least every three weeks. For each bed he allowed a space of five feet, and suggested that they be painted green with oil paint, to absorb the noxious exhalations. Lattices outside of the windows, which were provided with metal ventilators, should soften the rays of the sun without obstructing the passage

of air, and at least twice a year the rooms should be whitewashed. Extreme views were not lacking; as C. L. Hoffmann (1788) thought it necessary that each patient in the hospital should have a separate room.

We will not forget that our forefathers, in their efforts to improve the hospitals, did not entirely follow the empiric, but sought to solve certain questions by experiment. Among such were their *researches in putrefactions*. Lord Bacon had considered it extremely useful to search for a means whereby putrefaction could be prevented or arrested, and he believed such work to be of the utmost importance in medicine and surgery. Pringle made such experiments in antiseptics in 1750 and 1751, and published the results of forty-eight of them in the *Philosophical Transactions*. Contrary to the accepted theory, he believed that putrid matter was not alkaline, and that alkaline salts did not induce, but arrested putrefaction, and he made known various antiseptics. Likewise he showed that most animal putrefactions would cause fermentation in farinaceous matter, but that saliva, when well mixed with food in sufficient quantity, prevented fermentation in the first stages. Upon this were based experiments in the putrefaction of blood, and so on. A Scotch surgeon, W. Alexander, took up the same question (1771), and experimented with meat and with blood of men and cattle. No degree of heat would alone induce putrefaction, moisture was essential to the process; and also the vapors from dead men and cattle would cause contagious diseases only in hot regions not sufficiently swept by the wind. But the perspiration of a healthy man starts putrefaction, since a piece of meat rolled in drops of sweat putrefies very quickly. He denied that stagnant water breeds putrid fevers and diarrhea, although the vapors from it are dangerous. Similar researches were made by Macbride, Collin and Buchholz; Haller also experimented on animals concerning the action of putrefying matter.

In closing, a few words concerning the lying-in hospitals; as in Germany, obstetrics and surgery were usually taught by the same professor. France first introduced practical instruction for students and obstetricians, and to that end erected the first lying-in hospital, in Strassburg in 1728. It served as a model for all newly founded institutions, and attracted a crowd of foreigners. The largest was in the *Hôtel Dieu* in Paris, but at the beginning of the century students were not admitted there. The maternity cases were as closely crowded as all the other patients; indeed, four women in labor occupied one bed. The room was saturated with moisture and dampened the linen hung at the windows (1786). Lapeyronie founded two chairs in obstetrics, one for surgeons, the other for obstetricians (1743). Dublin had had a lying-in hospital since 1745, London since 1749; in the latter 2 per cent. died in 1771. In Germany, Berlin made a beginning, and opened the first obstetric school in the *Charité* under John Frederick Meckel. The chief surgeon treated the pregnant women, attended them at delivery, and instructed the pensionary surgeons and obstetricians in the maternity ward. For difficult cases and internal treatment, he was obliged to consult the physician of the *Charité*. Of greater value was the institution under Roederer, founded in Göttingen in 1751, modeled after the one in Strassburg. Roederer, who was called as obstetrician upon Haller's recommendation, wrote the first complete, systematic manual of obstet-

rics in Germany, which received much applause. Van Swieten first introduced public instruction in obstetrics in Austria. Dr. Crantz was sent to Paris for training, and then installed as first teacher of obstetrics in the University of Vienna, in 1752. Later, Steidele became professor of theoretic obstetrics in the Spanish Hospital. Joseph II. had a large maternity hospital connected with the newly founded General Hospital in Vienna. Here again, the humane sentiments which characterized the Austrian imperial house, were not renounced. The strictest privacy was maintained in the maternity hospital; no one was asked her name, much less the name of the father. Each patient, because of the possibility of her death, must write her name on a paper, seal it and mark it with the number of the bed and of the room, and keep it near her. At her discharge she took the paper with her unopened. Institutions for teaching obstetrics were founded in various German cities (Cassel, Marburg, Jena, Halle). Copenhagen had a large maternity hospital under Saxtorph, in which there were about 650 births in the year 1784.

(To be continued.)

SOCIETY PROCEEDINGS.

Chicago Ophthalmological and Otological Society.

Regular Meeting, held at the Victoria Hotel, March 9, 1897.

Dr. MONTGOMERY in the Chair.

There were eighteen members and visitors in attendance. The minutes of the last meeting were read and approved. The Secretary read the application of Dr. K. K. Wheelock of Fort Wayne, Ind., and it was referred to the Committee on Membership.

Dr. HALE showed a case of congenital cataract in a young man whose right eye had been needled four times and efforts made to extract the lens substance through a large cut in the cornea. There was still left considerable lens matter directly behind the pupil, which interfered greatly with vision. The cataract in the left eye had not been touched and was of a triangular form. Dr. Hale wanted the opinion of the Society as to the best method of procedure with the right eye.

Dr. GAMBLE showed a young lady with stellate congenital cataract in each eye. These had not been operated upon.

Dr. MONTGOMERY showed a case of gummata of the ciliary bodies. The patient was a young man who had had syphilis about a year ago, which was treated. In October, 1896, pain began in the right eye. This increased in severity, running into the temples and was accompanied by great injection. In November he was admitted to the Eye and Ear Infirmary with a severe iritis and great bulging at the sclero-corneal junction of the temporal side in the right eye. Apparently the iris had been drawn back into this bulging so that the pupillary edge was almost out of sight. The patient was put on calomel, 1-10 of a grain every two hours, but the symptoms increased in spite of this. Then the bulging and iritis began in the left eye. The treatment was changed to iodid of potash and increased to 45 grains three times a day, which was the saturation point. The symptoms rapidly disappeared and in two weeks the patient was without pain. The right eye, however, had a blocked pupil, and one week ago the doctor had done an iridectomy on this eye.

Dr. TILLEY showed a case of congenital paralysis of the third nerve with the exception of the fibers which supply the iris and ciliary muscle. This case was shown some ten years ago to the Chicago Medical Society, and since that time the only additional factor was a well determined history of syphilis in the parents. Both eyes turned strongly downward and outward, patient being obliged to throw back and turn his head to the side in order to see with either eye. There is some myopia in both eyes and the vision of the two is about the same. The only movement is a slight downward and outward one. Dr. Tilley thought there was probably a congenital absence either of the nerve or of the muscles. He was afraid to operate on the ptosis for fear that the patient could not close the eye sufficiently to cover the cornea.

Dr. HORTZ reported two cases of lamellar cataract:

Case 1, with almost normal acuity of vision and good accom-

modation. The patient was a young man, 23 years old, who consulted the doctor April, 1896, because his eyes ached a good deal in continued near work. He was wearing concave spherocylinders prescribed three years previously. With these glasses the vision of the right eye was 20 100, of the left 20 40. Each eye showed a hazy condition of the lens, which, after the pupils were well dilated, presented the characteristic picture of lamellar cataract. In both eyes the opaque portion showed a circular outline from which, however, numerous very short but distinct dark lines were projected in such regular intervals that the whole looked very much like a fine cog-wheel of a watch. The diameter of the opaque portion was the same in both eyes, but the right was a little duller than the left. In the right eye the best vision obtainable was 20 70 with minus spherocylinders, while in the left eye 20 20 was obtained in the same way. With these glasses the patient could read Sn. 0.5, though he preferred the minus cylinders without the spheres.

Case 2, with an unusual occurrence after the needle operation. On April of last year Dr. Hutz operated on the eyes of a 4 year-old boy for lamellar cataract, the operation consisting in a small incision into the anterior capsule of the lens. No reaction followed; pupils kept well dilated by atropin and the cortex became gradually opaque. A week later in the right eye the entire central portion of the lens (that which had originally been enclosed in the opaque lamellæ) was found in the anterior chamber. This same thing happened a week later in the left eye. The lens nuclei looked like very small lenses, being circular in outline, and were absorbed in such a manner as to become gradually smaller, still preserving their shape and not breaking up. In June a needle operation was done on the capsule and left the eyes in very good condition, the fundus details being clear with a plus 8.

Dr. HOLMES had had a similar experience of lens nucleus falling into the anterior chamber, but it irritated so much that he had to do an iridectomy.

Dr. GRADLE had had a case in which the nucleus protruded through the wound in the capsule, but did not escape into the anterior chamber; it slowly absorbed in this position.

Dr. COLEMAN had recently had a case of a child, 6 months old, with marked congenital cataracts in both eyes. Six months ago he had told the father (who was a physician) that he thought it would be better to operate later, but in the meantime the cataracts had disappeared. Dr. Coleman would hesitate to remove any congenital cataract except by dissection.

Dr. COLBURN asked if anyone had ever seen the punch which he had seen described for the purpose of making a hole in an opaque capsule.

Dr. PINCKARD had seen the punch, but had never seen it used. He doubted the value of it in such cases.

Dr. HORTZ said that in Dr. Hale's case probably the 2-hook operation would be as good as any.

Dr. COLBURN had used a double needle.

Dr. MCARTHUR stated that the 2-hook operation was still used very extensively in the London clinics.

Dr. HORTZ thought that it might be wise in Dr. Tilley's case to try to raise the eyes by advancement of the superior recti. He thought that any interference with the lateral muscles might produce a troublesome diplopia.

Dr. COLBURN had had a case similar to Dr. Tilley's in which after very extensive advancements and tenotomies he had finally succeeded in getting binocular vision. He had found no trouble in securing sufficient fibrous tissue to make the advancements, although there was no apparent muscle.

Dr. GRADLE stated that he had not succeeded in getting diplopia in cases of congenital paralysis and that the patients were never troubled with this symptom.

Dr. PINCKARD stated that he had had a similar experience, it being impossible to provoke double vision in most of these cases.

C. P. PINCKARD, M.D., Secretary.

SOCIETY NEWS.

Association of American Medical Colleges.

J. M. BODINE, M.D., President, Louisville, Ky.

BAYARD HOLMES, M.D., Secretary, Chicago, Ill.

The annual meeting of the Association of American Medical Colleges will be held at the Hotel Walton, Philadelphia, Monday, May 31, 1897, at 10 A.M. On account of the coincident meeting of the American Academy of Medicine and the Association of Examining Boards the Association will probably adjourn to meet at the College of Physicians at a later hour and probably on the following day.

THE ORDER OF BUSINESS.

1. Reading the minutes of the previous meeting.
2. Adjournment for ten minutes for the presentation of credentials by delegates who are not deans of the colleges they represent and for the payment of annual dues.
3. Roll call of colleges holding membership.
4. President's Address. By J. M. Bodine, of Louisville, Ky.
5. Report of
 1. Committee on course of study; a, Medicine, by Wm. Osler of Baltimore; b, Obstetrics, by — Williams of Baltimore; c, Surgery, by Bayard Holmes of Chicago.
 2. Committee on codifying the Constitution and By-laws, by the Secretary. The report is appended herewith.
6. Secretary-treasurer's report.
7. Report of Judicial Council.
8. Presentation of papers or essays.
9. New business.
10. Adjournment.

The following report from the Committee on Codifying the Constitution has been made to include all the recommendations which have been received from colleges in relation to constitutional amendments. No changes have been made in the spirit or requirements of the Constitution or By-laws, but their provisions have been made more exact and definite. On account of the establishment of examinations for entrance upon professional study in States other than the State of New York, the Committee recommends that the section relative to this matter be made general so as to apply to all States now giving medical students certificates, and to any State which may issue such certificates hereafter. The other changes in the Constitution were suggested at the Atlanta meeting and are for the most part of a similar character. The Committee recommends that this Constitution be adopted as a whole in the place of the existing Constitution.

BAYARD HOLMES, Secretary.

REPORT OF COMMITTEE ON CODIFYING THE CONSTITUTION.

ARTICLE I.

This organization shall be known as the ASSOCIATION OF AMERICAN MEDICAL COLLEGES.

ARTICLE II.

SECTION 1. Any college conforming to the requirements of the Association, as expressed in this Constitution and in the By-laws of the Association, is eligible to *membership*.

SEC. 2. Any college desiring membership in this Association shall make *application* to the secretary and pay the annual dues of five dollars. This application shall be accompanied by evidence that the college applying is conforming to the requirements of this Association. The application and all evidence and information in relation to the college shall then be put in the hands of the Judicial Council, to be reported to the Association favorably or unfavorably at the next annual meeting, at which time the college shall be elected to membership if it receives the favorable recommendation of the Judicial Council and the favorable ballot of two-thirds the colleges represented in the meeting. The neglect of the Judicial Council to report on the application of a college shall not be a bar to election.

SEC. 3. Each college is entitled to one *representative* at all meetings of the Association and to one vote on all questions. The dean of the college will be its accredited representative in the absence of any other delegate.

SEC. 4. The dues are five dollars a year, payable in advance.

ARTICLE III.

SEC. 1. Each college holding membership in this Association shall require of each student *before admission* to its course of study an examination the minimum of which shall be as follows:

1. In *English*, a composition on some subject of general interest. This composition must be written by the student at the time of the examination and should contain at least two hundred words. It should be criticised in relation to thought, construction, punctuation, spelling and handwriting.
2. In *Arithmetic* such questions as will show a thorough knowledge of common and decimal fractions, compound numbers and ratio and proportion.
3. In *Algebra* such questions as will bring out the student's knowledge of the fundamental operations, factoring and simple quadratic equations.
4. In *Physics* such questions as will discover the student's

understanding of the elements of mechanics, hydrostatics, hydraulics, optics and acoustics.

5. In *Latin* an examination upon such elementary work as the student may offer showing a familiarity usually attained by one year of study; for example, the reading of the first fifteen chapters of *Cesar's Commentaries* and the translation into *Latin* of easy *English* sentences involving the same vocabulary.

SEC. 2. In place of this examination or any part of it colleges, members of this Association, are at liberty to recognize the official *certificates of reputable* literary and scientific colleges, academies, high schools and normal schools covering the work of the foregoing entrance examination, and also the medical student's certificate issued by any State examining board.

SEC. 3. Colleges, members of this Association, may allow students who fail in one or more branches in this entrance examination the privilege of entering the first year course, but such students shall not be allowed to begin the second course until the entrance requirements are satisfied.

SEC. 4. Colleges, members of this Association, are free to honor official *credentials issued by medical colleges of equal requirements*, except in the branches of study embraced in the last year of their own curriculum.

SEC. 5. Candidates for the degree of Doctor of Medicine in the year 1899 and thereafter shall have attended at least *four courses* of medical instruction, each course of at least six months duration. No two courses shall be in the same calendar year.

SEC. 6. Colleges, members of this Association, are free to give to students who have met the entrance requirements of the Association additional *credit for time* on the four year course as follows: *a.* To students having the A.B., B.S. or equivalent *degrees* from reputable literary colleges, one year of time. *b.* To graduates and students of colleges of *homeopathic* or *eclectic* medicine, as many years as they attended those colleges. *c.* To graduates and students of reputable colleges of *dentistry, pharmacy* and *veterinary* medicine, as many years less one as they attended those institutions.

[SEC. 7. Colleges, members of this Association, may confer the degree of Doctor of Medicine during the year 1898 upon students who have attended *three courses* of six months duration each. Each course shall have been in a separate calendar year.]

ARTICLE IV.

SEC. 1. In addition to the representations of colleges in attendance at regular meetings, who are termed *active members*, there shall also be associate members and honorary members. *Associate members* shall consist of former representatives and representatives of post-graduate medical schools and members of State boards of medical examiners. Distinguished teachers in medicine and surgery may be elected to *honorary membership*.

SEC. 2. Only duly delegated and accredited active members in actual attendance whose annual dues are paid shall have *voting power*, but associate and honorary members may participate in all other proceedings and duties and may be elected to any office.

ARTICLE V.

SEC. 1. The *officers* of this Association shall be a President, Senior and Junior Vice-presidents, Secretary and Treasurer, and a Judicial Council of seven members; all of whom shall be elected annually by ballot and serve until the election of their successors.

SEC. 2. The *President*, or one of the Vice-presidents in the absence of the President, shall preside at all the meetings and perform such duties as parliamentary usage in deliberative assemblies and the By-laws of this Association may require. Of the seven members constituting the *Judicial Council*, the three whose names appear first on the list of those first elected shall serve three years. Of the remaining four, the two first named shall serve two years, and the two last named shall serve for one year. Vacancies by expiration of term to be filled at the annual election of officers. Vacancies by death or resignation may, if business of importance arise, be filled by the surviving members of the Association.

SEC. 3. The *Secretary* and *Treasurer* shall record the proceedings of the meetings, conduct the correspondence, receive dues and assessments from members, disburse the funds of the Association as provided by resolution, issue certificates of membership, and perform such other duties as the By-laws may require.

SEC. 4. The *Judicial Council* shall investigate and determine all questions of violation of the rules and regulations of this Association, and all matters of dispute between the members of this Association. All charges or complaints shall be

preferred formally in writing, and referred to the Council. The Council shall make written report at the next ensuing session of the Association upon all matters received for adjudication.

ARTICLE VI.

SEC. 1. The stated *meetings* of this Association shall occur annually on the Monday preceding the Tuesday on which the American Medical Association convenes.

SEC. 2. A majority of the active members whose dues are paid shall constitute a quorum.

ARTICLE VII.

This Constitution shall not be altered or amended, except by written notice to all members at least thirty days previous to a stated meeting, and by a vote of two-thirds of all the acting members present at such meeting.

(It is thought best to introduce for comparison the Constitution now in force.)

CONSTITUTION.

ARTICLE I.

This Association shall be known as the ASSOCIATION OF AMERICAN MEDICAL COLLEGES.

ARTICLE II.

SEC. 1. Colleges adopting and observing the rules of this Association, as herein provided, shall be eligible to membership. Each college shall be entitled to one representative at all the meetings of the Association.

SEC. 2. Colleges desiring membership in this Association shall make written application to the Secretary, officially signed, and pay to the Treasurer of this Association the sum of five dollars (\$5.00) annually in advance.

ARTICLE III.

SEC. 1. Colleges, members of this Association, shall require of all matriculates an examination as follows: 1. An English composition in the handwriting of the applicant of not less than two hundred words, said composition to include construction, punctuation and spelling. 2. Arithmetic—fundamental rules, common and decimal fractions, and ratio and proportion. 3. Algebra—through quadratics. 4. Physics—elementary—(Gage) 5. Latin—an amount equal to one year's study as indicated in Harkness' Latin Reader.

SEC. 2. Graduates or matriculates of reputable colleges, or high schools of the first grade, or Normal schools established by State authority, or those who may have successfully passed the entrance examination provided by the statutes of the State of New York, may be exempted from the requirements enumerated in Section 1.

SEC. 3. Students conditioned in one or more of the branches enumerated as requirements for matriculation, shall have time until the beginning of the second year to make up such deficiencies; provided, however, that students who fail in any of the required branches in this second examination shall not be admitted to second course.

SEC. 4. College members of this Association are free to honor official credentials issued by colleges of equal requirements except in the case of branches embraced in the last year of their own curriculum.

SEC. 5. Candidates for the degree of Doctor of Medicine shall have attended three courses of graded instruction of not less than six months each, in three separate years.

SEC. 6. Students who have matriculated in any regular college prior to July 1st, 1892, shall be exempted from these requirements.

SEC. 7. Candidates for the degree of M.D., in 1899, or thereafter, shall have pursued the study of medicine for a period of four years, and attended at least four courses of lectures of not less than six months duration each. It is provided, however, that the following classes of students may apply for advanced standing:

a. Graduates of recognized colleges and universities that have completed the prescribed course in chemistry and biology therein.

b. Graduates and matriculates of colleges of homeopathy.

c. Graduates and matriculates of colleges of eclectic medicine.

d. Graduates and matriculates of colleges of dentistry requiring two or more courses of lectures before conferring the degree of D.D.S. or D.M.D.

e. Graduates and matriculates of colleges of pharmacy.

f. Graduates and matriculates of colleges of veterinary medicine.

All students shall be required to comply with the provisions of the entrance examination and prove their fitness to advanced professional standing by an individual examination upon each branch below the class he or she may desire to enter.

ARTICLE IV. Membership.

SEC. 1. Membership in this Association shall be divided into

active, associate and honorary. The active membership shall consist of persons duly appointed to represent the college for the fiscal year. Associate membership shall consist of former delegates, representatives of post-graduate medical colleges and of State boards of medical examiners. Honorary membership, of distinguished teachers in medicine and surgery.

SEC. 2. Voting power shall be confined to active members in actual attendance. Associate and honorary members may participate in all other proceedings upon invitation of the presiding officer.

ARTICLE V.

Officers.

SEC. 1. The officers of this Association shall be a President, Senior and Junior Vice-presidents, Secretary and Treasurer, and a Judicial Council of seven members, all of whom shall be elected annually by ballot, and serve until the election of their successors.

SEC. 2. The President, or one of the Vice-presidents in his absence, shall preside at all the meetings and perform such duties as parliamentary usage in deliberative assemblies and the By-laws of this Association may require. Of the seven members constituting the Judicial Council, the three whose names appear first on the list of those first elected shall serve three years. Of the remaining four, the two first named shall serve two years and the two last named shall serve for one year. Vacancies by expiration of term to be filled at the annual election of officers. Vacancies by death or resignation may, if business of importance arise, be filled by the surviving members in the interval between the annual meetings of the Association.

SEC. 3. The Secretary and Treasurer shall record the proceedings of the meetings, conduct the correspondence, receive dues and assessments from members, disburse the funds of the Association as provided by resolution, issue certificates of membership, and perform such other duties as the By-laws may require.

SEC. 4. The Judicial Council shall investigate and determine all questions of violation of the rules and regulations of this Association, and all matters of dispute between the members of this Association. All charges or complaints shall be preferred formally in writing and referred to the Council. The Council shall make written report at the next ensuing session of the Association upon all matters received for adjudication.

ARTICLE VI.

SEC. 1. The stated meetings of this Association shall occur annually on the Monday preceding the Tuesday on which the American Medical Association convenes.

SEC. 2. A majority of the members shall constitute a quorum.

ARTICLE VII.

This Constitution shall not be altered or amended, except by written notice to all the members at least thirty days previous to a stated meeting, and by a vote of two-thirds of all the delegates present at such meeting.

BY-LAWS.

SEC. 1. The presiding officer shall, on calling meetings to order, call for the reading of the minutes of the previous session, which, when approved, shall be recorded in a book kept for that purpose, signed officially by the Secretary and approved by the President.

SEC. 2. After approval of the minutes, the Secretary shall announce the colleges represented at the meeting and an adjournment of ten minutes shall then follow to allow other representatives present to register and pay their dues.

SEC. 3. Order of business.

1. The reading of the minutes of the previous meeting.
2. Roll call of membership.
3. Reports of committees.
4. Secretary and Treasurer's report.
5. Report of Judicial Council.
6. Papers and essays.
7. New business.
8. Adjournment.

SEC. 4. These By-laws may be altered or amended at any time by unanimous consent of the members present, or by written proposition to so alter or amend, being read in open session and receiving the approval of a three-fourths vote of all the members present at an adjourned session of any stated meeting; provided, however, not more than twenty-four hours shall have elapsed between the time of the proposition to amend and the final vote thereon.

RULES OF THE JUDICIAL COUNCIL.

1. All complaints, charges and other questions must be submitted in writing through the Secretary of the Association, or directly through the Chairman of the Council.

II. All complaints of violations of rules and regulations must be in the form of written charges and specifications, signed by the complainant.

III. All charges and specifications must be presented to the accused for answer. In all cases the written answer must be filed with the Chairman of the Council within ten days from the receipt of the copy of charges by the accused.

IV. All counter charges must be submitted to the accused for answer, and pleadings in the same manner as the original charges, and the Council will take no notice of any evidence not submitted through its Chairman in regular form and order.

V. As the strictest formality is necessary to insure justice equally, all decisions of the Council must be rendered in writing, signed by each member taking part in the determination of any question.

VI. In the intervals between the annual meetings, the Council may act upon all matters submitted in due form by its Chairman, each member communicating his decision to the Chairman, who shall immediately, or within ten days from the date of any decision, file a certified copy with the Secretary, and notify all the parties interested.

VII. It will be the duty of the Chairman of the Council to file and preserve all original complaints, charges and other matter referred to the Council, and to deliver them to the Secretary on the first day of each annual meeting next ensuing the date of final decision.

THE FOLLOWING NAMED COLLEGES PAID THEIR DUES FOR THE YEAR ENDING MAY 30, 1897.

College of Physicians and Surgeons, Chicago.
 Detroit College of Medicine.
 Medical Department, Howard University, Washington.
 Western Pennsylvania Medical College, Pittsburgh.
 Medical Department, Columbian University, Washington.
 Ohio Medical University, Columbus.
 Western Reserve Medical College, Cleveland.
 Rush Medical College, Chicago.
 Medical Department, University of Maryland, Baltimore.
 Hospital College of Medicine, Louisville.
 Barnes Medical College, St. Louis.
 Baltimore Medical College.
 Kentucky School of Medicine, Louisville.
 Medical Department University of Louisville.
 College of Physicians and Surgeons, Baltimore.
 Louisville Medical College.
 College of Physicians and Surgeons, Cleveland.
 Cincinnati College of Medicine and Surgery.
 College of Physicians and Surgeons, Boston.
 Baltimore University, School of Medicine.
 Albany Medical College.
 Medical College of Indiana, Indianapolis.
 Medical Department, Arkansas University, Little Rock.
 Starling Medical College, Columbus.
 Medical College of Ohio, Cincinnati.
 Laura Memorial Medical College, Cincinnati.
 Medical Department, National University, Washington.
 Toledo Medical College.
 Miami Medical College, Cincinnati.
 Kansas City Medical College.
 Wisconsin College of Physicians and Surgeons, Milwaukee.
 University of California, Medical Department.
 The Kansas Medical College, Topeka.
 Michigan College of Medicine and Surgery, Detroit.
 College of Medicine, University of the Northwest, Sioux City.
 Harvard University, Medical School, Boston.
 College of Medicine, Syracuse University.
 Medical Department, New Orleans University.
 College of Medicine, University of Southern California, Los Angeles.
 University of Michigan, Medical Department, Ann Arbor.
 Gross Medical College, Denver.
 Medical Department, Yale University, New Haven.
 Medical Department, Johns Hopkins University, Baltimore.
 College of Physicians and Surgeons, St. Louis.
 Medical Department, University of Denver.
 Medical Department, University of Buffalo.
 Medical Department, University of Minnesota, Minneapolis.
 Omaha Medical College.
 University of Oregon, Medical Department, Portland.
 University of Georgetown, Medical Department.
 Woman's Medical College, Philadelphia.
 Jefferson Medical College, Philadelphia.
 College of Physicians and Surgeons, Minneapolis.
 Creighton Medical College, Omaha.
 Total, 54.

American Academy of Medicine.

The twenty-second annual meeting of the American Academy of Medicine will be held in Parlor "C" of the Continental Hotel, Philadelphia, on Saturday and Monday, May 29 and 31, 1897.

The meeting will be called to order at 2 P.M., May 29, when the Academy will hold an executive session, open to its membership only. The order of business will be as follows: Reading of the minutes of the last annual meeting; report of the Council; election of Fellows; appointment of a Committee on Nominations; treasurer's report; action on the proposed amendments to the constitution; new business. At the conclusion of the executive session, approximately at 4 o'clock, an open session will be held for the reading of "Professional Program." Only those papers whose titles have been furnished are included in this list; several others have been partially promised and it is hoped that these will be added to the completed program to be presented at the meeting.

THE ASSOCIATED DUTIES OF THE PHYSICIAN.

1. "The True Principles on which the Medical Profession Should be Associated and the Character of the Resulting Organization." Leartus Connor of Detroit.

2. "Physicians' Mutual Aid Societies." John B. Roberts of Philadelphia.

3. "Quid pro Quo—Present and Future." C. C. Bombaugh of Baltimore, Md.

4. "The Relation of the Physician to the Public Press." Solomon Solis Cohen of Philadelphia.

5. "Some Relations of Author, Publisher, Editor and Profession." George M. Gould of Philadelphia.

6. "Medical Reviews." Walter L. Pyle of Philadelphia.

7. "The Influence of a Liberal Education with Reference to Medical Ethics." Elmer Lee of Chicago.

8. "Hospital Abuse." W. L. Estes, South Bethlehem, Pa.

9. "Result of a Year's Endeavor to Lessen the Dispensary Abuse in the Rhode Island Hospital, Providence, R. I." F. T. Rogers of Providence.

10. "Are Physicians up to Date? A Sociologic Inquiry." Charles McIntire of Easton, Pa.

The Academy will take a recess at about 6:00 and reconvene at 8:00 in open session.

11. The President's Address. J. C. Wilson of Philadelphia.

At the conclusion of the address, if it be the pleasure of the Academy, the papers not reached in the afternoon will be read.

Second day: executive session, 10 A.M.; reports of committees; election of Fellows; election of officers; unfinished business; new business. Open session, 11 A.M. Reading of papers resumed.

12. "The Relation of Alcohol to Preventive Medicine." J. W. Grosvenor of Buffalo.

13. "The Truth About Calomel." Everett Flood of Baldwinville, Mass.

14. "The Great Physician of the Revolution; A Doctor sans peur et sans reproche." A. L. Gihon, Medical Director, U. S. N., retired.

15. "Where Shall We Put Up the Bars? A Plea for Preliminary Education." A. L. Benedict of Buffalo.

DISCUSSION: "THE RELATION OF THE COLLEGE TO THE MEDICAL SCHOOL."

16. "The Side of the Medical School." Bayard Holmes, B.Sc., M.D., College of Physicians and Surgeons, Chicago, Secretary of the Association of American Medical Colleges.

17. "The Side of the College." Ethelbert D. Warfield, LL.D., President, Lafayette College, Easton, Pa.

18. "The Side of the University." William Pepper, M.D., LL.D., Ex-Provost, University of Pennsylvania, Philadelphia.

The Committee on Program will ask that thirty minutes be given to each of the speakers opening this discussion, and, at their conclusion, that visitors be invited to take part in the discussion, each speaker being limited to five minutes, according to the rule. The discussion will be assigned to the first place after the recess for lunch.

At the conclusion of this discussion the reading of any unread papers will be in order, after which there will be a short executive session.

Reports of committees; unfinished business; induction of President-elect; appointments for 1897-98; new business.

The reunion session will be held at the Continental Hotel on Monday, May 31, at 8 P.M. By a standing rule of the Academy, the price for the supper is limited to \$2 per plate. Fellows are at entire liberty to invite their friends to enjoy with them the Academy's annual social function. The meetings during the past years have been pleasant and the post-prandial pro-

gram of interest. It greatly aids the committee in every way to know in advance the probable attendance upon the reunion session. Those who may be thinking about attending are requested to send their names either to the chairman of the Committee of Arrangements, the President or the Secretary. The price for the ticket can be paid to either of them at any time. The time limit for papers read before the Academy is twenty minutes; discussion to five minutes for each speaker, excepting in closing, when ten minutes are given.

The Trunk Line Association, with their usual courtesy to the Academy, extend the time of the concession granted to the AMERICAN MEDICAL ASSOCIATION to include the earlier date of the Academy. Fellows desiring to avail themselves of this will please: 1. Pay full fare to Philadelphia and secure a certificate of that fact from the agent selling the ticket. 2. This certificate must be endorsed at Philadelphia by Dr. W. B. Atkinson, Secretary of the AMERICAN MEDICAL ASSOCIATION, and countersigned by an agent of the Trunk Line Association. 3. When so endorsed and countersigned the presentation of the certificate will secure you a return ticket by the same route at one-third fare. The Council will meet on Saturday morning, when the application for fellowship will be acted upon. Kindly forward any application you may have to the Secretary as soon as convenient.

SELECTIONS.

A Study in Air Embolism.—In the *Boston Medical and Surgical Journal*, February 26, Dr. Jay Perkins, a medical examiner for Rhode Island, has outlined a painstaking investigation, both clinical and experimental, on the above subject. The immediate cause of death in consequence of air in the blood-vessels is given by different authors as one of the three following ways: 1, paralysis of the heart from over-distention of the right ventricle; 2, air in vessels of the brain, causing ischemia; 3, obstruction of the pulmonary circulation by bubbles of air in the capillaries of the lung, causing death from asphyxia.

The symptoms of air in the veins depend upon the amount introduced, the rapidity and force with which it is introduced, and the relative strength of the heart into which it is introduced. A small amount can be taken care of by the blood without causing symptoms; a larger amount, but still not enough to kill, will cause immediate temporary irregularity of respiration and of the heart's action, a sensation of impending death, a cry, a convulsion, or simply a collapse. On listening over the heart a churning sound is heard. If the air enters more slowly, we may get air-embolism of the pulmonary vessels and death from asphyxia, or later from pneumonia. The plugging of the pulmonary vessels causes deeper inspirations, through the need of the system for more oxygen, and thus more air is drawn into the vessels. Air can, however, pass through the capillaries if only there is sufficient force behind it, as Professor Senn has shown by injecting air into the arteries of dogs. He found that by injecting air into the arteries he got "convulsions, coma, tetanic rigidity of the limbs and extensor muscles of the back. If the animal does not succumb to the primary effects of the air upon the brain and medulla oblongata, a series of symptoms succeed which announce the arrival of the blood in the veins and right side of the heart." Death takes place from asphyxia from the plugging of the pulmonary capillaries with frothy blood, the right side of the heart being less strong than the left. If a large amount of air enters the blood vessels at once, we have only momentary symptoms, the cry, deep respirations and death, the action being nearly or quite on the heart. Here the symptoms do not last long enough to be due to non-aeration of the blood and there are no brain symptoms unless, as occasionally occurs, we have a convulsion. If the chest is opened immediately after death, the right auricle will be found still contracting, the left auricle and both ventricles having ceased action. If, however, a puncture be made in the right side of the heart and the air let out, the heart will begin to contract again. In dogs dying from the spontaneous entry of air into the jugular vein death

is more prolonged and the heart continues to beat for some time after apparent death has taken place.

In a dog weighing about seventy-five pounds, ether was given while the vein was being secured and then removed. A large canula was introduced into the external jugular. Blood clotted in the canula, and but little air entered. An unknown amount of air was then blown into the canula, and the dog expired instantly. After a few moments the chest was opened; the auricles were still pulsating, the left slowly, the right seventy times per minute. Heart distended, right side more than the left. Air was present in both sides of the heart, more marked in the right side.

In a second dog a small amount of air was injected into the external jugular, producing labored breathing, a tumultuous action of the heart, and giving a slight churning or gurgling sound on listening over the heart. A larger amount of air was then forced into the vein, causing the arrest of any perceptible action of the heart after a brief space of time. Frothy blood came from the distal end of the jugular, and air was found in the femoral vein and cellular tissue of the thigh. The right side of the heart was distended, and contained air and considerable frothy blood. Some air and frothy blood were found in the left side of the heart.

Vaso-motor Poisoning in Accidents from Chloroform.—Dr. H. A. Hare, in the *Medical News*, March 6, appears in the editorial columns with a signed article, in support of the view that the dominant action of chloroform is to depress the vaso-motor center. The experiments of all, or nearly all, investigators have shown that this drug, as ordinarily given, produces a fall of pressure, although in the first moments of inhalation there may be a rise which is due to excitement. "Bowditch, Minot, Coutts, Wood, the Hyderabad commissioners, my own studies, with and without Thornton, and all teachings I have ever seen, prove this fact. This is the experimental evidence; the practical evidence lies in the fact that accidents from chloroform anesthesia result more frequently when the drug is given to a patient who is in the erect or semi-erect position than when lying prone. Inversion of the body of the patient under these circumstances, even in apparently hopeless cases, will often serve to resuscitate him by causing a portion of the blood to enter the feebly beating heart from the veins, and so reach the vital centers in the medulla, as well as filling the coronary arteries, an equally important matter. Again, accidents from the use of chloroform are exceedingly rare in parturient women, because the compression of the abdominal vessels cuts off a large vascular network and the pains stimulate the vaso-motor center. We know that if atropin, a valuable vaso-motor stimulant, is given before the administration of chloroform, the latter drug may be given with greater safety. Finally, I wish to mention an important clinical observation. On one occasion I gave chloroform to a feeble woman whose condition demanded an abdominal section. The face suddenly became pallid, the radial pulse disappeared and the heart sounds could not be heard. The operator immediately grasped the abdominal aorta to determine if the heart had ceased to beat, and as he compressed it, the pulse in the radial artery at once returned. The compression of the artery prevented what little blood the heart had to pump from flowing onward and stagnating, and, by restoring to a certain degree the normal pressure, produced a tonic cardiac influence; for the normal heart must have arterial resistance in order to perform its proper functions.

"My conclusions, therefore, are that chloroform generally kills by its vaso-motor poisoning effect, which deprives the heart and respiratory center of blood, and simultaneously the drug itself aids in the embarrassment of these parts. From these conclusions we may draw the following practical deductions: 1. In all cases when chloroform is to be given to a feeble patient, the extremities should be tightly bandaged. 2. Atropin should be given as a vaso motor stimulant. 3. A large

compress should be tightly bound over the abdomen if this is at all relaxed, or if an accident occurs. 4. The patient should be inverted, if syncope occurs. 5. Artificial respiration, performed by compressing the floating ribs and precordium, should be employed to aid in the circulation of the blood, to pump the chloroform vapor out of the lungs, and to aid the respiratory center in its functions. 6. During the use of chloroform the respirations should be watched for two reasons, because the depth and rapidity of the breathing is a gauge of the amount of chloroform inhaled (for the amount on the inhaler is not the dose), and because as the blood pressure falls, the respiratory center becomes disturbed in its function and the irregular breathing shows that the chloroform is disturbing it. Further, irregular breathing means irregular dosing, for twenty deep inspirations a minute means more chloroform inhaled than twenty shallow ones. The respiration is the dose gauge."

Successful Operation for Perforated Gastric Ulcer.—Clarke (*Lancet*, March 20, p. 806) adds another to the growing list of cases of perforated gastric ulcer successfully operated on. A domestic servant, 19 years old, was seized with severe epigastric pain and sickness two hours after her mid-day dinner of beef, potatoes and rice pudding. She had had some uneasiness about the stomach for two or three days previously and two years before she had suffered from hematemesis. Since this time she had often felt pain after food, with occasional sickness. In the course of four hours following the onset of the acute manifestations the patient was moderately collapsed, and the symptoms, together with her aspect, her attitude and her pallor, made it evident that abdominal exploration was urgently called for. Accordingly, a five-inch incision was made in the median line, from the xiphoid cartilage to near the umbilicus. The left rectus muscle was not divided. The falciform ligament of the liver was in the way and somewhat delayed the due opening of the peritoneum, but on getting through this membrane, odorless gas and turbid fluid escaped, and bits of potato and rice were seen scattered about. There were no adhesions. On drawing down the stomach a perforated ulcer perhaps an inch in diameter was found on the anterior surface near the cardiac extremity, through which more rice and potato was escaping. The edges of the ulcer were indurated and the base around for some distance was thickened. Considerable traction downward was necessary to bring the ulcer within due reach. The fluid and bits of food were, as far as possible, at once removed, sponges were adjusted around, and the stomach was washed out with two syringefuls of fairly hot water. The edges were too deep to admit of being trimmed; so the opening was closed by two rows of fine silk sutures by Lembert's method and fixed well beyond the ulcer, both above and below. The abdominal opening was then covered temporarily with hot sponges and a second median incision was made a little above the pubes, so as to explore Douglas' pouch. A good sized sponge passed into this cavity was found on withdrawal to be saturated with the same turbid fluid as had already been noticed. The abdominal cavity was now freely irrigated with hot water at a temperature of 105 degrees, several pints being used, and the various recesses especially were dealt with by means of the glass tube passed between the coils, above and under the liver and in the different regions, until all of the fluid returned clear. The surplus was then sponged away. A large drainage tube was then introduced into Douglas' pouch and the lower wound was closed. A similar piece of tube was inserted through the upper opening and reaching to the site of the ulcer. The operation lasted an hour and a quarter and was well borne by the patient. Three hours later a hypodermic injection of morphin was given to relieve pain. Sickness occurred once in the night. Nutrient enemata were administered regularly. On the second day improvement was noticed. Thirst was relieved by hot water enemata each day and the drainage-tube was soon removed and replaced by plugs of iodoform gauze. On the sixth day a small discharge of pus took place from the epigastric wound, which otherwise was doing well. Rectal feeding was continued until the eighth day, when

the patient began to take liquids by the mouth. The wounds gradually closed and convalescence was uninterrupted. The patient was dismissed two months after the operation, having gained seven pounds in weight.

PRAGTICAL NOTES.

Radiographic Test After Osteotomy.—At the New York Post-graduate Hospital Dr. Samuel Lloyd recently gave an interesting demonstration of the surgical utility of ray work. One case was that of a young girl whose thigh bones were crossed, thus preventing her from the use of her limbs. She was taken into the hospital nine weeks ago, when the surgeon performed the operation of osteotomy. Both thigh bones were broken and placed in position for a normal reunion. The bones were subjected to a ten-minute exposure of the ray, and by the use of the fluoroscope Dr. Lloyd was able to announce a perfect union of the bones, so that the girl would be able to walk. The successful application of the X rays to this part of the body was more difficult than to any other part a representative of Mr. Edison explained, but the healing bones could be seen as readily by placing the Crookes tube under the operating table and holding the fluoroscope above the thigh bones. Other experiments, equally successful, were made with fractured bones of the knee and elbow and with diseased bones of the hands.

Vaginal Atresia and Its Cause.—Meyer has published a very complete monograph on this subject, with no fewer than 216 cases carefully tabulated. He does not confirm Kussmaul's doctrine that ill-development of the lower part of the genital tract with atresia is due to fetal inflammation. It is in infancy and childhood that these inflammations occur, such as vulvitis and local lesions in general infectious disorders. The vagina closes, the tissues heal and look healthy after a time, and it is not till puberty that the damage becomes manifest. Then it is easy to understand how the disease might be wrongly considered congenital. Unilateral hematosalpinx, with inflammatory closure of the vagina, is very often observed, and Meyer holds that there is closure of the tube at the ostium from the same inflammation, due to some infective agent. As the agent can cause septic changes in the blood in the tube, the ultimate rupture of the hematosalpinx into the peritoneum or into some visceral cavity puts the patient to great peril. This explains the high mortality of atresia vaginæ with unilateral hematosalpinx.—*American Practitioner and News*, March 20.

Prodromal Eruptions in Measles.—Robet has collected a number of observations showing that measles may have a premonitory rash as is the case with variola and varicella. These eruptions vary in character, being scarlatiniform, morbilliform and erysipelatos. They may even resemble red miliaria, showing small vesicles filled with a clear fluid surrounded by a pink areola, and accompanied by itching. The erythematata generally appear about the second day of the period of invasion, and disappear before the measles eruption, and they do not seem to affect in any way the invasion period of the disease, and the temperature course in nowise differs from the cases in which there is no premonitory rash, nor does the subsequent condition of the patient show the least difference; moreover, there does not seem to be any serious constitutional effect similar to that following the erythematous eruptions met with in diphtheria, enteric and some other diseases. The author admits that the number of cases sufficiently recorded is as yet too small to warrant any statistics being drawn, but he thinks that these premonitory rashes are much more frequent in measles than is generally supposed.—*British Medical Journal*.

Identity of Seborrhea and Alopecia.—It is announced from the Pasteur Institute that M. Sabouraud has established the fact of the identity of the microbe in these two affections, which

he has successfully isolated and with which he has produced the characteristic alopecia patches on sheep, guinea pigs and rabbits. Inoculations with the seborrheic microbe are not quite so convincing, and hence he only asserts in the case of seborrhea that the microbacillus is the constant microbial expression of the affection, without being able to demonstrate that it is the cause of the lesions. His article in the *Annales de l'Institut Pasteur*, February 25, is an able presentation of the clinical picture, elementary lesions and the microbe of the two affections reveal the connection between them, and proves the facts that acute alopecia is an acute local seborrhea, and alopecia decalvans a generalized chronic seborrhea. The same parasite produces two distinct diseases; why they differ is still a problem. The bacillus can only be cultivated on very acid media. The growth of the coccus albus interferes with its cultivation, unless "vaccinated gelose" is used, in which the coccus albus has already been cultivated. The same effect of abundant and isolated cultures can be secured by slow pasteurization; ten minutes at 65 degrees C. kills the coccus, but does not affect the bacillus. Further details are quoted in the *Presse Méd.* of March 20.

Serum Diagnosis of Typhoid Fever in Norway.—The *Tidsskrift for den Norske Lægeforening* of March 1, contains Dr. P. Aaser's report of the results of this method of diagnosis at the Ullevold Hospital during the epidemic of typhoid that has prevailed at Christiania since last October. Positive results were obtained in 98.9 per cent. of the 91 cases of unmistakable typhoid, and in 5 out of 59 cases in which clinical examination had failed to disclose it. He found that the intensity of the reaction does not depend upon the severity of the disease, some of the lighter cases producing the effect with greater intensity than the graver cases. The length of time required varied also from five to twenty minutes. He stated that the more the culture can be attenuated, without losing its agglutinating and paralyzing power, the more certain the diagnosis with it. He even succeeded with 1 part serum to 1,000 parts culture. Contrary to the experience of some others, he found the reaction continue with the same intensity two to three months after the commencement of the disease, and in the case of a nurse who had passed through an attack of typhoid over a year previously, the reaction was rapid and distinct. He obtained the reaction the third day in 2 cases; the fourth day in 4; the fifth day in 2; the sixth day in 3, and the seventh day in 4; the second week in 24; the third week in 10; the fifth week in 8; the sixth week in 19; the seventh week in 8; the ninth week in 6. Dr. Aaser refers constantly to the article on the subject in this JOURNAL, Feb. 6, 1897, by Appel and Thornbury, and concludes with the generally accepted opinion that while the serum test is not infallible, yet in connection with the syndrome, etc., it is of great practical value.

Perforation of Gastric Ulcer Following Anesthetization.—At the Berlin Society of Obstetrics and Gynecology, a report of which appears in the *Centralblatt für Gynäkologie* for December 5, Kiefer showed a specimen of perforation of the stomach by an ulcer after anesthetization. Four weeks after parturition the patient had been subjected to a secondary suturing operation, presumably on the perineum. Previous to the anesthetization she had been in excellent condition, but she vomited immoderately after it. On the following day she was manifestly in a state of collapse, short-breathed, and complaining of a stabbing pain in the right side. The abdomen was tympanitic, but not very tender on pressure. The pulse was about 120, and there was no elevation of the temperature. She died in about thirty-six hours after the operation. In her last hours she had vomiting of bile, and seems to have gone to sleep quietly after that. As there were no significant abdominal symptoms, embolism suggested itself at first. When the abdomen was opened postmortem the protruding coils of intestine were

accompanied by an abundant escape of liquid that was of a cloudy-yellow appearance and smelled aromatic and alcoholic. The peritoneum, including the serous coat of the intestine, showed recent hyperemia, and was partly covered with lymph. There was a decided hour-glass shape to the stomach, owing to firm adhesions of the cicatricially contracted lesser curvature to the left lobe of the liver in consequence of an old ulcer of the stomach. At the pylorus there was a transverse laceration about two-thirds of an inch long through which the mucous membrane was prolapsed; the neighboring portion of the organ was infiltrated with bile, and there was a recent ulcer of the pylorus. The perforation had not given rise to the hemorrhage. The account leaves it to be inferred that the perforation was due directly to the excessive vomiting that followed the anesthesia. What anesthetic was used is not stated. We must probably include ulcer of the stomach among the morbid conditions that render the vomiting incidental to general surgical anesthesia dangerous. In this instance the ulcer does not seem to have been diagnosticated.—*New York Medical Journal*.

Chlorosis.—As the result of a study of thirty-one cases of chlorosis, with especial reference to the etiology and the dietetic threatment, Simon (*American Journal of the Medical Sciences*, April, 1897, p. 399) has arrived at the conclusion that an anatomic basis for the disease has not yet been satisfactorily made out. Perversion of the appetite, as manifested by excessive consumption of starches and sugars, has been noted as a common symptom of chlorosis. The development of the disease is attributed to an insufficient consumption of animal proteids. The affection is thought to be more common than is generally supposed, and occurs in both sexes and at almost all ages. The diagnosis should be based solely on the results of examination of the blood. It is further recommended that the designation, simple anemia, should be substituted for that of chlorosis. Iron is not believed to be a specific in the treatment of chlorosis. In the treatment especial attention should be given primarily to the diet. In cases in which iron fails to yield good results resort should be had to a suitable diet, of which animal proteids, bone-marrow and dark beer are important constituents. The beneficial effects of bone-marrow are not ascribable to the amount of iron it contains.

Acetanilid in Minor Surgery.—The general practitioner is, at more or less frequent intervals, called upon to do minor surgical work in his office, and an antiseptic dressing that is convenient of application and at the same time reliable is a special need. Many antiseptics, of alleged great germicidal powers, are offered by the manufacturers, but most of them are proprietary articles and high priced. For some time acetanilid has been recognized as one of the best dressings in minor surgery, though it still left something to be desired in the attempts to prevent suppuration. In the *Medical News* of February 6, Dr. W. A. Fallas, Horton, Mich., makes the following suggestions with regard to acetanilid as a dressing. In place of the pure drug, he uses a compound that seems based on good ground, and is said to overcome the weak points of the single substance. He recommends, acetanilid 48 per cent., boric acid, powdered, 15 per cent., starch powdered and finely sifted, 35 per cent., carbolic acid, liquid, 2 per cent. This makes a mixture that is slightly moist, but is practically a dry dressing, and at the same time has stronger powers of absorption than pure acetanilid. Its special advantages are its powerful bactericidal action, freedom from odor, painlessness and cheapness. This latter advantage is one not to be lost sight of, for by reason of this cheapness it may be applied quite profusely, especially to sutured wounds, and in locations generally where absorption into the blood is not to be feared.

Treatment of Prostatic Hypertrophy—Cauterization through the Rectum.—Negretto records four cases of prostatic retention

treated with much success by the above method. After thoroughly emptying the rectum, the patient is anesthetized and the rectal speculum passed, the upper part of the bowel is plugged with gauze, and then, under the guidance of the finger, a specially devised hook with graduated stems is passed into the prostate to steady it. The prostate is then cauterized with a Paquelin or galvano-caustic over the extent required. The operation only lasts two minutes. The bowels are kept confined for a few days, and a catheter kept permanently in the bladder for some time. On the sixth or seventh day a purge is given, at the end of ten or twelve days the catheter is removed, and the patient can urinate by himself. The patients were 56, 62, 74 and 78 respectively, and had suffered from prostatic disease from three to five years on an average. In each case cauterization per rectum not only speedily relieved the congestion, but caused a notable diminution in the size of the prostate. The author believes this method to be superior both in its immediate and remote effects to castration or excision of the vas deferens.—*British Medical Journal*.

Veratrum Viride in Eclampsia.—Dr. W. H. Thayer claims that in puerperal convulsions he has found a condition of the nervous system that begets a peculiar tolerance of certain drugs, especially of veratrum viride, so that the officinal dose has no effect. But large doses quiet the nervous erethism, producing a decided effect in a short time—sometimes in fifteen minutes, but almost certainly within an hour—and keeping the nervous system under control for several hours. The administration is followed by cooling of the surface, great lowering of the pulse in rate but not in strength, and along with this complete arrest of the convulsions. The state of the pulse is the guide in treatment. From a high rate, which rules in the disease, it is reduced to the normal standard or below it; and while it is kept below 60 there need be no fear of a recurrence of the paroxysms. When this effect has been once produced, it will continue several hours, and a single dose will do it; if not apparent within an hour or less, the medicine must be repeated in smaller doses; and it can be safely repeated at intervals until the pulse begins to fall. With the pulse for a guide, no untoward symptoms need occur from its use; the pulse may be brought to 50 without any general depression; if carried so far as to produce vomiting we may find great prostration produced by the nausea, which is overcome within thirty or forty minutes by opium or any diffusible stimulant, perhaps in less time by a solution of morphia hypodermically. The employment of veratrum viride in large doses in puerperal convulsions was first reported to the Kings County Medical Society by Dr. Herbert Fearn of Brooklyn, in 1869, substantiated by cases in which he had used dram doses of the tincture, sometimes required to be many times repeated, with favorable results. Since 1869, when Dr. Fearn's paper was read, the treatment of puerperal convulsions with veratrum viride has been slowly gaining favor, of which we have evidence in many communications to various societies and medical journals. Bartholow, in his *Materia Medica and Therapeutics* (1888) says: "Dr. Sullivan of San Francisco informs me that veratrum viride (half a dram of the fluid extract every fifteen minutes, until nausea or vomiting ensues) is invaluable in puerperal convulsions. Barker, in his 'Puerperal Diseases,' had already called attention to its utility, and Boyd confirms the previous observations. Increasing experience adds to the testimony regarding its exceptional value in relief of this formidable malady." "The experience of one general practitioner in puerperal convulsions is not very great; but in the convulsions of children I have regularly employed veratrum viride for twenty years past with excellent effect, and as a prophylactic in ephemeral fever in children who are subject to convulsions. I believe the use of veratrum viride in puerperal convulsions originated in Brooklyn, where its value is now generally recognized. It has gained ground elsewhere, as rapidly as could be expected of the management of an affection so infrequent, and promises in time to supersede all other methods of treatment."—*Boston Medical and Surgical Journal*, April 1.

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It would greatly facilitate the prompt delivery of the JOURNAL to those members of the Association living in large cities, if they would kindly furnish this office with their street address in those cases where it is omitted from the wrapper of their JOURNAL, as we have been notified by the postmasters of the larger cities that second-class mail matter not having street address, would be placed in the general delivery to await call.

SATURDAY, APRIL 24, 1897.

THE MEDICAL SIDE OF THE DEPARTMENT OF
AGRICULTURE.

Since no one disputes the beneficent act of the man who makes two blades of grass grow where one grew before, it is evident upon slight reflection that wisdom and propriety can not go far astray in attributing to agriculture and all pertaining thereto, the greatest meed of praise for acts and motives so highly commendable. The empirical methods of farmers, gardeners, stock-raisers and others who supply our food either directly or indirectly, are now giving way to the more rational investigation and experiment of skilled biologists, the result of whose work and induction the Government is endeavoring to spread and diffuse gratuitously where it will do the most good. With a view to carry out this purpose a number of properly qualified experts in microscopy, bio-chemistry and veterinary medicine have been for some time quietly at work on various problems of a bucolic nature and with gratifying results. In the well equipped laboratories for pursuing this form of medical industry one finds all appliances for conducting the necessary experimentation, in addition to card catalogues of the literature bearing on the subject, with collections of specimens surpassed by a few only in Germany.

Among the various bulletins, more or less medical, issued by the Department in the last few years those relating to food products deserve more than passing notice. With a more varied and abundant food sup-

ply than that of any other country, we find in the United States not only the worst prepared food, but a greater waste and neglect of nutrient material that might be utilized in the interests of frugality. Take, for instance, the edible mushrooms and other allied fungi so rich in quantity and variety both North and South, no less than 111 species being indigenous to North Carolina alone, and in almost every section and climate of the Union are to be found the species common to Continental Europe. During the Arctic cruise of the U. S. Steamer *Courier*, mushrooms might have been gathered by the cart load in the vicinity of Point Barrow, Alaska, but not knowing how to distinguish the comestible from the poisonous species, no one dared eat them, although it is safe to say that all were edible, for as a rule nothing is poisonous in the far north.

Varieties of truffle, edible boletus and puff-ball from great antiquity have been articles of large consumption, and at present are widely cultivated in Europe; but according to a late authority, in the most prosperous and progressive of all countries, with a population of nearly seventy million of people alert to every profitable legitimate business, mushroom-growing, one of the simplest and most remunerative of industries, is almost unknown. As a matter of fact, from an economic point of view the mushroom industry is so profitable when intelligently conducted as to bring in more money than eggs and poultry and with less trouble. Moreover, it is stated that the food value of many species of mushrooms entitles them to a place beside meat as sources of nitrogenous nutriment, and their analysis seems to bear out the statement, being rich in protein, potassium salts and phosphoric acid, fatty matter and a considerable quantity of sugar. As compared with other foods, mushrooms are said to surpass in nitrogenous value bread, oatmeal, barley bread, leguminous fruits and potatoes. In France the popular belief in truffles as an aphrodisiac is as widely prevalent as the use of mushrooms among the peasantry and the working classes in towns, among whom this esculent often takes the place of meat. Indeed, an exclusive diet of mushrooms is so compatible with the preservation of excellent health that a number of investigators report never having enjoyed better health than when living for weeks and months upon mushrooms, and the case of a centenarian is cited who lived upon mushrooms and nothing else for thirty years. So much is to be said upon the alimentary value of mushrooms and their use as a delicate condiment, we wonder why fungiculture is not more in vogue. To the gourmet what more dainty addition to an otherwise prosaic breakfast than that of mushrooms to bacon? And who that has spent much time in Southern France does not recall with dreamy delight the gastronomic ecstasy of eating an omelet with mushrooms, such as a French cook only can prepare? Here

then is an alimentary substance almost equal to meat, which general ignorance of its distinguishing characteristics allows to rot and waste in enormous quantity in our fields and woods. There is also in our country a popular but unfortunate prejudice concerning the use of mushrooms similar to the appendicitis craze in the use of grapes, which time and intelligent instruction only can eradicate. The purpose of the food bulletins is therefore to promote the mushroom industry; to place on the table of the middle classes a wholesome delicacy which before had been restricted to the wealthy; and to give some clear and trustworthy criteria by which to make the essential distinction between the edible species of mushrooms and those that are poisonous. Unhappily this distinction is less easy than might be wished. The old test of the silver spoon, the onion, and milk are not fixed and certain, since some of the most poisonous species are without action upon silver or an onion, or upon new milk. The authorities are that in general all mushrooms should be regarded as suspicious whose flesh changes to blue or greenish color on contact with air; also those having a disagreeable, nauseating or bad odor; or of which the taste is acrid and biting, or the flesh soft, deliquescent, spongy, hard or corky. The flesh of edible mushrooms is usually firm, but tender, exhaling an aromatic odor suggesting freshly ground meal. But these characteristics alone are more or less faulty as diagnostic methods. To avoid error the generic and specific features of the parasite must be studied. It is only by taking into account as much as possible the botanic character, organoleptic properties, and other specific traits that distinguish the species of the mycologic world that we may hope to formulate therefrom practical directions for distinguishing the innocent and edible mushrooms. Happily, muscarin poisoning is not common, though it has been observed; only a few of the species are toxic; some of these are rendered inert by cooking, and their digestibility, like that of other articles of real alimentary value, varies with individuals, temperaments and morbid states.

Equally bearing upon the subject of bromatology is the study of the animal parasites, most of which are enigmas for the biologist and yet a problem for the hygienist. Through the efforts of the medical men connected with the department much light has been thrown upon the history of these strange beings; their organization has been described, their activities revealed and a classification made. One of the latest bulletins on this subject deals with the tapeworms of poultry. To the practical man who asks the use of all this, we have only to mention the valuable aid that such work affords in the inspection of food supplies, the stamping out of disease among domestic animals, the enforcement of cattle quarantine, and the like. As an instance bearing on this point we may cite a path-

ologic specimen from a sheep erroneously supposed to be infected with tubercle, which caused the whole flock to be condemned and slaughtered. Had the inspector known enough to recognize the existence of a common entozoön the mistake would not have occurred. Again, the subject of trichinous meat much affects our trade relations with Germany. History shows, however, that the disease first occurred in that country in 1875, and a record of all the instances of this disease occurring in the last four years shows that 50 per cent. of them originated in German pigs.

To the average farmer and stock-raiser the subject of parasites in domestic animals is a matter of no little interest. Our old friend the horse, whose sphere of usefulness is being daily lessened by the bicycle, the electric car and the automobile carriage, comes in for a fair share of treatment in the "Special Report on the Diseases of the Horse," which is intended to be distributed to farmers as a safe and scientific guide. It is doubtful, however, whether the mass of farmers, many of whom do not know the "canon bone from the paxwax," care to be told anything about the prehistoric hipparion; or that the horse is a monogastric mammifer, non-ruminating, gyrencephalic perissodactyl ungulate, having three sesamoid bones in the flexor tendon of the foot, no clavicles or gall-bladder, and is unable to vomit. It is also doubtful whether the chapter on disease of the nervous system of the horse will be of much use to the ordinary farmer; since neurology is the most difficult and recondite branch of medicine, and neurologists now doubt the existence of hydrophobia, which the report in question admits is the subject of much controversy and may be mistaken for tetanus.

Since the Saxon days of the *Horsthegn*, government officers have interested themselves in perfecting the breed of horses and other stock; so that now we find the stoutest blood on the turf in animals perfected by fresh strains and full of go and quality. The perfecting of stock being an index that points to a higher state of civilization everything therefore that conduces to that end is praiseworthy, whether it comes from the farmer or the man of science.

European critics accuse our cattle inspectors of being over confident, and one foreign minister in Washington quotes to that effect an outbreak of Texas fever on board a foreign-bound ship in which the cattle that died overnight became dismembered on attempting to hoist them from the hold, so advanced was the decomposition.

As a matter of fact, judicial fairness prompts no very serious criticism in the considerations of the fore-mentioned bulletins. Perhaps a little less zeal is to be commended among the followers of PASTEUR, who make unsound deductions from laboratory diseases with which they have no clinical acquaintance. However, the writers have reported their work with

considerable accuracy of anatomic and morphologic description couched in the special and new terms of mycologic, helminthologic and veterinary language, which we regret to say is such unpopular reading to the average congressional constituent that the leaves of these really valuable publications will come ultimately to such base uses as did the noble dust of ALEXANDER, or find their last resting place as wrapping paper in the corner grocery.

SEWAGE DISPOSAL AND WATER PROTECTION.

The disposal of sewage is the important sanitary problem of the present time and of the immediate future for the people of this country, for, outside of seacoast communities, the condition of natural water supplies will be dependent on the manner in which it is worked out. The rapid growth of our cities, and the increasing volume of their excreta discharged into the water courses, lead the sanitary authorities of every community which pumps up river water for use to give serious consideration to the method of sewage disposal of their neighbors up stream. The consoling reflection that the running stream becomes purified during its flow, is not now available. Aeration, sedimentation, dilution and nitrification have long been recognized by chemists as unreliable purifying agencies in the flow of a stream from city to city; and the typhoid death rates of the down stream settlements tell the same story to the etiologic investigator. England has been at work on this problem for half a century, and it is yet far from being satisfactorily solved. When the Health of Towns Commission, over fifty years ago, aroused public attention to the existing filthy conditions and the want of facilities for even the removal of human excrement, not to speak of its disposal, local authorities vied with each other in the construction of sewerage systems. The cities become cleaner, but at the expense of the streams. Legislation had then to be directed to the protection of the latter, that they might cease to be nuisances in their character of open sewers. Sedimentation or precipitation of the sludge with purification of the liquid was successfully carried out in some instances, but failed in so many others that the attention of sanitary engineers became directed to irrigation and filtration as yielding better results. Many cities with suitable lands in their vicinity succeeded in disposing of their sewage in this way; but the efforts made to improve existing methods, or to discover better methods, indicate that the success achieved does not satisfy the British sanitary authorities. At the present time an experiment is being conducted in Essex, in which the sewage is retained in an underground "septic tank," excluded from light and air to give the anaerobic bacteria opportunity of breaking up the organic matter of the sewage prior to treatment by intermittent filtration (*Lancet*, Dec. 5, 1896); and a somewhat similar

method is on trial by the Sutton Urban Council (*Sanitary Record*, Dec. 11, 1896).

We are encouraged to hope that great impetus will be given to progress in the disposal of sewage in this country by the report of the Passaic Valley Sewerage Commission. This Commission, consisting of Dr. ELIAS J. MARSH, Dr. H. C. H. HERROLD and Mr. WILLIAM T. HUNT, was appointed in accordance with an Act of the Legislature of New Jersey, approved Feb., 26, 1896, to consider the subject of the pollution of the Passaic river and of a general system of sewage disposal for the relief of the valley of the Passaic river. The daily discharge of 70,000,000 gallons of sewage into the river below the Great Falls at Paterson, with the deposit of foul-smelling sewage sludge on the shores, is recognized by the Commission as a public nuisance, an injury to health, and an increasing menace to property interests in the valley. The river has lost its former attractiveness for pleasure purposes such as boating, bathing, etc.; its fisheries have been destroyed, and its waters have become unfit for many manufacturing purposes. As a means of relief the Commissioners propose a system of trunk sewers leading from the falls of Paterson to the meadows below Newark, collecting the sewage but not the storm water from the towns and villages of the valley, and discharging near the southern end of Newark bay where the volume of water is great owing to the junction of the Hackensack with the Passaic. The soil of the valley is unfavorable for filtration or irrigation, and chemic disposal works for the various communities would be likely to result in the deterioration of some of them into local nuisances. The estimated cost of the proposed trunk system constructed to meet the wants of a population of 1,500,000, which is represented as the limit of probable increase in 1930, is \$6,500,000. To provide for the needful expenditure the Commissioners present a draught of a general enactment calculated to meet the necessities of other drainage districts in the State, as well as that of the Passaic river. Their scheme of action proposes that the water-sheds of the State be recognized as drainage districts, and be treated for legislation as such; that where pollution of the rivers exists of a nature to constitute a public nuisance or to be detrimental to public health, the Governor shall have power to take proceedings under the Act, upon report to the Legislature of a commission especially appointed to consider the subject; and that he shall then appoint three commissioners to take the work of purification and protection in charge. These river commissioners, having defined the territory requiring sewage disposal, would then proceed with the construction of the necessary works. The funds would be obtained by the issue of bonds, the payment of which, with interest, would be provided by assessment upon the communities and the individuals benefited.

The commissioners deserve credit for the able manner in which they have done their work, and for pointing out the necessity for the protection of other drainage areas than that of the Passaic, and the means by which their protection may be effected. The difficulties encountered by them in devising a method for the disposal of sewage, and the protection of a single river within the limits of their own State are suggestive of those that would be encountered, in the absence of National legislation on the subject, in the case where two or more States are concerned. In progress of time we may have a Department of Public Health.

THE PHILADELPHIA SEMI-CENTENNIAL MEETING.

The semi-centennial meeting of the AMERICAN MEDICAL ASSOCIATION, which will be held in Philadelphia June 1, 2, 3 and 4, 1897, bids fair to surpass in the character of the entertainment, the scientific papers and the number in attendance any meeting which has heretofore been held. The committee in charge have been able to obtain large and roomy places of meeting for the general and the Section meetings, all within a single block, and within a very short walking distance or immediately adjacent to the largest and most comfortable of the Philadelphia hotels.

The general meetings of the AMERICAN MEDICAL ASSOCIATION will be held in the Academy of Music, which is an opera house capable of seating nearly three thousand persons, the acoustic properties of which are so excellent that a speaker on the stage can be heard in any part of the house. Immediately across the street from the general meeting place is situated the Hotel Walton, which will be the ASSOCIATION headquarters and which contains no less than five large meeting halls, in which several of the more important Sections will hold their meetings. In this hotel, too, will be given most of the receptions and dinners held by the Sections or private individuals. Immediately to the south of it in the same block is the South Broad Street theater, with a capacity for about fifteen hundred persons, which will be given over to one of the larger Sections, and adjoining this is the Hotel Stenton, in which three Sections will hold their meetings. Immediately south of the Academy of Music, and in the same block on the opposite side of the street from the South Broad Street theater, is situated Horticultural Hall, a building recently erected at a cost of about half a million of dollars and which is supposed to be one of the handsomest and the best hall for acoustic properties in the United States. The main hall of this building will be devoted to the exhibits, and it is interesting to note that nearly all the space in this hall has already been taken by prospective exhibitors. Two or three important Sections of the ASSOCIATION will hold their daily meet-

ings in the large meeting rooms in this building.

It will be seen from this description that the exhibition hall and all the meeting places are situated on both sides of the street within one block, and in this way physicians desiring to hear different papers in different Sections can readily pass from one meeting to another during the course of the morning or afternoon hours. All of the hotels are so large and commodious that they will amply accommodate the 3,000 members which the Committee of Arrangements hope to have in attendance, and nearly all the large hotels, a list of which has already been published in the JOURNAL for April 3, are within five blocks of the meeting places, and several of them not more than a few hundred feet away.

Nor has the Committee been content with arranging for a complete and useful scientific meeting. Efforts have been carried to a successful termination looking toward the entertainment during the hours between the morning and afternoon sessions, and in the evenings, of all the delegates and their wives and daughters, and it has been found possible to so group together these entertainments that only short distances will be traversed from one entertainment to another.

With the reputation which Philadelphia has for hospitality and for the study of scientific medicine, we feel that we can urge our readers most enthusiastically to make every effort to attend this meeting, which bids fair to be an historic occasion in the history of the ASSOCIATION.

BIO-CHEMISTRY AS A RECOGNIZED MEDICAL SPECIALTY.

In the *American Naturalist* for April, Mr. ALBERT MATTHEWS makes a plea for the recognition of bio-chemistry as a special branch of science and for the establishment and endowment of professorships and laboratories for research in this particular line. He shows that the chemistry of living matter, or the chemistry of metabolism, has problems of its own quite apart from those that engage the attention of the specialist in ordinary organic chemistry. The fully qualified bio-chemist should also have his own special qualifications; he should be to some extent a zoologist and a botanist as well as a physiologist, and while he widens his range of knowledge in this way he can best work by restricting his field to the study of the chemical problems of life and the substance of living beings. His specialty is in its way one of the widest, but it is even yet wider when to his duties are added those of the general chemist working on the ordinary problems of analysis and synthesis of organic and inorganic compounds, as is the case with the majority of the professors of chemistry in our colleges and universities. Medical chemistry includes the whole range of inorganic and organic chemistry in the usual curriculum, and its biologic relations are only treated

as side issues to be cultivated as a later post-graduate study, if at all. Yet these are practically and almost exclusively the chemical problems that engage the attention of the practicing physician, and their practical applications are every year becoming more and more extended. Even the most ordinarily qualified doctor has to make use of bio-chemic tests of the secretions and excretions for purposes of diagnosis, and the use of these is constantly increasing. The phenomena of digestion, secretion, reproduction, all require for their understanding, to say nothing of their study, a knowledge of these relations, and the fuller and more accurate this can be the better for the physician and his patrons. Bio-chemistry has, moreover, within the last few years entered the field of therapeutics as well as those of physiology and pathology; the rational use of organic extracts and serum therapy generally depend upon it. It is a necessary adjunct to bacteriology, for it is the toxins the microbes elaborate, not the organisms themselves, that are deadly, and medical chemistry gives us the knowledge of these, and often that of the methods by which we can successfully counteract them. In a word, bio-chemistry is the one thing that bids fair to make therapeutics a system of scientific and rational procedures, instead of being, as it has largely been, only an empirical and unsystematic experimentation upon the complex and too little understood human mechanism.

The propriety, therefore, of making it a special branch in our medical colleges is sufficiently evident. In the post-graduate schools it should be a necessity even now, and the time is probably coming, with the advancing requirements of medical education, when the knowledge of the general principles of inorganic and organic chemistry will be a preliminary requisite for admission to our medical colleges, and their courses of clinical instruction will be confined to the special physiologic and pathologic relations and reactions of chemical substances and compounds. That this field is wide enough for any medical course is sufficiently evident, and it is widening every year.

There is a sort of unworthy satisfaction that we may feel from the fact that according to Mr. MATTHEWS' showing America is not so far behind Europe in her inadequate recognition of this important specialty. In only a few of the great European universities, it appears, are there special chairs of bio-chemistry, and these few are chiefly those of Austria and Russia. In Germany, where so much work is done in this department, it is mostly by professors filling chairs of physiology and pharmacology, bio-chemistry by itself being there as yet a generally unrecognized specialty. The same is true of England and France and this country, though excellent work is done in each in this special line. There are, moreover, few special journals in this department, though

certain physiologic journals are largely filled with articles on bio-chemic research, notably the *Zeitschrift f. Physiologische Chemie* and *f. Biologie*, *Pflüger's Archiv* and the *Archiv für Experimentelle Pathologie und Pharmacie*, the *British Journal of Physiology*, the *Journal of Experimental Medicine*, and a few others. It is needless to enumerate the important works that treat of this specialty or some one of its departments; their titles should be familiar to any well-informed physician.

Another feature which will undoubtedly come to be considered as a medical necessity is the establishment in our large centers of bio-chemic laboratories for practical purposes, where the more elaborate analyses and examinations which are now coming to be often exacted for diagnostic and other purposes, can be made. These are for the most part impracticable for the average physician, who can go on as heretofore using the simpler tests, but who will be compelled to call in skilled assistance for the more complicated analyses and examinations. Such laboratories already exist in some cities, like Chicago, for example, where one is in profitable operation under Dr. WESENER, and they have long been recognized as essentials to the health departments of our great centers. Their multiplication will be a great advantage to medical research, as well as of practical use to the profession.

Specialties in medicine are, it may be said, numerous enough already, but the truth is they do not exist or prosper except as they meet a need. They are generally practiced before they are actually professed, and that is the case at present with that of bio-chemistry. The time has apparently come for its full recognition by the profession and in our medical instruction.

THE JOURNEY TO MOSCOW.

An arrangement has been made with Thos. Cook & Son, tourist agents, for a round trip to Moscow in August. The party will leave New York on Saturday, July 3, by the North German Lloyd Steamer *Werra*. The steamer calls at Gibraltar July 12 and on July 15 arrives at Naples, where three days will be spent; on July 19 the party will travel to Rome, where four days will be spent; on July 24 travel to Florence, where two days will be spent. Various towns in Italy will be visited; Switzerland will be traversed, thence to Vienna, Warsaw, Moscow, St. Petersburg, Stockholm, Christiania, Hamburg, Bremen, etc., whence they return by the same line to New York, where they expect to arrive September 24. The cost of membership in this party has been fixed at \$560. Such well known physicians as the following are among the signers of the circular: Nicholas Senn, Casey A. Wood, Harold N. Moyer, Eugene S. Talbot, D. R. Brower, J. B. Murphy, D. A. K. Steele, B. T. Whitmore.

Let us have a Department of Public Health!

CORRESPONDENCE.

White Glossy Paper Injurious to the Eye.

SAN JOSE, CAL., April 20, 1897.

To the Editor:—It is not often that one will complain of receiving something that is too good, but I do wish to thus complain at present. While the matter and make up, generally, of the JOURNAL OF THE ASSOCIATION have improved to a high point of excellence, the paper-maker has been endeavoring not to be left in the rear; and he has brought up the excellence of the paper on which the JOURNAL is printed to a degree of perfection altogether too high to be acceptable to many readers of the JOURNAL.

As sanitarians and hygienists we ought to practice what we preach. There is not a medical man who will not say at once, when his attention is called to it, that printed matter intended to be read by human eyes—and it is mostly thus intended—should not be impressed on paper of high glossy finish or of glossy finish at all. Some other color than white might be suggested as more comforting to the human eye, but inasmuch as white is the color of paper generally used for printed matter it ought to be a dead white with slightly yellowish tinge. Any white surface reflects light, but when it has the gloss of a looking-glass it does so in high degree. The reflections from glossy paper cause greater contractions of the pupil than would occur if the paper were dead white. And further such reflections dim the letters, relatively, on the same principle that we can not see the stars when the sun is shining. Not only should the JOURNAL be printed on paper of proper texture and finish but we, as conservators of public health, should insist that all books be printed on paper the most pleasing to the eye and the most preservative of human vision. Most respectfully,

A. C. SIMONTON, M.D.

ANSWER: We have several times asked leading members of the Section on Ophthalmology to discuss the question of the paper on which our JOURNAL should be printed, its quality, color and finish, but nothing has been done. This year it is hoped that the Section will give their opinion. The Ophthalmology Section is one of the strongest in the ASSOCIATION, and its deliberate judgment will be generally acquiesced in.

Medical Instruction of the Laity in the Lay Press.

GALESBURG, ILL., April 13, 1897.

To the Editor:—It is certainly unwise for physicians to attempt professional instruction of the laity in the lay press by means of signed articles. In the first place, such articles blur the distinctions between their writers and advertising charlatans; in the second place, the tendency in such articles is to say the brilliant rather than the true.

Yet, after all, should not the laity be instructed medically in the lay press? By all means. The instruction in physiology and hygiene presented in the common schools is distinctly inadequate and is, moreover, imparted to the learner at a time of his life when he can not by any possibility correctly estimate its importance and therefore the necessity of remembering it far on into later years. Besides, in the common schools practically nothing is said of disease. It might be urged that the less the laity learns of disease, the better for the laity. But notions of disease, superficial though they necessarily are, the laity will have, and if it does not get them from doctors, it will get them from almanacs, fences, barns and billboards.

To anyone practicing medicine it would seem unnecessary to urge the immense amount of harm that comes from widespread medical misinformation. The worry and depression in cases of disease that are either slight or non-existent; the difficulty on the part of physicians to secure intelligent coöperation, especially in the country; the enormous amount of injury

from the use of patent medicines; the large number of lives lost that might have been saved had the patients had in time the slightest inkling of the real nature of their maladies; these are a few of the considerations which to any thinking physician present themselves at once.

How should the matter be gone about? The plan, it would seem, should be this. Let a competent staff be chosen yearly from among the members of the AMERICAN MEDICAL ASSOCIATION, whose duty it should be to furnish a very large proportion of the lay press (as literary syndicates furnish stories, poems and the like, but without cost to the press) a considerable number of unsigned articles (simple, clear and honest) on such subjects as would seem to the staff as a whole to be proper and important for the general public to consider. Plenty of competent writers would lend themselves to the purpose.

Let it be borne in mind that the subject chosen should be such as seems to the staff as a whole proper and important for the general public to consider. There is no doubt that a staff chosen from among the members of the AMERICAN MEDICAL ASSOCIATION could be altogether trusted to make a wise choice of subjects. Some of the possible themes that suggest themselves to the present writer are these: Why Promiscuous Spitting should be Prohibited. Why Legitimate Physicians do not Advertise. What not to do while waiting for the Doctor. The Truth about Catarrh. Some of the Swindling Methods of "Traveling Physicians." Pain in the Back no sign of Bright's Disease. Old and Discarded Methods of Treatment Revived under new names by Quacks. On these and a multitude of other topics, the laity is sadly in need of information.

It might, of course, be contended that the masses simply will not learn. But it is certainly true that the masses do learn, only they learn the wrong things; and may not a partial explanation of that fact be found in the further fact that the right things are so seldom, indeed almost never, presented to them? Then, again, all people are not blockheads, and there are no doubt in existence a number of persons who might, good sooth, have comprehended some medical matters, but who merely happen never to have studied medicine. Finally, to present to the laity the truth about matters concerning which the laity is already in possession of the error, certainly could do no harm.

THOS. H. SHASTID, M.D.

Weak Cylindric Lenses.

BOSTON, April 12, 1897.

To the Editor:—I notice in an editorial in the JOURNAL of April 10, on page 709, "Oculist" Taylor who cured all sorts of diseases by operations and manipulations on eyes, after the cylinder quackery of today." Several years ago the Editor of the JOURNAL appeared in an editorial in which he expressed disbelief in the efficiency of cylindric lenses of as low degree as one-half a dioptrie, in relieving symptoms of an asthenopic or reflex nature. At that time he was answered by ophthalmologists from various parts of the country, testifying as to the efficiency of weak cylindric lenses, but this does not seem to have convinced our editor, and so the continuation of his remarks about the "cylinder quackery of today." If the unanimous opinion of ophthalmologists at that time did nothing to convince him, it would seem as if something stronger was required; and it would be well for him to refer to the writings of Dr. S. W. Mitchell of Philadelphia on the subject of reflex disturbances in relation to eye diseases; as it has often been said that by him, more than by any one else, has the attention of the profession been called to this matter. WM. E. BAXTER, M.D.

ANSWER: The original editorial to which our valued correspondent takes exception was written by a distinguished member of the Ophthalmology Section and of many of the ophthalmic societies of the country. The last editorial was written against quack practices, not against any one engaged in honest work.

Physician's Duty to Husband and Syphilitic Wife.

KEARNEY, NEB., April 14, 1897.

To the Editor:—Will you please enlighten me as to my duty in the following matter. About three months since, a married lady came to this city to visit her parents. She and her husband had been living in a distant State. A few weeks after her arrival here, she called upon me for advice concerning a rash which practically occupied the entire cutaneous surface. Her mother accompanied her at the first call. Each of them insisted on knowing my diagnosis. In the presence of her mother I stated that she had a papular eczema of which she could be relieved within the course of a month. Within a few days the patient called alone, when I told her she had syphilis, and this papular eruption was one of its constitutional manifestations. She did not manifest any surprise and thanked me for my discretion before her mother. Within a month I received a letter from her husband demanding my diagnosis in the case of his wife. I could easily see between the lines that his suspicions were aroused. I did not disclose her malady to the husband. He writes again insisting on my diagnosis. What is my duty?

H. S. B., M.D.

ANSWER: Refer him to his wife; she alone in this case has the right to disclose the nature of her illness.

ASSOCIATION NEWS.

Special Exercises at the Jubilee Meeting.—The Committee of Arrangements has set aside an hour on the second day of the meeting for exercises to commemorate the founding of the Association in Philadelphia in 1847. The founders of the Association believed that it would raise the standard of medical education and combine the medical profession of the United States in one body. Dr. Davis, who is recognized by all as the moving spirit in the enterprise, will read a short paper, giving an account of the origin of the Association and how the objects for which it was founded have been attained. The committee has taken steps to secure the attendance at the meeting of the presidents of the State Medical Societies and the presidents of the State Boards of Medical Examiners as an illustration of the success attained through the instrumentality of the Association.

In addition to the address of Dr. Davis, there will be two or three other short addresses to add to the interest of the occasion. It is desired that the presidents of all State Boards of Medical Examiners and of all State Medical Societies meet Dr. Davis a few minutes before his address, in order that they may escort him to the stage. In the event of the president of any one of these organizations not being able to attend the meeting, he is requested to send as an alternate one of the ex-presidents, in order that every State society and every examining board may be represented upon this notable occasion.

Of the original members of the Association there are still living, Dr. N. S. Davis of Chicago, Dr. Alfred Stillé of Philadelphia, Dr. John B. Johnson of St. Louis and Dr. David F. Atwater of Springfield, Mass. The committee hopes that these gentlemen will all be present to take part in the meeting.

JOHN B. ROBERTS, M.D.,

Chairman Committee on Anniversary Exercises.

Section on Dermatology and Syphilography.—Preliminary program:

TUESDAY, JUNE 1ST—AFTERNOON SESSION.

Address of the Chairman. A. Ravogli, Cincinnati, Ohio.

Report of the Secretary. T. C. Gilchrist, Baltimore, Md.

Report of the Executive Committee. L. D. Bulkley, New York; A. H. Ohmann-Dumesnil, St. Louis, Mo.; A. E. Regensburger, San Francisco, Cal.

Miscellaneous Business.

1. An Attempt to Classify the Clinical Varieties of Eczema,

with special Reference to their relative Frequency and Importance. Edward Preble, Cleveland, Ohio.

2. Report on Carrasquilla's Serum Cure of Leprosy. Albert S. Ashmead, New York.

3. The Treatment of Skin Cancer. John V. Shoemaker, Philadelphia.

4. Electricity in Dermatology. Robert B. Morison, Baltimore, Md.

5. Appointment of Nominating Committee.

DINNER OF THE SECTION—8 P.M.

WEDNESDAY, JUNE 2D—MORNING SESSION.

6. Neurotic Eczema. L. Duncan Bulkley, New York.

7. A Localized Epidemic of Impetigo Contagiosa. A. H. Ohmann-Dumesnil, St. Louis, Mo.

8. Ulerythema Sycosiforme, with Report of a Case. J. Abbott Cantrell and Jay F. Schamberg, Philadelphia.

9. Lantern Slide Exhibition of Clinical Cases and Pathologic Conditions in Dermatology. J. A. Fordyce, New York.

WEDNESDAY, JUNE 2D—AFTERNOON SESSION.

Report of Nominating Committee.

Election of Officers of Section.

10. The Successful Management of a Case of Psoriasis Colossus by Hydriatin Treatment. Elmer Lee, Chicago, Ill.

11. The Tongue as it Interests the Dermatologist. Charles W. Allen, New York.

12. The Use and Abuse of the Iodids in the Treatment of Syphilis. C. Travis Drennen, Hot Springs, Ark.

13. On Various Forms of Cutaneous Tuberculosis. A. Ravogli, Cincinnati, Ohio.

THURSDAY, JUNE 3D—MORNING SESSION.

Clinical demonstrations.

14. The Effect of Erysipelas and its Toxins upon certain Diseases of the Skin. B. Foster, St. Paul, Minn.

15. Remarks on the Symptoms and Nature of Erythema Multiforme. Louis A. Duhring, Philadelphia.

16. Mycosis Fungoides, with Report of a Case. John V. Shoemaker, Philadelphia.

17. Some Remarks Concerning Acne Vulgaris. T. C. Gilchrist, Baltimore, Md.

THURSDAY, JUNE 3D—AFTERNOON SESSION.

18. On a New Method of Pictorial Representation of Diseases of the Skin. Wm. S. Gottheil, New York.

19. Three Cases of Tuberculosis Cutis Verrucosa. M. B. Hartzell, Philadelphia, Pa.

20. Demonstration of Clinical Printings and Photographs of Diseases of the Skin. J. A. Fordyce, New York.

21. Syphilis in Reference to Marriage. Discussion opened by L. Duncan Bulkley, New York, and discussed by Joseph Ransohoff and A. Ravogli, Cincinnati, and Charles W. Allen, New York.

PUBLIC HEALTH.

The Smoke Nuisance at Cleveland.—Partisan politics in the management of municipal health is as damaging as la grippe to the human organism. This trite observation is suggested by the situation of affairs in our own city. A few months since a smoke ordinance was passed by the council, which was guaranteed to be legal, and the administration announced with blare of trumpets that the smoke nuisance had to go. Not only has the smoke not gone—that was not to be expected—but complaints entered at the health office against specific chimneys, which are and have long been doing definite damage to adjoining property, are met with empty promises and the sly hint that after the coming spring campaign for city offices it may be more convenient to enforce the law. In other words, the laws are used to aid the cause of candidates and parties, and the officers who swore to enforce the laws do so only when it suits the convenience of themselves and their political cohorts. It is a disgrace to the city that the enforcement of the laws must abide the sweet pleasure of our ward politicians. —*Cleveland Journal of Medicine*, March.

Mortality by Influenza in New York State.—The *Bulletin* of that Board states that in February there was a mortality by la grippe estimated at 300 deaths; or 200 less than in the same month in 1896. In March, there were 700 deaths estimated by the same

cause. At the same time the general death rate of the State in February mounted up to 19.0 per 1,000 as compared with 17.25, the rate for January, 1897; the average for February, for the past ten years, was 18.35 per 1,000. The totals by acute respiratory diseases were 254 higher in February, 1897, than in January, the same year. The infantile mortality was relatively small, 28 per cent., as is usual in the times of influenzal prevalence. We notice in a recent New York city official bulletin that no less than seventeen deaths occurred by influenza in a single week out of a total death-toll of 839; only one other zymotic cause, namely diphtheria, showing a higher total. When we consider the slowness with which some practitioners accept influenza (or any other of the newer causes) as death-causes, we think we are not mistaken in assuming that la grippe is capable of making very serious ravages; a position that we have not always found it easy to accept.

School Admissions in 1896.—Questions likely to be put to a child on application for admission to school, in 1896:

Teacher—Young man, have you a certificate of vaccination against smallpox? Pupil—Yes, sir.

Teacher—Have you been inoculated against croup? Pupil—Yes, sir.

Teacher—Have you been treated with antidiphtheritic serum? Pupil—Yes, sir.

Teacher—Have you a written guaranty of immunity against whooping cough, measles, mumps and scarlet fever? Pupil—Yes, sir.

Teacher—Have you an individual drinking cup? Pupil—Yes, sir.

Teacher—Do you promise never to exchange pens with your neighbors? Pupil—Yes, sir.

Teacher—You are supposed to be convinced of the necessity of disinfecting, at least once a week, with sulphur vapors, and of sprinkling your clothing with chlorid of lime? Pupil—Yes, sir.

Teacher—Then you possess all that modern hygienists require of a pupil; you may pass up these steps, be seated upon your separate aluminum bench, and begin to write your p's and q's.—*Deut. Med. Zeitung.*

Limit of Power of State Board of Health as to Vaccination.—A very important decision, but one which has been misstated in some early press reports, was handed down by the supreme court of Wisconsin, Feb. 23, 1897, in the case of *State v. Burdge*. The court particularly disclaimed expressing any opinion on the question of the validity of legislation making vaccination of children attending school compulsory. At the same time, it rather gives one the impression that it would uphold a statute of that character. What it did decide had reference to the power of the State board of health to make a rule that no child should be allowed to attend any public or private school in the State, without first presenting the certificate of a reputable physician as to having been successfully vaccinated. There is no statute in Wisconsin authorizing compulsory vaccination, or requiring vaccination as one of the conditions of attending the public schools. In the absence of any such statute, the supreme court holds that it can not be maintained that such a rule as the foregoing is a valid exercise of the powers of the State board of health. It says that the State board of health is a creation of the statute and has only such power as the statute confers. It has no common-law powers. In Wisconsin it is given "a general supervision throughout the State of the interests of the health and life of citizens," and is authorized "to make such rules and regulations and to take such measures as may, in its judgment, be necessary for the protection of the people from Asiatic cholera, or other dangerous contagious disease," the term "dangerous and contagious diseases," to be "construed and understood to mean such diseases as the State board of health shall designate as contagious and dangerous to the public health." But its powers, though quite general in terms, the court holds, must be held to be limited to the enforcement of some statute relating to some particular condition or emergency in respect to the public health. It has no "legislative power," and none can be delegated to it. Consequently, so far as the statute just quoted delegates legislative power over the subject involved, rather than provides for the administering and carrying into

effect of some substantive provision, it is unconstitutional, and furnishes no authority for anything like legislation on the part of the State board of health. The rule which the latter promulgated is also pronounced unreasonable, and therefore void.

New York Quarantine Laboratory.—Drs. Doty and Fitzgerald, at the Swinburn Island laboratory of the New York Quarantine Station, have been hard at work since the middle of February in initiating the production of an American anti-pest serum. The first horse was inoculated with a culture of plague bacilli on February 26. This was repeated on March 4, and again on March 9. For the purpose of determining how early the serum might have acquired antitoxic qualities, about one pint of blood was drawn from the horse on March 15 for experimental purposes, and from this one-half pint of serum was obtained. One cubic centimeter of this was injected into each of a number of white mice. After thirteen hours they were inoculated with a culture of the plague bacilli. These mice did not die, but several mice into which the serum had not been injected died, thus showing the efficacy of the serum in the cases of those that lived. Tests were also made to ascertain the curative power of the serum, but they did not prove satisfactory, although in most cases they prolonged life, and in one case a cure was effected. These tests were made by inoculating mice with the deadly dose referred to, which killed in twenty-four hours, but within three to twelve hours after the first injection they were treated with one cubic centimeter of the serum. These tests indicate that the serum in the horse is surely both preventive and curative. Other tests with blood from the same horse will be made. According to the investigations made by Dr. Doty, to Dr. Yersin of the Pasteur Institute in Paris, is due the credit of the discovery of the bacillus of the bubonic plague; although it must be admitted that Kitasato is a close competitor, one writer claiming that there was not more than three weeks' difference between the two and that that difference is in favor of Kitasato. Now then, let the interesting question be looked into: By whom and at what date did either of them place their discovery upon the printed page. Dr. Doty is proceeding cautiously and slowly, bearing in mind the experience and teaching of Yersin that the proper development of an anti-pest serum demands much time and prolonged treatment of the animals under the toxins. After the discovery was made a bacteriologic laboratory was founded on the Annam coast, in China, about one year and a half ago, for the study of the serum treatment of the plague. The opportunity to test the serum came when the plague broke out in China. Out of twenty-five cases treated by Dr. Yersin, twenty-three recovered. In the course of his experiments Dr. Yersin found that mice, rats and pigs were stricken before human beings. He decided that these animals possessed special receptivity for the plague, and that they would be serviceable to him on that account in his experimental work. Dr. Yersin placed healthy animals in contact with those inoculated and found that the latter died first, but in a few days the sound animals died one after the other, the plague bacilli being found in their organs at postmortem. They had therefore taken the plague by simple propinquity. These facts proved that the plague is a contagious disease that can be inoculated.

NECROLOGY.

FREDERICK W. WHITEMORE, M.D., Harvard, 1878, died at his home in Cambridge, Mass., April 14.

THOMAS SPENCER DAWES, M.D., Albany, N. Y., 1848, died at his home in Saugerties, N. Y., April 11, aged 76 years. He was born in Cummington, Mass., of which State his brother Henry L. Dawes served as senator.

THOMAS S. BAHAN, M.D., New York University Medical College, 1856, died at his country home in Douglaston, Long Island, N. Y., April 6, from cerebral softening. He was born in St. Johns, New Brunswick, came to New York in 1853, and began his professional career in what was then Greenwich village. He served as surgeon in charge of the Park Barracks throughout the war, was long attending physician to the Northern Dispensary and had identified himself with most of

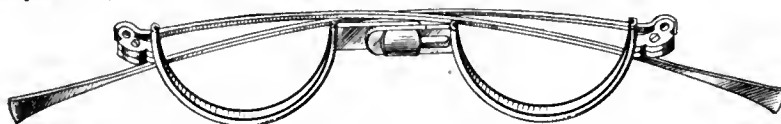
the medical societies. As a family physician he won an enviable reputation for skill and culture. A few years ago he lost a promising son, who was drowned while asleep in the Doctor's yacht, as the result of a collision, for which the pilot of a tug-boat was imprisoned for criminal carelessness. A widow and two sons survive him.

NEW INSTRUMENTS.

A PRESBYOPIC TRIAL FRAME.

ALBERT B. HALE, M.D.
CHICAGO.

A few weeks ago I had occasion to ask a patient to sit in my office for some time, for the purpose of testing the efficacy of glasses at the reading distance before I finally prescribed them. On measuring the pupillary distance, however, I was annoyed to discover that I had nothing at all suitable to her case, for the greatest distance I dared allow was 55 mm., while the smallest frame I had was not under 60 mm., and as it was a decentration I wished to avoid, I was obliged to postpone the trial till another day. Meanwhile, I investigated frames, but could find nothing in a small, light presbyopic frame that was adjustable, and I am sure that it is not at present to be found.



After explaining my idea, I finally had Mr. Allen (Edward Allen & Co., 80 Dearborn Street, Chicago) make the frame, of which this illustration is the best description. (The cost is three dollars.) It explains itself. By means of traction the button connecting the two sides by a mild spring, yields, so that the pupillary distance is modified without changing the symmetry of the frame itself. The frame is as light as any other, and causes no inconvenience to a patient. It allows of a pupillary distance of from 54 mm. to 65 mm., certainly suitable to any but an extraordinary head, and by its use the adjustment can be so accurate that the usual cause of dislike to the trial frame (decentration) is well avoided. The frame can be made, at a small increase in cost, to hold two lenses on each side, if so desired.

Columbus Memorial Building.

FOR THE APPLICATION OF COCAIN TO THE UVULA.

HENRY W. WANDLESS, M.D.

Chief Surgeon Dallas Charitable Eye, Ear, Nose and Throat Infirmary;
Consulting Oculist and Aurist M. K. & T. Ry.
DALLAS, TEX.

There is always more or less difficulty to anesthetize the uvula with cocain by making application with cotton on a carrier. I had for several years used cotton on a toothpick, with very little satisfaction, and seldom getting the uvula insensible.

The first attempt usually produces reflex spasms of the soft palate and faucial muscles. Rubbing the uvula with cotton keeps up this effect until the mucous membrane of the uvula is insensible to the touch. This is very disagreeable to the patient: besides, the cocain by contact spreads over the base of the tongue, the pharyngeal wall and the larynx. This often produces nausea and discomfort.



I have devised a little instrument, shown in the cut, which has none of the objectionable features of the cotton probe method; besides, it does its work thoroughly and is no trouble at all. Its general contour is that of a spoon, its bowl being deeper and more uniform. The handle is curved so as not to obstruct the light, and is seven inches in length: flat, so as to

prevent rotation in the fingers emptying its contents into the mouth. Its bowl is three-fourths of an inch long, five-eighths broad and five-sixteenths deep.

To use this instrument, place a few drops of solution of cocain in the bowl, and if the patient can not lower the base of his tongue unaided, lower it with a smooth tongue depressor, place the instrument under the uvula and allow it (the uvula) to drop into the solution loosely. The moment the uvula comes in contact with the cocain solution the latter rises up the moist surface of the uvula to a considerable height above the level of the cocain by a sort of capillary attraction. Rarely will the touch be noticed, if the touch is gentle. After holding it there for a minute perhaps, and before the patient makes an effort to swallow (which he will do), withdraw the instrument, allowing the uvula to drag over the posterior lip of the bowl to dislodge any excess of the cocain that may adhere to it, thus preventing it from being deposited in the mouth. A better way is (having withdrawn the applicator) to touch the uvula with a pledget of absorbent cotton previously prepared. Repeat this application with a fresh solution once or twice at intervals of one or two minutes and you will find that in about eight minutes the anesthesia is complete and the operation may be proceeded with without pain.

For the last year or two I have used a roughly constructed instrument made by myself by inserting the handle of a pepsin dose spoon into a laryngeal mirror handle, which answered the purpose very well.

PHIMOSIS FORCEPS.

Salvatore, an Italian military surgeon, has invented a phimosis forceps which is described and illustrated in the *Gaz. d. Osp. e d. Clin.* of March 7. He claims that it totally prevents hemorrhage; the total anesthesia is so complete that the patient is merely an indifferent spectator of the operation, and there is no danger with it of injuring the organ, which afterward presents a normal appearance with no indications of having undergone surgical treatment. The instrument consists of two strips of metal fastened together at one end and in contact at the other, where there is a screw thread and thumb screw to graduate the space between them, as the two strips form an open ellipse, like a wagon spring. Each is pierced with a row of holes.

BOOK NOTICES.

Vita Medica; Chapters of Medical Life and Work. By Sir BENJAMIN WARD RICHARDSON, M.D., LL.D., F.R.S. New York and Bombay: Longmans, Green & Co. Pp. xvi and 496. 1897.

"These chapters of 'Vita Medica' were finished by my father on Wednesday, Nov. 18, 1896, just before 8 o'clock in the evening. At 10 he was seized with the illness which ended fatally on Saturday morning, November 21.

"The last proofs were not revised by my father, and, but for the few corrections that could be made without him, the book is published as it left his hands.

"BERTRAM RICHARDSON."

This book is, as its name imports, a history of the medical life of Richardson. The accounts of the early experiments with peroxid of hydrogen, antiseptics, studies on blood, sanitation, anesthesia, alcoholism, nervous centers, the germ theory, vital phosphorescence, are very interesting. The charming manner in which the story is told, showing as it does the personality of the author, makes the book one to be sought after. The last twenty years have been rich in autobiographies of distinguished medical men, and among them all we must place this of Dr. Richardson as one of the very best of its class. It does not deal directly with the personal life of the author, yet his medical life has been so inseparable from it as to give us a glimpse of character at once admirable and worthy of imitation.

The many readers of Richardson's works in this country will be pleased with the perusal of this book.

The Retrospect of Practical Medicine and Surgery. Edited by JAMES BRAITHWAITE, M.D., Lond., assisted by E. F. TREVELYAN, M.D., Lond., B.Sc., M.R.C.P. Vol. cxiv., January, 1897. New York: G. P. Putnam's Sons. 8vo, pp. xv and 435. 1897.

Braithwaite, with its careful selections, conservative compilation and successful skimming of medical literature, has given us the clear crystal in this number.

Hypnotism and Its Application to Practical Medicine. By OTTO GEORG WETTERSTRAND, M.D. Translation from the German Edition by Henrik G. Peterson, M.D., together with "Medical Letters on Hypno-suggestion, etc.," by Henrik G. Peterson, M.D. Pp. xvii and 166. New York and London: G. P. Putnam's Sons. 1897.

This work has appeared in Swedish, German and Russian, and now, thanks to Dr. Peterson of Boston, it appears in English.

The therapeutic uses of hypnotism are becoming every day better known and its value more and more apparent.

Wetterstrand's work is a clinical report of great value, and his cases are commented upon with a profound knowledge of psychology, and evident sincerity. The book is timely and very instructive, as it teaches how to bring hypnotism within the control of the practitioner as a powerful addition to his armamentarium against suffering.

A Manual of Physiology with Practical Exercises. By G. N. STEWART, M.A., D.Sc., M.D., D.P.H., etc., with numerous illustrations including five colored plates. Pp. 796. Price \$3.50 net. Philadelphia: W. B. Saunders.

[From W. T. Keener, Agt., 95 Washington St., Chicago.]

A modern manual of physiology intended for the systematic study and as a guide for the laboratory.

The work is a thorough-going one, well illustrated, and modern in its method. We no longer have those smoothly flowing treatises on physiology that made the earlier works so popular; on the contrary, the modern physiology has come to be a mathematico-chemic statement concerning the functions of the body based on careful observation and accurate knowledge. While thus the romantic has disappeared, in its place has come science and the power that grows from it, and there is still enough of the marvelous in the study of the actual processes of nature to keep up a strong interest.

MISCELLANY.

A French Hospital at London.—The *Figaro* announces that the Baronne de Hirsch had followed up her gift of two million francs to the Pasteur Institute by a donation of one million francs for the foundation of a hospital in London, and several charitable institutions in Paris have just received large sums of money. It is estimated, says the *Figaro*, that in two months the Baronne de Hirsch has distributed in France, England and Austria eleven million francs.

The Bubonic Plague in Art.—The *Gaz. d. Osp. e d. Clin.*, of January, 31, has an engraving of a famous painting in a church at Verona, which represents St. Rocco, a holy philanthropist and pilgrim, who had the plague and recovered. He is showing the spot on his thigh where the characteristic lesion is seen through a slit in his garment; location and appearance are clinically correct. The cut is too blurred for reproduction. Raphael and others have portrayed the scenes of desolation during the plague, and the old masters were "realists" more than is supposed. Charcot recognized, centuries after, the clinical picture of glosso-labial hemispasm in a certain well known painting at Venice.

The Plague Abroad. The Sultan of Morocco has prohibited the annual pilgrimage of Moslems to Mecca on the ground that the prevalence of the plague along the usual route is a direct men-

ace to the public health. This is significant in the face of the fact that this is the first issue of any such general order. Somewhat antithetical to this handsome submission to popular demand is the printed dispatch from Bombay in the London *Daily Mail* of March 29. This recounts that on the preceding Saturday "a Mahometan, while living in the city with his wife, refused to allow her to submit herself to the prescribed inspection. The officials insisted, whereupon the Moslem drew his dagger and stabbed her to the heart. Then he stabbed the official physician and attempted to kill himself." The dispatch above alluded to likewise adds the information: "The plague is spreading rapidly in Bulsar and Gujerat, and its ravages are terrible."

The Nose and Menstruation.—The fact has been observed that the nasal mucosa undergoes certain modifications during the menstrual period, turgescence, exaggerated sensitiveness, tendency to hemorrhage and cyanotic discoloration. Fliess, of Berlin, has been studying this phenomenon and has found that a certain form of dysmenorrhea, in which the pains continue after the commencement of the menstrual discharge, is largely dependent upon the nose. He applies the term genital to those parts of the nose where these manifestations are most intense, namely the inferior turbinate bones and the tubercula septi. Lesions of these points produce this form of dysmenorrhea, while their cocainization arrests the dysmenorrheic pain as long as the effect of the cocain lasts. Cauterizing will also arrest the dysmenorrhea permanently, or at least for a long while. These nasal congestions occur during pregnancy at the time when the menses would otherwise occur.—*Reported at the Ges. f. Geb. und Gyn.*, December 11.

The Anti-Plague Serum.—Dr. Solomon of Louisville, in the *American Practitioner and News*, March 6, gives the most recent summary of the researches that are being made by Yersin and others upon the specific treatment of the plague. He says that Yersin, Calmette and Borrel are supplying us with an antitoxin which they obtain from the rabbit, the guinea pig or the horse, any one of which may be rendered immune by careful experimentation. This antitoxin has as yet seemed to do all that was claimed for it, namely, immunize animals which were about to receive injections of virulent bacilli, and cure others which had received an injection of virulent bacilli, yet were not too far gone to be saved. The theory which Behring applies to the workings of diphtheria antitoxin, and which is quoted in full in a letter addressed to the *Practitioner and News* from Berlin, last February, is applicable to all antitoxins and will bear brief repetition here. Behring says antitoxin prevents diphtheria by rendering cells immune before they have been poisoned by diphtheria toxin. A cell once poisoned is no longer capable of being rendered immune by antitoxin. Therefore give the antitoxin early and before the bulk of cells in the animal organism have been so changed by diphtheria toxin that they can not longer take up diphtheria antitoxin. A late issue of the *Progrès Médical* makes mention of the fact that Dr. Ortner and Prof. Albrecht, both of Vienna, have been sent by the Academy of Medicine to Bombay to make investigations relative to plague. The profession all over the world may congratulate themselves that these two men have been selected to do so important a work. Ortner, who is first assistant to Neusser, is one of the most painstaking and careful clinicians of Europe. Although scarcely 30 years of age, his position among the profession in Vienna, and the high esteem in which he is held are enviable. A Bohemian by birth, he combines with that keen far-sightedness characteristic of his people an indomitable energy. "Albrecht is equally as well equipped in his specialty and is too well known by Americans who study medicine (pathology) in Vienna to need any praise from me. His theme is microscopic pathology and he ranks with Kolisko and Weichselbaum, who teach microscopic pathology. I repeat what I heard said of him by a colleague: 'I have never seen a pathologic slide placed before Albrecht that he could not immediately diagnose it.'"

All the Easy Questions in Science Have Been Solved.—President David S. Jordan of the Leland University, California, in a letter to the *Popular Science Monthly*, has stated that "Scientific investigators are not wizards;" their discoveries are not presaged by uncanny feelings nor green darkness, nor is there anything occult about their ways of working; they are simply men of unusual persistence and steady common sense. Everything easy was found out long ago, and additions to knowledge can only come from mastery of past achievements and mathematical accuracy in the registration of small details. The progress of science is not marked by surprises and contradictions. The result of scientific inquiry comes as a surprise only to those ignorant of the steps in investigation which leads up to it. The discovery that the peculiar rays, called "X" by Röntgen, could be made to cast shadows on a sensitized plate does not imply, as has been intimated by some, that thought can be photographed. One might sooner expect to photograph the songs of birds than "the cat's idea of man." The great power which exact knowledge gives adds nothing to the probability of the mythology of our own or other times. The "power of mind over matter" is not a form of hysterics. It depends on exact knowledge of the nature of material things. It is no occult influence showing itself in neurotic "adepts" by uncanny lights, under "astral" conditions. It is greatest by daylight, with sane men, among whom science is simply enlightened "common sense."

Colleges.

The annual commencement of the Atlanta Medical College, was held March 30. There were 38 graduates.—The fourth annual commencement of the Wisconsin College of Physicians and Surgeons, Milwaukee, was held April 6. Thirty students were graduated.—The annual commencement of the Barnes Medical College, St. Louis, was held April 6, and 116 were graduated.—The annual commencement of the Southern Medical College was held March 30. There were 30 graduates.—The tenth annual commencement of the Gross Medical College, Denver, Colo., was held April 8. There were 15 graduates.—The commencement exercises of the Baltimore Medical College, Md., were held April 8.

Hospitals.

The tenth anniversary of the opening of the St. Margaret's Hospital at Kansas City was celebrated April 5. The total number of patients treated has increased from 545 in the first year to 1,868 during the past year.—The Board of Health of Lambertville, N. J., has secured St. Andrew's Episcopal Church parish building to fit up a hospital for typhoid fever patients. There are said to be about twenty cases in the town.—A movement is on foot in Germantown, Pa., for the establishment of a non-sectarian hospital on the west side of that suburb. The institution is to be modeled after the Bellevue Hospital in New York and will not conflict with the German-town Hospital.

New York.

A HOUSE OF REFUGE QUARANTINED.—The New York Board of Health have ordered for Randall's Island a quarantine of the House of Refuge, an institution conducted by a private corporation known as the Society for the Reformation of Juvenile Delinquents. The resolution adopted asserts that the drainage is poor and that proper nurses have not been provided for the children, about 800 in all, some of whom are suffering from contagious as well as eye-diseases which may end in blindness. There is now no physician in charge, resignations and dissatisfaction being in order. To the allegations the President of the Society replies in effect that unless the State legislature votes an appropriation the institution can not be maintained, nothing being allowed for the improvement of the realty; that the property can not be turned over to the State, since the land was given to the managers with the proviso that it would revert to the city, when the society ceased to fulfil the conditions of its being; that except the lighting and the plumb-

ing, the buildings are in good condition; that the statistics are not awry, considering that children are sent from all the counties bordering on or near the Atlantic, including all of Long Island, New York, Albany and Rensselaer Counties, their particular House of Refuge admitting by order more children than the other two reformatories of the State; and further that there has not recently been a death in the institution, besides too contrary to statement that there has been no scarlet fever or diphtheria, while the sixty-eight cases of chronic diseases of the eye are not so bad an offset to the 200 cases of two years ago.

A DISPENSARY BILL PASSED.—The New York State Legislature has passed a bill for the protection of the public dispensaries against "the alleged" indigent, making wilful, false representation a misdemeanor punishable by a fine not less than \$50 nor more than \$250. Dispensaries are to be licensed by the State Board of Charities and are not to be established in any drug store or tenement house. A secular paper in a brief comment says, "it practically abolishes fake or quack dispensaries where poor people are badly treated." This is unjust since the profession at large never even insinuated to that effect. The fight has been against the undue multiplication and bootless competition. The treatment in the main has been beyond criticism.

DIVISION OF A HOSPITAL FUND.—The Hospital Saturday and Sunday Association, whose receipts for this year amounted to \$61,500 have distributed of this sum \$50,000 among thirty-five institutions. Of this former sum, \$8,200 was designated for special purposes and \$3,300 was reserved for expenses. The collections were \$2,500 more than last year and the number of "Free Hospital Days" was 690,841.

A BROAD AND LIBERAL DISPENSARY.—The New York Hospital proposes to erect a mammoth out-patient department on its property at Sixteenth Street, with facilities for treating hundreds daily. The plan is to gather in the rich and poor alike at the low price of one dollar per month. Bargain days all the year around! "Young man, go West," was Horace Greeley's answer to every solicitor for bread or work.

THE PUBLIC SCHOOL MEDICAL EXAMINERS.—The corps of Medical Examiners, recently appointed by the Health Board to examine children as a prophylactic measure against the spread of contagious diseases began their work on March 29 last. At present the system is to apply to the primary schools and the primary departments of grammar schools. The 150 examiners who are to make written reports are assigned to duty as near as possible to the schools in their immediate district. In the suburbs where the schools are small, one medical examiner is assigned to two schools, while in instances where the attendance is large two examiners are assigned to one school. As the whole matter is still experimental President Wilson states that until the official reports are presented it will be difficult to ascertain the true number of cases, but that the Board as in the past is bound to protect the public against the most insidious beginnings of any epidemic.

UNDER THE WILL OF LOUISE A. HONLAYER, the French Hospital will receive a reversionary bequest of \$3,500; the St. Francis' Hospital of Trenton, \$10,000; the Eye and Ear Hospital, same city, \$1,000; while certain orphan asylums and homes for aged persons will obtain upward of \$40,000.

NASSAU HOSPITAL OF LONG ISLAND.—Land for a hospital at Garden City, Long Island, has been secured by the board of trustees of the newly chartered Nassau Hospital Association. The officers are the following: President, L. N. Lanehart, M.D., of Hempstead; Secretary, James S. Cooley, M.D., of Glen Cove; Treasurer, J. H. Bogart, M.D., of Roslyn. The following medical men were also elected members of the staff of the hospital: William H. Hoag, Manhasset; J. H. Bogart, Roslyn; John Mann, Jericho; E. D. Skinner, Mineola; James S. Cooley, Glen Cove; William H. Zabriske, Glen Cove; George H. Fuller, Oyster Bay; Charles H. Ludlam, Hempstead; L. N. Lanehart, Hempstead; John Hutcheson, Rockville Center; F. T. DeLous, Rockville Center; John H. B. Denton, Freeport; C. H. Hammond, Freeport; Dr. Peishing, Far Rockaway; G. A. Finsterer, Floral Park. The incorporators named in the certificate of incorporation are as follows: Drs. L. N. Lanehart, C. H. Ludlam, E. D. Skinner, John Mann, G. A. Finsterer, J. H. Bogart and James S. Cooley.

BELLEVUE HOSPITAL.—Work has been begun upon three

new buildings at Bellevue Hospital. They will include an erysipelas pavilion, an isolated pavilion for cases of contagious diseases and a new boiler and laundry house. The buildings will be placed on the open ground near the river. The morgue is to be moved temporarily to the center of the lawn to make way for the isolated pavilion. The structures will be of blue stone and red brick, and will be sufficiently attractive in design to relieve the bleakness of the old hospital buildings.

COUNTY MEDICAL SOCIETY.—Since April, 1895, when the law providing for the criminal prosecution of quacks was restored, the New York County Medical Society has caused the arrest of eighty-three persons for practicing illegally, and it has obtained convictions in fifty-one cases. These persons have paid \$3,690 in fines, and a number of them have been sent to jail beside. The legal department of the society has a large number of cases pending. This fact alone is deterrent of much illegal practice, and not only tends to prevent the pretenders from trying to establish themselves in New York city, but also drives some of them to other localities where the duty of prosecuting offenders is not undertaken by the profession.

MEDICAL DEPARTMENT OF NEW YORK UNIVERSITY.—The trustees of the New York University have accepted the deed of the Loomis Laboratory, and at the same time the Medical School, which, since its establishment in 1841 has been under the management of a separate board of trustees, now passes under the control of the trustees of the University, together with its endowment of \$100,000 and its property valued at about \$300,000.

Washington.

BOARD OF HEALTH REGULATIONS.—Senator McMillan has introduced in the Senate, at the request of the Commissioners, a resolution providing that the commissioners be authorized, in making regulations under the authority conferred by Congress, to alter, amend or repeal any of the ordinances of the late board of health, which were legalized by joint resolution approved April 24, 1880, whenever in their judgment the public interest requires it.

MEDICAL ASSOCIATION OF THE DISTRICT.—At the meeting of the standing committee of the Association for organization, held on the 16th inst., the following officers were elected: Dr. Geo. N. Acker, president; Dr. R. T. Holden, secretary. The committee adjourned to meet in ten days to consider matter connected with the meeting of the AMERICAN MEDICAL ASSOCIATION in June next.

THE FOURTH TRIENNIAL MEETING OF THE CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.—The Congress will meet in Washington, D. C., on Tuesday, May 4, and under the direction of the Executive Committee, consisting of Drs. Samuel S. Adams, chairman, Washington; Louis McLane Tiffany, Baltimore; W. W. Johnston, Washington; Irving C. Rosse, Washington; S. O. Richey, Washington; J. Taber Johnson, Washington; Charles F. Bevan, Baltimore; I. E. Atkinson, Baltimore; T. Morris Murray, Washington; George M. Sternberg, surgeon-general, U. S. army; Samuel Theobald, Baltimore; William H. Howell, Baltimore; A. R. Shands, Washington; Frank Baker, Washington. The following places of meeting have been arranged for:

American Ophthalmological Society, ladies' parlor, No. 2, the Arlington.

American Otological Society, ladies' parlor, No. 1, the Arlington.

American Neurological Association, St. John's Parish Hall, 16th Street.

American Gynecological Society, lecture hall, Columbian University, corner 15th and 8th Streets.

American Dermatological Association, new reception room, the Arlington.

American Laryngological Association, Cosmos Club.

American Surgical Association, chemical laboratory, Columbian University.

American Climatological Association, post-graduate room, Columbian University.

Association of American Physicians, museum, Columbian University.

American Association of Genito-urinary Surgeons, the Shoreham.

American Orthopedic Association, examination room, Columbian University.

American Physiological Society, Prof. Lodge's room, Columbian University.

Association of American Anatomists, physical laboratory, Columbian University.

American Pediatric Society, Prof. Huntington's room, Columbian University.

The officers of the congress are: President, William H. Welch, M.D.; vice-presidents, ex-officio presidents of constituent societies; chairman of executive committee, Landon Carter Gray, M.D., New York city; treasurer, Newton M. Shaffer, M.D., New York city; secretary, William H. Carmalt, M.D., New Haven, Conn. The president of the congress, Prof. Wm. H. Welch, M.D., of Johns Hopkins University, will deliver an address Wednesday evening, May 5, at 8:15 o'clock, in the Columbia Theater. The exercises attending the unveiling of the statue of Prof. Gross, under the auspices of the Surgical Association, will be held on Wednesday, May 5, at 5 o'clock.

WASHINGTON OBSTETRICAL AND GYNECOLOGICAL SOCIETY.—At the meeting of the society held on the 2d inst., Dr. John Van Rensselaer read the paper of the evening entitled "The Need of Care in Instrumental Dilatation of the Cervix Uteri." The paper brought forth a full and instructive discussion. Dr. H. L. E. Johnson presented a number of polypi, which he had removed from the female urethra. Four with long pedicles were removed from one case. At the meeting held on the 13th inst., Dr. W. M. Sprigg read the paper of the evening entitled, "Puerperal Infection and its Prevention."

THE PUBLIC SERVICE.

Navy Changes. Changes in the Medical Corps of the U. S. Navy for week ending April 17, 1897.

Surgeon J. W. Baker, detached from the "Bennington" on relief and placed on waiting orders.

Surgeon M. H. Simons, orders to the "Columbia" revoked and placed on waiting orders.

Surgeon E. Z. Derr, orders detaching him from the "Columbia" revoked.

P. A. Surgeon E. S. Rogers, detached from New York navy yard and ordered to the marine rendezvous, New York.

Change of Address.

Auld, J. Maxwell, from 705 Jackson Boul. to 714 Monroe St., Chicago.

Barr, G. W., from 615 Hampshire St. to 1240 Park Pl., Quincy, Ill.

Blech, Gustavus, from Washington, D. C., to 119 Miami Av., Detroit, Mich.

Billmeyer, G. M., from 846 S. Wood St. to 714 W. Polk St., Chicago, Ill.

Clark, M. A., Barnesville, to 175 Cotton Av., Macon, Ga.

Ferguson, A. H., from 2950 Indiana Av. to 548 51st Boul., Chicago, Ill.

Forrester, Joseph, from W. 4th to 904 Peach St., Erie, Pa.

Fitzpatrick, G. W., from 409 Garfield Av. to Room 215 Temple Bldg., Kansas City, Mo.

Judd, C. E., from 18 Campbell Park to 93 Flournoy St., Chicago, Ill.

Montzambert F., from Toronto, Ont., to Quebec, Que.

Owley, W. T., from Glasgow, Ky., to 206 F. St., N. W., Washington, D. C.

LETTERS RECEIVED.

Alleger, W. W., Washington, D. C.

Boehringer & Soehne, New York, N. Y.; Blakely Printing Co., The, Chicago, Ill.; Brown, J. M., New London, Wis.; Battle & Co., St. Louis, Mo.

Campbell, W. W., Atchison, Kan.; Cole, A. M., Indianapolis, Ind.

Denning, H. H., Chicago, Ill.; Draper, E. F., Advertising Agency, New York, N. Y.

Fessenden Mfg. Co., The, Pittsburg, Pa.; Fairchild Bros. & Foster, New York, N. Y.; Fischer Chemical Importing Co., New York, N. Y.

Haggard, W. D., Jr., Nashville, Tenn.; Henrotin, Ferdinand, Chicago, Ill.; Hare (2), H. A., Philadelphia, Pa.; Hotel Walton, Philadelphia, Pa.

Hardy, M. H., Provo City, Utah; Hay, A. H., Chicago, Ill.; Houston, Jee, Swartz Creek, Mich.; Hildreth, J. L., Cambridge, Mass.

Loeb, H. W., St. Louis, Mo.; Lord & Thomas, Chicago, Ill.; Lane, L. C., San Francisco, Cal.; Leisenring, H. G., Wayne, Neb.

Milbury, F. S., Brooklyn, N. Y.; McSwain, I. A., Jackson, Tenn.; Murphy, J. J., Lima, Ohio; Macmillan Company, The, New York, N. Y.

Marmoth, W. V., Washington, D. C.; Mulford, H. K., & Co., Philadelphia, Pa.

Pepper Laboratory of Clinical Medicine, University of Pennsylvania, Philadelphia, Pa.; Platt, Henry B., New York, N. Y.; Proctor & Collier Co., Cincinnati, Ohio.

Ravogli, A., Cincinnati, Ohio; Rosse, Irving C., Washington, D. C.; Reed, R. Harvey, Columbus, Ohio.

Stearns, Frederick & Co., Detroit, Mich.; Stout, Geo. C., Philadelphia, Pa.; Saxlchner, Andreas, New York, N. Y.

Weeks, F. E., Clarksfield, Ohio; Watkins, T. J., Chicago, Ill.; Wandless, Henry W., Dallas, Texas; Ward Brothers, Jacksonville, Ill.; Westmoreland, W. F., Atlanta, Ga.

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ADDRESS.

THE MEDICAL NEEDS OF SYRIA.

An address delivered before the graduating class of the Marion Sims College of Medicine, St. Louis, Mo. April 10, 1897.

BY LABIB B. JUREIDINI, A.M., B.D.

CLARKSVILLE, TENN.

The attention of the civilized world has lately been awakened to a certain corner of it where crime and massacre have become rife, and where fanaticism and tyranny have been maturing their most horrible results. Information about the lands in which these scenes have been, and are being enacted, and about the nations that are groaning under the iron hand of the unspeakable Turk, now assumes a new aspect of interest to all, especially to the sympathetic hearts of the American people. To physicians and all others interested in their noble profession, all that pertains to the medical conditions and needs of these countries will be among the first topics of interest. It shall be my effort tonight to present before you the medical needs of Syria, my native country, which, though not undergoing the same convulsions that are now tearing up other sections of the Ottoman Empire, may yet be taken as a fair representative of the rest, inasmuch as the same general conditions prevail in it as in the others, and as it breathes the same religious and political atmosphere.

But allow me to say at the start that I shall not be able to present the subject before you from a professional point of view. I can bring no resources of medical knowledge to bear, for I have none. And when in my country I never tried to make a particular study of its medical conditions. Nevertheless, there are certain phases of its medical needs that do not require a specialist to discover. And I shall attempt to exhibit them in a popular, rather than a technical way—to give the facts as they are suggested to my mind.

And first of all a few words about the climatic conditions of Syria may be appropriate. There are certain peculiarities of the Syrian climate which may have a tendency to help the rise and spread of disease. One is the continued drought of the summer season. For over four or five months, no rain falls at all. The soil becomes parched up and in frequently beaten places it is pulverized into dust, the particles of which flying about in the air, enter the system in various ways, sometimes carrying with them organic germs, and they give rise to several diseases. Then in some localities, especially in low lands, the heat of the summer is intense, and favors those diseases that are fostered by a hot climate. A very few localities besides are marshy, and hence malarial. But these are all the natural disadvantages, as far as I know, from which Syria suffers. In all other respects, its climatic conditions are favorable. The climate is mild and even. There are not those sudden changes in the tempera-

ture which prevail in large portions of this country. Our climate, like our music, is rather monotonous, and indeed the balmy breezes of the Mediterranean sea which sweep along the slopes of the Lebanons, and the thousands of clear, crystal springs that gush forth from the mountain side, and the numberless delights that reside in its glens and valleys, render that region one of the garden spots and health resorts of the world. And as far as the climate is concerned, there is no reason why the people of Syria should die of any other complaint than accident or old age. But the fault is not with the climate or the country, but with the people. If the people of Syria undergo any physical suffering (and they do) it is because they violate nature's laws and the violation carries along with it the penalty.

One of the agencies that militate against them in this respect is the comparative ignorance that prevails as to the plainest facts about medicine. Of course, all the people of a country, however highly civilized it may be, are not expected to have a comprehensive knowledge of medicine. But there are certain rudimentary facts that ought to be the common possession of all, not professionals only, in order to ward off all avoidable suffering, and in this respect the people of Syria are deficient. There is considerable ignorance about the constitution of the human body; and as to the nature of disease, some very curious notions prevail. For example, a variety of ailments are classified as "winds." The felon is called the "thorny wind." Cholera "yellow wind." And there are also winds of the side and of the hip, and of the chest, etc., so that you might imagine that every man was a new edition of Æolus, except that the winds are not under his control.

The laws of health are very little known, at any rate very little observed. Negligence of personal habits as to cleanliness is very common among the poorer classes, especially among the Mohammedans. Mohammedanism does not often go hand in hand with cleanliness. And if the Arabic proverb is true that "Cleanliness is of faith" (or religion) then Mohammedanism has very little of either. At any rate, it is one of the most productive causes of disease. It might sound rather strange to say that a people's religion could injure their health. But this is true at least in the case of Mohammedanism. It is an unhealthy religion. A brief consideration of some of its underlying principles and the practices of its adherents, will be sufficient to show that the above statement is not fanciful.

Fatalism enters the warp and woof not only of the Mohammedan's theology but of his every day life and practice. He has very little use for physicians, for no physician can alter the predetermined course of events and the fate of the patient; and he deems it entirely unnecessary to take any precautions against disease, even when an epidemic is ravaging the country. The

more intelligent classes of Mohammedans, however, have outgrown this belief in practice, if not yet in theory. They do summon medical aid to the bedside of their sick. But the common run of them are still wedded to their old belief, and act accordingly.

Polygamy also has its by no means small share to contribute to the unhealthy influence of Mohammedanism. In addition to the awful degradation of morals, it has a very derogatory influence on the physical constitution of parents and offspring. Moreover, it creates peculiar domestic circumstances that tend to the neglect of the proper nursing of children. The several wives of the same man are often too busy with their own rivalries and jealousies to attend to such trifling things as children. The children are allowed just to grow as best they can, without any attention being paid to their moral or physical welfare. And their propensities to filthiness in both respects are given free scope, so that a certain degree of squalor becomes a necessary adjunct of a Mohammedan community. This, in conjunction with other causes, manifests itself in a variety of diseases, among which those of the eye are most common: Strabismus, cataract and myopia are prevalent. And the number of blind men parading at the head of funeral processions, or hanging around about mosques and other public places, is remarkable. Any number of cases of myopia can be seen, some of them very extreme, indeed. I heard of a Mohammedan who was once asked to sign a document. Taking the pen, he raised the paper close to his eyes, and traced the signature. But on returning the paper, the signature was not there. It was found on his fleshy nose.

To do justice to Mohammedanism, however, one favorable fact about it must be mentioned. And that is that it enjoins upon its followers total abstinence from all intoxicating drinks. The Mohammedans, with rare exceptions, observe this injunction, to the shame, I am grieved to say, of their Christian neighbors. And by the way, the drink demon is becoming more and more serious. For formerly though almost all the Christian element of the population drank wine and *raki*, they did it in moderation and there were very few drunkards. But now the number of drunkards is awfully increasing and deaths from the effects of liquor are becoming more numerous.

A great deal of superstition prevails among the ignorant classes of the country. Mohammedans, as well as others, and many of these superstitions that bear on medical subjects are interesting on account of their oddity. A great number of diseases are attributed to the *evil-eye*, or some other magical influence. It is believed that certain people have a peculiarly harmful power residing in their eyes, and whenever they look with covetousness or evil will upon any object it is brought under an evil influence. A material object becomes liable to breakage or loss; a plant, to decay; an animal, to disease and death; and the danger is dreaded no less against man than against any other being. Babies especially are exposed to the *evil-eye*. A mother who has a healthy baby or one particularly pretty or 'cute (and you know *all* mothers have such babies) is greatly apprehensive for its welfare and takes active measures to shield it from all harm. She resorts to charms of many descriptions. Eggshells, blue beads and bones are regarded very efficient, and a triangular scrap of leather inclosing a scroll with some talismanic inscription is irresistible. In this country physicians try to

heal diseases by *prescriptions*, there they seem to do it by *inscriptions*. Another remedy that is helpful not only in cases of evil-eye but really in all diseases, is the following: Write a few verses of the Koran on a slip of paper, boil in water and administer internally or externally or both ways, and cure will follow, God permitting. This is of avail only in case of Mohammedans. For a Christian, verses from the Bible must be substituted. Sometimes a child of a weak constitution is made to wear a piece of the bone of a tiger or some other ferocious animal suspended on its neck. The idea being that since the beast is strong, and the bone the strongest part of the body, therefore it will communicate this strength to the wearer. A very bright idea, indeed!

But though the Syrian mother's love to her child be very tender, and her solicitude for its welfare very intense, yet there are certain of her practices as to child care that do not seem to me to be very apt to promote the child's robustness. The infant is cramped tight in its cradle and tied up in its swaddling clothes. The tighter the baby is swaddled the stouter it is believed to become when full grown. This practice seems to me to have a tendency to retard the child's development and to injure its vascular and respiratory systems by decreasing the capacity of its chest and hindering the free circulation of blood.

In addition to the above, natural prejudices and stereotyped systems of social habits play their part against the sanitary welfare of Syria. Among the Mohammedans, as you know, women are entirely excluded from all association with men. They are not allowed to show their faces, even to the nearest male relatives. The higher they are in the social scale the more strictly is this seclusion observed. So that even when the negative obstacle of fatalism does not stand in the way to prevent calling medical aid, this powerful prejudice comes up and makes it next to impossible for a male physician to examine the condition of a female patient. He has to form his diagnosis from the description of the father or husband. Sometimes, indeed, in very urgent cases, the hand of the patient may be stretched from behind a screen, allowing the pulse to be felt. But to see the face or tongue—never!

The first need of Syria, then, is to all that tends to break up these adamantine walls of prejudice and custom, and to dissipate these clouds of ignorance and superstition. We need general enlightenment among the people and a fair acquaintance with the primitive facts of the science of health. And we need all the agencies by which this can be carried on. We need to have instruction about physiology and hygiene introduced into our schools, and we need the *schools* in which to carry on the instruction. We need popular papers and magazines that make common the knowledge of the plain facts of medicine, and we need to have the majority of the people so educated that they can read them. Above all, we need to get rid of Mohammedanism and its superstitions and to have Christianity with its purity and enlightenment to raise the morals of the people not only, but also to promote thereby their physical and intellectual condition.

Another phase of Syria's need is to sanitary institutions of all kinds. Hospitals are badly needed. Though a few such cities as Beirût, Jerusalem and Damascus have their hospitals, yet the larger number of cities from twenty to eighty thousand people have

no such institutions. And indeed in that country, there should be a greater need of hospitals than in this. For owing to the ignorance among the masses of the people as to the proper ways of treatment and nursing, and owing to the lack of conveniences at their homes, it becomes very urgent that all cases of any degree of seriousness be brought not merely for treatment, but even for nursing, into suitable quarters and under competent medical supervision.

Then there are no insane asylums in Syria. The demented are allowed to go at large, wandering along the streets, sometimes objects to the jeers and practical jokes of heartless fellows, who lack but very little themselves of being in their places, and often presenting sights that are shocking to all sense of decency. Violent cases, however, or raving maniacs who are supposed to be dangerous are shut up, bound in chains and fetters and cast in some dungeon or cell where the harsh treatment brings to a speedy end their wretched existence.

Herein also Mohammedanism has its part to play. The Mohammedans believe that insanity is a species of inspiration. Insane people are peculiarly blessed from above. They are *ualis* or saints, and great respect is paid to them. Indeed this belief sometimes leads to practices extremely immoral.

When I said that there were no insane asylums in Syria I ought, perhaps, to have made *one* exception. For there is one such place known as the Monastery of St. Qurhayyah. It is a gloomy cave in one of the fastnesses of Mt. Lebanon, presided over by a number of monks, whose business it is to heal the insane people that are brought under their care. The cure is effected by frequent floggings and exorcism, which are supposed to drive the evil spirit out of the sufferers, for, contrary to the Mohammedans, they believe that insanity is possession by the devil. But to one witnessing their ways of treatment, the evil spirit would seem to reside in the monks rather than in their patients. At any rate, they often succeed, and oftener they succeed too much. They drive not only the *evil* spirit but even the very *life* spirit out of their patients.

Now Syria needs a few asylums conducted after modern plans and in the light of modern science in order to take care of these miserable wrecks of humanity, to restore to sanity those in whom there is any hope of recovery, and to provide a habitation for those that are hopeless.

Again, sanitary precautions of all sorts are needed in our cities. No good systems of sewerage or drainage exist. Even in Beirût, the most progressive of all Syrian cities, no satisfactory system is in operation. And in many of its streets the stench is unbearable and proves to be a prolific cause of disease. Then the cities are very crowded, the streets are narrow, sometimes not more than 8 or 10 feet wide, and sometimes they are arched over, or rooms are built across, so that the wholesome rays of the sun can rarely find an entrance into the houses. As to ventilation, it becomes out of the question. People here talk about the tenement districts of New York. I have seen some of them; they are bad indeed, but they do not compare with some portions of Beirût that I have seen, and still less with portions that I have not seen.

These are some of Syria's medical needs, but her greatest is to *medical men*. I do not mean merely to numbers. For though there is by no means the same proportion of physicians to population as in this

country or Europe, and though in larger parts of the country no medical help at all can be secured within many miles, yet the need is not of *so many more* but of *so much abler* physicians. Up to about twenty-odd years ago we had scarcely any men of ability in the medical profession. The land was under the sway of quacks, whose knowledge, when they had any at all, was limited to a partial acquaintance with Avicenna or Galen or some other old-fashioned writer, and to the old and even then out-of-date notions about medicine. They knew nothing about anatomy and their system of practice was based on speculation and theory rather than scientific fact and investigation. The way in which they acquired their education was peculiar. A few months' attendance on, or, it may be, acquaintance with, a physician was thought sufficient. Among the papers of my father I once fell upon the copy of an official report which he had presented to the governor of the district in which he held office after having made a tour of inspection concerning practicing physicians, their diplomas, qualifications, etc. In one of the villages of Mt. Lebanon a man was found practicing medicine and selling his drugs. Asked where he had received his education, he replied that he had accompanied Dr. Somebody for two years in the capacity of a groom, and now he started practice on his own hook, seemingly getting the profession by contagion. Another man seems to have got it by heredity, for he said that his uncle had been a physician before him, and that was the reason *he* was one also.

With such thorough courses of training, we might reasonably expect a proportionately scientific mode of treatment. Cupping, bleeding and cauterization were frequently resorted to. Herbs, more or less indifferent, and concoctions therefrom were administered in liberal doses, and if the patient survived it all it was not the physician's fault.

But the reign of ignorant quackery in Syria is now practically at an end. Among the very few wise things that the Turkish government has done have been the strict regulations as to licensing only physicians who bear the diplomas of a well-reputed medical college, and who stand a satisfactory examination before the Imperial Medical Board at Constantinople. But notwithstanding these restrictions, physicians of high ability are still few and badly needed. Our danger now is not from ignorant quacks but from licensed and so-called educated ones.

Besides thoroughly equipped medical men, Syria needs medical women—lady physicians. The state of society and the prejudices of the people, even among non-Mohammedan sects, being what they are, it is necessary that women be treated by physicians of their own sex. This is the only means possible to relieve them from considerable suffering and to save unborn generations a great deal of physical weakness and hereditary tendency to disease.

Thanks to the kind aid of the missionaries, those from this country especially, this, as well as other needs of Syria, have begun to be supplied. Indeed, our country is under unbounded obligation to the United States, not only for the greater part of the modern social, intellectual and religious development, but also for meeting the physical needs of the people. It is indeed a complete charity that seeks to compass *all* the needs of its objects. This is the genius of Christianity and missions are its manifestation. The American Mission in Syria now maintains the only

lady medical missionary actively engaged in her work. The American missionaries have given us the *first*, and for many years the *only*, medical college. From within the walls of that institution about two hundred men have gone forth fully equipped to practice the healing art, and are now scattered all over Syria, Egypt and other countries in the Levant.

In this connection allow me to address a few words to you, gentlemen of the graduating class, not by way of advice but as an appeal. You are now going forth to give to the world the fruit of your preparation in one of the first institutions of the land; you have had the rare fortune of being trained under professors of the highest ability and of national and international reputation. You have entered upon the fruits of the labors of centuries of progress in your profession, and now you bear in your hands one of the most beneficial boons that has been allotted to men. What use will you make of this power? Shall it be only as a money-making scheme, to take advantage of men's necessity and make it contribute to your financial interest? Nay! but let me repeat to you what I am sure your worthy professors have enjoined upon you once and again: *Do not degrade your profession to the level of a trade.* It is true that every profession must provide an ample support to those that practice it, and that in proportion to their ability; but this should not be the sole end. It should rather be the means to the greater and nobler ends, the advancement of the profession and the welfare of humanity.

The strides that have been made by the medical science in all its branches during the last fifty years are marvelous, but, as you all know, the possibilities have not yet been exhausted. The doors are still open for you to study, to investigate, to discover, to apply. For it is to your country that the world looks up for leaders in this as well as in other lines. *Be among these leaders.*

And then there is another aim that might well claim a place in your hearts. If one of the ends before you in your professional life is to promote the welfare of your fellowmen, one of the best means in which this can be done is through medical missions, one of the grandest philanthropies of the present century, and destined to hold a still more prominent place in the century to come. There are many lands not as highly favored as your own, in which teeming millions of humanity suffer and die in ignorance and misery, and it is within the power of medical science to reach them and alleviate their suffering.

But then there is a higher and still nobler mission that the physician can perform. It is not only to relieve physical pain, but by so doing to reach the hearts of the sufferers with cheer and consolation, to administer to them with the *physical* the *spiritual* remedy.

I have one more word to say. It is to discharge the pleasant duty of expressing in my own behalf and in the behalf of my own country, the warmest gratefulness to the esteemed professors of this institution. Gentlemen, tonight you have added an important item to the indebtedness of my country to yours, by giving us two young physicians, who, inspired by your spirit and electrified by contact with you, shall be bright lights in the medical firmament of Syria. And in the future, if you ever wish to attempt the impossible and trace the wholesome influence that your institution has exerted, be assured that Syria shall not prove herself the least receptive, and from her distant shores there

shall be borne across the face of the mighty deep a deeper and mightier gratitude.

ORIGINAL ARTICLES.

FIRST AID IN RAILWAY EMERGENCIES.

Read at the Third Annual Meeting of the American Academy of Railway Surgeons, held at Chicago, Ill., Sept. 24, 1896.

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COLUMBUS BARRACKS, OHIO.

Introduction.—About 9 o'clock in the evening of the 11th of last August, during a blinding thunder-storm, an express train dashed into a small freight train a short distance outside of the passenger station at Columbus. W. N. S., the fireman of the passenger engine, an unusually vigorous man of 38 years of age, was hurled violently down from the cab to the Scioto River, twenty feet below. So tremendous was the force of his ejection from the engine cab that his body was completely torn from his right foot which had been caught in the wreck, leaving a horribly lacerated stump midway between the ankle and the knee, while the soft parts above the latter joint were also severely injured, rupturing the anastomotica magna and giving rise to a considerable hematoma in the thigh. Throughout the accident, this man retained entire self-possession and when found some time after the disaster, he was engaged in tying a portion of his cotton jacket about the injured limb to check the alarming hemorrhage which was occurring from the wound. Unacquainted with the means of properly tightening his extempore tourniquet, sufficient compression to close the arteries failed to be exerted, and when he arrived at the University Hospital, an hour and a half after the collision, the bleeding from the external wound together with that from the ruptured anastomotica had brought him almost to the point of exsanguination. At the hospital, he was so fortunate as to be admitted to the service of the senior surgeon, my distinguished friend, Dr. R. Harvey Reed—to whose courtesy I am indebted for the privilege of quoting the case—and his colleague Dr. W. U. Cole. The patient's wet clothing was instantly removed, he was wrapped in warmed blankets, hot water bottles were placed about him, and other measures designed to restore the normal temperature and revive the vitality were employed, such as alcoholic stimulants, hypodermics of strychnin and nitroglycerin, and injections of hot saline solution. The hemorrhage was controlled by the elastic ligature, and the limb amputated as quickly as possible at the juncture of the middle and lower thirds of the thigh. Very little anesthetic was needed and very little given. The patient rallied promptly from the anesthesia but, owing to his bloodless condition and the impossibility of correcting it, he gradually became delirious and about an hour before the end experienced a tonic spasm, after which he sank rapidly, expiring about eighteen hours after the accident, a victim of exsanguination.

This accident occurred in the midst of a city of a hundred and fifty thousand inhabitants, containing a hundred and fifty medical practitioners, numerous hospitals, and two medical colleges. There were a dozen physician's offices within five minutes walk of the locality of the disaster, not to speak of numerous telephones by means of which dozens more might

have been quickly summoned to his relief. But he bled to death! Here was a man of mature age and well-regulated mind who, notwithstanding his frightful injuries, was in full possession of all his faculties and anxious to apply for himself the treatment which would stay the approach of the king of terrors. Had he been instructed in the simplest elements of first aid, the application of the simplest form of improvised tourniquet, W. N. S. might today have been about the streets of Columbus with a healthy amputation stump upon which a suitable artificial limb could readily be worn, and the statistics of the skilful surgeon, who attended him, might have been increased by one more success in addition to the large number already enumerated in his case-books.

Railway mortality.—The average number of persons injured yearly in railway accidents during the seven years from 1888 to 1894 was 38,500, of which number 6,500 were killed, and in the year of the Columbian exhibition there were 47,000 casualties of which 7,000 were fatal. For the treatment of these cases numerous magnificent surgical systems have been devised. The surgical staff of so many of our railroads at the present day is so highly organized that to mention one would be an invidious distinction. The statistics of injuries accentuate the need for such organization and it is to the credit of humanity that so many railways have provided for it.

The field for first aid.—There is a period, however, for which most roads have as yet made no provision—the period between the occurrence of the accident and the arrival of the surgeon. The opinion has been advanced that on some roads the stations are so near together and the local surgeons so readily accessible that this period is inappreciable and does not require to be provided for. Esmarch in his Samariter-briefcase has well shown the fallacy of the idea that such provision is required only in sparsely peopled localities, reciting an instance of a fire in the city of Berlin where, after an apparently suffocated person had been brought out of a burning house, it was two hours before a physician could be brought to the spot, the life of the victim being saved only because of a knowledge of first aid upon the part of the firemen. And even in our own case of W. N. S., it was an hour and a half from the avulsion of his leg to the application of the elastic tourniquet in the University Hospital, although the accident occurred within touch of the best possible surgical treatment. There is no question but that everywhere on earth emergencies are liable to occur in which life or death may hang upon the presence of a person with a knowledge of the simple elements of first aid, and no where is this more profoundly true than in the emergencies of railway practice, unless perhaps it be on the battlefield.

Existing first aid arrangements.—In order to ascertain what may have been done in this respect in the railway service, in the course of my study upon the present subject, I addressed to the chief surgeons of fifty prominent railways, a letter containing the following questions:

1. Have you any organized system of rendering first aid in illness or injury aside from your medical staff?
2. What, if, any, of the employees of your road are instructed in first aid?
3. What, in a general way, is the character and scope of the instruction?
4. What advantages have been derived from the instruction?

To these letters I received twenty-nine replies.¹ Of this number five replied in the affirmative, six in the affirmative to the extent of a first aid surgical dressing case with printed instructions for the use of its contents, and eighteen replied wholly in the negative. It is a fair presumption that those who did not reply at all, would also have given a negative answer. It is evident then that but little has been done in the organization of first aid in railway emergencies. Indeed, it would seem that even on the roads on which efforts, looking to the first-aid instruction of the non-surgical employes, have been inaugurated, a complete and definite organization has hardly yet been attained.

Advantages of first aid.—The advantage of first aid in those cases in which life may be saved by the prompt application of temporary assistance is evident, but it is no less a fact that it is of proportionate value in less serious cases. The ability to cope with possible injuries inspires men with self-confidence in emergencies. They are not so apt to lose their heads. And yet it can not be denied that even under comparatively favorable circumstances some men will become confused. Instruction in first aid will, however, reduce this to a minimum in accidents.

A knowledge of the subject is valuable, if for no other reason than because it will teach men to avoid improper or dangerous methods of treating emergencies. The use of the tobacco-quid saturated with the indescribable ingredients of the saliva of the habitual tobacco chewer, the cobweb with its collection of filth from all quarters, the sweat-permeated cloth torn from the dirty garment, and perhaps, worst of all, the mucus-laden handkerchief are banished from contact with open wounds. Cleanliness is learned and wounds do not come to the surgeon already infected by filth.

Familiarity with proper methods of handling the injured is of the greatest advantage in four respects: 1. It renders it possible to remove the wounded from wrecks more expeditiously, a feature which may be of vital importance in case, for example, of the not infrequent instance where fire is an accompaniment of an accident. 2. It may be an infinite saving of suffering to the injured. The infliction of pain in moving a patient is an evil so easily corrected that there is but little excuse for not knowing how to do it painlessly. The saving of unnecessary suffering to a patient means diminution of shock and a more favorable condition for the treatment of the surgeon. 3. It prevents the aggravation of injuries so frequently due to improper handling. A wealthy Englishwoman, in alighting from her carriage, slipped and sustained a simple fracture of the leg. The well-meaning and intelligent enough people, who helped her back into her carriage so that she might return home, had not been taught the way to lift and handle the disabled. That her leg was turned in the attempt and the simple fracture was transformed into a compound fracture, was not so much their fault as the fault of the neglect of the proper instruction of the public in such

¹ The gentlemen, who so courteously answered my questions, were: Drs. W. A. Adams, F. W. & D. C. Ry.; F. P. Baneroff, C. P. D. & G. Ry.; E. Braxton, N. Y.; N. H. & H. Ry.; F. H. Caldwell, Plant System; G. P. Conn, C. & M. Ry.; H. P. Cooper, A. & W. P. Ry.; Walter Courtney, N. P. Ry.; C. M. Daniels, W. N. Y. & P. Ry.; C. M. Drake, Southern Ry.; W. H. Elliott, C. of G. Ry.; W. L. Estes, L. V. Ry.; W. J. Galbraith, U. P. Ry.; A. P. Grinnell, V. C. Ry.; S. S. Halderman, C. P. & V. Ry.; G. H. Hogeboom, A. T. & S. F. Railway; J. H. Jenne, C. V. Ry.; S. Marks, C. M. & St. P. Ry.; P. H. Millard, C. G. W. Ry.; S. Mitchell, J. T. & K. W. Ry.; R. D. Mussey, C. H. & D. Ry.; J. E. Owens, C. & N. W. Ry.; N. J. Pettijohn, K. C., F. S. & M. Ry.; J. F. Pritchard, M. L. S. & W. Ry.; R. H. Reed, C. S. & H. Ry.; W. B. Rogers, K. C., M. & B. Ry.; Stuart & Boyles, H. & T. C. Ry.; S. S. Thorn, W. & L. E. Ry.; J. F. Valentine, L. I. Ry.; F. B. Tibbals, M. C. Ry.

matters. Were all such cases fully known and recorded, there is not the shadow of a doubt that hundreds of instances of such aggravation of injuries would be found in the history of railway surgery. The prevention of such occurrences may detract a little from the experience of the surgeon, who will certainly receive less credit for the successful treatment of a simple wound than for the cure of a complicated injury, but it will improve his results, simplify his labors, and enable him to accomplish more work in a given time. 4. It is to the pecuniary advantage of the railway company for, (a) the fact of thorough preparation having been made for every emergency will give the public increased confidence in the road, which will result in increased patronage, and, (b) the diminished severity of injuries due to prompt attention and careful carriage will materially reduce the amount of damages which may have to be paid to the injured.

Hemorrhage is perhaps the complication of railway accidents in which first aid would be more particularly applicable, although it must be admitted that the bleeding is often surprisingly limited, especially in crushed wounds where the lumina of the injured arteries have been occluded by the compression which caused the accident. Nevertheless bleeding may be placed at the head of the list of complications, the failure to immediately correct which, may convert an otherwise curable injury into a fatal one. A Lieutenant-Colonel in the Army, while fighting at the head of his command, was wounded in the thigh by a band of hostile Indians, sustaining a division of the femoral artery. The surgeon was at the rear of the small command and, while a messenger was despatched for him, some of the line officers endeavored to arrest the bleeding as well as they could, but not being expert in the application of improvised tourniquets, they were not successful in entirely checking it. When the surgeon arrived in a few moments, the patient presented all the evidences of fatal hemorrhage, from which he never rallied. That was before the institution of first-aid instruction in the army. Now, every subaltern and a large proportion of the enlisted force would be competent to step in and apply an extempore tourniquet which would amply control such hemorrhage until the arrival of a surgeon, rarely far away in military service.

But hemorrhage is not the only accident in which prompt action may avert impending death. In cases of submersion under water as may occur in case of a fallen bridge, prompt action is notoriously of advantage. In cases of suffocation by smoke or heat, such as may occur in a railway fire, the prompt application of artificial respiration is equally efficacious. The advantage of prompt treatment even of apparently fatal shock is too well known to demand repetition; while the prompt and easily-learned treatment of heat stroke may also mean the difference between death and life.

A little acquaintance with the treatment of foreign body in the eye is apt to be of particular service to a railway man, since this accident is probably more liable to occur in his experience than in that of any other class of individuals.

First aid may be applied with advantage in many other less serious surgical incidents. Not only simple wounds, but bruises and sprains may be prevented by prompt and intelligent treatment from developing into serious and disabling injuries. While fractures

can not be permanently treated except by the surgeon, their treatment can be greatly assisted by the exercise of proper measures to prevent the aggravation of the injury and to conduce to the ease of the patient. Burns and scalds, on the contrary, when not severe or extensive, may be sufficiently treated by the first-aid man, while colic and diarrhea may often be controlled by the exhibition of simple remedies.

And, as already suggested, not the least advantage to be derived from instruction in first aid in railway emergencies is the obtaining of organized discipline and intelligent conduct in case of accident. Instead of careering like so many decapitated chickens or crowding about the injured like so many bucolics about a prize beef, the men will naturally fall into places where each one can be of the most service and order will readily be brought out of chaos.

So many, indeed, and so forcible are the arguments in favor of the thorough instruction of railway employees in first aid that the discussion might be prolonged almost indefinitely. But, admitting the desirability of such knowledge, we naturally fall upon the consideration of the questions, as to what men should be instructed, whether all should receive the same amount of instruction, how the instruction should be given, what facts should be taught, and whether men qualified in first aid should be distinguished by a badge to indicate their training.

Who should be qualified to apply first aid.—As employees who are in command of men may not only be required to apply first aid themselves, but to direct others in rendering assistance, such men as conductors, yardmasters, station agents and foremen of shops should particularly be instructed.

All men connected with passenger trains should be qualified, not only from the standpoint of humanity, because of the relief which they may afford to injured passengers, but from the standpoint of the interest of his railway company, since prompt attention to injured passengers may prevent aggravation of injuries and possibly increased claims for damages.

Both of these classes of men should be taught not only the application of first aid, but should be instructed in the organization of first aid parties in extensive accidents and in the best methods of showing others how to apply it.

All other employees should be taught the subject in a less complete manner perhaps, although in view of the changes which transfers and promotions may make, it would be well enough for them all to receive the same amount of training.

Substance of first aid instruction.—Of what then should the instruction consist? In a recent paper on "Methods of Instruction in First Aid," I recommended that the instruction of the enlisted men of the army be given in five lectures, each occupying a full hour; it might be of advantage in railway work to add a sixth lecture. The course thus arranged would be as follows:

1. The Human Body—the skeleton and the circulation in particular.
2. Bandages and Dressings—the triangular bandage in particular.
3. Wounds and Bleeding.
4. Broken Bones.
5. Unconsciousness—suffocation and shock in particular.
6. Other Emergencies—including the use of the emergency box.

It is impracticable, in the limited time at our disposal at present, to specify in detail the facts, methods and theories which should be taught. I have endeavored to do this in my little book on *First Aid in Illness and Injury*,² which may be familiar to some of you. It is worth while, however, to go over briefly the subjects that will naturally segregate themselves into groups suitable for treatment in the several lectures.

1. The lecture on the human body should include a simple description of the body, its chief component parts and the principal vital functions carried on by it; a little knowledge of bones and muscles; something about the nervous and digestive systems; more about the respiratory function and the organs involved in it, and still more about the circulatory system. Experience has led me to consider this introductory lecture as absolutely essential to a proper comprehension of the practical subjects to be taken up later. It is never safe to presume upon the prior existence of any anatomic or physiologic information whatever. Even the most intelligent laymen often display an amount of ignorance that would be laughable if it were not lamentable, and still less acquaintance with the subject must be expected in the less educated.

2. The second lecture, on bandages and dressings, is also foundation work, and its mechanical characteristics ought especially to appeal to the interest of the mechanically inclined railway employe. The triangular bandage, the basis of all surgical first aid, should be taught in all its uses. It is not sufficient simply to talk about it, but it must be shown in actual use. And even that is not enough, for its application can not be satisfactorily understood until every man has himself applied it in all its various modes of employment. The manner of improvising dressings and some suggestions as to the sources from which they may be extemporized is an essential feature of this lecture.

3. The third lecture, on wounds and bleeding, is the natural sequel of the first two—the practical application of the materials learned in the second upon the parts taught in the first. This is really the most important lecture in the course and may often with advantage be expanded into two, treating in some detail of wounds of various kinds, and in particular, crushed and lacerated wounds; reviewing the circulation of the blood and especially the course of the principal arteries, with the location of the most appropriate points for compression in order to control bleeding; the differentiation of the varieties of hemorrhage and the treatment appropriate to each, including the arrest of arterial bleeding by digital pressure and by the tourniquet, will all come within the scope of this lecture.

4. In the fourth lecture, on broken bones, the nature, character and most frequent location of fractures are to be taught, together with their possible effects on the tissues adjacent to this break. The signs of fracture and cautions against unnecessary handling may be followed by a description of the methods of retaining the parts safely and comfortably until proper surgical attendance may be secured. The improvisation of pads, cushions and other supports should also be considered in detail.

5. The fifth lecture, on unconsciousness, is a most important one in connection with railway emergencies, involving, as it does, the treatment of severe shock and collapse, cerebral concussion and compression of the

brain, as well as simple fainting. Suffocation in its various forms, including compression of the chest, drowning and inspiration of hot air or smoke, is most important. If inebriation does not often come under the eye of the railroad man, sunstroke certainly may, and convulsions sometimes do. The use of position, hot and cold applications, the administration of stimulants, the employment or avoidance of friction and the application of artificial respiration should all be well understood.

6. The sixth lecture, on other emergencies, may be a collection of the facts not taken up in the others, such as the removal of foreign bodies, the treatment of the effects of heat and cold—burns, scalds and frost bite—cramps and diarrhea, and the like. Here may also be taken up the use of the emergency box and its contents.

In connection with each lecture, some method of transporting the disabled should be taught. This proves an excellent relief to the monotony of a long talk and helps not a little in impressing the facts taught upon the minds of the hearers. Moreover, it is so exceedingly important a feature of first aid work, that advantage should be taken of repeated opportunities to impress its methods upon one's auditors.

Methods of instruction.—With regard to methods of instruction, each lecturer will determine the way in which he can himself best impress his audience. In a paper³ upon this subject in its military relations, read at the last meeting of the Association of Military Surgeons, I arrived at the following conclusions among others: 1. The best method of instruction is a combination of the lecture, the demonstration and recitation from a text-book, neither of these being sufficient without the accompaniment of the other two. 2. The best instruction is characterized by extreme simplicity of diction and the avoidance of all technicality of language. 3. The best instruction is progressive in character, beginning with anatomy and physiology and advancing to bandages and dressings, and then to emergencies proper. 4. The work is advantageously supplemented by home study of a first-aid text-book.

Excellent charts are available for assisting in the graphic presentation of the subject, and they should be freely used, but nothing can impress men so strongly as a demonstration upon a human subject, and this plan should be utilized whenever practicable. An excellent method in lecturing upon the circulation before male classes is to demonstrate the course of the arteries and veins by red and blue outlines painted upon the skin of a living man. It is not difficult to find men with sufficient enthusiasm to willingly serve in this capacity, and the subject is rewarded for his self-sacrifice by the especially strong impression which the lesson makes upon himself.

Recitations from a text-book, which are used with great advantage in military first-aid work, are not always practicable among the frequently changing forces of railway work, but I can not too strongly urge the great desirability of encouraging the men to the private perusal of a suitable first-aid book. Every station should be provided with one of these—one of the more complete works—and every train should have one in its emergency box. A most useful place for such a work would be in the drawing-room car together with the hotel directory and the railway

²"First Aid in Illness and Injury." By James E. Pilcher; fourth edition, 8vo, pp. 322. New York: Charles Scribner's Sons, 1897.

³Methods of Instruction in First Aid, New York Medical Record, Sept. 5, 1896.

guide. But, more than that, each employe should be advised and encouraged to provide himself with proper literature upon the subject and, in the light of the lectures and demonstrations of the surgeons, he should study it carefully and conscientiously. This plan is followed with success in numbers of the National Guard organizations, where every member is required to provide himself with a first-aid text-book and to make it the subject of home study. Information received *viva voce*, as in lecturing, is easily forgotten and demands reinforcement by subsequent reading.

The emergency box.—While every man should be taught to extemporize dressings from any available source, it must not be forgotten that better results may be obtained by the use of properly prepared dressings. This is what contributes value to the emergency chest. Every ambulance association has devised one and not a few have been constructed by railway surgeons. I am inclined to think that the chief defect in these chests has been that too much has been left to the judgment of the railway employes. Such a box should not be stocked with a supply of bandages, a package of gauze, some antiseptic tablets and a paper of pins, each article by itself, to be combined as needed for accidents. In order to get at the articles which they need the first-aid men will handle over the lot with their travel-stained hands, until in a short time the entire chest is too filthy to be used. A plan which avoids all this and which also saves the layman the responsibility of grouping the proper articles, is the collection of all dressings into the form of first-aid packets. These packets may well be an extension of the military first-aid dressing packet. The form commonly used in the army was devised by Esmarch of Kiel and contains in a small space: 1, two compresses of sublimated gauze, each wrapped separately in oiled paper; 2, one roller bandage two yards long, of sublimated cambric with safety pin, and 3, an illustrated triangular bandage. One of these packets contains dressings ample for wounds of considerable size, and for very extensive ones two or even three may readily be employed. In addition to wound dressings, the box might with advantage contain a few simple remedies, put up in tablet form when practicable, and with exact dosage; diarrhea tablets, colic tablets, anodyne tablets and, in a bottle of colored glass studded with points to prevent confusion, a number of antiseptic tablets for making solutions for wound cleansing. A bottle of aromatic spirits of ammonia, some packages of bicarbonate of soda for burns, and a few light and small splints might be introduced with advantage; a pair of shears and of dressing forceps should not be omitted and a good first-aid book should always be added. Such an emergency box should form a part of the outfit of every conductor, station agent and foreman, who should be thoroughly instructed in its use and held strictly responsible for its availability and serviceability at all times.

Uniformity in first aid.—The course of instruction given should, as far as possible, be uniform for each road: indeed it would be better still if a uniform plan were adopted for all roads. Men transferred from point to point, or exchanged from road to road would not then be confused by varying instructions and, wherever they might be, they would naturally fall into suitable first-aid positions. Absolute uniformity, of course, would not be sought for—opportunity must be left for the individuality of the teacher—but the desired

result would be obtained by the adoption of a uniform syllabus of instruction.

Frequency of instruction.—The course of lectures should be given by each surgeon at least once a year to the men connected with his section of the railroad. On account of the constant change in the *personnel* of the employes, a not inconsiderable proportion of his hearers will be new each year and in any event no one can fail to be benefited by one or two repetitions of such instruction, particularly at annual intervals.

Rewards for proficiency.—The St. John Ambulance Association of England and other societies for the propagation of first aid hold examinations upon the subjects taught in their classes and issue diplomas and medals to those who pass. It is worthy of consideration whether a similar plan might not be of advantage in the railway service. If those men who had been found qualified were decorated with a red cross, to be worn in a conspicuous place, it would render them more easily discernible in case of accident and the possibility of winning the decoration might add a little to the general interest in the subject.

Conclusion.—The results of such organization, if thoroughly applied, will be surprising. In the accident in which W. N. S. made so gallant a fight against impending death, only two other persons were fatally injured. I am not so presumptuous as to assume that the percentage of cases, fatal without first aid, would be present in every railway accident, and assert that one-third of the deaths might be avoided by the proper administration of first aid, but I am prepared to assert, and that with the positiveness bred of actual knowledge, that by the faithful employment of first aid in railway emergencies a distinct improvement in the result of the treatment of railway injuries may be obtained, a material reduction in the mortality of railway accidents may be achieved, and an unspeakable amount of suffering may be saved to the unfortunate victims of future railway disasters. Simple in organization, inexpensive in application, easy in accomplishment, the results will be out of all proportion to the cost. The general adoption of first-aid, then, will not only benefit both the railway service and the traveling public, but it will be a distinct ethical advance introducing into railway work an era of realized responsibility, elevated humanity and genuine altruism.

DISCUSSION.

Dr. HENRY HATCH (Quincy, Ill.)—I was very much pleased with the paper just read and it coincided with my ideas, as I have claimed to be the first surgeon who has put emergency boxes up for a railroad at his own expense. I have devised some emergency boxes of my own which I have in use at the prominent offices in Quincy station; I put up seven of them. In the box I have adhesive plaster, carbonated gauze and absorbent cotton. I have the absorbent cotton put in separate bandages, and the gauze put in a jar, each containing about one-eighth of a yard. The adhesive plaster is put in tin boxes in little coils; in this connection, I have a little stick which I give instructions how to use as a torsion key, and in the cover of the box are printed instructions how to use this material. To the head of every one of the offices where the box is placed, I have taken pains to give special instructions. So far as the boxes are concerned on my part, they are original with me; I never had seen and did not know of any. It has had an excellent moral effect upon the men; while they do not know who put them in, they feel better toward the railroad—the C. B. & Q. They feel as though the railroad company had some heart and is looking to their interest. The C. B. & Q. also has

a relief system, whereby the men are entitled to surgical relief free by paying their monthly stipend to the relief association. While I have not had these boxes in but, I think, five months, it has been a saving to the relief department, because a great many of the smaller accidents have been attended to by the men themselves; and for that reason it would be a financial advantage to all railway companies to have these emergency boxes at every station and at every point in that station where there are liable to be accidents. I have one in the freight house, passenger depot, one in the switch office and round house, where they keep the engines. It is my intention to be at Galesburg soon to see the officials and try to induce them to put boxes along the line. I have sent one to Galesburg and one is up at the master mechanic's office. I am exceedingly pleased with this paper.

Dr. REED—In reference to the paper, which was an admirable one on the subject treated, and which has given us considerable material for thought, I wish to say that when I was appointed surgeon of the Pennsylvania Company some twelve or fourteen years ago, I found on the Pittsburg, Fort Wayne and Chicago Railway some old boxes scattered here and there, on engines, cabooses, stations and about the road. They were small tin boxes and contained some bandages, cotton I believe, and a few instruments, I do not remember just what they were, perhaps a pair of scissors, something of that kind; very few were complete, and the general superintendent, Mr. Thomas, called my attention to the matter and made the remark that they had been placed on the road years before that and the road was well supplied with them, but owing to the fact that no instructions had been given the men or given those in charge of the men, the boxes had fallen into disuse; when a man would hurt his finger, hand or arm, he would go to the box, pull out a piece of this material and bind up the wound, and close the box; perhaps when something more serious occurred that required the material, it was not there. That was one objection. Another objection was that under these circumstances they did not know how to use it—this was before the days of antiseptic surgery and dressing of an aseptic character—and as there was no one to keep the boxes replenished and no one to report when they were used, the boxes fell into disuse. But notwithstanding that fact, if this matter is taken up properly by the railroads, and proper parties instructed in the use of the material which should be placed and kept in them, I think that something very valuable can be developed out of it. Whether or not we can use all the suggestions made by the writer of the paper in practical work is a question. Those of us who have had some practical experience in this line on railways know that it is quite a task to instruct the employes in many things which we would be obliged to teach if it were carried out in full. For example, I was called on by the superintendent on the Northern Pacific Railroad, who had known me some years ago when he was on the B. & O., and asked to write out a few simple rules which would govern the men in an emergency, and he emphasized the fact that the rules should be so short and simple that they could be either remembered or read in a moment, and he suggested: If you make the rules explicit, if the men do read them they will not remember, and if they want to apply the rules under an emergency they will not take the time to read them. That was the practical difficulty. I also had a letter from a gentleman from one of the roads in California who had written to me, and it was strange that those two men should have written to me on the very same subject. Again, on the Pennsylvania road I was requested by Mr. Thomas to prepare rules, and the same thing occurred again: three practical men wanted rules, but insisted that they should be short and readily applied, without going into details. And the question comes whether or not we would be able to get the employes to read a long list of instructions and be able

to retain them so as to apply them. The plan is certainly an admirable one, and contains a great deal that I think we should consider, but I think it will require some practical work to bring it into full development.

Dr. SMITH (Streator)—I have had the pleasure of listening to the very good paper by Dr. Pilcher, also the pleasure of reading his book; I believe it would be beneficial to every chief and local surgeon to get Captain Pilcher's book and read it; I do not know any way that he could employ his time better. He gives some practical ideas and instructions. So far as this box is concerned it is a pretty good thing, but I think very poor without instructions; the first thing you know when a man has an accident he goes and tears off a bandage and puts on a chew of tobacco and lets it go for six or seven days, and then comes to the doctor, and you have a poisoned wound, may be syphilitic, and without instructions I do not believe the box amounts to much. Dr. Wood—I believe he organized the first surgical association on the Wabash—had these boxes, had printed instructions in the lid, and I do not suppose you can find one on the road. The Santa Fe, when they started up, had emergency boxes in every passenger and freight car, and when Dr. ——— took charge of the road I succeeded in getting two of them for Streator. I wish the gentlemen would see Captain Pilcher's book and read it: it is a good one.

Dr. McCURDY (Pittsburg)—In order that we may have the benefit of all the best knowledge, I think the best thing that can be done by the Association at this time is to see that copies of this paper reach every manager of every road in our country. In that way it will be able to do some good. As railway surgeons we know that everything that Captain Pilcher has said is of great importance and for him to prepare this paper as exhaustively as he has without having that paper reach the roads and bring some practical results would be a great pity; and I move you that this matter be referred to the executive committee with power to take this action.

Motion seconded by Dr. Reed and carried.

Dr. HARNDEN—I have listened to the paper with a great deal of interest. I suppose the author is competent to give a good paper and good advice on this subject, and there is no doubt but what theoretical advice is excellent, and if it could be carried out as he has indicated so ably it would be attended with good results. But in my experience in such matters I have found instructions to employes leave them somewhat in the position of a half-educated doctor—they kill more than they cure. In giving instructions to employes, especially as to the application of ligatures applied with the idea of controlling hemorrhage: I think nine times out of ten the hemorrhage will be increased for the relief is not intelligently applied. A method of teaching employes might be carried out so thoroughly and exhaustively as to render them capable to fulfil these instructions, but unless you append to a law a penalty you will not make it effective, and unless you append to these instructions some requirement under the head of organized relief association, or on the part of the management of the company requiring such employes to show by answers to questions or by oral examination that he has learned those instructions and remembered them and has some idea of carrying them out practically, then the instructions will not have accomplished much. I think about as amusing an instance illustrating the value of such instructions, a man came into my office one day and said a man was injured in the arm and there was considerable hemorrhage attending it; I went to him, and found both limbs above the knees wound tightly with cords, I asked what that was for, and one of the boys said he had heard that if you shut off the arteries in the limbs it would prevent hemorrhage in the rest of the body. That is about the way they would carry out instructions. And the recommendation of this same form was brought before the Erie Railway surgeons and it was discussed and it was decided to

place the matter in the hands of a committee to formulate instructions and recommendations to the manager of the company. The committee reported at the next meeting with a majority and minority report; the minority report was a long detailed list of recommendations and instructions to the employes and the majority report was a very brief one and consisted simply of some of the most simple forms of instructions; in case of hemorrhage elevate the extremities, which, as we all know would in a large majority of cases of ordinary hemorrhage, control it; this was one of the instructions, another was to place a clean towel or other clean bandage of some kind immediately over the wound and apply compression and run for the doctor, and I think that was about the extent of the instructions—they were very simple indeed. They were presented to the company and immediately adopted and circulated and placed in all offices and given to the employes. Now, I think our Fellow, Dr. Estes, chief surgeon of the Lehigh Valley system, by personal supervision of it, has been able to carry out some method of controlling hemorrhage by ligation, by which he has been able to accomplish some wonderful results. And I say Dr. Pilcher's ideas are most admirable if they can be carried out by personal supervision on the part of the head of the management or the relief department.

Dr. GARDNER—I have listened to the paper with a great deal of interest. In our own line [Southern Pacific] we have had boxes some time. The boxes alluded to that we have had on our line (with the exception of the passenger train from San Francisco to New Orleans, the limited, on that a box is placed in the dining car) were ordinarily only a few boxes placed along but they were failures; the contents were mistreated and when they were wanted they were not to be had. The emergency bandage is just the same as the army bandage, but we added the cotton. With that I have printed instructions with every package; these we have placed in the round house, the machine house and every caboose; in every caboose a dozen bandages and printed instructions in every box. We found it was impossible to give instructions to our employes because our road is far west and the employes change often and we do not have the different employes long enough to instruct them; I made an application for a thousand bandages and they were distributed to the different departments and gave great satisfaction; our instructions are simple and very short so anyone can adapt them.

Dr. REED—I beg the pardon of the Academy and ask permission to add one remark I intended to make and forgot. I wish to say Dr. Pilcher's book should be in the hands of every railroad surgeon, but what I intended to convey in my remarks is I think it will do better work in the hands of the surgeon than in the hands of the average employe. The instructions to the average employe should be short and concise, and be backed by intelligent instruction to the average surgeon, who is fully as ignorant as to what should be done in an emergency many times as the average man.

Dr. PILCHER—It has given me very great pleasure to learn from this discussion that the Academy is so nearly unanimously in favor of the extension of first-aid work in the railway service. The remarks, however, of the gentleman who seems to doubt its practicability, remind me of the not entirely unknown anecdote of the peripatetic old chap who was wandering about Southern Europe some four hundred years ago circulating a rumor that the world was round. Nobody believed him. But those of us who visited Chicago three years ago can say most emphatically that he was right. The fact that any particular individual had not seen it to be round did not make the world any less spherical. And the fact that some gentlemen, who have not made the effort, think that first-aid instruction will not be a complete success does not in any way militate against the fact that success in railway first-aid is not only a possibility but an actual living fact. Five roads have already used it to

some extent, and the chief surgeon of the Lehigh Valley Railway, Dr. W. L. Estes, writes me that upon his road, first aid has saved no less than seventy-five lives which would otherwise have been lost. These facts alone would seem to amply demonstrate that the doubts expressed by the skeptical gentleman are an unwarranted reflection not only upon the teaching capacity of railway surgeons but upon the intelligence of the vast body of railway men, many of whom are daily entrusted with matters requiring exceptionally keen judgment and comprehension, and all of whom are necessarily above the average grade of intelligence. Neither the public nor the railway service will tolerate such a reflection for a moment. First aid is not a theory nor an untried practice but it is a thoroughly proven instrument, the value of which has been amply demonstrated not only in railway work, but to a far greater extent in military and in civil life. No flag is so much honored today in the civilized world as the white field bearing a red cross, the symbol of aid to the injured and afflicted.

The point that has been suggested with regard to the possible danger of mistaking the inadequate information acquired through first-aid instruction for a complete medical education is a matter that every first-aid instructor should look after himself. In the little book of which some of the gentlemen have spoken so kindly, I have endeavored on nearly every page relating to treatment to call attention to the fact that the aid rendered is only temporary and pending the arrival of a medical man, who should be summoned at the earliest possible moment. I have too much confidence in the ability of our railway surgeons to have any doubt as to whether or not they will impress upon their men the fact that, except in the very simple cases, their assistance should attempt only to tide over the time until a surgeon can be secured. With regard to the emergency box of which so much has been said, I believe it to be an important feature of railway first aid, although it would hardly seem to deserve the prominence which has been thrust upon it in this discussion. The instructions in the emergency box are also important. No emergency box should be without its instructions, clearly printed and conspicuously placed, nor should it be without a copy of a good first-aid book, for the further information of its custodian at his leisure, not for hurried consultation in the face of the emergency. You all remember the peculiar cerebral condition which often takes hold of men in emergencies, and manifests itself either in amaurosis or paralysis of the center of comprehension, so that they can not grasp the meaning of any sort of printed matter. But the previous instruction in first aid not only enables men to apply the necessary treatment in the majority of cases without reading the printed rules, but in case they may desire to refresh their memories before applying first aid, it gives them the self-confidence which would enable them to go over the rule intelligently and profitably. But the preliminary teaching is indispensable! It is hardly necessary to repeat what I have already stated in my paper, that an emergency box gotten up after the plan described will do away with the objections already made to these first-aid helps, and the plan of issuing the boxes to certain individuals, who should be held responsible for their serviceability entirely obviates the difficulty arising from their becoming damaged or defective.

Some of the gentlemen have referred to the fact that the introduction of first aid into the railway service will require work. There is no doubt of that, it will require work, both upon the part of the railway surgeons and on the side of the other employes. It will require some expenditure also upon the part of the railway companies, but this will be more than counterbalanced by the amount of expensive litigation that will be avoided. Personally, I have no direct interest in the matter except that of a more or less frequent traveler who may on some occasion be in a position to be greatly helped by first aid. I speak in the interests of the thousands of injured

persons who might every year be helped by the adoption of systematic first aid in railway work. If, as a consequence of the increased confidence of the people, the receipts of the railways are increased I do not object. If, because of the diminished amount of litigation, the expenditures of the railways are diminished I should be pleased. But these are mere trifles, hardly to be mentioned in comparison with the enormous benefit to the great traveling public, which will accrue from the adoption of a system of first aid such as has been urged.

AMPUTATIONS.

Read at the Meeting of the Western Surgical and Gynecological Association, Topeka, Kan., Dec. 29, 1896.

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The reasons for presenting a paper upon this particular subject are, that the writer has had a considerable experience and observation in this line of work. It is a subject which has received little attention during the period represented by the age of this society, the profession having been fully occupied, studying and discussing the newer problems in our science and art, which have brought with them pressing demands for solution. It is only necessary to turn our mental skiascope upon the history of the last decade, in order to fully perceive and appreciate its marvelous achievements in these newer fields.

The development of specialism in surgery, with its perfected technique, has made its influence felt all along the line even to the "saw bones." When low, it may be said that to amputate a limb in a modern manner, that is, ideally, without drainage, and securing primary union, requires as much, and sometimes more, skill and experience than to do a hysterectomy.

Infrequently as some individual members of the profession are called upon to do an amputation, their experience is insufficient to keep them in line with the more advanced practices; therefore, inasmuch as the subject has received little recent attention, its consideration and discussion is thought to be desirable at this time.

The conditions necessitating amputation are so various that fixed rules can not be followed, either in determining the necessity for amputation, or the manner in which the amputation is to be done. With modern methods of wound treatment, there is not the same necessity for early amputation for injury, as formerly; this, in itself, saves many limbs and possibly lives. But when delay is made without the institution of proper methods, there is the same danger that drove our forefathers to immediate amputation and the necessary sacrifice of many limbs or portions of limbs, because the life should not be jeopardized. Crushing injuries and compound fractures represent this class of cases, and their successful treatment requires not only thorough surgical knowledge, but experience. A better understanding of my meaning can be obtained perhaps by the recitation of cases, of which we have, and doubtless all other surgeons have, too great a number, and is another reason why this paper is written.

A packing-house employe had great toe crushed by wheels of street car. His shoe and foot were necessarily very infectious from saturation with animal matter, and had been imperfectly cleansed, closely sutured and dressed with absorbent cotton. Septic lymphangitis and spreading gangrene occurred. Am-

putation at middle and upper thirds of legs; return in stump; reamputation middle of thigh, general sepsis and death.

Boy of 12 had foot crushed by street cars; no bones broken, soft parts over metatarsus badly injured and skin burst longitudinally on outer and inner borders of foot; wounds tightly closed by suture and small drainage tubes introduced by physicians called in emergency. Dry iodoform gauze and cotton dressing were secured by bandage; the scant discharge dried into dressing, sealing all parts of drainage. Presented third day septic lymphangitis, temperature 104.5, gangrene halfway to the knee, amputation three inches below the knee, flaps too doubtful to suture. Left wound entirely open, iodoform gauze loosely laid over end of stump between cellulose-cutaneous flaps, copious wet hot carbolized dressing applied. Dressed third day, slight loss of margin of anterior flap, trimmed with scissors and edge of posterior flap curetted, closed with silk-worm gut, primary union, but some pus; recovery uneventful.

These cases represent a class very common, a full half dozen of which could be detailed, from a comparatively recent period. This observation I have made: that general practitioners are too prone to make attempts at repair of these injuries, with results that are worse than useless, and often most pernicious, as illustrated in the cases reported. In cases of this character, the wounds should not only be left wide open, but freely enlarged, if necessary, to allow all discharges to find the most ready and free outlet. Not only this, but many free incisions should be made to allow free exit of the stagnated venous blood. In many of these crushed and lacerated wounds, the trouble may not be so much with the lack of arterial supply (though this may be much affected), as of venous return; the engorgement of the veins increasing the swelling, and devitalizing the tissues by the pressure, thus favoring and initiating the pathologic changes which are prone to culminate in a diffuse, acute, septic lymphangitis with accompanying thrombo-phlebitis and possibly gangrene. In addition to this treatment by free incision to guard against strangulation, the very large gauze, hot wet carbolized dressing is used by the author. This proving inadequate, constant irrigation by hot water is resorted to, which treatment has proven of greatest advantage to the writer in several almost hopeless cases of secondary compound fracture, and cases of crush injuries of the extremities.

In those instances where amputation is subsequently demanded, as well as many primary cases, it has been found that much of the limb can often be conserved by leaving the stump unsutured, thus placing no tax or strain upon the flaps of very questionable vitality. This course in secondary amputation admitting of the incision passing through tissues already much inflamed, the subsequent free drainage produced by this open method quickly restoring the waning vitality of the tissues, beside appreciably lessening the risk of amputation during the inflammatory period. In these cases a preference is also made for the wet carbolized dressings, which are always very ample in character, extending well above the affected part.

It has been demonstrated by the writer that the time-honored custom of going sufficiently high in an amputation to get flaps to cover, need not necessarily be followed in all cases, as is illustrated by the following:

Brakeman had right foot crushed by freight-car truck passing across metatarsus. Integument ruptured longitudinally upon inner and outer borders of foot, but the integument was entirely separated from deeper tissues to a point corresponding to the mid-tarsal articulation. The bones of the tarsus were not crushed, but laid bare for fully halfway on their distal ends. The metatarso-phalangeal joints were wholly disorganized and the tendons, both of the dorsal and plantar surfaces, were stripped of all attachments for many inches. As is often the case in railroad injuries, external appearances were no index to the concealed injury to the member. The skin flaps produced by the traumatism were nothing but skin. Even the subcutaneous fat on both dorsum and sole was perfectly removed. Then to get flaps of vitalized tissues, sufficient to cover stump, nothing short of a Pirogoff amputation would have sufficed. And some would have advised nothing short of going to middle third to get a good stump for an artificial member. But here is a man who went to sleep to have his toes amputated. Self-preservation demands that something be done less radical than some of the procedures referred to. It was my opinion that these accidentally made skin flaps would not live, but I felt actuated to give them a chance, and I therefore resolved to do what I termed a cheese-paring operation, and I made a section of the foot at a point where these questionable flaps would partially cover, if they lived. Disarticulation of the first metatarsal bone was made and the heads of the other metatarsals were sawn at this point, for the reason that the sawn surfaces would granulate more readily than an artificial surface. The flaps were not sutured, for their vitality was much in question. Loose gauze was placed across the stump. Generous padding and no pressure by bandage. Dressed on the third day. Flaps almost wholly devitalized, but no line of separation. Line fully formed in one week, and shreds removed only after sloughing began. When this process was complete, no flaps remained for covering the whole end of the stump. It occurred to me to stimulate the growth of a deep bed of granulations upon this surface so favorable for cicatricial tissues, and to eventually cover this surface by skin grafts. Pern balsam and vaselin, in proportion of about one to six or eight, was incorporated in the iodoform gauze and applied with most happy results, and in about two weeks a full third of an inch of firm, fine granulations covered the entire surface, deeply covering the bones, when after simply rubbing the granulations with gauze, Thiersch grafts were made to cover them, and the result was perfect. With an identical case I feel sure that I could save from an inch to an inch and a half more of the foot. This man walks with little imperfection in his gait, notwithstanding the fact that he has not even taken my advice to get a spring steel shank put into the sole of his shoe.

So large a proportion of amputations are necessitated by injury, the effects of the traumatism extending to, or even beyond the point of election or necessity, the tissues and the patient being in an unfavorable condition for the most perfect reaction and local regeneration, but few cases of primary major amputation admit of complete closure of the wound without drainage, though the only two cases in which this was tried were successful, one of which was not dressed until the fourteenth day. These were favorable subjects, and were selected cases, which are sel-

dom seen in the foregoing class; hence, the use of drainage is the rule.

Many cases also, where amputation is done for disease, are unsuitable for an absence of drainage. Suppurative osteomyelitis and tuberculosis furnish examples.

Cases where amputation is made for removal of a deformed or useless limb, or for disease such as sarcoma, and reamputation for neuromata, and painful stump, are of the class permitting the operator to attain to the ideal in this particular field of the surgical art. First of all, the patient is well, being neither depressed by shock, nor vitality lowered from loss of blood. Second, an opportunity for deliberate and perfect attainment of asepsis, both of the patient and surroundings, as in other operations of election; and lastly, time, in which to secure perfect hemostasis and carefully coapt by buried suture the wound surfaces. The various cellulo-cutaneous flap methods, which have been so long popular, are not perfectly adapted to this method; hence the return of the musculo-cutaneous flap, made preferably by cutting from without inward with a small knife, instead of by transfixion, thus dispensing with the formidable catling.

There has been some discussion of late, concerning the advantages of the periosteal flap. That it does favor development of osteophytes, can not be disputed; that it does render the skin more freely movable over the bone, is true, and is a distinct advantage, especially in amputations by the skin-flap methods. When the bone is covered by a quantity of muscle, it is unnecessary in the writer's judgement. The statement made, that the end of the bone is more prone to osteomyelitis and necrosis without the flap, is not concurred in; this condition being induced by prolonged suppuration about the end of the bone; and in the presence of suppuration this apron of periosteum is prone to become devitalized and itself become a source of delay in resolution. I have often thought that the pressure made over the stump by the firm dressing, was sufficient to cut off the circulation in the periosteum, and that the trouble sometimes experienced in the end of the bone covered by granulations, was the direct result of suppuration started and maintained by the sloughing of the periosteal flap. When the periosteal flap is made, care should be exercised not to separate the muscles from it, and it should be so formed and adjusted, as not to favor the irregular development of new bone, when it may become a source of serious inconvenience.

The nerves should be redivided from one to two inches, varying with individual operations, after the limb is severed. When this is done, though the healing of the wound may be somewhat delayed, there is little danger of the growth of neuromata, it being my opinion that their development is due to irritation and inflammation incident to delayed union, when their divided ends are exposed to this influence, together with their subsequent involvement in the resulting dense cicatrix.

In a reamputation at the forearm for neuromata done last year my associate, Dr. Galbraith, after dividing the nerves two inches above the tumors (which were as large as Concord grapes), the ends of the radial and median nerves were united by catgut suture as in nerve suture, the ulnar receiving no such attention. The case was so treated for experimental purposes. Cases of this character showing a good percentage of recurrences, it was thought that this would

favor a more normal regeneration and repair of the divided nerve fibers. (It may be interesting to note that these nerves were from three to four times their normal size.)

It is a matter of common knowledge to those who have made the observation that when a nerve is divided the sheath retracts for a considerable distance, thus exposing the nerve to the irritation incident to the repair instituted for its encapsulation and protection.

Theorizing that this process may have its influence in the production of excessive cellular activity in the part, thus starting this abnormal growth of fibrous tissue upon the nerve ends, it has occurred to us to try, in cases seeming to demand it, the sliding of the sheath a considerable distance up the nerve before the nerve is divided, a procedure readily and quickly done.

To hasten repair of the several nerve ends and limit the tendency to excessive or abnormal regeneration, Professor Senn has recommended that a wedge-shaped piece be resected from the end of the nerve and the surfaces united by fine catgut. This method of dealing with the large nerve trunks is to be commended cause be founded upon scientific principles. Though it may be said that this will not permit of so high a section as when the nerve is simply cut high. It is the opinion of the writer that so-called neuromata will not form when the nerve is divided sufficiently high to remove the nerve end from the influences of prolonged suppuration at or near the wound surface, barring those cases where there would seem to be an inherent tendency to their formation. The writer's observation is, however, that an irritation is necessary to stimulate their growth, as above referred to, or from the involvement of the nerve end in the cicatrix. If our observations are correct these time-taking methods are useless and unnecessary except perhaps in very rare cases. And it will be a question in many cases whether time should be given to their employment. Certainly not in some.

Some cases of reamputation for sensitive or painful stump are unsuccessful for the reason that the condition is due to neuritis, the result of the original traumatism, or from the extension of inflammation from surrounding tissues. If treatment for neuritis is unsuccessful, excision of a portion of the nerves, or reamputation at a point above the disease may be resorted to, though frequently unsuccessful.

To close an amputation wound, without drainage, requires close attention to details; the knife should be keen, doing as little violence to the tissues as possible; tendons as well as nerves cut high; any redundant fat or shreds of tissue trimmed off; vessels ligated somewhat beyond the point of division of the surrounding tissues; for this purpose catgut is usually preferred. Shredded catgut used as an absorbable tamponade, may be used to arrest hemorrhage from the bone. Absolute hemostasis must be secured in every part, and a glazed condition of the wound obtained. This is more readily brought about if no irrigation is used. Its use impairs the regenerative powers of the tissues and should be avoided. If there is any probability of infection being present, needing to be washed away, success can not be expected. Great care should be taken also, that bleeding is not produced by the needle in making the buried suture, because a little bleeding excites more as is known by all abdominal surgeons. The tension of the sutures should be uniform, strangulation within the wound, or in the skin, being inimical to success.

Leaving a depended opening at the angle, as in a Stephen Smith, will sometimes enable the operator to dispense with the tubage drain, and also procure what is practically union throughout.

The dry dressing is to be preferred in these as in all aseptic wounds. The limbs should be properly supported, securing so called physiologic rest, this being favored also by perfect quiet on the part of the patient.

One great disadvantage of the tube is, that it of necessity remains too long. In an aseptic wound, twenty-four to seventy-two hours should be sufficient time for its purpose to be fulfilled. The first dressing usually not being made under a week, and the intervals of dressing being too long to secure its speedy removal, if it be only a portion at a time, infection is apt to occur before the wound is closed, because of the relaxation of precautions or from other causes.

The introduction of drains of iodoformized wick with gauze or silk attached and secured outside the dressing where they can be drawn upon and the drainage removed in twenty-four to forty-eight hours at will without disturbing the dressing, is practiced by some operators with excellent results and should be more generally employed.

The use of from thirty to fifty strands of catgut secured to the periosteum and from there radiating to the surface between buried sutures of the same material or silk has not been tried, for the reason that I look upon it as possessing in a measure the same objection as that possessed by the decalcified bone drain, which introduces into the wound too great an amount of material favorable to bacterial incubation.

According to Kocher, "the simplest and oldest methods have again become frequent. These are the circular incisions." A familiarity with all methods and their modifications will enable the operator to exercise his ingenuity and skill in making the most of individual cases with the varying conditions. With present-day methods less depends upon the method, than when union was commonly by granulation. Cicatrices after union by first intention are much less apt to be troublesome, even though unfavorably located. When complete closure of an amputation wound is made, there are several advantages possessed by the musculo-cutaneous flap method, which permits of the accurate coaptation of muscle to muscle and fascia to fascia. Dead spaces, subject to the accumulation of wound ooze, are eliminated, dependence not being placed on the fit of the dressing as in the skin-flap methods, though their special advantages render them justly popular.

SOME CLINICAL OBSERVATIONS OF MENINGEAL COMPLICATIONS, FOLLOWED BY DEATH AND POSTMORTEM EXAMINATIONS.

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The dura mater, histologically speaking, is composed of two distinct membranes, the external being a dense fibrous membrane lining closely the interior of the calvarium; the inner surface is smooth, lined with epithelium and is a serous membrane. The dura mater is therefore a fibro-serous membrane; exter-

nally fibrous, internally serous. The latter is more intimately connected with the brain structure. In keeping with these anatomic facts each layer is subject to somewhat different pathologic conditions. The inner layer of the dura is far less frequently diseased than the outer; a chronic, simple inflammation of the latter may exist for an indefinite period prior to death.

It is frequently observed, as in case number one, in making autopsies, that it is difficult or impossible to remove the calvarium without considerable force, and often laceration of the dura is the result. In these cases the dura is firmly adherent to the calvarium and if we are careful to examine the latter we will find that it is thick and often heavier than normal, indicating an increase in the osseous structure and the spongy structure, or diploë, mostly disappeared. Dr. Weir Mitchell attributes to this condition the cause of many permanent and obstinate headaches, often overlooked during life.

Case 1.—E. W. E., aged 56. Widower over thirty years. Occupation, agent for a land company in which he held some interest, the duties connected with the same occupying very little of his time. Was refined and an exceptionally well-educated and well-read man. Had been in the past a prominent society man, but during the last ten years, although having the *entrée* into the best society, he refused all invitations and from choice lived in comparative retirement. He had only two or three intimate friends and was considered a "crank," or eccentric by those persons who met him often but did not know him intimately. He lived a solitary, lonely life in his office, to which his bedroom was attached. In business he was considered a man of exceptionally good judgment and acumen. Had always been extremely careful of his health and was fond of talking about his ailments; was also constantly taking medicine for catarrh (nasal), biliousness and nervousness. Was latterly of an extremely morose disposition.

About January 16 last he complained of some pain and slight swelling of left side of face, which he thought due to defective teeth. On the 18th he had a dentist extract the second and third molars of the left upper jaw. The pain and swelling continuing, he consulted a physician two days later, who found some slight swelling in the muscles of the inferior and temporo-maxillary region, hyperesthesia of the skin and sensitiveness of the mucous membrane. Pressure was painful at the points of emergence of the nerve trunks, especially so where the nerve enters the muscles. The ophthalmic division of the fifth nerve was not affected, but in the upper maxillary division the pain was marked along the upper teeth and there were painful spots along the auriculo-temporal nerve, the pain radiating in the region of the ear and along the lower jaw and teeth. He complained of intense pain directly over the temporal bone; mastication and talking were painful. Examination of the mouth and teeth showed nothing abnormal. Temperature was normal as was also the pulse. Bowels constipated. The case was diagnosed as facial neuralgia, and some of the nerve analgesics were prescribed with codein to relieve the pain: aconite ointment externally, and a saline for the bowels. This treatment not relieving the pain, which continued in the same locality, nitroglycerin andgelsemium were tried with little effect; also hot water bottles and other hot and soothing applications. The patient at this time, a week after calling in professional aid, was sitting up during the day in his office, but not going out of the house.

He took very little nourishment, had very little sleep at night, and was extremely nervous and forgetful. He refused to stay in bed during the day, and

after going to bed at nine at night, would get up and dress himself in two or three hours and sit up the remainder of the night. Began at this stage to develop symptoms of mental unsoundness; had illusions of hearing and sight, was unable to remember the combination of his safe, which he was anxious to open; could not remember directions for taking medicine, etc. The swelling of the face increased and the intense pain changed from the center of temporal region to the coronoid process. On examination of the ear, the anterior wall of the external auditory meatus was slightly swollen; the handle of the malleus was retracted; the short process very prominent; the drum membrane in consequence was drawn in, the two folds extending from the short process, which are ordinarily seen in chronic middle ear catarrh, were very prominent, and the membrane had lost its luster and presented considerable opacity. On the 30th, or about twelve days after being under medical care, he remained in bed, for the reason that he was unable, through weakness, to dress himself and unfit mentally to be trusted without a nurse. At this time his pulse and temperature were normal and continued so throughout the course of the disease. Bowels and skin normal; urine normal. He took very little nourishment—milk and egg, beef peptonoids and whisky.

Mental disturbance soon became more pronounced; he had illusions and became at times violent, so that it required two male nurses to attend him. Kept constantly trying to put his bed clothes on for socks and trousers and endeavored to get out of doors. One of his illusions was to pick the paper off the wall of the bed room in order to enlarge the room. He also fancied chairs were men and women, and refused food and drink. The swelling of face increased, with local heat and redness, while the pain diminished. The sub-maxillary glands were involved; the center of pain remained over the coronoid process; no fluctuation. Attempts were made to locate the abscess with aspirating needle, but without success. Application of cold to the swelling caused pain, and it was found necessary to give morphia hypodermically to quiet the patient—one-half grain at most, during twenty-four hours. Strichnia was given for the heart. Examination of the ear three or four days after his taking to bed, revealed the anterior wall more swollen, the view of the tympanic membrane leaving only the posterior inferior quadrant to be seen. This, however, did not show that the middle ear was acutely involved, nor did sharp percussion on the mastoid process at any time cause any pain. The mouth, throat and teeth were examined and found normal.

Dr. Conway, the dentist who extracted the teeth, states that Mr. E. had been complaining of pain in the lower jaw for about four years, but that from several examinations he could not make out any trouble.

I was called to see patient, in consultation with Dr. B. D. Harison, on February 5. Upon arrival, the patient was being held in bed by two powerful men, after having what was termed "attacks," in which his strength was very great, and required two of them to control him. His pulse was 84; the first and second sounds of heart could be heard; volume very much decreased and quite rapid in rhythm. Temperature normal. The pupils were equal and responded to light. Patient was asked to protrude tongue, which he did, and no paralysis of the organ was found.

A swelling was noticed on the left side of the face, which extended down over the superior and inferior maxillaries and below, including the sub-maxillary gland; the latter was swollen and enlarged but quite firm and gave rise to considerable pain on pressure. No fluctuation could be found.

Sensation was impaired; in both upper and lower extremities locomotion was very much impaired. The swelling on side of face extended to and narrowed the external auditory canal. Patient's tongue was coated with a yellowish brown fur; odor from breath was very offensive.

His talk was disconnected and he could not converse, but would answer questions after being aroused, though his intellect was very much impaired. He labored under delusions of going to fall or be injured; would not recognize friends or acquaintances unless his attention was particularly called to them. When asked if he knew such a person, who was his friend, he would answer in the affirmative, when his attention was called to the friend. He died ten hours afterward, the immediate cause being cardiac failure.

Postmortem, eighteen hours after death: Skull cap removed with great difficulty. Dura mater firmly adherent to inner table; dura also somewhat thickened. The sinuses distended with venous blood. Pacchionian depressions well marked on inner table, with corresponding bodies on membrane. Dura mater firmly adherent to pia along longitudinal fissure. An excessive amount of sub-arachnoid fluid; some venous congestion over whole surface. Slight adhesions noticed between pia and brain substance; more pronounced over base. Sections of cerebral tissue presented nothing abnormal, macroscopically; in fact there was no tissue, with exception of dura mater, which did present anything strikingly pathologic to the naked eye.

On the left side of the face and neck there was a large swelling. An incision into the substance disclosed quite a large abscess cavity behind the inner angle and ramus of the inferior maxillary, filled with about four ounces of very fetid pus. The cavity extended up to the external surface and base of skull inside of the styloid process of the temporal bone. The inner surface of the inferior maxillary was denuded at the angle and this extended up the ramus about an inch.

This case is of interest from a surgical as well as pathologic point of view. Pus was suspected, but was not located before death. The mastoid cells were not involved, neither did the pus cavity extend into the antrum of Highmore, as is frequently the case. The roughened condition found along the inner angle of the ramus of the lower jaw, extending upward toward the upper jaw and involving the canals which lead into and are in close proximity to the posterior cerebral lobe, would indicate the serious nature and location of the pus. However, the alveolar abscess was suspected and an examination made *per os*, but it was not detected. As is well known to surgeons, an alveolar abscess may perforate the antrum when attached to an incisor tooth or may open into the nares, or when connected with lateral incisors the abscess may perforate backward between the layer of the palatine process and superior maxilla, or between the periosteum and hard palate, or may also form fistulous openings on the face near the inner canthus or the under side of the malar bone. When connected with a lower incisor they open sometimes in

front of the chin, under the margin of the lower jaw. It is also known that pus from an alveolar abscess may pass down the neck, and one case is reported where it found exit below the clavicle, and in another fatal case it reached the arm pit. When the alveolar abscess distends the mucous membrane of the gum or cheek the diagnosis is easily made, and evacuation and incision is the remedy. In this case these conditions were not found, there being no fluctuation, either external or internal. The mental symptoms manifested by the patient, even before going to bed, indicated meningeal complications. The adhesion of the dura mater to the inner layer of the calvarium would indicate that they had been of long standing. There was a history of cephalalgia in his case which might be accounted for by the pathologic condition of the dura. The involvement of the brain and meninges might be attributed to two principal causes: First, the mechanical obstruction caused by the situation of the pent-up pus; second, the meningeal complications caused by sepsis or streptococcus meningitis. Such extensive adhesions as were found in his case indicated a chronic inflammation of long standing. While the cause of death was, no doubt, due to heart failure, the location of the abscess, involving the external carotid and other vessels which supply the brain, no doubt was responsible for the mental symptoms which developed in this case.

Case 2.—Mental disturbance following rheumatism. C. L. was a saloon keeper. He drank heavily and had been for two years afflicted with sub-acute gastritis and frequent insomnia. A few days before his last sickness he went hunting, sleeping nights in a log hut in the vicinity. Having a poor appetite he kept up on whisky. A day or two before my being called he came to town for a fresh supply of liquor. Often, before this time, his only food was malted milk and beef tea.

I was called to see him on November 26. The right shoulder was swollen and very painful; nausea naturally followed. Pulse full 110 and temperature 103 degrees. The following day the symptoms abated. On the third day his left elbow and wrist were badly swollen and painful and at night caused more or less insomnia. He had muttering delirium when he did sleep. On the fourth day his knees became involved, and subcutaneous nodules presented themselves on his thighs and forearms. At this time, also, acute delirium became continuous and the maxillary glands became involved. He lived till December 6, from the 3d to the 6th his condition remaining apparently hopeless. There appeared to be a prostration, almost equivalent to shock, from the disease itself; but one must not lose sight of the fact that he was a sufferer, or victim, of chronic alcoholism, indigestion and insomnia being with him common conditions.

No postmortem was allowed, yet it is altogether probable that, inter maxillary and sub-basis, there were glandular pressure and confined pus sacs.

In this case pressure at the base of the brain might have caused the mental trouble, and paralysis of phrenic and pneumogastric functions, while the poison of the disease, *per se*, would have been sufficient to paralyze the vital functions.

This case presented many psychologic symptoms in common with the preceding one, and although a postmortem was not held, I am of the opinion that meningeal complications were, no doubt, present, involving the pia and arachnoid, and extending over the cortex and possibly over the base. Sensation was partially lost in this patient, as well as the power of locomotion. In neither of these cases did the temperature run high, and the meningeal symptoms developed so insidiously that they were liable to be overlooked by the general practitioner for pathologic conditions in other parts of the body, which might be responsible for the secondary brain lesions.

Case 3.—Patient was admitted to the Upper Peninsula Hos-

pital for the Insane, July 27, 1896. Male, age 34, married. Occupation, electrician. Family history fair; no insane relatives; quiet habits; very nervous temperament. Patient had had inflammation of the lungs three years previous; there was also history of rheumatism. Assigned cause, overwork and exhaustion. Previous to his admission he seemed influenced by delusions for some little time; was constantly active in the performance of unnecessary labor, generally something that ought not to have been done.

For the first two or three days patient took very little nourishment, and was quite restless and noisy about the halls, talking of his delusions, etc., but would talk rationally if you held him to a subject. He soon developed destructive tendencies and was also homicidal; appropriated any and every weapon he could get his hands on with the express purpose of killing one of the attendants. When questioned about his motives in this regard, he admitted his intentions without any apparent reluctance or feeling in the matter. He became very troublesome on this account, necessitating constant supervision.

The following is a brief account of one of his attempts to injure an attendant: "He rapped on his room door at about two o'clock one morning and stated to the attendant that he wished to go to the closet to get a drink. He had a sheet wrapped around him, apparently for protection, and started for the washroom; when he got as far as the door, he suddenly turned and struck at the attendant with an iron bar, which he had broken from the bed and had concealed under the sheet. The attendant was so close to him, and being on the alert for any emergency, that he easily warded off the blow." Patient admitted that he intended to kill the night attendant. All of these attacks occurred within two weeks of the date of his admission.

He then became very quiet, docile and apparently very much interested in reading and amusements, but still showed an extremely irritable manner, seeming, however, to try to suppress this as much as he could. From the beginning he entertained lofty and extravagant delusions regarding electricity, telephone lines, etc. He was constantly desirous of taking hypnotics, etc., so that he could get some sleep, claiming that since his admission he had slept but a very little, notwithstanding the fact of his apparently resting well every night, according to the night attendant's report.

The pupils of his eyes were constantly dilated, the right larger than the left; there was no variation in this condition all the while he was here. He complained constantly of severe headache. When first admitted, his demands for medicine were allowed to a limited degree, but we soon commenced to give him placebos. The effects of the administration of these seemed to be equal to those of the drugs he had been taking.

After he had been in the hospital about a month his delusions became more and more pronounced and were tinged with ideas of wealth. He commenced to be extremely irritable again, quarreling with patients, refusing to interview his friends, who came to see him often, and was constantly excited. He became more and more noisy and troublesome in talking of his schemes, etc., so much so that it was necessary to keep him away from the other patients on account of his disturbing them and exciting the whole hall. He gradually broke off from his usual habits of attending amusements, etc., and showed no regard for his former associates.

He soon became almost unmanageable; his mental activity became greatly impaired, so that it was impossible for him to talk rationally on any subject; he became very incoherent in his talk. His delusions of

wealth, etc., increased, and he also had hallucinations of sight and hearing, as expressed by his actions and talk. On the occasion of this latest disturbed spell he failed quite rapidly physically. He took considerable nourishment, but it did not seem to be assimilated.

It soon became necessary to place the patient in bed on account of his debilitated condition. He was very noisy night and day from this time on until the date of his death. For about one week before his death he did not seem to recognize any one. Unless watched, he would bruise and lacerate his body intentionally, without any apparent sensibility to pain.

For about two weeks before the patient's death the record of temperature, pulse and respiration showed a very slight abnormal element. His temperature at no time (and this was only recorded on one day) was over 100, and was most of the time normal. His pulse during this period ranged from 76 to 96. The respiration was about normal until two days before death, when it reached 24. There is no record of subnormal temperature. Patient died of exhaustion Sept. 30, 1896.

For some time before death there was rigidity and contraction of the muscles of the back of neck, indicating an involvement of the base, or basal meningitis. The headache was a prominent feature in the case; it was continuous and severe. The general surface of the body at times was very sensitive. The tongue was nearly normal at first, but later on became heavily furred. The temperature at no time ran high, neither did the pulse, excepting shortly before death. At first the pupils were contracted, but later dilated and irregular. The knee-jerk was at first very much increased, later diminished. A diagnosis was made of congestion of the brain or membranes, with possibly inflammatory exudate.

Postmortem made eight hours after death: The skull cap was readily removed; no adhesions of the dura to any part of the calvarium. The Pacchionian bodies were greatly enlarged and seemingly congested. The dura mater, to the naked eye, presented a normal appearance, but upon removal of the same it was found firmly adherent to the pia mater along the longitudinal fissure. The membrane was injected and hyperemic, the seat of serous exudate, and was slightly clouded. The meshes of the pia arachnoid were found to be infiltrated. The infiltration was not purulent in character, but rather of the nature of serum. These conditions were more noticeable over the cortex, although they seemed to extend to the base, and probably involved intra-cranial portions of the various nerves at this seat.

In making sections with the knife throughout the white matter there could be seen with the naked eye enlarged capillaries, and what appeared to be small clots were visible, and under the microscope marked congestion was found, and what appeared to the naked eye to be clots were found to be blood corpuscles which had found their way to the outside of vessels, and which represented a condition termed by pathologists "vena vasculosa."

The postmortem in this very interesting case confirmed the diagnosis made antemortem. The patient's insanity was, no doubt, caused by an increased circulation in the brain structure. The equilibrium of the vascular system in the nerve centers was not properly maintained, which resulted in serous exudate and adhesion of meningeal membrane, which extended over the cortex and base and caused death.

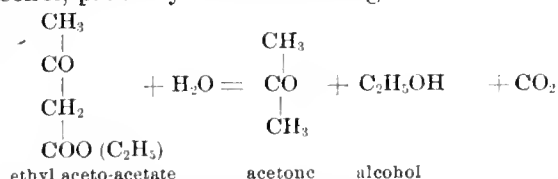
THE CHEMISTRY OF THE URINE IN DIABETES MELLITUS.

BY EDWARD L. MUNSON, M.A., M.D.

ASSISTANT SURGEON U. S. A., FORT ASSINIBOINE, MONTANA.

The following article is the result of almost daily analysis of the urine in a typical case of diabetes mellitus, extending from the recognition of the disease to the death of the patient, a matter of eight months. On account of the confusion existing in the literature bearing on this subject it has been deemed best to synthetically prepare several of the abnormal bodies present in the urine of this case for the purpose of an experimental study of their properties.

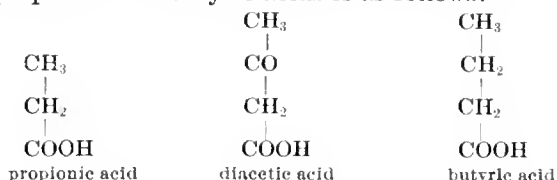
Aceto-acetic acid.—The true history of this body begins with Gerhardt's discovery in 1865 that certain diabetic urines yielded a Bordeaux red on the addition of a solution of ferric chlorid. He did not, however, attribute this reaction to the presence of aceto-acetic acid but believed it to be due to the presence of ethyl aceto-acetate, an allied body responding to this test, since he observed that the distillate of such an urine contained certain quantities of acetone and alcohol, probably in the following reaction:



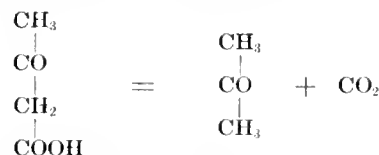
The alcohol present in this distillate, however, was probably a product of the sugar fermentation and its occurrence thus led to an erroneous conclusion. This theory of Gerhardt has not been confirmed by later investigators. Following Gerhardt's discovery, Rupstein, in a series of experiments, claimed to have isolated a substance apparently identical with aceto-acetic acid, which body has since been considered to give the reaction with ferric chlorid in diabetic urine. In 1885, V. Jaksch ("Ueber Acetonurie und Diaceturie." Berlin) made more extended investigations and published his methods and conclusions, bringing out many new facts with regard to the occurrence of aceto-acetic acid and acetone. He also claimed to have isolated this acid in the form of various basic salts, but the analytic results given by these salts did not confirm his claims, as they by no means closely agreed with the theoretic analyses. Although unknown to him, beta-hydroxybutyric acid, a body allied to, and isolated in practically the same way as, aceto-acetic acid, is nearly always present in urines which yield the ferric chlorid reaction. This body unites with cases in much the same proportions as aceto-acetic acid and has nearly the same molecular weight, a difference of only two hydrogen atoms. No method of separating these two bodies in the form of basic salts was as yet discovered and Jaksch's claim as to his isolation of diacetic acid can hardly be admitted.

Concerning the properties of diacetic acid but little is known. According to Ceresole (*Berichte der Deutsch. Chem. Gesellschaft* B. xv. S. 1326) it is a thick, colorless liquid of strong acid reaction and is miscible with water in all proportions. It decomposes easily below 100 C. breaking up in the production of acetone and carbon dioxid. According to Jaksch (loc. cit.) it decomposes in the urine on standing in 12 to 18 hours and a dissociation of its salts takes place on

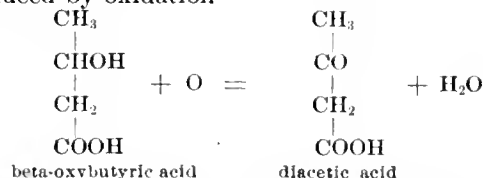
bringing it down to dryness. It dissolves calcium and barium carbonates and if treated with nitrous acid gives carbon dioxid and nitroso-acetone. It never occurs free or in combination in nature except in the urines of patients suffering from diseases involving great tissue waste. It may be artificially prepared according to the method of Ceresole. (loc. cit.) Dissolve 4.5 gm. ethyl aceto-acetate (free from acetic acid) in a solution made by dissolving 2.1 gm. metallic potassium in 80 c. c. of water. Let stand for twenty-four hours and then slightly acidulate with sulphuric acid. It is then shaken with ether several times and this ethereal extract shaken with a fresh mixture of barium carbonate and water. The barium aceto-acetate at once goes into solution, the ethyl aceto-acetate remaining in the ether. This barium salt is very hygroscopic and is not crystalline. It does not give a precipitate with silver nitrate but yields a violet red color on the addition of ferric chlorid. The salt has the same properties. This reaction with ferric chlorid does not take place in the presence of free mineral acids. Aceto-acetic acid is a derivative of the fatty acid series and its relationship to propionic and butyric acids is as follows:



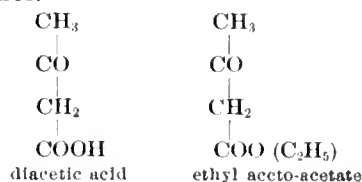
It is closely related to acetone, which is one of its decomposition products according to the following reaction:



to beta-hydroxybutyric acid, from which it is directly produced by oxidation



and to ethyl aceto-acetate, its ethyl salt, bearing the same relationship to this body that acetic acid does to acetic ether.

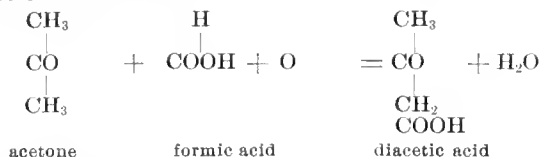


These several bodies are so intimately related it is evident that no violent chemic action is required to convert one into another, a mere oxidation or the decomposition of an unstable compound being sufficient to effect this change.

It was at first supposed that aceto-acetic acid was produced in some inexplicable way in the oxidation of sugar and several writers, among them Minkowski (*Arch. f. Exp. Path. u. Pharm.*, Bd. 18, S. 41) attempted to demonstrate a relationship between the ferric chlorid reaction and the sugar excretion.

Among other attempts at explanation the following series, which is chemically possible outside the body, was offered by Hugoumenq (quoted in *Am. Jour. Med. Sci.*, October, 1887). Starting with glucose, he suggested stages consisting of alcohol, aldehyde, aldol, beta-hydroxybutyric acid, diacetic acid and acetone, the last body being very stable and incapable of further oxidation.

Further investigations showed conclusively that the oxidation of sugar was not the source of this body and V. Jaksch ("Ueber Acetonurie und Diaceturie," Berlin, 1885) advanced the theory that in this oxidation the acetone was directly produced and, if in excessive quantity, united with some fatty acid present in the system, perhaps formic acid, in the production of diacetic acid.



That the source of the diacetic acid is in the sugar is opposed by the fact that not every case of sugar in the urine is accompanied by an acetonuria or a diaceturia, and further that the presence of sugar in the urine does not appear to be essential since diacetic acid has been repeatedly demonstrated in the urines of various fevers, carcinoma and other affections characterized by excessive tissue waste. In the case upon which this work has been based the acid first appeared upon placing the patient upon a diet from which all carbohydrates were excluded, at once greatly diminished upon a return to a mixed diet—this diminution being permanent—and was markedly greater after a diet composed almost entirely of meats.

These points would show that the acid is not produced from sugar, but is produced by a splitting up of albumin. Wolpe (*Jahresbericht der Gesamten Medicin*, 1887) believes that the albumin breaks up into a number of bodies, one of which is beta-oxybutyric acid, this acid being converted into diacetic acid by a process of oxidation. This is the explanation which is most generally received. It has been thought by the writer that its origin might be found in leucin, a body formed in the cleavage of the proteid molecule, splitting up in the direct production of oxybutyric acid and other bodies. This theory is favored by the fact that no acid body from which oxybutyric acid can be readily derived has ever been found in urine. The formation of diacetic acid is by the oxidation of the oxybutyric acid, while the diacetic acid itself decomposes in the production of carbon dioxid and acetone. Should the production of the fatty acids exceed certain limits it is possible that the oxidation can no longer be carried on to acetone, with the result that they are excreted in the urine as diacetic or even oxybutyric acid.

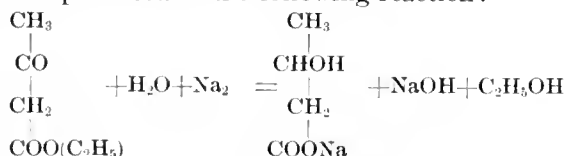
Many of the following results are based upon experimental work upon the barium salt, which responds to the various tests for the free acid and is a much more stable and manageable body. It was found to be fairly stable, requiring six minutes of vigorous boiling to produce complete dissociation, while the free acid stood for several weeks in solution and in ethereal extraction without decomposition. On the addition of the barium salt to urine there was an immediate precipitation of the barium with a decomposition of the acid. On evaporation of this salt

decomposition occurs. Both the free acid and salt are readily soluble in ether, less so in alcohol and water. It was found to be fairly soluble in acetic ether and amyl alcohol, less so in benzol ether and chloroform. It gives a bordeaux red on the addition of ferric chlorid, yields iodoform by treating with sodium hydrate and Lugol's solution and also with ammonium hydrate and tincture of iodine, the so-called acetone test. The ferric chlorid reaction is therefore a decisive test in diagnosing an acetonuria from a diaceturia. The writer has found that diacetic acid gives the "diazo reaction" of Ehrlich, while acetone, oxybutyric acid and ethyl aceto-acetate do not. This is a ready and reliable test for differentiation. A free mineral acid decomposes diacetic acid, thus destroying the ferric chlorid and "diazo reactions." Ferrous sulphate gives a similar reaction to ferric chlorid with diacetic and is preferable since it can readily be made up in neutral solution. That the reaction with ferric chlorid lost by boiling is due to an actual decomposition rather than volatilization was proved by placing a portion of this acid in a hermetically sealed tube and keeping in steam for half an hour. On cooling and treating with ferric chlorid no reaction could be obtained.

The method of V. Jaksch for isolating diacetic acid from the urine is as follows: "Urine giving a strong reaction with ferric chlorid is slightly acidulated with sulphuric acid and directly extracted several times with ether, until the ethereal extract on evaporation no longer gives a violet reaction with ferric chlorid. These ethereal extracts are shaken with barium carbonate in water, when the acid goes into solution. The ether is then removed and the aqueous solution of barium diacetate filtered clear and evaporated down to dryness in vacuo over sulphuric acid." This method fails if oxybutyric acid is also present in the urine. To eliminate the possibility of the presence of ethyl aceto-acetate in this urine, 63 liters of fresh urine were distilled, it being known that this body split up in the formation of acetone, alcohol and carbon dioxid. A large amount of acetone was present in the distillate but no alcohol. This practically proved the presence of diacetic acid, since there are probably no other bodies which yield acetone on distillation except propyl alcohols, which have never been found in urine. Since all determinations of the diacetic acid by isolation can be by no means quantitative, through the facility with which it decomposes, its comparative insolubility in any extracting body and the synchronous occurrence of oxybutyric acid, no accurate estimations of the quantity of this acid present in the urine have heretofore been possible. The following method, which has been devised during the course of these experiments, can however be recommended as an easy and accurate way of making a quantitative determination. This method is as follows: Make up a solution of barium diacetate and determine its strength by adding to a known quantity an excess of sulphuric acid. The barium sulphate thus formed is precipitated out and weighed, the percentage of barium diacetate in the solution being readily calculated from this. Dilute this solution up to a known amount with water until only a moderate reaction is given on the addition of ferric chlorid. Add 1 c. c. of the urine to be tested to 9 c. c. of water and find out the least quantity of ferric chlorid required to bring out the maximum intensity of the reaction. Now tritrate in 9 c. c. of water a sufficient quantity of

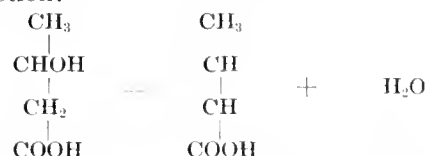
the standard barium diacetate solution so that the reaction produced in each exactly matches in color. From the reading on the burette the proportion of diacetic acid in the urine can be exactly determined. By this method a quantitative estimation of six hours urine, amounting to 3.5 liters, was made. This specimen of urine contained 76.495 gm. of diacetic acid, an enormous quantity which well substantiates the theory that diabetic coma is due to an acid intoxication. In this connection experiment as to the delicacy of the ferric chlorid reaction showed it to occur in the presence of .0000973 per cent. of diacetic acid, while the reaction was strong in the presence of .00038397, as seen in a ten inch column. For clinical purposes, therefore, a urine in which .0005 to .001 per cent. of aceto-acetic acid occurs should be readily recognized. Careful experimental work upon known solutions of diacetic acid have shown that the test based upon the production of iodoform on treating with sodium hydrate and Lugol's solution or with tincture of iodine and ammonium hydrate can not be made quantitative.

Beta-hydroxybutyric acid was first chemically prepared and described by Morkownikoff and Wislicenus ("Watt's Dictionary of Chemistry") about 1870. It is, according to them, a slightly colored, viscid syrup, which shows no tendency to crystallize and readily abstracts moisture from the atmosphere. It volatilizes rather easily in water vapor and at once decomposes on heating to 120 to 130 degrees C., yielding a thickish acid distillate which, on cooling, deposits snow-white crystals having the composition $C_4H_6O_3$, and exhibiting all the properties of crotonic acid. It never occurs in nature except as a constituent of the urine in certain pathologic processes. It is best prepared by treating ethyl aceto-acetate with water and sodium amalgam, when the sodium salt of this acid is at once produced in the following reaction:



By slightly acidulating with hydrochloric acid, neutralizing with sodium carbonate, evaporating to a syrup, separating out the sodium chlorid formed, extracting with strong alcohol and allowing to cool, the sodium oxybutyrate is obtained. This may be still further purified by repeated alcoholic extractions. By adding sulphuric acid, shaking with ether and pouring off and evaporating this ethereal extract the free acid is obtained. The sodium salt forms anhydrous crusts made up of soft, sharply-pointed crystals, which are soluble in water and alcohol and are very deliquescent. The silver salt separates, on mixing the sodium salt with silver nitrate, in the snow-white capillary and interlaced crystals. The calcium, copper, lead and zinc salts, which are all very soluble and amorphous, are obtained by boiling the acid with the corresponding carbonates. The oxybutyric acid excreted in the urine has the same properties as above and in addition possesses the power of rotating polarized light to the left, the synthetically prepared body being optically inactive. A quantity of the sodium salt was prepared for experimental purposes. This salt was light brown in color and extremely hygroscopic—so much so that it was necessary to expose it to 115 to 120 degrees C. for half an hour and then

keep in a dessicator over sulphuric acid. This salt, with the free acid, gave neither the iodoform test nor the reaction with ferric chlorid although it had been claimed by Minkowski (*Zeitschrift für Biologie*, 1887) that it responded to the latter test. Oxybutyric acid and diacetic acid are frequently present in the urine at the same time and while the reaction with ferric chlorid is not a test for the former body its occurrence renders the presence of oxybutyric acid probable. Neither this acid nor its salts give the "diazo reaction" of Ehrlich. Stadelman (*Zeitschrift für Biologie*, 1887), Minkowski (*Zeitschrift für Biologie*, 1887) and Külz (*Arch. für exp. Path. und Pharm.*, 3, XVIII, S. 41) have all formulated methods for isolating oxybutyric acid from the urine as a salt. The method of Minkowski, probably the best and the simplest, is essentially as follows: A large quantity of urine (several liters) is thoroughly fermented and evaporated to a syrup. It is extracted with alcohol, this alcohol distilled off, the residuum dissolved in water and extracted with ether after the addition of a little sulphuric acid. The ether is then evaporated off and the remaining brown syrup treated with concentrated solution of silver nitrate, when the silver salt, in long shining needles, should precipitate out. Various other salts may be made by substituting solutions of the carbonates of these metals for the nitrate of silver solution. By this method, after adding 3 grams of sodium oxybutyrate to 1 liter of normal urine only 1.1286 gram of the same salt could be recovered. Külz's method (*loc. cit.*) of dehydration into alpha-crotonic acid proved to be uniformly successful. This method is as follows: "Take fresh urine which gives the ferric chlorid reaction, ferment thoroughly and precipitate with lead acetate. Filter clear and evaporate the filtrate to syrup. To this syrup add an equal volume of concentrated sulphuric acid and heat in a retort, collecting the distillate in test tubes packed in a freezing mixture. If oxybutyric acid be present in the urine alpha-crotonic acid will distill over and crystallize out in white plates in cooling. It will be recognized by its melting point, odor, etc. He believes that 100 c.c. is a sufficient quantity of urine to employ, but it has been found necessary in these experiments to use a very much larger quantity. This test is based upon the following reaction:



This method is by no means quantitative, fully 66½ per cent. of a known quantity of oxybutyric acid being lost in its conversion into crotonic acid. A determination of the amount of oxybutyric acid in the urine can also be made by the polariscope since this body—the product or cell activity—rotates the plane of polarized light to the left, while the artificially made body is optically inactive. This property may be explained by the presence of an asymmetric carbon atom in the composition of this body and has been taken as a test for its presence in the urine by Minkowski (*Zeitschrift für Biologie*, 1887) and Wolpe (*Jahresberichte der Gesamten Medicin*, 1887). They take 100 c.c. of the twenty-four hours urine, remove the albumin and thoroughly ferment. After fermentation is complete, precipitate with lead

acetate and filter clear, examining the filtrate with the polariscope for the acid. It was found that this acid is optically weak and must be present in considerable quantity to answer this test. In the urine of this case the largest amount of this acid found was 4.513 grams in the twenty-four hours' excretion. This is far smaller than the enormous amounts observed by Stadelman (*Deutsche Medicinische Wochenschrift*, Nov. 14, 1889), Kirstein (*Deutsche Medicinische Wochenschrift*, April 11, 1889) and others, where the twenty-four hours excretion ranged from 75 to 90 grams.

While the most reliable means of detection is actual isolation as a basic salt, its occurrence in very small quantities or the presence of other organic bodies may render such isolation difficult or impossible. Dehydration into alpha-crotonic acid furnishes the best clinical method for the detection of oxybutyric acid. Very small amounts of this body are easily recognized by it, the strong pungent odor of even a minute quantity of crotonic acid being unmistakable. An evaporation of an ethereal extract gives the best results in this respect. The use of the polariscope, owing to the weak rotatory power of this acid, is but a rougher test by which additional confirmation of its presence can be obtained.

Ethyl aceto-acetate, it is now believed, never occurs in urine, although early investigation seemed to point to it as the cause of the ferric chlorid reaction. It is a liquid with an agreeable, sweet odor. It is slightly soluble in water, the liquid giving the reaction with ferric chlorid. It boils at 180 C. and is very stable. It behaves like a monobasic acid, which property is probably due to the position of the group CH_2 between two CO groups. It reacts with ferric chlorid and also with tincture of iodine and ammonia and with sodium hydrate and Lugol's solution. The reaction with ferric chlorid remains after boiling, while with diacetic acid this is not the case. Ethyl aceto-acetate does not give the "dialysis reaction" of Ehrlich, while diacetic acid does. Its sodium salt can be extracted with ether from an alkaline solution, while diacetic acid can not. These two bodies can never be confounded with ordinary care, although considered as the same by Halliburton ("Chemical Physiology and Pathology") and Talamon (*La Médecine Moderne*, No. 14, 1891).

Alpha-crotonic acid never occurs as a constituent of the urine, but may result from the dehydration of oxybutyric acid. It is a body which on melting crystallizes out in white shining trimetric plates, which are sparingly soluble in cold water but are extremely so in alcohol and ether. These crystals melt at 72 C. and ebullition takes place on rising to 160.5 C. It unites with most metals to form salts which are permanent at ordinary temperatures but which decompose under 100 C. It is very volatile and possesses a powerful, unpleasant odor, which is quite permanent.

Acetone has long been recognized as occurring in certain cases of diabetes, and more recently has been found to be an urine constituent in other diseases also, especially such as are characterized by nervous or cerebral disturbance or are accompanied by high temperature and excessive tissue waste. To it was long attributed the production of various nervous and cerebral symptoms and even coma. Later experiments have shown, however, that this body possesses but slight toxic properties and that it is improbable that its presence could produce such grave symptoms. The

true history of acetone begins in 1857, when Petters (*Präger Vierteljahrsschrift*, xv, 6, S. 61), described a fatal case of diabetes in the urine of which he detected a body which gave the tests for acetone. In 1860, Kraulich (*Präger Vierteljahrsschrift*, xvii, Bd. 3, S. 58) made further investigations and, like Petters, arrived at the conclusion that acetone was formed by an abnormal intestinal decomposition. During the next twenty-five years experimental work on this subject was carried on by Lieben (*Annalen der Chemie und Pharmacie*, Bd. vii, S. 236), Kouska (Diss. Griefswald, 1873); Küssmaul (*Deutsch. Arch. f. klin. Med.*, Bd. xiv, S. 99) and others, but no satisfactory conclusions were reached. In 1885, however, a careful study of its occurrence was made by von Jaksch ("Ueber Acetonurie und Diaceturie," Berlin), who also discovered the presence of diacetic acid in diabetic urines. It was believed by Petters and Kraulich that acetone was formed by an abnormal fermentation in the intestines. Küssmaul, however, showed that this could not be the case. Jaksch and Kobert believed that acetone is never formed in the alcoholic fermentation, but is produced in the lactic acid fermentation. This is not the conclusion arrived at in this article. As has been previously stated, it is believed that an abnormal decomposition of albumin yields oxybutyric acid; this splits up into diacetic acid and this, on further oxidation, gives acetone—a diaceturia or oxybutyruria occurring when the acids produced in this excessive albumin decomposition are present in larger amount than the system is capable of completely oxidizing to acetone. Acetone is a very clear, mobile, colorless fluid which boils at 56.3 C. It possesses a sweet, ethereal odor which is very characteristic. It is chemically prepared by the dry distillation of wood and the acetates, and is also a product of the oxidation of various organic compounds. It is a rather stable body, but under certain conditions may decompose in the production of acetic and formic acids. It yields iodoform on the addition of tincture of iodine and ammonia, and will produce indigo blue in alkaline solution on treatment with ortho-nitro-benzaldehyde. With a solution of sodium nitroprussid and sodium hydrate it turns red, the color soon fading, but reappearing on the addition of acetic acid. It will also dissolve the red oxid of mercury. Jaksch ("Ueber Acetonurie und Diaceturie") believes that acetone is only slightly toxic, but adds that under certain conditions it may produce severe symptoms of poisoning. Lewin ("Toxicologie") calls 5 to 8 gm. per kilo the fatal dose for the dog. He finds that a man may ingest 10 to 20 gm. in the twenty-four hours without producing serious discomfort. In the course of these experiments 10 gm. of acetone each were given to four healthy persons. No subjective symptoms of any sort were induced, nor could tests for acetone be obtained from the urine. There was an acetone odor to breath for twenty-four hours. Doses of 16 grams were administered to two persons without any effects. No acetone could be obtained from the urine. Twenty-five grams were given during two hours without effect. In one instance 36 gm. were given during two hours with the production of slight intoxication and a temporary rise in the pulse rate from 88 to 112. In this case the acetone odor to the breath persisted for forty-eight hours, while a test for this body could be obtained from the distillate of the urine. It is concluded that by itself acetone can be productive of no dangerous or

marked symptoms, but is of importance as showing a pathologic katabolism of the system and as being the forerunner of the much more dangerous diacetic and oxybutyric acids which in a steadily progressive diabetes must ultimately appear. Jaksch ("Ueber Acetonurie und Diaceturie") claimed that acetone was always to be found in normal urine and was consequently a product of normal metabolism. He claimed to have isolated an appreciable quantity by distilling 300 liters of normal urine. On the other hand, Moscatelli (*Archivio per le Scienze Mediche*, Vol. x, p. 231) has been unable to find acetone in healthy urines. He used 25 liters of urine from healthy persons and distilled, saving only the first few cubic centimeters that came over. These were then mixed and redistilled. The first five c.c. which came over were used for testing. By this method no acetone was found, although tests were used which were sensitive to half a milligram of pure acetone. Salkowski (*Jahresbericht der Gesamte Medizin*), has recently shown that any healthy urine distilled with sulphuric acid yields minute quantities of a body which gives all the reactions of acetone. He does not find this body on distilling such urines without the addition of sulphuric acid. In the course of these experiments 50 liters of healthy urine were distilled, without the addition of any acid, without giving the faintest reaction for acetone in the distillate. Acetonuria, in this case, only existed for a few days. Following the institution of an anti-carbohydratic diet, a diaceturia was produced which continued until the death of the patient seven months later. The amount of acetone present was at no time very large, in fact, a large acetonuria will probably never occur, since the system will probably not be able to decompose a large amount of oxybutyric acid in the production of acetone. After the occurrence of the diaceturia several attempts were made to find free acetone in the urine, but without success. This agrees with Jaksch, who never was able to find free acetone in an urine giving the ferric chlorin reaction. It has been claimed by Kallay ("Ueber Diabetes Mellitus"), Talamon (*La Médecine Moderne*, July, 1891), and others, that acetone in the urine is the cause of the ferric chlorid reaction. Acetone, either in the urine or synthetically prepared, gives no reaction with ferric chlorid. It has also been stated by Landois ("Physiologie"), and Kallay (loc. cit.), that the ingestion of acetone causes the presence of albumin in the urine, and that an acetonuria may be responsible for this frequent concomitant of diabetes. In the eight persons who were given acetone in amounts varying from 10 to 36 gm. no albuminuria could be detected, although frequent tests were made. Such an albuminuria is probably due to an over-excitation of the kidneys through the increased amount of work thrown upon them. Should acetone occur in considerable quantity, it will be recognized by its characteristic odor. It was found that 1 per cent. of acetone in a distillate of healthy urine, made with or without the addition of sulphuric acid, was readily perceptible to smell. Since a certain amount of acetone is yielded on distilling an urine containing diacetic acid, all tests for an acetonuria must be applied to fresh urine. It must be emphasized that diacetic acid gives the usual tests for acetone. A diaceturia is therefore to be recognized by the occurrence of either the ferric chlorid or the diazo reactions, since neither of these tests is responded to by acetone. The best method for the recognition of this body is that

of Gunning, the production of iodoform in the presence of acetone or the addition of tincture of iodine and ammonium hydrate.

All observers have found the excretion of urea in diabetes to be far above that of health, Cohnheim ("Vorlesungen ueber allgem. Pathologie"), and Strümpell ("Lehrbuch der spec. Path. u. Ther."), reporting cases in which the excretion rose as high as 125 to 150 gm. in the twenty-four hours. This increase may in great part be accounted for by the excessive amount of proteids which form the usual dietetic treatment of diabetes. A more important factor, and one which is but little considered, is the abnormal breaking down of the body tissues, it having been demonstrated that the excretion of urea is far in excess what could possibly be produced from the nitrogenous foods ingested. The urea in this case, on a mixed diet, remained at about three times the normal amount.

It has long been known that the excretion of ammonia in the urine is greatly increased in certain morbid processes, especially diabetes. In 1872 Frerichs noticed that the urine of diabetic patients previous to or during the occurrence of coma contained an extraordinary amount of ammonia. He therefore attributed the production of these cerebral symptoms to the poisonous action of this body, which he believed was produced by the action of an abnormal ferment upon the urea, decomposing it in the production of ammonium carbonate. This idea, as the so-called theory of "ammonemia" at one time gained wide credence, but has more recently been shown to be erroneously grounded. In 1889 Stadelman and Kierstein, working independently, published (*Wochenschrift für Klinische Medizin*) reports of work done on this subject. Starting with the observation that the ingestion of acids increased the ammonia excretion and that they exactly kept pace with one another, the reasoning was extended to those diseases in which there was a noticeable increase in the acid excretion. It was found by them that the quantity of oxybutyric acid excreted in diabetes ran exactly parallel with the excretion of ammonia. The theory of an "acid intoxication" was therefore proposed by them, believing that severe nervous and cerebral symptoms appeared only when the production of acid was excessive, and that coma supervened when the neutralization of these acids could no longer be effected by the quantity of ammonia available in the economy. They therefore recommend the determination of the twenty-four hours ammonia excretion as an easy clinical way of arriving at an approximate idea of the amount of acid excreted. The average ammonia excretion of a healthy individual being about .8 gm., they believe that an ammonia excretion of more than one gram may induce serious symptoms, while a rise to 2, 4 or 6 gm. denotes a dangerous condition and a marked liability to coma. On a diet composed exclusively of proteids the patient upon whom these experiments were based excreted an average of 8.4 gm. per diem. On a mixed diet the ammonia excretion fell over 25 per cent. One sample of urine, passed while the patient was on a rigid meat diet, gave an enormous yield of ammonia, far exceeding the maximum quantities given by Stadelman and Kierstein. This specimen was passed between 9 A.M. and 3 P.M. and amounted to 3.5 liters. In this were found 16.635 gm. of ammonia associated with an excretion of 76.435 gm. of diacetic acid and a total urine acidity of 142.8. This amount of ammonia should theoretically be able to neutralize some 90 gm.

of diacetic acid, and there was evidently an excess beyond what could combine with this body. The probable presence of oxybutyric acid would account for this discrepancy. Unfortunately, the full twenty-four hours' excretion could not be obtained, but had this proportion obtained for the usual urine excretion of ten liters the ammonia would have amounted to 42.32 gm., a quantity capable of neutralizing about 125 gm. of concentrated sulphuric acid.

Frequent determinations of the percentage of urine acidity were made in this case, and all examinations of the twenty-four hours' excretion showed an acidity far above normal. The percentage of acidity was about 25 per cent. less while the patient was on a mixed diet than while there was a rigid exclusion of the carbohydrates. It was also noticed that urine passed several hours after meat meals was much more acid than urine passed fasting or shortly before eating. All determinations of urine acidity should be accompanied by estimations of the ammonia, as according to Stadelman and Kierstein it is probable that the acids do not exist free, but in the form of ammonium salts.

OXYGEN INHALATIONS AND HYPODERMIC MEDICATIONS IN THE LUNG AFFECTIONS OF INFANCY.

BY R. S. WOODSON, M.D., U. S. A.

JACKSON BARRACKS, LA.

The difficulty encountered in procuring a supply of oxygen in the treatment of pulmonary affections leads me to believe that its efficacy is not appreciated by the profession at large. The text-books of recent date recommend oxygen inhalations in such cases, but in so vague a manner as to leave the average practitioner unwilling to undertake the trouble and expense necessary for its utilization. It is for the purpose of urging upon the more conservative members of the profession the extreme value of these remedial agents that the following case is reported:

I. L., infant daughter of Lieutenant L., aged six weeks, was attacked with broncho-pneumonia, with involvement of large lung area. The severity of the attack may be best expressed by relating that a very distinguished specialist called in consultation on the fourth day of her illness gave the gravest prognosis and recommended euthanasia. Up to this time the treatment consisted of oil-silk cotton-batting jackets, steam and medicated vapor inhalations, ammoniacal and alcoholic stimulation. The condition of the patient was that of marked cyanosis, Cheyne-Stokes respiration, carbon-dioxid narcosis, pulse weak, rapid and irregular. After the grave prognosis of the above-mentioned specialist the writer was left alone with the case. Two suitable rubber bags were procured, and with the means at hand afforded by the laboratory of the post hospital, Jackson Barracks, La., a sufficient quantity of pure oxygen was administered almost continuously to the infant, with the most marked and gratifying results. The previous cyanotic condition gave place to a healthy color, with a disappearance of carbon dioxid narcosis. The respiration became deeper and more regular, the pulse slower and stronger and a general tonic effect was noted. In addition to the oxygen inhalation and *pari passu* with its administration, hypodermic injections of digitalin, strychnin and atropia were employed as often as indicated, with an occasional injection of codein to control excessive coughing.

The method of administration was as follows: One-half a tablet of digitalin 1-100 grs., strychnin 1-60, atropia 1-100 were dissolved in a syringe-ful (30 m.) of water, 5 minims of which were injected at a dose. By plunging the needle boldly in over the region of the hip the infant will not experience pain, provided the needle is small and sharp.

The writer wishes to call attention to the accuracy of dosage and promptness of effect noticed with this form of therapeutic administration, and especially with these agents and to express his conviction that by these means the mortality of uncomplicated cases of broncho-pneumonia, even in the very young, can be brought very low. By this method the digestive apparatus is not interfered with, a point in connection with regular and sufficient nourishment of the highest import. The writer takes this occasion of urging extreme caution in the use of opiates and to express his preference for codein.

SURGERY ONE HUNDRED YEARS AGO.

AN HISTORICAL STUDY

BY DR. GEORGE FISCHER.

DEDICATED TO THE GERMAN SURGICAL ASSOCIATION.

TRANSLATED FOR THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

BY CARL H. VON KLEIN, A.M., M.D.

(Continued from page 795.)

CHAPTER V.—SURGICAL INSTRUCTION AND LITERATURE.

Schools of surgery in Germany and Russia; Practical instruction at universities, polyclinic, clinic; Surgical instruction in Paris: Desault, Ecole de Santé, Pensions, visits to Pelletan, French students, Boyer; Surgical instruction in London: John Hunter, Edinburgh; Book-making of German surgeons, servilism, Latin or German; Mutilation of the German language by the French; Translation craze, esteem for foreign countries; Surgical periodicals, reviews; Text-books, prices of books.

With the sharp separation between medicine and surgery in Germany, and the wide gulf which between doctor and barber in respect to scientific acquirements and social position, it could not happen otherwise than that the study of surgery was a very different matter for the physician from what it was for the barber. The universities where the physicians heard surgical lectures, did not exist for the barber; he lacked both the money and the preliminary training of the gymnasium. The state had to provide for its higher education in other ways, since the beginning and the end of the wisdom which the barber apprentice took with him from the home of his master, was the noble art of shaving, bleeding and putting on plasters. With this object in view, special institutions of learning called *Collegia medico-chirurgica*, were founded. In these schools, with which an anatomic amphitheater was connected, various teachers lectured in anatomy, surgery, pathology, materia medica, chemistry, botany, and so forth; also the barbers were examined there, before they were given permission to practice.

One of the oldest institutions was that founded in Hanover in 1716, which was under the direction of the physicians-in-ordinary and court physicians. It received as students the journeyman barbers and the apprentices of the city. Upon payment of a certain amount (two thalers from the apprentices), they were given the bodies of criminals to dissect. Berlin followed and, according to a plan of Holtzendorff, instituted a collegium medico-chirurgicum, which was an enlargement of the anatomic amphitheater, at that

time the only medical school outside of the universities, in the kingdom of Prussia. This new institution was the first one in Germany which trained surgeons and physicians especially for the military service. King William I. desired to have in his dominions an institution where medicine and especially surgery should be taught just as well as in Paris, London and Amsterdam. In it medico-surgeons and thorough physicians should be trained for the low countries (north Germany), and for the army. At its foundation there were six professors and a "demonstrator of surgical operations," who gave public lectures daily, in the German language, in all branches of therapeutics. Henrici, professor of therapeutics, lectured four times a week on medical and surgical pathology. In the winter Buddeus gave demonstrations in the anatomic amphitheater, and lectured on wounds and operations, on fractures, luxations and mortality of wounds; he also exhibited bone-preparations, and gave instruction in sectional reports. The actual teaching of operations, bandaging, and the use of instruments was entrusted to the regimental surgeon Senff. Of the other professors, Ludolff taught materia medica, in connection with demonstrations in setting bones; Pott, pharmacutics; Neumann, pharmaceutical chemistry with experiments. Finally, Schütz, in one semester expounded arithmetic, geometry and trigonometry, and in the other conducted practical experiments in the field. Berlin was proud of this school and imagined it was not only just as good as a university, but that it was not behind even the Paris institutions, indeed, that it surpassed them in many good points, because here lectures were held daily, in Paris only during certain months. The joy over its founding inspired one collegian to the following poetic effusion:

"What Leyden, Paris, Basil has rendered great,
Is now with equal skill achieved within our State,
Apollo, to your flock of Muses say, 'tis known
Berlin, through Frederick William, a Paris now is grown."

The hope of connecting a hospital for practical instruction with this school, was realized a few years later in the establishment of the Charité. In 1810 the college was dissolved and replaced by the medical and surgical academy for the army.

In *Dresden*, under August II. in 1748, at the suggestion of Pitschel, afterward surgeon-general, a medical and surgical college was founded. He describes the institution in a little work full of absurdities, and in a disgustingly servile hymn to Frederick August III. As army surgeon in Bohemia, Pitschel had convinced himself of the great irregularities in the Saxon hospital life as well as the gross ignorance of the hospital stewards and field apothecaries, not one of whom even knew oxymel simplex. After peace was restored, and when at the solicitation of several army surgeons, Pitschel gave lectures on diseases of the bone, the council of war commissioned him to outline a plan for a surgical school and to organize it within the barracks. In spite of the commission of the council he had many difficulties to combat. The people who lived rent free in the barracks would not move out; from the timber which had been hauled for the college building, a member of the council of war had himself a barn built, and finally, his colleague, Günther, surgeon-in-ordinary, published as his own the plan borrowed from Pitschel. His Majesty accepted Günther's, but he was publicly blamed by the people. After many trials, the death of the Duke von Weissenfels, who had left a number of anatomic prepar-

ations, gave the next impetus to the establishment of a school in which army surgeons as well as civil surgeons should be trained. Hänel taught therapeutics, Pitschel anatomy and Günther surgery. Each infantry regiment must send two, each cavalry regiment one, yearly, to complete the course. They connected with this school the surgical hospital, and in 1784 a lying-in hospital for twelve persons was added. The surgeon officiated at the same time as obstetrician. The Platner instruments and bone-preparations were bought and a library established. In the war for Independence Dresden saw the downfall of her school, but replaced it in 1815 by the surgical and medical academy.

Coeval with the establishment of these institutions, there sprang into existence in other parts of Germany larger or smaller schools with two or three year courses, and thereupon occurred a forward stride, considerable for that time, in the progress of surgery. Unfortunately many of them did little. Indeed, the lectures were not always held regularly. Schools of this kind arose in Frankfort-on-the-Main, Hamburg, Regensburg, Bruchsal, Braunschweig, Celle, Cassel, Gotha, Dillingen and elsewhere. In Heidelberg in 1783, Professor Schwarz founded a surgical institute and diverted the guild funds of that place, which were as a rule spent in feasting, to the creation of a library. At the same time Zürich established, through a society of physicians, a medical and surgical institution with seven teachers. The course was expected to cover three years, and the price for the lectures, excepting anatomy, for this time, was placed at twelve Louis d'or. In Braunschweig the preparatory studies cost three thalers a semester. Only a few schools enjoyed the advantage of hospitals; so the school of the Hof-rath Trampel, in Meinburg, and also that in Lands-hut, where surgical patients were received for a fee of thirty kreuzers a day, were especially recommended. It is only in the present century that institutions for the education of first and second class surgeons have multiplied in Prussia; in Münster 1822, Breslau 1823, Magdeburg 1827, Greifswald 1831. But this growth was arrested in 1849, when the study of surgery was limited to the universities alone. Of the medical and surgical academy in Vienna and of the military medical institute in Berlin we will speak later.

The establishment of the German surgical schools nowhere met with more approval than in *Russia*. Catherine II. called the surgeon Mohrenheim from Vienna to St. Petersburg, as professor, and commissioned him to found such a school there, the first in Russia. A great building near the outlet of the Neva, with forty beds for practical instruction was planned, and in 1783 was dedicated. It was under the immediate protection of the empress. Thirty pensioners were appointed, who devoted themselves to surgery and were given free lodging, an allowance in money, etc. They were for most part Germans, or of German parentage. They received free instruction from seven professors in theoretical and practical medicine, surgery, anatomy, physiology, chemistry, botany, materia medica, pharmacy, obstetrics, ophthalmology, physics, and even in the German language, besides instruction in other languages. The teachers received a salary of 600 rubles each, together with a residence. Mohrenheim, who taught surgery, ophthalmology and obstetrics, performed the more important operations himself, but left the lesser ones to the students. If the pensioners passed the examinations successfully they

served six years in the ambulances, then as staff surgeons and division surgeons. The experiment with the German element turned out so well that a few years later the empress called German physicians and surgeons to Russia in order to appoint them in the provinces and to the surgical school in St. Petersburg. She gave the physicians from 600 to 800 rubles per year, with the rank of major; the surgeons 400 to 600 rubles, with the rank of lieutenant, and secured to them very liberal provisions in regard to pensions and the care of their widows and children. They could choose their own residence in the province. In 1786 eighteen German physicians and six surgeons, whose commissions as court surgeons Zimmermann had issued in Hanover; among others the Braunschweig city surgeon, Knockstedt, who became professor of anatomy. In the course of a year three new schools, with an income of 24,000 rubles, were established by the empress in St. Petersburg, Moscow and Kronstadt. Attached to each of these were fifty students, three teachers in medicine and three teachers for languages and drawing. The assistant surgeon received 150 rubles, each pupil 50 and each professor 1,000.

We will now turn to the *practical instruction in the German universities*. Until the 18th century the seats of learning in Germany had lecture rooms enough, but no patients. Medical instruction was everywhere limited to lectures in therapeutics and the students knew sickness only from their note books (*Medici ex commentariis*). What were the consequences? When the young men left the university, in spite of all their erudition, they could scarcely recognize erysipelas. They followed their text-books mechanically, and when left to themselves it was only with the greatest difficulty that they were able to push forward on practical lines. The university fills the memory and instructs the understanding of only the more capable and industrious few, and the greater number almost suffocate in the tasking of the memory (Baldinger). Even in the 80's the Vienna students must needs be satisfied if they were permitted to read over Van Swieten's Commentaries, since there were not even lectures on pathology. Stoll, the professor of medicine, lectured voluntarily on fever and chronic diseases, but this was only a fragment. In 1795 Professor Frank began daily free lectures on special pathology and therapeutics. Surgery in the universities fared no better. Barren and unfruitful it lay useless and unknown. The faculty took almost no interest in it of their own accord; they looked down on it contemptuously because it was in the hands of the barbers. For a long time it had no professor at all. One teacher expounded Boerhaave's "Aphorisms," another based his lectures on Heister's "Surgery." But because of the lack of hospitals the students saw no patients. This need was somewhat satisfied by the *policlinic* (*klinische Institut, ambulirendes Klinikum*), with which they were content for a long time. The professors took the students with them to the houses of their private patients, and allowed the poor to be gratuitously treated by the students, under their supervision. From this grew the custom of the younger physicians attaching themselves to those older in practice, in the rôle of assistants. Many civil authorities even required the young doctors to serve for a specified time under the direction of reputable physicians before they gave them permission to treat patients independently. Little came of this. The busy practitioner demanded as much as possible from

his assistant, but had no time or inclination to instruct him scientifically. The young colleague was never sent to the sick of the better classes, but if his name came to be often heard he was dismissed and another engaged. Although the policlinics could not take the place of a hospital, they were of great value to the students. We will look more closely at those of Jena. For several years Professor Loder had taken his students to visit private patients. He also treated the poor, whose cure was paid for out of a fund made up by him and his pupils. So there grew up gradually a private policlinic, which was in 1791 given to the public as "*Medicinisch-Chirurgische Krankenanstalt*," the gift being the result of an annual allowance from the Duke of Saxe-Weimar. In the first years Loder took charge of the medical and surgical practice alone, till in 1793 Hufeland undertook the medical cases; the court surgeon, Günther, was assistant. The institution took care of about 200 patients, the majority of whom received medicine and treatment free. There were also rooms reserved in the lying-in hospital for the special surgical cases. The patients came at a specified hour to the institute, which was open daily; only those who were bedridden were visited by the students. It was their duty to visit the acute cases two or three times a day, the chronic cases once. If a student neglected this duty he forfeited his semi-annual allowance. In important cases Loder and Hufeland accompanied the students. Separated into practitioners and auditors, they kept journals, which were from time to time examined by the professor, and they themselves, under supervision, prepared most of the medicines, in a little laboratory. The policlinic developed in a gratifying way, and in the first three years was attended by fifty-two practitioners and seventy-five auditors, and in the year 1796 treated about five hundred and forty patients. Since the entire cost amounted to 800 thalers, while the Duke gave only 260 thalers, the professors were obliged to renounce their respective fees and even to apply the honoraria of the students to its support. Similar ambulatory clinics existed in many universities; in Göttingen, and Halle, where the clinic was enlarged for surgical cases and endowed with 1,000 thalers, until, in 1806 a hospital was built. Reil had charge of the medical, Meckel the surgical cases.

The center of practical instruction should be in actual *university clinics*, which really only began to develop in the eighteenth century. The impetus to found the first clinic in Europe was given by the German students in Padua in 1578. At their instance it was decided that the two professors, Albertino Bottoni and Marco degli Oddi, who were already physicians in the hospital of St. Francis, should give lectures beside the sick beds, and from time to time open bodies to ascertain the seat of disease. Unfortunately, dissections were soon forbidden. This first clinical instruction, as it appears, did not long continue fruitful, and the clinics established after the manner of this one, in Pavia and Genoa, had no especial consequence. Accordingly they did not approach in merit, as bearing on the general introduction of clinical instruction, the clinics in Utrecht and Leyden; for it was in Holland first that these arose, through the labors of Heurnius, Schrevelius, Kyper, de le Boë Sylvius, and especially through Boerhaave's magnificent results, and thence spread to the universities of all nations. The instruction consisted principally at the bedsides, where the students were entirely passive. Indeed,

Heurnius, who established the first clinic in Holland as *collegium medicum practicum* at Leyden, and conducted it alternately with Schrevelius, soon came to the conclusion that the students must be induced to do more investigating at the bedside. He brought this about, and required them to make their diagnosis. This method, however, was very distasteful to the students, and Heurnius desisted from it, and thereafter contented himself with his lectures. But this system of examination seems to have been already instituted by Kyper's celebrated successor, Sylvius, and to have been one of the forces which carried the fame of the Leyden clinic over all countries (v. Ziemssen). Boerhaave's clinic (1714) became the mother school for all others and the model of that one which Van Swieten founded in Vienna in 1754. Only the brilliant result of this *first clinic in Germany*, which was so important in the development of medicine, induced the other universities of the fatherland to establish such clinics, which they had until then regarded as unnecessary (Göttingen 1780, Prague 1781, Kiel 1788, Leipzig 1798). Because of their undeveloped state there was much left to be wished for, even to the end of the century. The sick rooms allotted them were frequently too small and too low and bore no relation to the number of students and patients. Of these last there were indeed no lack, but there was a lack of the necessary diversity of cases. Professor Frank requested for his medical clinic twenty beds, no more and no less, which, evenly divided between the sexes, gave the students sufficient opportunity to observe, and did not rob the teacher of too much time. The beds in the ordinary hospital were to stand three feet apart, in the clinic about six feet apart, so that the students might have room enough. He wanted twice as many beds for the surgical clinic, because a number of patients with fractures and luxations consumed so little of the students' time, that a more frequent change was not necessary. No doubt much was done in the last half of the century for surgical clinics; yet, in the beginning of this century, there were a number of German universities that had nothing of the kind. We have seen in the foregoing chapter how the surgical service was managed in the Berlin Charité, and in the Vienna general hospital. In the latter, besides the polyclinic, there was a temporary clinic especially designed for instruction. When the school of medicine, surgery and practice was removed from the hospital, Professor Stoll, successor to de Haën, taught medicine; he had the right to select from all of the patients taken gratuitously, any whom he wished, for purposes of instruction, in his two rooms, which contained twelve beds. The same number and the same right, belonged to the professor of surgery, Professor Steidele, who every day, after the clinic, gave a lecture in surgery and a course in operations on cadavers. In the Charité there were two clinics, whose teachers belonged to the university, but the hospital had no further connection with the university, and they were not under the same management. Professor Reinlein directed a second institution of learning in the Vienna hospital, where surgeons were given special instruction in medical science. The students could assist at all ordinations of physicians and surgeons, and had access to the house of refuge and the lying-in hospital. Interest in surgical education arose quite early in Würzburg. When the university was reorganized in 1734 the professors were permitted to take students to patients in the hospital. This permission was the

first impetus to the establishment of clinical instruction. The professor of anatomy and surgery taught theoretic surgery, while the demonstrator of anatomy and surgery (called also *opérateur*) of Julius hospital, gave instruction in practical surgery and bandaging, at the bedside of the patients in Julius hospital. The chief surgeon chose two assistants from among the students (Obergesell and Untergesell), who helped him, and were excused from the payment of fees. C. C. von Siebold, who was at the same time academic teacher of surgery and chief surgeon of Julius hospital, was the first one who was in a position to give surgery students the advantages of a surgical clinic. Ophthalmology received very scant attention in Germany. Austria set a good example. When the general hospital of Vienna was founded, two rooms in it were assigned to Jos. Barth, and in 1812 a special ophthalmic clinic, with sixteen beds, was opened there under Professor Beer. All the walls, chairs, beds and dishes in them were colored green, to soften the light. In the Charité of Berlin, in 1816, a clinic in surgical ophthalmology was instituted.

If the German wished thorough training in surgery, which it was nearly if not quite impossible for him to get in his fatherland, he had to go to France or England. Such journeys were at that time not infrequently undertaken. If money was lacking for it, the treasuries of princes and bishops and even of the magistrates of certain cities, were opened for the maintenance of promising young men. In foreign countries ample opportunity was offered to study anatomy and to see surgical patients and operations. German surgeons who were not trained in Paris were not trusted at all; the reputation of the surgical school in Paris had extended through the whole world, and whoever came from there was proud to be its pupil.

Surgical instruction in Paris was carefully cherished even in the first half of the century. Every year three public courses in operations on cadavers were held in the royal garden in the *collegio medico* and *collegio chirurgico* at St. Cosmes, to which every one was freely admitted. All had free entrance to the great hospitals, where the most important operations of the most celebrated Paris surgeons could be witnessed every day, and in the Charité there were private courses in operations. The students also heard anatomy, gratis, in these three places, and had besides great opportunities to prepare in the Hôtel Dieu and in the Charité, as well as in the private houses of Winslow and Duverney (1725). They even found opportunities for operating on the living, under the direction of Le Dran. With all this, even in France, surgery was still separated from medicine in the second half of the century, which was paralyzing to instruction. They were taught in separate institutions, and here, as in Germany, an implacable hatred and party strife was cherished. Whatever was taught from the chair, lacked practical illustration in the hospital, and *vice versa*. So the faculties in Paris before the Revolution, although they were surrounded by the most important hospitals, did not possess a single sick room. The Ecole de Chirurgie, dedicated in 1779, had in their splendid building, situated in one of the narrowest streets of Paris, only a few beds at their disposal, much too few for their 700 or 800 students. Here all the surgeons of France were instructed free of charge, in an amphitheater that accommodated over 1,000 hearers. In 1785 Louis and Chopart taught physiology there, Fabre and Tenon pathology, Sabatier

and Pelletan anatomy, and Sue, with Lassus, taught operations. In the afternoon the colleges were better attended than in the morning, because in the afternoon about 350 barbers, who served their customers in the city, changed their coats and ran to the colleges. Montpellier was an exception. There clinical instruction was combined with the *École de Médecine*; hence a physician from Montpellier was preferred to one from a Paris school. There *Desault* lectured, whose zeal overcame all the objections of the state. After three years in the *Charité*, he went in 1785 to the *Hôtel Dieu*, that great cavern, where patients were lost in the crowd, and were never made to serve the advancement of medical science. Whoever was acquainted with Paris and knew that prestige and money were worth everything there, must be surprised that *Desault*, who had neither, but owed everything to his knowledge, came to occupy the first place in France. Young, active, free from prejudice and national pride, he began to teach and train a large number of students. It was now for the first time appreciated how important to the advancement of practical surgery the *Hôtel Dieu* might have been, and of how little use it actually had been. *Desault* gave instruction at the sick beds, and created thereby the *first surgical clinic in France*. Every morning they began with the polyclinic, *Desault* examined the patients and spoke of their cases; then the internes read the history of the more important cases that left the hospital that day. They then proceeded to the operations. After explanatory remarks had been made, the patient was brought into the amphitheater and operated upon by *Desault* in the presence of the students. He even showed the opening of an abscess, so that all could see. For the sake of the school, he employed only the best methods in his operations. Then came a succession of dissections, visits, and finally a lecture on some surgical subject. The morning instruction lasted three hours every day. The credit of first lecturing at the bedside of the patient belongs to *Desault*; he did not stop with superficial visits, but took the student to the bedside, and there instructed and questioned him. There were many obstacles in the way of this innovation. The nuns, who were all-powerful, in the *Hôtel Dieu*, intrigued and cried out that operations were performed in public, and that it was contrary to feelings of humanity; complaints against *Desault* were daily poured in on the administration, and envious colleagues disparaged his efforts. But all obstacles were surmounted by his perseverance. According to the statement of his great pupil *Bichat*, *Desault* did not possess the gift of eloquence, but there was a certain fire in his discourse, which illumined all he said. His carriage, his gestures, indeed his whole appearance, changed momentarily according to what he wished to express. His school soon became the center of surgery; the number of his hearers increased daily, and those of the public institutions decreased, a fact which especially vexed his adversaries. Foreign nations sent pupils to Paris, under the express conditions that they hear his clinical lectures, which were the first of their kind. Not only most of the surgeons of the hospitals in Paris and the provinces, but also the higher army physicians, were trained by him; he was indeed the teacher of most of the good surgeons, and there were few large cities where the pupils of *Desault* were not among the best surgeons. In the twelve years that he was chief of the hospital, the sum of practical

knowledge which accrued to French surgery was greater than in the fifty preceding years. His successors were not in a position to continue instruction according to the method introduced by him, as they could not cope with the clergy and the nunneries; they fell back again into the old beaten path.

(To be continued.)

OPENING OF "THE WALTER GARRETT MEMORIAL BUILDING" OF THE PENNSYLVANIA HOSPITAL.

PHILADELPHIA, APRIL 24, 1897.

The managers of the Pennsylvania Hospital, having decided two years ago that the requirements of modern surgery demanded greater facilities than the hospital possessed at the time, appointed a committee to visit hospitals in other cities and confer with the surgeons of the institution with regard to necessary improvements. Under the guidance of Mr. Addison Hutton, architect, plans were drawn for important additions to the institution, and the work was energetically pushed to a conclusion. Through the liberality of a former president of the board, Mr. Wistar Morris, principally, the erection of a new series of buildings, upon the Spruce Street front, was undertaken and completed, which now contain the entire surgical division of the hospital. Last year, work on the remaining portion of the comprehensive plan was begun. The magnificent operating pavilion, receiving wards and children's wards, embodied in the large building known as the "Garrett Memorial," at the corner of Eighth and Spruce Streets, is now finished and was opened by the managers April 24. Addresses were made by Drs. Thos. G. Morton, J. M. DaCosta and J. B. Chapin, of the medical staff. The announcement was made that this building, believed to excel any of its kind in the world in completeness of its appointments, had been erected solely through the liberality of one member of a family of philanthropists, to which the hospital was already largely indebted for most generous gifts.

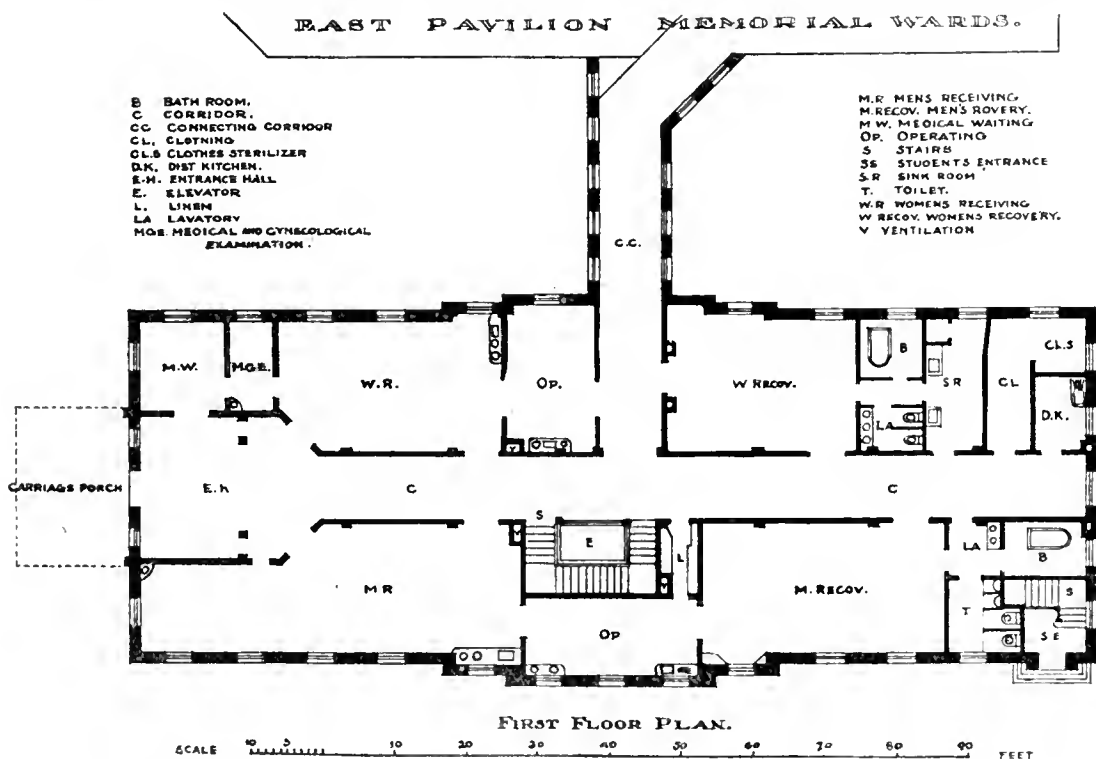
Description of the building.—Entering from the Eighth Street or eastern gate of the hospital, midway between Spruce and Pine Streets, and turning to the north, a broad cemented drive and sidewalk lead to the doors of the new building, about one hundred feet distant. A large glass porte-cochère overhangs the entrance, so that the injured and sick as they are brought by ambulance, police patrol or private conveyance, can be taken into the building without exposure to the weather. The first floor is but a single step above the grade. Passing through wide doors, one enters a large and well-lighted vestibule or lobby. On the left, opens a waiting room for ambulatory medical cases awaiting examination and perhaps admission, next to which is a smaller room in which physical examinations may be conducted. Upon the left side of the lobby is located the clerk's desk, connected by telephonic communication with every portion of the hospital; there are here placed benches for those inquiring after friends or accompanying the injured. At the farther end of the lobby, a wide central hall extends to the stairs and elevator, and also to the corridor connecting this building with the other buildings of the hospital. Upon either side of this hall, opening at an angle to the lobby, are doors leading to the receiving wards—that on the right for men, and on the left for women. The men's receiving ward, measuring 53x18, termi-

nates at the farther end in doors leading into a small operating room. Cases not to remain in the hospital will receive dressings or minor operations in these rooms, and then depart as they came. But those patients who are to remain will pass from the operation and dressing rooms through other doors, into a large reception ward. This ward will contain fifteen beds and in it all patients will be undressed, bathed and put in proper condition to be distributed to such portions of the main buildings as their disease or injury may require. At the northern end of the ward opens a passage communicating with the baths and lavatories. Patients found to require serious operations, after being prepared as far as possible in this apartment, will then be transferred to the second floor.

The women's receiving ward, to the left of the lobby, is similar to that for men, but not so large. It likewise opens into an operation and dressing room at its northern end, and beyond is a similar but smaller ward. Patients recovering from anesthesia after minor

oven, in which clothing infected with disease germs or vermin may be steamed or baked sufficiently to destroy effectually not only all parasites, but their eggs as well, a very important consideration for the protection of the hospital from such pests. At the extreme northern end of the corridor to the left is placed a diet kitchen from which to serve food to those temporarily occupants of beds in the quiet wards. Sufficient beds are provided in the reception wards to house all who may be admitted between sunset and morning, so that the quiet of the main wards may never be disturbed by entry of new patients during the night, or at any other time by those in danger of speedy death, or recovering from the effects of ether, or under the influence of liquor.

At the exact center of the building, on the right hand, a capacious elevator runs from basement to roof, surrounded by iron grill work, and a broad marble staircase. Opposite the elevator and stair shaft is a corridor, nine feet wide, leading at right angles to



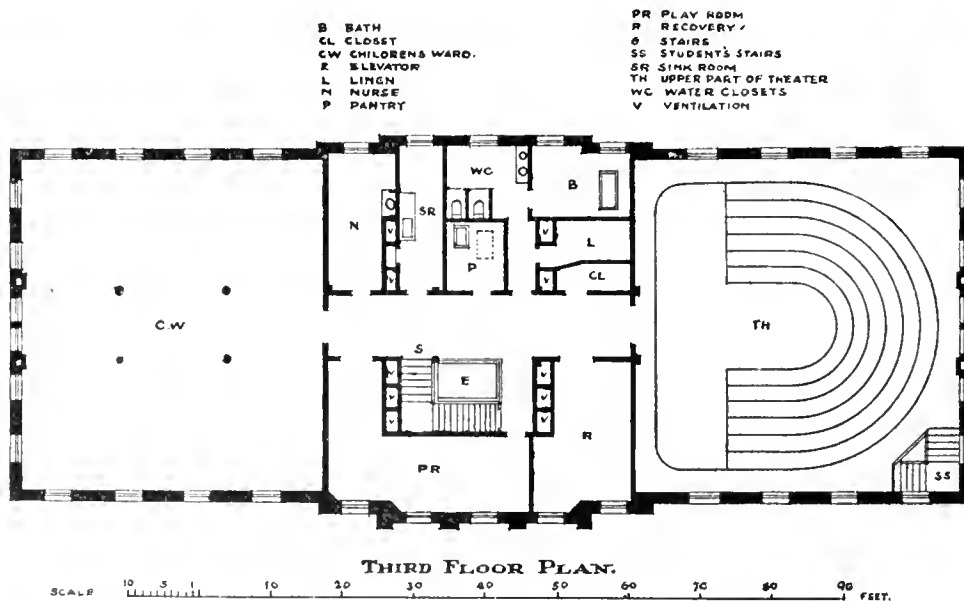
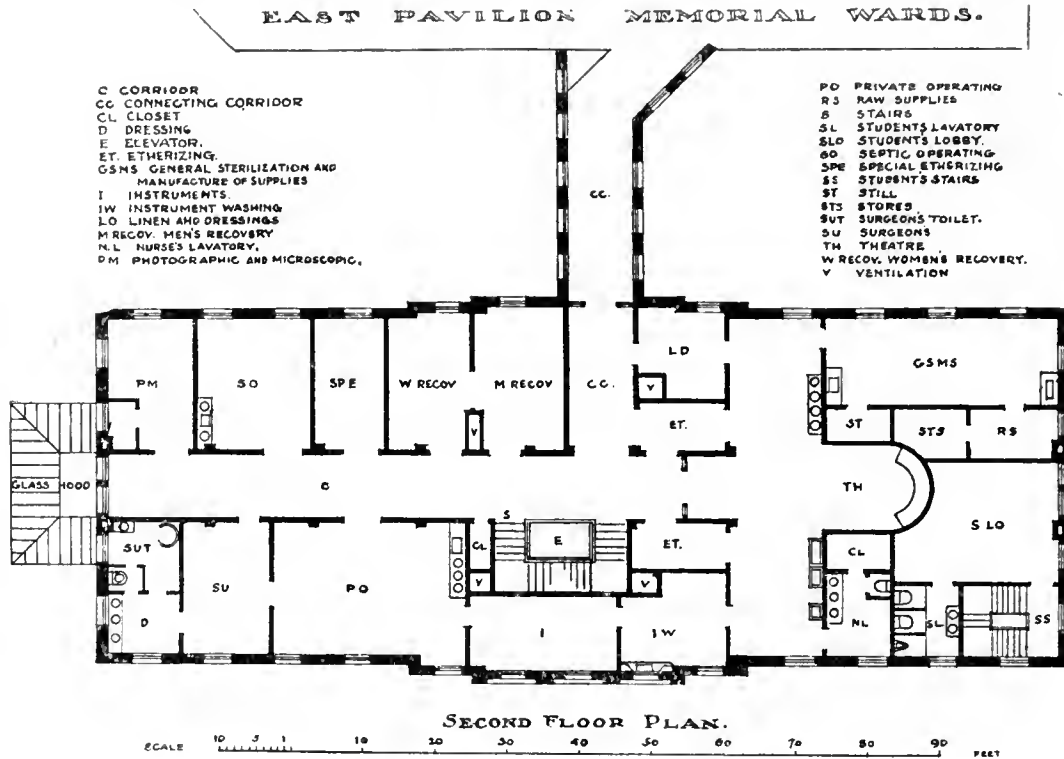
operations will be detained in the reception wards until they are in condition to return to their homes. Sunstroke cases, as heretofore, will not be taken into the receiving wards, but will be treated in the cool, deep basement, or in large tents in the airy grounds surrounding the building, until fit to be removed to the main wards. Beyond the women's bath and lavatories, but communicating also with the main hall, is an apartment where scullery work is done for all the wards of the floor. Here will be a flushing sink for washing utensils, sinks, racks for drying, and a steam-closet wherein all articles of clothing, etc., may be warmed or dried rapidly. When it is considered how many of those coming to a hospital are cold and wet and shocked by exposure, loss of blood and concussion, it will be seen how useful this novel feature will be. Next, on the north, and opening only to the hall, is a room devoted to temporarily ticketing, bagging and storing the clothing of each patient. From it opens a small room containing a steam and hot air sterilizing

the main corridor of the basement of the hospital, thus affording ready access to all the basement corridors of the whole institution and to the elevators running upward therefrom to the various divisions and wards. The receiving wards will thus become the distributing center for all cases admitted. Patients will here be examined, cleansed, put to bed, receive preliminary treatment, and be classified for distribution to the appropriate wards. Persons destined to occupy private rooms will pass at once through the corridors, on wheeled trundles, to the elevator leading to those apartments, without passing through the receiving wards.

Ascending to the second floor, the visitor finds himself surrounded by the most complete series of rooms and arrangements to facilitate modern surgical treatment that has yet been installed by any hospital in the world. To the right, as he alights from the elevator or ascends the beautiful marble staircase, large double doors lead into the great amphitheater, or

main operating room, where clinical instruction will be given. On either side of these doors, in communication with the corridor, as well as the amphitheater, are two rooms where patients can be quietly etherized before being taken into the operating theater. This amphitheater, measuring 45x46, is lighted by a great glass dome covering its entire center, and many plate glass windows surrounding it on all sides. But, as if this were not sufficient, the whole central

roomy and comfortable iron and wood suspended chair, very different from the hard wooden benches to which medical students have been so long accustomed. Behind the actual operating space, a clear area of 13x46 extends from one side of the building to the other, which facilitates ingress and egress of beds and permits the assemblage, without crowding or confusion, of those appliances and conveniences which have become necessary to the highest develop-



portion of the roof toward the north has been made transparent by great sheets of thick plate glass. Under the glazed dome stands the operating table in a large open space, surrounding which on three sides (toward the north) arise seven tiers of seats, numbering in all 200. These seats rise abruptly, so that every spectator will have a free view over the heads of all sitting below him. Each student will have a

ment of the healing art. On either side of the operating space are located sinks, flushing tanks, wash basins, pipes bringing steam for heating and sterilizing, and other pipes from which sterilized water can be drawn of any desired temperature, from a splendid brass water filter and sterilizer on the right side of the area.

There are also provided steam closets for heating

blankets and linen, racks holding swinging bottles of antiseptic solutions, movable tables for instruments and dressings and other appliances. A cluster of electric lights above the operating table afford light at night, and electrical apparatus is also provided for resuscitation and treatment.

The spectators or students enter the amphitheater by a special gate and door opening from Eighth Street, at the corner of Spruce. This entrance, approached by a flight of broad granite steps, is one of the principal architectural features of the building. Ascending a short stairway, a large student's lobby is reached, from which open a coat room and lavatories, while, again ascending the stairs, the area surrounding the amphitheater above the seats is entered. Thence, flights of descending steps render all of the seats easily accessible. It will be noted that by this arrangement the students are practically kept outside of the hospital; their relation to the operating and lecturing portion of the room will be similar to that of an audience to the stage in a place of entertainment, except that the floor of the operating space is some four feet below the first tier of seats.

On the right hand of the area, behind the operating space, doors open to the nurses' dressing room beneath the seats. Here all nurses who are to assist at operations will invest themselves in sterilized linen clothes and prepare themselves with the same care as the surgeons for carrying out the antiseptic details. This room has washbasins and other necessary fittings, as well as a water-closet. Upon the other side of the amphitheater, a door leads under the seats into a long room where all the dressings of the entire hospital will be manufactured. This apartment is fitted with a battery of four high pressure steam sterilizers, sinks, and all other apparatus, such as cutting and winding machines, that go to make up a small factory for surgical supplies. Directly opposite this room, across the area of the operating room, is another room devoted to storage of the finished supplies, which room also communicates with the corridor to facilitate distribution of the supplies to those coming for them from the various wards and smaller operating rooms.

Leading to the south out of the operating area, is a small room devoted to washing and sterilizing instruments. Next to the south, is the instrument room where is aggregated the surgical armamentarium in five large cases of plate glass and enameled iron. South again of the instrument room is the private operating room. This large chamber is devoted to such operating as is done upon private patients or when the amphitheater is in use by another surgeon. It is fitted complete for all ordinary purposes, and is perfect in its appointments as the main operating room, but will contain no provision for onlookers.

The remaining rooms in this suite along the south side of this building, are devoted to the private use of the medical staff. The first is a sitting and consulting room; the second a dressing room, while a third comprises a lavatory and bathroom. All of the rooms between the instrument room and surgeon's lavatory, besides communicating with each other, open upon the main corridor.

Upon the west side of the corridor are located two rooms for the recovery of male and female patients from the effects of anesthetics before being transferred back to the wards. Next a room for etherizing patients for the private operating room. Next again, is an entirely novel feature, namely, a room devoted

exclusively to operations upon cases affected with virulent and dangerous infectious diseases, such as lockjaw, anthrax, glanders, tuberculosis, gangrene, etc. This room is lined throughout with hydraulic cement, and has doors and windows of such special design as will permit it to be filled by live steam under slight pressure. The plan is to here operate upon virulent cases and then leave everything that has been used in the room. The doors will then be securely fastened, and, from attachments in the corridor, steam will be turned on from pipes suspended all around the cemented walls so as to flood the chamber with an element absolutely destructive to all germs. After a sufficient exposure to this agent, the room may be cooled off and entered. It is thus expected to do away with what has been a great danger in the past from these virulent cases that from time to time must be admitted and occasionally communicate infection to other persons. The last room on this side of the corridor, the southwestern corner, is to be devoted to microscopic and photographic work. It will contain a dark room, sinks, and other necessary appliances and will be especially fitted for elaborate use of the Roentgen X-ray, fluorescent screens, and skiagraphy.

The second floor, or operating suite, connects by corridor with the main floor of the surgical pavilions of the hospital, so that patients are transported the shortest possible distance between the wards and operating rooms.

The entire third floor of the new building has been assigned to a large children's ward, comprising space for twenty-five beds, nurse's room, pantry and diet kitchen, sink and utensil room with steam drying closet, baths, lavatories, a small isolation ward, and a large cheerful playroom and sunbath.

SELECTIONS.

On New Tuberculin Preparations by Robert Koch.—After a long silence, R. Koch addresses (in the *Deutsche medicinische Wochenschrift*, April 1) the profession with new theories and facts on the subject of tuberculin and immunization against tuberculosis. The results are more likely to startle the medical world in a still higher degree than the tuberculin era. But experience has been sufficient to guard this time against over-enthusiasm, and will enable the scientific world to form a closer analysis of the subject and perhaps give some new directions.

According to Koch, immunity may be brought about by only one factor, but it is not necessarily so: it can be composed of two components or perhaps more. One is simple and pure immunity to toxins, as in tetanus (Behring, Kitasato). It disappears after several weeks. Another is pure bacterial immunity, exclusively against the body of the bacterium, like immunity against cholera and typhoid fever (Pfeiffer). The ideal immunization must therefore have the purpose to protect the animal or human body against every danger and not only against the one single danger derived from the microorganisms.

In men there is apparently no immunity against tuberculosis, and cured individuals are more susceptible to infection, but there can be observed under certain conditions an immunity in this disease. The observation of miliary tuberculosis in man and guinea pigs shows that there is, as a rule, a stage where the bacilli disappear, which in the beginning were present in great number. This true bacterial immunization comes generally too late for the victim. These observations have given occasion to Koch to discover a method by which such immunization can be produced at a time which is valuable to the vic-

tim. He starts from the fact that immunization can only take place in such cases where the body is inundated in a short time by bacilli in great number, and he finds in this fact the explanation why in an average case of localized tuberculosis, there is no apparent immunity. The bacilli in the body are only in small number and grow slowly, mostly surrounded by necrotic tissue, and are absorbed only after a long time after their death and following chemical decomposition. Where the bacilli grow in large number, as in cavities and on the surface of mucous membranes, they are not absorbed at all and therefore general immunization can not take place.

In his efforts to obtain artificial immunization he is, therefore, guided by his theory that such immunization is only possible when numerous tubercle bacilli are distributed rapidly in the body and come into actual contact with living tissues, as in miliary tuberculosis and in experimental guinea-pig tuberculosis. As nearly as possible similar conditions must be created. In his effort to produce this he met with considerable difficulty, as bacilli distributed throughout the body in large quantities are only very slowly absorbed. He therefore considers that bacilli which are unaltered in their structure are not suitable for immunizing purposes. To facilitate their absorption he followed in general three different processes: First, treatment of the bacilli with chemicals and heat; second, extraction of bacilli; third, destruction of the bacilli by mechanical means.

The treatment with chemicals (diluted mineral acids or boiling in concentrated alkalis) gave preparations which were slowly absorbed, and this process was followed by two great changes in the composition of the bacillus with a destruction of the immunizing power.

Through extraction of the bacilli by glycerin and the employment of the absorbable constituents he arrived at tuberculin, whose diagnostic value he emphasizes and to whose therapeutic value he adheres. But he believes that only immunity against toxins, no bacterial immunity, can be produced by it. The reactions produced by tuberculin, which according to his statement are essential for the immunizing effect, subside before an absolute cure is perfected. Hence his efforts to produce a bacteria immunizing preparation. The extraction of the bacilli with a decinormal solution of sodium hydrate without complete filtration of remaining bacilli, gave a preparation which he calls *TA* (alkalin extract), with not entirely satisfactory results, on account of the difficulty of absorption of the remaining unaltered bacilli. After filtration to remove them the immunizing power was too much decreased. To make the constituents of the bacilli easier attackable for the absorbing elements of the body, Koch resorted to their complete destruction by mechanical means.

The necessity of such procedure seemed confirmed through the observation of certain constituents of the tubercle bacilli, namely, two chemical bodies, which Koch classifies among the group of "unsaturated fatty acids." The first is soluble in dilute alcohol and readily saponified by sodium hydrate, the second is only soluble when boiled in absolute alcohol or ether and very difficult to saponify. Both are stained intensely by carbofuchsin and retain stain after being treated with dilute nitric acid and alcohol. The extraction of the first variety of fatty acids leaves the second, which retains the stain and therefore is the bearer of the specific staining of the tubercle bacillus. These latter "fatty acids" can slowly be extracted by hot sodium hydrate and the process may be followed under the microscope. The "fatty acids" leave the body of the bacillus in stainable drops, the bacilli retain their form from the beginning, but do not take up the specific stain. Koch believes that these fatty acids form a protective "cover" against absorption of the bacillus in the body. Hence the necessity to destroy this protective cover.

By crushing and pulverizing the perfectly dry and virulent cultures in an agate mortar and centrifuging a suspension of

the powder in distilled water until no more stainable bacilli are present, Koch derived two preparations, which contain all immunizing properties which can be obtained from the bacilli. The opaque fluid above (oben) the sediment after centrifugation is called *TO*, the sediment or remainder (*Rest*) is named *TR*, which is treated by the centrifuge again until no sediment derived from constituents of the bacilli remains and a clear fluid is obtained.

TO shows after first staining with carbofuchsin and afterward with methylene blue, purple cloud-like formations, while *TR* shows masses stained blue. Fifty per cent. glycerin does not change *TO*, while it precipitates *TR*. Koch therefore thinks that *TR* contains those constituents of tubercle bacilli, which are not soluble in glycerin, therefore not contained in the glycerin extract. *TO* has similar qualities as tuberculin and corresponds in efficiency with the alkalin extract *TA*, except that there is no danger of forming abscesses after subcutaneous application. The immunizing properties are very similar.

TR acts decidedly immunizing. It causes reaction in tuberculous individuals if too large doses are employed, but the effect is entirely independent of the reaction. With tuberculin *TA* and *TO* it is necessary to produce reaction in order to produce curative effects; not so with *TR*. "The value of this preparation is expressed by Koch as follows: That *TR* represents all immunizing factors contained in the culture of tubercle bacilli is evident from the fact that a man who is immunized against *TR*, even if all reactions were avoided, does not react any more to large doses of simple tuberculin and *TO*, he is immunized against all components of the bacillus. I have observed this property of *TR*, which appears to be of utmost importance, in such a large number of cases, that there can not be any doubt as to the correctness of the observation."

Koch further gives some technical details about the preparation of *TR* and directions for its therapeutic employment, which consists in subcutaneous applications with avoidance of reaction, until the highest possible dose (20 mgr.) can be arrived at.

In a summary of the animal experiments he points especially to the progressive changes in liver and spleen, disappearance of the necrotic yellow foci, in place of which he found grooves on the surface, which give to the organ an uneven characteristic appearance (cicatrizations). A cure of tuberculous guinea pigs, in which the disease, as is known, progresses very rapidly, could be perfected by Koch only when treatment was early begun one or two weeks after inoculation. This rule applies also to man. Very advanced cases, especially those with secondary infection particularly by streptococci, are only rarely accessible for the specific treatment of tuberculosis. Koch excludes in general those patients with a temperature above 38 C. (100.4 F.). He has treated a number of suitable patients with lupus, and has to report without exception considerable improvements. He speaks only of improvements, though not a few cases would merit the expression cured, which he does not wish to adopt before a sufficiently long period without relapse has passed. In lupus he obtained continued improvement with very slight local reactions. In pulmonary tuberculosis the increase of râles was the only local symptom, which soon subsided. The quantity of sputum decreased even after a few injections and often it subsided entirely, with a corresponding disappearance of râles and decrease of the area of dulness.

In conclusion, Koch believes that possibly other methods, perhaps combinations with *TO* or with serum preparations, which are obtained with *TO* or *TR*, may lead to better and speedier results. But he maintains that further improvements of the preparation as such can not be expected.

It is apparent that the long looked-for article of Koch makes us richer by one new theory of immunity in tuberculosis, but

great reserve will be necessary as to the acceptance of the therapeutic conclusions thereby gained. We have certainly to await the promised publication of his experiments on animals and men before we can judge further. As far as it can be conceived the results he has arrived at in guinea pigs are identical with that of other experimenters. In this country the experiments with preparations from the tubercle culture, which were published some time ago by Professor Klebs, showed in guinea pigs the same grooves and disappearance of necrotic parts in liver and spleen. He demonstrated microscopically the regressive changes taking place in the tubercular tissue and published photographic reproduction of the appearance of the liver and spleen in experimental animals, proving the possibilities of artificial immunization. It is to be wondered how little credit in general Koch gives to other experimenters outside of the "Institut für Infektionskrankheiten," and particularly those working in this country. As to his discovery of fatty acids in the bacilli, which fact induced his idea of the necessity of employing mechanical means to favor the solubility of the bacilli, it seems evident that these acids are originated from the fats, which were observed long before Koch, especially in this country. Hammerschlag and Nensky observed them first and Dr. de Schweinitz of Washington made the first quantitative determination. Independently of the latter, Professor Klebs has published in the *JOURNAL* the results of his experiments (July 25, 1896). He found two fats in the bacilli, with different fusing points and gave an exact statement of their physical and chemic quantities and especially he pointed out that these fats are the single cause of the specific staining of the bacilli. Abell of Baltimore further found glycerin in the alcoholic ethereal extract, explaining the high hygroscopic quality of the bacilli.

All the important results of these tedious experiments of prominent scientists in this country are completely ignored by Koch, or if known, no credit is given for them. In the interest of true science it is to be regretted that Koch and the other members of the "Institut für Infektionskrankheiten" try to assume an autocratic leadership of the whole scientific world. Nevertheless the way opened by Koch through his tuberculin and his latest experiments allow reasonable expectations in the "causal therapy" of tuberculosis, but it will need the work of others and the combination of many factors, to reach an absolutely satisfactory result.

Lake Erie as a Source of Civic Water Supply.—The continued presence of *typhoid fever* in any municipality is as *inexcusable* as *vermin* in a modern dwelling, and indicates a degree of shiftlessness and apathy not consistent with modern methods and needs.

Lake Erie, the water supply of Buffalo, as well as of the cities of Toledo, Cleveland, Dunkirk, Erie and Ashtabula, is subject to periodic upheavals, due to its shallowness and the strong west and northwest winds occurring during the winter and spring months. As a result Buffalo has roily water during five or six months of the year, beginning with November or December and lasting until May or June. It will be interesting, therefore, to compare the results obtained by the city chemist and city bacteriologist of Buffalo and see how they agree or disagree.

Both chemic and bacteriologic examinations of the water should be made, at least once weekly, to determine its character as a safe or dangerous water for domestic use, and if contamination is shown to exist, the services of an engineer be enlisted to detect, if possible, the cause and origin of such contamination. This last proposition is the one to which I wish to call attention. Who is to decide whether a water is potable, if the chemist and the bacteriologist do not agree? Up to within a few years ago a chemic examination of water was deemed sufficient to decide its potability, and upon the decree of the chemist the water was either accepted or rejected.

The chemist was generally able to detect the presence of decomposing organic matter, either vegetable, animal, or both, which in his analysis was indicated by the presence of ammonium compounds and the oxygen-consuming power of the water. The ammonium compounds, particularly the albuminoid ammonia, are usually the result of putrefactive fermentation of nitrogenous matter, and water of high purity should contain from none to .041 parts per million, while in impure water it ranges upward from .082. The chemist is only able to say that a water contains organic matter in the process of fermentation, but can not say how virulent or innocent are these destructive agents. It is now generally accepted that organic matters, which by one means or another find their way into surface waters, are oxidized and eventually reduced to simple substances by the operations of microorganisms, and not by mere chemic changes independent of them. In other words, the oxidation of impure, polluted water is the result of bacterial activity; but what is their nature?

The decree of the bacteriologist is now imperative in deciding the pathogenic or non-pathogenic character of the bacteria. The water from artesian wells contains no bacteria, while that of sluggish streams, lakes and rivers receiving the sewage of large cities contains millions of colonies per cubic centimeter. Authorities consider a water having 250 bacteria per cubic centimeter, or less, as entirely safe and usable.

It is now generally recognized that the mere enumeration of the number of colonies which develop from a water under investigation is not a sufficient indication upon which to found an opinion as to its potability. The greater number of colonies, the more organic pabulum is present for these microorganisms. The bacteriologist is not able as yet to give any definite idea of the amount of such organic matter, while the chemist is able to do so with considerable precision. But the bacteriologic examination may prove of great value if it succeeds in demonstrating the presence of certain pathogenic bacteria, and in thus preventing the use of a dangerous water. Moreover, the number of colonies is an index of the probable quantity of organic matter which may come from a dangerous source; and the dangerous pathogenic bacteria are not only likely to be present in such water, but they can more readily multiply in it. The number of varieties of non-pathogenic micrococci found in water is about thirty, and pathogenic micrococci two—the *staphylococcus pyogenes aureus* and the *micrococcus Biskra*. Of the non-pathogenic bacilli seventy-nine varieties have been found, while of the pathogenic bacilli sixteen varieties, including the bacillus of typhoid fever, of cholera, and the *bacillus coli communis*. These three varieties are the most important findings possible of a bacteriologic examination, and are positive proof of the presence of alvine dejections in the water.

In January, according to the city chemist, the water was in good condition, while the bacteriologist again found the *bacillus Janthinus*, and reported the water to be in "very poor condition" for the first half of the month and a gradual improvement the last half. The number of typhoid deaths decreased to five. In February and March both officials found the water in good condition, also evidenced by the death rate and the typhoid deaths, three and four respectively.

For the months of April and May there exists a disparity between the two reports, the chemist claiming that the water was in "excellent condition" during May, while the bacteriologist found the water "not in good condition," because of large bacterial contents. The deaths from typhoid fever were four—an unusual time for typhoid to be present. For May the chemist found evidences of contamination, while the bacteriologist, on the preceding day, considered the water in good condition, containing on that day only 270 bacteria per cubic centimeter. In June both officers found the water in good condition.

Reviewing the opinions of the city chemist and the city bacteriologist, it is evident that the disparity occurs whenever the water is in an improper and unhealthy condition, and when such is the case, it is only fair to assume that some error has been committed favoring the water.

The bacteriologic examination as well as the chemic analysis are, therefore, alike necessary in demonstrating the purity and safety of a drinking water, and neither should be omitted when the least suspicion exists as to its contamination. The consumers should be immediately warned of the dangers of using such water in its raw state, and should be enjoined to make some attempt at purification, either filtering, boiling or condensing. This applies not only to those cities whose water supply is open to contamination, but to every city having a public supply.

Besides the chemist and bacteriologist, the water department of every city, whose supply is liable to contamination, should have the services of an engineer whose fame does not rest upon his theoretic knowledge and bureaucratic propensities, but upon his practical information on the laws of hydrology and hydrodynamics. Such an one, well versed in the hydrography of his locality, could almost prognose the condition of its water supply and be an important aid to the city's health department. As such he would be able to render the same valuable services as does the local forecaster in meteorology, and give warning several days beforehand of marked changes in the quality of the water. While the chemist and bacteriologist are only able to detect impurities after contamination, the engineer could foresee these changes and give sufficient warning, or attempt to overcome the impending contamination before the city mains and reservoir are filled with the poisonous liquid.

Our present knowledge of the water supply question leads up to five propositions, as follows:

1. That the water supply of any city or village should not in any possible way be liable to pollution or contamination from the sewage of any other community.

2. That the sewage of a city should not be emptied into any watercourse not having a current of three to five miles per hour, and then the sewage entrance should be at a distance of one mile or more from the intake.

3. When the water supply of any city or village is a navigable stream, the water should be sand-filtered before pumped into the city reservoirs or water-mains.

4. That for ordinary drinking purposes the water should not be taken in its primitive or raw state, but be either filtered, boiled or distilled and aerated.

5. Both chemic and bacteriologic examinations of the water should be made, at least once weekly, to determine its character as a safe or dangerous water for domestic use, and if contamination is shown to exist, the services of an engineer be enlisted to detect, if possible, the cause and origin of such contamination.—*Dr. W. C. Krauss, in the Cleveland Journal of Medicine*, March.

PRACTICAL NOTES.

Successful Treatment of Sciatica with Copaiba.—*Dr. Glorieux* reports three cases of obstinate chronic sciatica cured in a brief period with 40 to 50 drops of copaiba a day, divided into several doses and taken on wafers.—*Semaine Méd.*, March 24.

Sterilization of Glycerinated Vaccine Pulp.—Exposure of the pulp to a temperature not over 30 to 37 degrees C. and for not longer than twenty-four hours, will kill the staphylococcus aureus and albus, without injuring the vaccine.—*Semaine Méd.*, March 31.

Methylene Blue in Headaches.—*Benno Levy* recommends methylene blue as extremely effective in curing headaches. He prescribes it in gelatin capsules: methylene blue (Merck) and pulverized nutmeg 0.1: one capsule four times a day. One

capsule brings relief and four usually complete the cure.—*St. P. Med. Woch. from Berlin klin. Woch.* No. 45, 1896.

Treatment of Chilblains with Compression.—*Dr. E. Müller*, observing that chilblains burn and sting more when the blood pressure in them is increased, has treated them successfully by compression. The member is first elevated for a while to reduce the amount of blood in it as much as possible, and then narrow strips of sticking plaster, 10 to 15 cm. long, are applied, lapping over each other, entirely covering the chilblain, and drawn so tight that the swelling is forcibly compressed over the entire surface.—*St. Petersb. Med. Woch.*, March 13.

Still Another Carcinoma of the Liver Extirpated.—*Schrader* describes a case operated seven years ago. The patient, a woman of 30, has been perfectly well since she was relieved of the neoplasm, 4x3.5 cm., which was removed through a large wedge-shaped opening, the wound in the liver cauterized and its edges sewed carefully to the edge of the wound in the peritoneum, thus making the wound in the liver extra-peritoneal. The abdominal wound was sutured as usual; there was no fever, and the wound had firmly closed over in eight to ten weeks.—*Deutsche med. Woch.*, March 11.

Two Hitherto Undescribed Symptoms in Addison's Disease.—*Renner* calls attention to a couple of phenomena that accompany this disease but are not mentioned in the text-books, the intolerable pruritus and the presence of numerous wart-like elevations scattered over the surface of the skin. He describes a typical case of the disease in which these wart-like prominences grew more numerous toward the end. At the necropsy the left suprarenal capsule was found in a state of cystic degeneration, with a cavity containing caseous products.—*Presse Méd.*, February 27, from *Ver. Bl. f. Pfälzer Aerzte*, Vol. xii, No. 3.

Case of Goitre in a Syphilitic Cured by Thyroid Treatment.—The goitre had begun to develop five years before. At first it had yielded to electric treatment, but soon returned and resisted every form of medication and treatment, until thyroid tablets were administered, commencing with one and increasing by one every third day, up to five. The "effect was prodigious," and in less than four weeks the goitre had entirely disappeared. The syphilis was in the tenth year.—*Presse Méd.*, February 27, from *La Policlinique*.

Resorcin in Whooping Cough.—*Roskam* now has a record of 200 cases of whooping cough treated locally with a 2 to 3 per cent. solution of resorcin applied to the glottis on a fine sponge, every four hours during the day, commencing at 6 A.M. and once or twice during the night. In 200 cases the children were cured in less than fifteen days, and the general health improved rapidly from the first. Others report equally favorable results. Some administer the resorcin internally at the same time.—*Annales de la Soc. Méd.-Chir. de Liège*, March.

Modern Progress in the Treatment of Gout.—All that we can claim over the ancients is that we have a more rational conception of the diet required, although the most eminent authorities still disagree in regard to the particulars: that we have discovered in the amines powerful therapeutic aids, although none of the combinations yet discovered, piperazin, lysidin, lycetol and urotropin, are free from serious disadvantages, but the way is indicated for new and truly effective discoveries, and we also have found that there is a peculiar affinity between uric acid on the one hand and urea and salicylate of soda on the other.—*Deutsche Méd. Woch.*, March 11.

Iron and Arsenic in Anemia.—If the chemical transformations in anemic subjects are studied, the cases can be classified into two categories: 1, those in which the nitrogenous transformations are diminished and the oxidation decreased; the coefficient of nitrogenous oxidation falls to an average of 75 per cent. from 80 or 82 per cent.; 2, those in whom the oxidation and nitrogenous transformations are increased. The

medication beneficial in the first category is directly contra-indicated in the second, especially iron, which increases oxidation, and arsenic, which modifies these processes. The failure of iron in some cases, and its success in others, is explained by these facts.—*Semaine Méd.*, March 31.

Educating the Left Hand.—Bueno de Miranda describes in *O Brazil Medico*, January 22, his method of extirpating a sub-glottic polypus of the larynx with epiglottic complications which rendered it necessary to use the laryngoscopic mirror and the probe while extirpating the tumor. He accomplished it by educating his left hand until he could hold two instruments firmly with it; the mirror, held between the third phalanx of the middle and ring finger, the handle resting in the groove between the thumb and palm; and the probe, with its point wrapped in cotton, held between the third phalanx of the middle and fore finger, the handle resting on the pulp of the thumb. The two handles were pressed firmly together, the instruments crossed. By this means the right hand was left free to extirpate the neoplasm with ease.

Router's Method of Operating Uterine Fibromas.—1, opening into the anterior and posterior culs-de-sac through the vagina; 2, laparotomy and treatment of the adnexa according to indications; 3, exteriorization and enucleation of the fibromas; 4, enlarging the incisions into the culs-de-sac; 5, hemostasis of the broad ligaments with an elastic band placed astride each ligament, around which it is twisted twice, and the ends tied with a silk ligature; section of the pedicles; ablation of the tumor; 6, toilet of the peritoneum and drawing the elastic fastenings into the vagina; they drop off spontaneously in twenty to forty days. His experience has been nineteen cures and four deaths with this technique.—*Presse Méd.*, March 27.

Pneumococcus Peritonitis in Children.—This disease can be readily diagnosed and as it yields at once to surgical intervention, Prof. F. Brun describes the symptoms so all can recognize it, in the *Presse Méd.*, of February 27. It commences with violent pain in the abdomen, fever, vomiting and diarrhea. In a short while this general commotion subsides, and the fever assumes the characteristics of a suppuration fever, while a dull, thick tumefaction appears in the iliac fossa above the pubis, in some cases with fluctuation. This local lesion is significant alone, but it assumes almost pathognomonic importance when it is accompanied by the special sign which he has found mentioned in nine of the fourteen cases on record (Lucas-Championnière, Jalaguier, Kirmisson), the swelling and inflamed appearance or fistulization of the umbilicus. In these fourteen cases, three died; one recovered after spontaneous evacuation through the umbilicus and into the vagina. The remainder recovered after laparotomy. His own experience has been four recoveries in five cases. The operation required is very simple, scarcely more than opening an abscess. In the fourteen cases, all under 15, the diagnosis was confirmed by bacteriologic investigation, and all but three were females. He suggests that the latter fact may elucidate the methods of peritoneal infection, as in every case where the lesions were clearly defined they were located in the lower part of the serosa. *Presse Méd.*, February 27.

Ascites in the Omentum.—A comparative study of this rarely recognized form of hydrops appears in the *Revista de Med. y Cir.* of February 25, the author, Dr. A. P. Miro, having had occasion to observe three cases. Relief and cure were obtained by puncture at a point midway between the xiphoid appendix and the left anterior, superior spine. The syndrome differs from that of ordinary ascites by the location of the pain and pressure in the epigastric instead of the hypogastric region, the gastric dyspepsia and sensation of fullness in the stomach after eating, the dyspnea after eating at first, and later, continuously, aggravated by moving about, and assuming the horizontal position, or by the slightest pressure on the epigastric

region, which may even cause syncope. There is resonance in the epigastric and hypogastric regions, with an area of dulness in the center, encroaching from above downward. The first point where fluctuation can be distinguished is in the upper part of the abdomen. The epigastric region is the first to protrude, and the last to subside after puncture. One case he described, required the introduction of a certain amount of artificial serum to counteract the effects of the withdrawal of over sixty liters of fluid in the course of twelve punctures, after which the patient recovered and has been in perfect health during the eighteen months since. He ascribes the accumulation of the fluid in his cases to the closing of the foramen of Winslow by congestion of the neighboring organs from the use of alcohol and highly seasoned food.

The Morphology and the Chemie Products of the Diplococcus Pneumoniae and Some Results of Vaccination.—Auld (*British Medical Journal*, March 27, 1897, p. 775) points out the difficulties surrounding isolation of the diplococcus of pneumonia in pure culture, as well as the variability in virulence that the organism displays. He describes the following as a delicate test for the purity of the growth: On the surface of sloping agar a streak culture forms a very fine dew-like moisture, absolutely transparent with reflected light. If the slightest trace of opacity can be detected, the culture is impure. From the blood of inoculated animals that yielded a pure growth on agar were obtained an albumose and organic acid. Injection of the former into a vein was followed by shock and a fall in temperature, with subsequent elevation. No other pathologic effect was observed, although the animal lost in weight. Intrathoracic injection of the albumose was soon followed by marked dyspnea and elevation of temperature. When the animal was killed, pleurisy and consolidation of the lung were found, while the blood and the serum proved to be sterile. Injection of the albumose beneath the skin of the ear was followed by local inflammation and elevation of temperature, with loss in weight. Intravenous and intrathoracic injection of the organic acid was unattended with noteworthy disturbance. From pure cultures of the diplococcus in artificial media an albumose and an organic acid were obtained similar to those obtained from the blood, and exhibiting the same reactions when injected into a vein or the chest, or beneath the skin. It was found that animals treated cautiously with pure cultures were rendered immune. The same result could be secured by the employment of the toxin isolated either by evaporation or by precipitation with alcohol. Immunity was similarly conferred upon other animals by injection of the serum of animals thus rendered artificially immune.

Precocious Maturity.—Morse (*Archives of Pediatrics*, April, 1897, p. 241) reports the case of a female child that weighed fourteen pounds at birth and had large breasts and a little hair on the pubes, which at the age of two months had become considerable. At the age of nine months a bloody vaginal discharge was observed, and at this time the child weighed twenty-eight and one-half pounds. The discharge recurred at monthly intervals, increasing progressively in amount until it reached that observed in adults. At the age of 14½ months the girl presented the general appearance of a child of three years. With her clothing she weighed thirty-six pounds and her height was 32½ inches. The breasts were prominent and each contained a mass of glandular tissue as large as a pigeon's egg. The nipples were well developed and surrounded by a dark pink areola and a little hair. The mons veneris and the labia majora were large and covered with a profuse growth of hair. The labia majora were well differentiated and fairly large. The clitoris was distinct but not disproportionately large. The hymen was distinct and easily distensible. The vagina was distensible and contained rugæ, and the cervix was distinctly felt. From a study of this case and of those recorded in the

literature the conclusion is reached that precocious maturity is a physiologic congenital anomaly of development. Menstruation is never the first symptom, but is always preceded and accompanied by others. Menstruation most often appears in the first two years and is accompanied by ovulation. The attributes of maturity are not all acquired before the age of seven or eight years. Sexual desire is soon developed and pregnancy may occur early. Menstruation may continue as long as when it begins at the normal time. The etiology of precocious maturity is unknown and the relation to precocious menstruation is obscure. There is no medical treatment. As the mental development of the unfortunate afflicted with this condition is usually far less than the sexual and physical, they must be carefully guarded against voluntary or involuntary intercourse.

Removal of Tonsil, Floor of Mouth and Half of Tongue by External Pharyngotomy for Epithelioma.—Morton (*British Medical Journal*, March 27, 1897, p. 780) reports the case of a driver on a locomotive engine, 55 years old, who came under observation with a history of a "pricking soreness" at the back of the tongue and in the throat, which had been present for five weeks. He could swallow only liquids and these only on the left side, and with much pain and difficulty. Inspection of the interior of the mouth disclosed a hard, ulcerated, warty growth on the back of the right side of the tongue, involving also the floor of the mouth between the back of the tongue and the jaw and the junction of the tongue and the anterior pillar of the fauces and extending on to the tonsil. Only one enlarged submaxillary gland could be felt. When the patient was anesthetized a hard growth could be felt in the tongue, extending to the middle line, and the tip of the finger could just be passed behind it, down the pharynx. The trachea was first opened and a Hahn's cannula inserted, and later the lower part of the pharynx plugged with a sponge as well to prevent the entrance of blood during inspiration. The left lingual artery was then tied and the mouth on the right side opened exactly as in excision of the tongue by the method of Kocher, the right lingual artery being tied at the same time. Some enlarged submaxillary lymphatic glands were removed. The growth was found to have infiltrated deeply into the tongue toward the hyoid bone and the tongue had to be divided close above the great cornu and somewhat beyond the middle line, thus leaving rather less than half the organ. The cheek was then separated upward from the jaw just in front of the masseter and the jaw divided at the junction of the body with the ascending ramus, so that on traction outward of the latter the tonsillar region could be seen fairly well. The growth was fixed to the external pterygoid muscle, a portion of which also was removed. The pharyngeal wall, where infiltrated by the growth, was also adherent to the external carotid artery, but it was readily peeled off. The tongue was not separated from the tonsil and the diseased portion of the pharynx, but all were removed in one piece. The growth had not invaded the jaw, but the periosteum was stripped off with it. The jaw was wired at the end of the operation and the stump of the tongue sutured to the soft tissues on the inner side of the front of the jaw. The operation was rather a protracted one, but was followed by but little shock. The patient was nourished through a tube introduced into the stomach and left *in situ*. The mass of growth in the tongue was about the size of a walnut and of the typical hardness of epithelioma, of which also it presented the microscopic appearances. The tracheotomy tube was retained for ten days and the stomach tube for rather more than a month, but by firmly plugging the external opening into the pharynx the man could swallow fairly well three weeks after the operation. In the course of six weeks the opening in the neck had so far contracted as to just admit the end of the thumb, and five weeks later it was only a minute sinus. The man could now eat mince-meat and speak so as to be understood, and he had gained flesh to a considerable extent. Four months after the operation the sinus in the neck was closed and the man returned to his work. There had been no sign of recurrence seven months after the operation.

Typhoid Fever in Infancy.—Dr. W. P. Northrup, in the *Albany Medical Annals*, March, takes for his thesis the position that typhoid fever is a rare affection in infancy. He says: At the New York Foundling Hospital, in twenty-five years, there is no record or remembrance of a case. This statement is made on the authority of Drs. O'Dwyer and J. Lewis Smith. In my own experience of fourteen years at the same institution, clinically, no case has been seen. I may add that from my first entrance into the service, Dr. O'Dwyer and myself have been literally looking for it. Furthermore, in 2,000 necropsies upon subjects under three years of age, for which statement I am personally responsible, no typhoid fever was verified. Of the 1,800 infants and children usually under the care of the institution, 1,100 are out at nurse in the environs of New York, Staten Island, Hoboken, Jersey City, Westchester County, Astoria, Williamsburg, Long Island City and intervening points, beside the crowded parts of New York and Brooklyn. All these are under three years, and a majority under two years. For the most part the food of these children is milk and water. Above the first year probably the milk is not warmed, to say nothing of boiling. Children drink copiously of water. There have been now 25,000 infants from the Foundling Hospital living about among the community and no case has returned with recognizable typhoid. They are not specially protected, but rather unusually exposed. Let it be remembered, too, in this connection, that our large hospitals receive their full typhoid crop of adults from just these localities, not a few of them finding their way to my own service at the Presbyterian Hospital. A child over one year old will receive from her ten dollar-a-month nurse many delicacies, but the milk will be the main feeding, and that milk will often be procured at the corner grocery. Corner-grocery milk is almost a by-word for unreliability. After watching for twelve to fourteen years for a case of sporadic typhoid in infancy, I entered into an investigation with other institutions. I will refer to one. The New York Infant Asylum in eight years has not had a case of typhoid, 10,000 cases of illness having been observed in that time and 700 autopsies made (Holt). From the experiences of the New York Foundling Hospital and the New York Infant Asylum the statement seems justified that typhoid fever in the first two years of life is rare. On the other hand, in the presence of overwhelming infection (over-abundance of virulent bacilli in long continued contact), an infant, though naturally little vulnerable, may succumb to the epidemic infection. In the Stamford (Connecticut) epidemic, in which 406 individuals were attacked, I saw four infants sick of undoubted typhoid; 4 in 406. One was 13 months old, one of three in a household of four attacked, all having typical typhoid. The manifestations in this infant were fever, prostration, dry tongue, pallor, characteristic eruption, feelable spleen. One was 16 months, two were 22 months; of the latter age one died early in the disease with broncho-pneumonia. This is the only autopsy on a typhoid patient under two years of age I have ever made or have seen. It will be urged that the unusually careful management of milk designed for infants, its warming and sometimes its boiling, have much to do with the rarity in this period of typhoid. That may be true. Infants under one year are largely wet-nursed, too. Above one year I think it is the experience of most that the infant is given largely unboiled milk; they prefer it and are considered large enough to take it. Especially is this so in the associations from which the above experience has been gathered. Here is a chance, says Dr. Northrup, to make use of the newly discovered method of exact fever diagnosis, namely, the agglutinative serum test. If, and when this test shall have been applied, he expects that our Baltimorean and other experts in fever will find it expedient to revise their assertions as to the vulnerability of the human subject to typhoid fever in the first two years of life; except perhaps in times of epidemic prevalence with a superabundant and virulent contagium, such as the comparatively immune (if so let such immunity be demonstrated) constitution of the infant can not withstand or overcome.

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INFORMATION WANTED.

It would greatly facilitate the prompt delivery of the JOURNAL to those members of the Association living in large cities, if they would kindly furnish this office with their street address in those cases where it is omitted from the wrapper of their JOURNAL, as we have been notified by the postmasters of the larger cities that second-class mail matter not having street address, would be placed in the general delivery to await call.

SATURDAY, MAY 1, 1897.

MEDICAL LEGISLATION IN 1897.

The progress of so-called medical legislation in the year 1897 has not been pleasant in many particulars. The Department of Health Bill in Congress has not been reported. Medical bills in New Hampshire have not been acted on. In Missouri we believe the osteopathy bill was slaughtered, but in Illinois the same bill, one of the most objectionable that could be offered, has passed its second reading, and there is great danger of its ultimately becoming a law. This curious measure is entitled "A Bill for an Act declaring the treatment of diseases of the human body by the system, method or science commonly known as osteopathy, and as taught and practiced by the American School of Osteopathy of Kirksville, Mo., not to be the practice of medicine within the meaning of section ten (10) of an act entitled 'An act to regulate the practice of medicine in the State of Illinois,' etc." This interesting bill recognizes the American "School of Osteopathy" of Kirksville, Mo., which is the only attempted recognition of an individual medical school in the statutes. An amendment in the senate committee erased the words "as taught and practiced at Kirksville, Mo."

In Michigan a bill, which gives color to the existence of the most objectionable forms of quackery, has been introduced, and curiously enough is supported by one wing of the profession who think anything better than nothing. Dr. MACLEAN, of Detroit, and his associates have been doing valiant work in attempt-

ing to defeat this bill, but the result is not yet definitely decided.

In Delaware the opticians have a bill, which is doubtless likely to pass, creating the degrees of Graduate Optician and Doctor of Refractions; the effect of which is to do away with the services of the oculist.

In Iowa the Practice of Medicine Act has passed.

In Wisconsin the Practice Act will probably pass.

Taking it altogether, we are of opinion that in the matter of legislation, Illinois bids fair to become worse than any State in the Union. Every quack in the State it is said, has "put up" his money to secure the passage of the "osteopathy" bill; while the bill of the Illinois State Medical Society, drawn with care and backed by the most able and respectable practitioners in the State, was strangled in committee.

We once more advise our brethren to take a part in political conventions and primaries, sufficiently active to become known to the lawmakers.

RHEUMATIC PERINEURITIS.

Of the nature of the causative agent of the group of symptoms that we are accustomed to designate acute rheumatism we have as yet little definite knowledge, although it is generally believed that they are dependent upon the presence in the blood of some toxic substance or substances, perhaps lactic acid, perhaps products of bacterial activity. In some cases microorganisms have been found to which specific etiologic qualities have been attributed, but the data of this kind are not yet sufficient to justify a final conclusion in the matter.

It seems probable that so-called acute rheumatism is of multiple etiology or that it occurs in several different forms. In favor of this fact the occurrence of arthritides, with or without pronounced constitutional manifestations and serious complications, in connection with a number of infectious diseases, *e. g.*, syphilis, gonorrhea, scarlatina, smallpox, would seem to constitute weighty evidence.

Whether so-called muscular rheumatism represents an attenuation of the rheumatic intoxication or a distinct affection, must for the present remain an open question. Myalgia may arise from a variety of causes, toxic and otherwise, and the rheumatic poison may naturally be responsible for some cases.

The involvement of the serous membranes other than the articular synovial sacs in a considerable proportion of cases of acute rheumatism must be looked upon as a manifestation of the activity of the primary cause of the disease rather than as a complication of the articular affection. That under the conditions thus briefly pointed out the nervous system sometimes suffers, should occasion no surprise, and it is probable that the cerebral symptoms not rarely observed represent a manifestation of such involvement.

That the peripheral nerves also are sometimes affected, is pointed out in a recent contribution to this subject by STEINER (*Deutsches Archiv für klinische Medizin*, B. 58, H. 2, 3, p. 237), who from a study of a considerable number of cases of acute rheumatism in the Wieden Hospital of Vienna arrives at the conclusion that in this disease the perineurium, like the serous membranes, is often the seat of inflammation, and not as a secondary manifestation from contiguity to an affected joint, but rather as a common effect of the primary cause. This perineuritis may run a course parallel with that of the affected joint or it may be the more conspicuous manifestation. It may attend mild cases, as well as those of severe degree; and it may develop before the joint affection, at its height or during its decline. While age and the general condition appear to be without predisposing influence, females seem to suffer rather more commonly than males. Good therapeutic results may be secured under these conditions by conjoining potassium iodid with sodium salicylate in efficient dosage. Ringing in the ears may be overcome by the use of ergot. If pain be severe the coal-tar analgesics may be administered. The treatment may have to be continued for a long period of time. When the heart is sound hot baths followed by hot packs may render excellent service.

THE MONTREAL MEETING OF THE BRITISH MEDICAL ASSOCIATION.

The Canadian committee of arrangements for this meeting have already manifested an alarm that is grotesque, in supposing an invasion of American physicians would destroy the honor and dignity of this Association meeting.

In their frantic efforts to prevent this they have secured the services of the *Medical Record*, who urges all persons not specially invited to stay away. Then, as if they doubted the personal influence of the *Record*, they send to other journals a circular letter explaining that a few noted persons are to be invited, and that they are quite unable to accommodate the others. The committee evidently have a very limited knowledge of medical gatherings and are following the counsel of still more limited intelligence. The attempt to discourage the attendance of physicians from the United States is both a psychologic and business blunder. The effort to invite a few leading men and thus discriminate outside the members of the Association is unfortunate, unless very discreetly carried out, and confined to men who have clearly won the title of leaders by original work. The assumption that any great number of physicians would be anxious to attend this meeting, because it was the British Medical Association is pure "anglomaniā." The average medical man of the United States is familiar with society gatherings and is not likely to go far

from home among strangers as a mere visitor. Few medical men, comparatively, attend their own medical and national conventions, even when near at home, and it would require something very unusual to attract any large number to Montreal. If the committee had been wisely counseled they would have gone on quietly providing for the members first, then arranged for new members and members by invitation, who could, on the payment of a certain fee, be admitted to all the meetings. This would have brought in a good revenue, and a number of colonial members, materially increasing the power and usefulness of the society. Should the sections become crowded with papers, cut off all discussion and confine the readers to five or ten minutes time for reading. There would be no confusion, no unwieldy crowds, and all who had paid would be entitled to join in the festivities. Those who had not paid could look on as strangers, free and independent. Under any circumstances, not more than two or three hundred persons would have come from the States, and the most of these would have been listeners and sight-seekers.

Of course our Canadian cousins may be a little nervous, and being unfamiliar with such entertainments have some fears of the presence of too many plebeians from the States. The idea of suggesting that only those who are invited should come is childish in the extreme. It assumes that this Association is the great close medical corporation of the world, and that the American physicians are suffering for a chance to be present at the meeting. Also, should they come they would be unable to control them, and these physicians are in manners coarse, lawless and undesirable. There are about thirty members in the States, who are entitled to participate in the meeting, as they belong to the British Medical Association, and certainly less than a third of those will attend, and why the committee should be alarmed at the presence of those who are not members is unexplainable. It is certainly a reflection on the honor and culture of the medical men of the United States to ask them to stay away before any expression of voluntary attendance has been manifested. The zeal of the *Record* is alike offensive in supporting such an absurd position. The British Medical Association, like our ASSOCIATION, should be free and independent, and its management should be capable of controlling any crowd of members and visitors who may come. Every Section should be independent to adapt itself to the conditions of the meeting. The Montreal committee are not making their duties less, nor winning respect from the profession by sending out vaguely worded circulars to keep people away, even from the States. While the profession at large have only general interest in this Association meeting, it seems lamentable that any journals in the States should notice, or even publish any letters conveying

the morbid fears of the committee, which to say the least are implied insults to the honor of the profession. The Montreal meeting should be a most notable event in the medical history of the year, but it should be managed as all other meetings of physicians are, and as it is always managed when it meets in England, that is, on broad scientific and business principles. It should be for the members alone and invited guests and the presence of a crowd of visitors and listeners should never create the slightest apprehension, but rather be considered as a compliment. A wise committee would seek to enlarge the membership from this crowd and not repel them, but impress upon them the value and need of belonging to such an association.

THE INFLUENCE OF HIGH ALTITUDE IN AGGRAVATING SURGICAL SHOCK.

From a consideration of the relation between high altitude and surgical shock WETHERILL (*Annals of Surgery*, April, 1897, p. 430) recommends in the performance of surgical operations, and under conditions of surgical shock generally, the patient should be spared the loss of every drop of blood possible. The importance of this precaution increases greatly as higher elevations are reached and the atmospheric pressure is correspondingly diminished. Anemic and exsanguinated patients are more susceptible to surgical shock at high altitudes than at sea-levels, and must be more carefully prepared for operations; extra precautions against shock must be observed both at the operation and afterward. Increasing shock after injuries or operations must be construed as strong presumptive evidence of continuing hemorrhage. It must be made clear that there is no hemorrhage before the ordinary remedies (cardiac stimulants, transfusion, etc.) are employed. The reflex effect of oozing is to cause a continuation of shock, which must be regarded as conservative in its tendencies while bleeding is still going on. In treating shock after surgical operations or injuries, the first and most important point is to arrest completely all further loss of blood. The depleted vessels should then be supplied by some means with an increased volume of fluid at a high temperature for the heart and blood vessels to contract upon, so that the circulation and the blood-pressure may be speedily reestablished. In abdominal operations this may be effected by leaving a large quantity of hot salt water in the abdominal cavity; or the abdomen may be opened afterward and the fluid introduced, thus securing at once the application of heat to the great abdominal nerve centers, as well as the mechanical pressure and support of a large volume of fluid upon which the abdominal viscera may contract, and thereby restoring to a degree the intra-abdominal pressure, as well as supplying water for absorption into the circulation. The sustained Trendelenburg position is, for obvious reasons,

an important accessory. Diffusible and cardiac stimulants, with heat to the surface, and all other means for the reestablishment of the circulation in its full force and volume, may now be freely employed. Natives and thoroughly acclimated persons are not as susceptible to the greater surgical shock in the higher altitudes as are others; long residence and the gradual compensatory changes in blood pressure, in vaso-motor action and in muscular support of the blood vessels, having adapted them in a great measure to the lighter atmospheric pressure and to the conditions incident to this. Surgical operations upon unacclimated persons from lower altitudes, and those that involve much loss of blood, are fraught with more risk from shock as the altitude is increased, and extra precautions for its prevention are imperative with such patients. This being borne in mind, and proper precautions being observed in the preparation of patients at the time of operation and afterward, as good results may be expected at high as at lower altitudes. In surgical shock at high altitudes every means should be used for the prevention of shock through the nervous system and the resultant blood-stasis, *i. e.*, the surface heat should be preserved, time in operating should be saved, exposure and unnecessary handling of the patient's viscera should be avoided, etc.

A MILITARY PATHOLOGIC PROBLEM.

The editorials in several of our English contemporaries within the past few weeks on the subject of the apparently growing evil of venereal infection in the British army are interesting if not altogether satisfactory reading. It appears that the average number actually *hors du combat*, as one might say, out of the seventy thousand Europeans in the military service in India, from venereal diseases is nearly nine thousand, certainly a very large figure when we consider that it necessarily does not include those still suffering from the later less disabling manifestations of the disorder. An average number of forty-five soldiers to every thousand are constantly in the hospital and this of course only includes the most severe types of the disorder, not those who can still do some duty though possibly still unfit for active field service. The ratio of hospital admissions per year for these affections was, taking the mean for three years, in the British Indian army, 43.8 per thousand. Comparing this with the figures for other European armies the magnitude of the evil is the more manifest—the comparative statistics for Germany being 27.3, Russia 43, France 43.8 each per thousand. In some Indian cantonments it would seem the annual hospital admissions for this cause exceeded in number the whole strength of the garrison, in Cawnpore, for example, with a force of 902 the hospital admissions were 967 in 1895. There appears to be no doubt but that there has been a very pronounced increase within the last year or

two; in 1895 especially when venereal disease attacked the British army to an altogether unprecedented extent. It is naively said in the report of the Departmental Committee appointed to consider the question of this prevalence, that this state of affairs does not appear to be attributable to increased immorality in the army, for drunkenness and crime have decreased and the soldier is more than ever surrounded by social and educational civilizing influences. The opinion of our British confrères appears to be that the remedy for this deplorable state of affairs is in the reënactment of the contagious diseases acts as applied to these disorders. Under former conditions the enforcement of these was, if one is not mistaken, accompanied by some rather objectionable features, such as the *quasi* enlistment of native women as recognized camp or barrack prostitutes, and a possibly harsh and indiscriminating system of personal inspection. It is unreasonable, however, that the reaction against measures that thus outraged public conscience should go so far as to disable the army authorities from exercising in a humane and decent way some sanitary jurisdiction in this particular direction. Simply placing venereal diseases in the same category as other infectious diseases, and requiring their reporting and if needed their isolation whenever their active existence becomes known to the authorities, and this would be a legitimate sanitary regulation, ought to go far to diminish the evil, and if properly carried out it need offend no one's moral or esthetic sensibilities. That this is not done seems a little remarkable, considering these facts.

There is another point of view from which the subject can be considered, and that is the real national peril from the present condition of affairs. According to a report made to the Royal College of Physicians, out of some thirteen thousand soldiers returning from India in 1894 over 60 per cent. were infected, many of them with the most virulent type of syphilis. The average number of hospital admissions in the British home forces, 203.7 per thousand, is over four times that of the continental European armies, and this difference is probably largely due to the influence of the Indian service. The large number of short-service men returning to civil life must be a serious peril to the community and the continuous existence of so badly infected a body of young and reckless men, though presumably under discipline that should be capable of exercising some restraint upon their spreading their diseases, is a source of constant danger. With such facts known, moreover, the soldier is degraded in the public estimation and the *morale* of the army must be affected to some extent together with its morals. ORTHERIS and MULVANEY are picturesque in fiction, but their attractiveness is marred if we consider them in the light of these revelations.

In this country we have but a small standing army and even were its condition as bad as is that of the British force, which is not the case, the matter would be less serious. But the time may come when we will be compelled to occupy and garrison outlying and tropical territories and have large detachments constantly in service in such regions. Then it will be well if our military sanitarians take a lesson from the experience of those of Great Britain and avoid their mistakes and their misfortunes. In the present showing by the English medical publications, the condition of the British army is reminiscent of the military experiences of the sixteenth century—the history of the siege of Naples and an incident of that of Madrid, as given by D'ISRAELI in his "Curiosities of Literature." War in all its aspects is an evil even when it is a necessary one, and it is attended with many other evils, some of which like the one here discussed, ought to be more or less avoidable. While the demoralizing influences in time of peace of army life should be reduced to a minimum by every possible means, it is due to the community in general that every reasonable measure should be taken to make the soldier and the ex-soldier less formidable in a pathologic point of view.

THE PHILADELPHIA MEETING.

It is hardly necessary to remind our readers of the unusual interest which will center in the coming meeting at Philadelphia. Already the arrangements are so far completed as to indicate, not only an unusual number of excellent papers, but a large attendance of leading physicians from all parts of the country. The sneering criticism of a few dyspeptics, and the far-off cries of those who have fallen back in the march, are still heard. The committee of arrangements have gone on quietly arranging for at least five thousand persons including visitors and sight-seekers and all their aunts, uncles and cousins. While the meeting is exclusively for members and invited guests, there is no alarm or morbid fears of being overwhelmed with the crowds. No letters are written to medical editors for publication, advising medical men to stay away, as not welcome. On the contrary, every effort is made to induce physicians and their families from all parts of the country to come and enjoy the occasion. Even the belated no-code men of New York, and the deserters and the frantic critics, and all prodigals from their father's house are urged and most cordially invited to come back and help us celebrate this coming half century of our existence. It should be a pleasure as well as a duty to come out and hear what the leaders and the great army of the profession are thinking and writing about. Every physician has a personal interest in the many new questions of medicine which are coming up with greater frequency every year. He can not understand these topics from the printed page, he must hear them from

the authors and teachers personally. He must see the men and have their voices to catch the inspiration of the themes. The colleges and teachers of Philadelphia have opened their doors for clinical lectures for a week or more before and after the meeting, to enable all who would like to become familiar with Philadelphia methods of treatment in the clinics and hospitals. This will give every medical man some practical returns for his time, and make the occasion a most memorable one. Every member of the ASSOCIATION should take pains to invite his medical neighbors to attend this meeting, and become members of the ASSOCIATION, and every member should rejoice at the opportunity to break away from every day life, and mingle with others who have similar interests and tastes with himself. There are no more important and enjoyable occasions in the professional lives of the medical man than these National gatherings.

Questions of codes and of management, and efforts to win its honors, are all healthy signs of progress and movement, and give the scientific side of the meetings caste and clearness not to be found in dull mutual admiration societies of local growth. The annual meetings are becoming more and more important scientifically every year. Many of the best and most advanced studies of modern medicine are presented in the papers read. This is amply confirmed by any examination of the pages of the JOURNAL for the past year. That this is true is still further confirmed by the fact of the increasing frequency of quotation from this JOURNAL by foreign authors and medical journals. The oft-repeated comments by smart medical journals, that the meetings were not up to the average in the quality and vigor of papers, are very often signally disproved by the frequent republications of its papers, and generous quotations by authors and medical works. The authors of papers should remember that the JOURNAL has won a place among the great publications of the world, and its readers are not confined to this country alone, but every section of the globe where medical science is studied, is reached by its weekly issues. Hence, authors should be more careful in the construction and style of their studies and conclusions. Often the excellence of a paper is marred by obscurity of style and expression, and the necessity of being clear and concise is apparent to all readers. The JOURNAL should have better prepared papers than ever before. Its representative character clearly requires it, and every writer should feel that this part of his paper should have the same careful attention and study that is given to the thought conveyed. A glance at the advanced publication of the program in the JOURNAL, giving the titles of the papers to be read, is sufficient to show the character of the coming meeting. The Section dinner is a new feature which will bring increasing interest to each one in a closer acquaint-

ance with others of the same special line of work. In this way one of the strongest means of sustaining scientific work is used and the narrowness and personality is widened, and workers along the same lines are able to better use and judge of the work of others. The more closely the members are brought together, the less friction and antagonism will exist. Philadelphia is an ideal city to meet in, its quiet atmosphere and great hospitals and colleges, and strong leading medical men, make it a very desirable place to visit. The committee of arrangements will have all the business details so complete that each one can enjoy all the meetings, general and sectional, without any confusion or crowding. Again we urge every one to come and show their interest in American medicine, and in the great evolutionary movement upward to higher and wider conceptions of science and its relations to every-day life.

THE PASSING OF KERR.

The medical profession of Chicago congratulate themselves that at last the layman who drew a salary of five thousand dollars a year, for attending the office occasionally and signing his name as Health Commissioner to documents drawn by Dr. REILLY, has been relegated to the purlieus of his ward, and that Dr. ARTHUR R. REYNOLDS has been reappointed to the same office from which KERR unjustly ousted him.

Many do not admire the general outcome of the city election, but this feature of it is as welcome as the flowers of Spring.

THE JOURNAL SPECIAL TRAIN.

Medical gentlemen from Illinois and vicinity, the Pacific Coast and the Northwest, who intend to be present at the great jubilee meeting of the ASSOCIATION, are invited to go by the JOURNAL SPECIAL, which will go by the Pennsylvania Railway without change from Chicago to Philadelphia. See their advertisement in another column.

CORRESPONDENCE.

A Basis for Medical Statistics.

CHICAGO, ILL., April 24, 1897.

To the Editor:--German medical papers have recently published a number of articles on puerperal morbidity based on statistics of hospitals in Berlin, Dresden, Marburg and other cities. The value of these statistics is much lessened by the knowledge that the investigators had not worked on similar lines or according to uniform methods. Some quoted rectal temperatures; others used the axilla. There was not a complete agreement as to the physiologic limit of temperature, though most of the investigators properly considered any rise above 38 degrees C. as pathologic. It was further noticed that considerable variation in the percentage of puerperal fevers occurred in the tables based on the readings of the thermometer by nurses and on those by the physician. Koblanck of Berlin, took the axillary temperature of patients during the last seven months of the period of eight years for which his

table was compiled. He got 27 per cent. of puerperal fevers, while during the preceding years the percentage was 10.

If such defects occur in hospital work, how much worse must the case be in general practice and in municipal statistics! Indeed it is practically impossible to compare the statistics of different cities because there is no uniform classification of diseases used by the health authorities of those cities. Even in the annual reports of a single city, one will frequently find much contradiction between the tables published. This shows that even in a single health office there may be an absence of clear and definite ideas as to classification. In this connection it may be mentioned that Dr. Heckard, the registrar of the Chicago Health department, has already set on foot a movement to bring about uniformity in classification of diseases in all the large American cities.

I would suggest that the AMERICAN MEDICAL ASSOCIATION should at its coming meeting appoint a Committee on Statistics, the duty of which should be to outline a basis for the compilation of reliable medical statistics. It should not only coöperate with Dr. Heckard's efforts in the field of municipal statistics but should endeavor to bring about harmony and thoroughness of statistical work in the wider domain of medical science.

The following scheme might be followed:

1. Municipal statistics of vitality, morbidity and mortality.
 - a. Agreement as to classification of diseases.
 - b. Reports of birth, diseases and deaths; compulsory by penalties; paid for by fees (as in Massachusetts and New York); or resulting from the education of a sense of civic duty among the public and the medical profession.
2. Hospital statistics, in which the German reports mentioned above show that there is ample room for improvement.
3. Private statistics. Uncertainty of diagnosis is the chief cause detracting from the value of statistics derived from private practice. Hence they should be divided into two large groups:

- a. Verified, either by postmortem examination or by scientific investigation (microscopic or bacteriologic).
- b. Non-verified, which represents what are now commonly called "medical statistics," being tables of judgments based on mere clinical grounds or often on simple guesses.

In all compilations, the class of verified diagnoses should be kept widely distinct from the class of non-verified cases.

A committee working on these or similar lines could formulate rules which would guide the profession to make clear and useful reports about cases; it would be a center point to which suggestions on this subject could be sent; and it would eventually, I believe, bring order into a field which is now mere chaos.

DAVID JESSUP DOHERTY, M.D.

The Eyes and School Work.

CARLINVILLE, ILL., April 24, 1897.

To the Editor:—When my friend and classmate, Dr. A. C. Simonton of San Jose, Cal., in his reference to the character of the paper the JOURNAL should be printed on said, "we as sanitarians and hygienists ought to practice what we preach," I am inclined to offer the following, which was issued by me by request, as a leaflet to the school teachers in my vicinity in reply to a newspaper query, as my contribution as a member of the Section on Ophthalmology, to which you refer the matter. While it deals with the character of the paper the JOURNAL should be printed on, it does also with much other matter germane; as to the mere tint of the paper, the Doctor is theoretically correct. Yet I think my preference is largely an idiosyncrasy or personal equation: I would prefer blue. White is best for all. "With your permission I will answer your queries of last week: Why should so many school children wear glasses? Is it because of bad light, or bad atmosphere, or bad print in text books, or inherited weakness, or is the race becoming

blind?" To which I will add, or is it an increasing demand made on the children for eye work, and a knowledge that relief from its pains may be enjoyed by their assistance?

"I think the queries very pertinent, and I am satisfied many children, teachers and parents will compliment you for asking the questions. Bad or imperfect light requires an increase of the visual effort and contributes to eye tire, worry and exhaustion, for in all eyes vision at the near or reading point is a voluntary muscular effort. With bad light and small print, and fine lines in geography and other branches of study, the objects to be seen distinctly must be looked at longer. The length of time of steady fixation necessary, causes fatigue of muscles, nerve and retina, in which the object seems to change its color and fade. Therefore, the light of school rooms should be as perfect daylight as the confining walls will permit, and admitted so the pupils may have the greatest advantage over its imperfections.

"The print of the school books ought to be like this, at least as large as No. 10 Pica, or 12 English—black and well leaded, so the lines are twice the length of the short letters apart, and the letters should be a little wider apart than the width of the bar of the letters, to be read with ease 12 or 15 inches. The paper should be smooth but not glossy.

"Will publishers of journals, newspapers and magazines please take heed.

"The blackboards ought to be a clean black, not gray with chalk, and all work put on them should be so large that the area of each letter will cover at least the square of an angle of five minutes and the area of a square of the bar of the letter, at least a square of the angle of one minute for the distance of the scholar who is to view it. For the distance of one hundred feet the greater area is about two inches square—four square inches—and the lesser area three-eighths of an inch square; for seventy feet, $1\frac{1}{4}$ and $\frac{1}{4}$; fifty feet, 1 and $3\text{-}16$; forty, $\frac{3}{4}$ and $\frac{1}{8}$; thirty, $9\text{-}16$, and $1\text{-}10$; twenty, $6\text{-}16$, and $1\text{-}16$. Divide the square of the greater angle into twenty-five equal squares and you will have the relative size of the two. The spaces between the bars and letters should also be equal to the lesser, or one-fifth the greater area.

"Bad atmosphere, want of ventilation, is enervating and impairs muscular tonicity, so necessary to keep up eye tension for acute visual purposes. But with all possible care on these points many eyes will be sacrificed by the increasing demands on children of today for mere literary attainments.

"The eye work required of children now is double if not treble what it was twenty or thirty years ago, and the clamor of all is yet for a higher grade at a tender age.

"In the class of what you would call inherited weakness we find our earliest wrecks.

"There are three different conditions of the refractive apparatus of the eye that constitute this class of weakness. I refer to the conditions of myopia, hyperopia and astigmatism. These three errors of the refractive apparatus of eyes are susceptible of many different degrees and varieties of combination, and when either exists it places the eye at a corresponding disadvantage, and precipitates sooner or later a failure of clear and comfortable vision. When the error is corrected it restores clear and comfortable vision and places the eye again at an advantage.

"Now, when amid the conditions of bad light, bad air, bad print on glossy paper, and overwork, we find a child pained with headache, red eyes, eye ache, nervous, and can not fulfill

the requirements of school with comfort, we search for an error of refraction, which if found, is corrected, if need be, with glasses. Again, the fact that very many children and adults have a greater or less amount of some one or more of these errors, and when rendered uncomfortable by it the knowledge that comfort and its privileges can be enjoyed by its correction with a pair of specially arranged glasses, it need not be wondered that many will wear them." A. C. CORR, M.D.

The Osteopathy Bill.

(COPY)

CHICAGO, April 26, 1897.

DEAR SENATOR GRANGER:—I have looked over the Osteopathy Bill, as introduced by you, and do not know what arguments were brought to bear upon you to father it, but the Bill is one which will be very unjust to the medical profession in this State, if allowed to pass; besides, it would make the State the dumping ground for quacks.

Personally, I would be very pleased to hear that you will quietly pocket the bill, or do something to stop its passage.

I am faithfully yours,

Senator Flavel K. Granger, JOHN B. HAMILTON, M.D.
Illinois Senate, Springfield, Ill.

ILLINOIS STATE SENATE,

SPRINGFIELD, April 27, 1897.

JOHN B. HAMILTON, M.D., Chicago:—Yours of 26 inst., was received by this morning's mail. My bill exempting graduates of schools of osteopathy from the requirements of the medical act, was passed by the Senate without opposition. The amended bill to the present act, perfected by the medical schools of the State, now lies in committee, without any friends to support it. So I conclude my bill is in touch with the public demand, and further medical restrictions are not looked upon favorably. Hoping your fears as to being overrun with quacks may not be realized, I am

Yours very truly, F. K. GRANGER.

Railroad Rates.

HYANNIS, MASS., April 17, 1897.

To the Editor:—Please state in the next issue of the JOURNAL for the benefit of the members residing east of the Mississippi, and especially in New York State and in the New England States, which railways in those sections have granted members and their families, who intend to attend the "grand jubilee meeting" of the Association, reduced rates and what procedure is necessary to obtain such privilege?

Very truly yours, ALBERT PICK.

ANSWER: We understand that all railways in the United States have agreed to a rate of one and one-third fare for the round trip.

PUBLIC HEALTH.

Preventive Inoculations of Bubonic Plague.—Only 4 of the 2,000 persons inoculated by Haffkine to March 4, have been attacked by the disease, according to a statement in the *Semaine Méd.*, March 24.

A Few Cases of Smallpox.—Twenty cases in all have occurred in New York City since March 1, nine of which have been removed from Randall's Island Asylum and schools. The first cases seem to have had no history.

The School as a Focus of Contagion.—The last report of the school inspectors in New York City report that out of 3,913 children examined, 258 were excluded. There were found besides seven cases of measles, five of diphtheria, one of scarlet fever, thirty-one contagious eye diseases, and 169 parasitic diseases of the head, while mumps, whooping-cough and

chicken-pox contributed in a minor degree to the sum total of the disqualifications for attendance.

Inoculations with Rinderpest.—Professor Koch, who has been studying the rinderpest in South Africa, announces that the results obtained with serum inoculations confer immunity to such an extent that he is convinced that thousands of cattle can be saved every day by their means. He has inaugurated a course at Kimberley, Cape Colony, to instruct others in his methods.

The Bubonic Plague in Bombay.—The latest advices bring the cheerful intelligence that the plague is abating in virulence, and that the refugees are beginning to return to the Presidency. Thus far, however, the mortality has not declined below 50 per cent. Haffkine's serum claims better results than that of Versin's, at least so says a telegram to the London *Lancet*.

A Death from Yellow Fever in New York Harbor.—A young naturalist died from yellow fever in the Swinburne Island Hospital April 22. He was a passenger by the Columbian Line steamer *Finance* from Colon, and belonged to a party of naturalists sent out by the Frank Blake Webster Company, of Hyde Park, Mass. They stranded in Central America and he was compelled to dispose of part of his effects at Panama in order to pay his passage home. Yellow fever having been reported at Colon, Dr. Doty, as a precaution decided to remove the sick man to the hospital. After the room on board the steamer had been disinfected she was allowed to go to her pier. The corpse remained on the island.

The Milk Typhoid Epidemic at Kirkcaldy, Scotland.—In the report bearing on the late typhoid epidemic at that place, recently submitted by Sir Henry Littlejohn of Edinburgh, he states that in this epidemic just brought to a close there were 193 cases, with a mortality of 20, or 10.4 per cent. The origin of the outbreak was, in his opinion, clearly traced to a dairy. The Kirkcaldy town council have awarded to Dr. Mackay, medical officer of health, and Dr. Curror, 100 pounds each, and Mr. Braid, sanitary inspector, 50 pounds, for the services rendered by them during the epidemic. Sir Henry Littlejohn, in his report, highly praises the ability and energy displayed by Dr. Mackay in coping with the epidemic.—*British Medical Journal*.

Inspection of American Meat Supply to Great Britain.—Dr. P. H. Bryce, Secretary of the Ontario Board of Health, has issued a pamphlet regarding the meat supply that is exported to Great Britain. The importance of full information on this subject is apparent when it is stated that during nine months in 1896, England received 436,223 cattle, of which the United States sent 308,159, and Canada 71,670; while the bacon from the United States during the same nine months amounted to 207,000,000 pounds. In 1896 the legislature of Ontario passed "An Act for the Inspection of Meat and Milk Supplies in Cities and Towns," empowering municipal councils to establish public slaughter houses and authorizing local boards of health to take measures for ascertaining the purity of public milk supplies and the general health of the cows: local boards are further authorized to provide for the testing of every such cow with tuberculin by a veterinary surgeon. Councils or boards availing themselves of the powers conferred by the act are required by it to conform to the regulations in that behalf from time to time adopted by the provincial board of health, and, with a view to encouraging the introduction of meat and milk inspection, the provincial board has now published a description of a slaughter house suitable for a town population of 5,000 persons, together with a plan, an elevation and an estimate of cost. In the testing of cows with tuberculin "a 10 per cent. solution of normal tuberculin is to be injected to the amount of from one to four cubic centimeters according to age of animal. . . . The temperature must thereafter be taken regularly every three hours for a period of

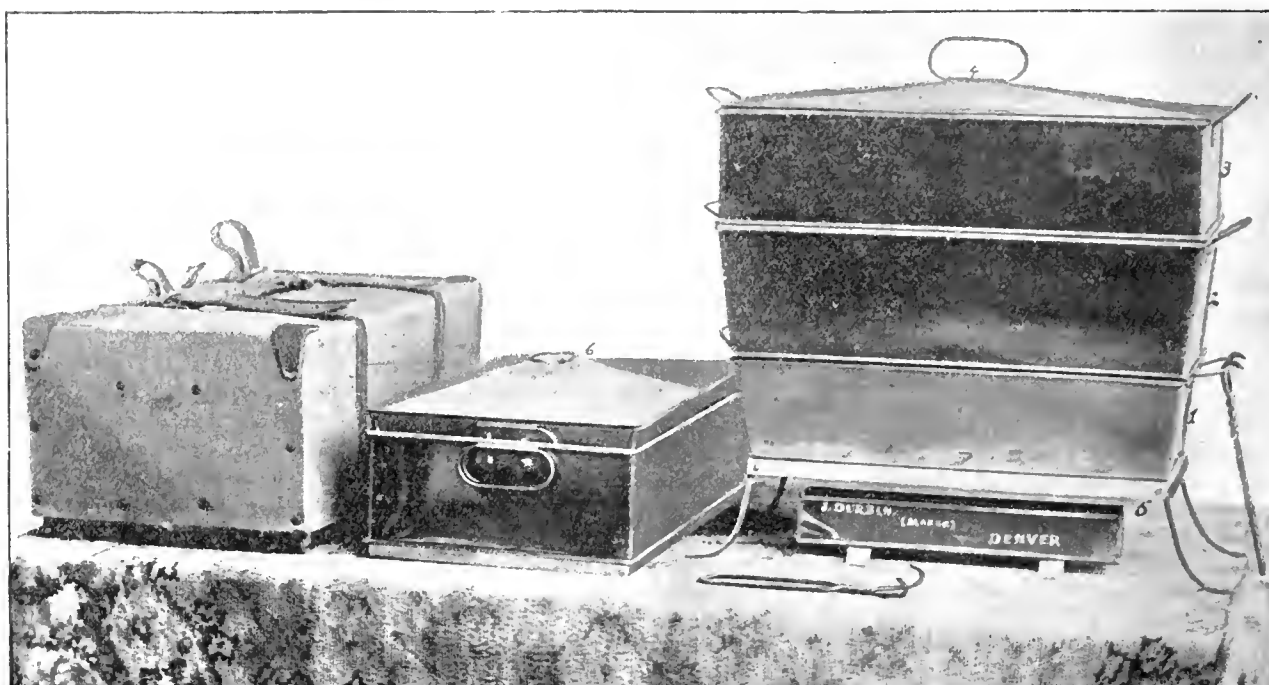
from twelve to fifteen hours. . . . Any notable rise of temperature indicates the existence of tuberculosis." Cows that give the tuberculin reaction, if they are wasting and show clinical signs of lung disease, shall be destroyed and the carcasses safely disposed of; but if they are in fair condition, they may be either fattened as speedily as possible for slaughter, or their milk, after boiling for half an hour, may be given to pigs or calves. The pamphlet concludes with a description of the inspection of meat at Buffalo. Returning to the inspection of cattle intended for the wholesale trade or export, they are inspected individually, and if found healthy to outward appearance they have a metal tag punched into the ear bearing a number of a continuous series, and a detailed statement of the numbers in any given lot is daily made and forwarded to the central bureau at Washington; also a note of any animals condemned, stating cause. These animals tagged as inspected are admitted to interstate trade, but if for export, are again inspected before going on board ship. So complete is the system of registration that, as an inspector in the Deptford market, London, stated to a Canadian friend, "The Americans are quite surpassing you Canadians, for we can trace any animal found diseased by that tag back to the very farm it may have come from in the Western States. We are getting afraid of

For practical sterilization this instrument has given perfect satisfaction; it is light, portable in small space, yet when fully extended, ample for all instruments, dressings, towels, operating coats, etc., one needs in ordinary operative work.

The instruments are boiled in a soda solution (1 per cent.) in the lower pan, the steam rising through the perforated bottom of the second pan to sterilize the dressings which have been placed in it. The top section has no bottom, being simply a collar for increasing the size of the steam chamber when much space is needed, and may be left off if desired, as the cover fits either section.

There is no difficulty in bringing the instruments to the required degree of heat, nor in sustaining for any required time the temperature of boiling water in the steam chamber.

The lamp is an open one for the combustion of alcohol, its flame will boil three pints of water in the instrument pan in four minutes. A plate, waiter, or instrument tray with a little water in it should be placed under the stand and lamp for the lamp to rest in; this is to prevent the burning of the table by



1, instrument pan. 2, steam chamber for dressings, etc.; bottom perforated. 3, section for increasing size of steam chamber; has no bottom. 4, lid for steam chamber; fits 2 or 3. 5, lamp and stand. 6, sterilizer "nested" for packing in carrier. 7, carrier; ample room for sterilizer and many other instruments.

your Canadian cattle." The quarantined animals at the yards are further examined, and if proved diseased on killing are all *tanked*, as the expression is. This work is being extended to the investigation and stamping out of tuberculosis and actinomycosis by inspection of herds. The latter must necessarily be largely carried out by State authorities.

NEW INSTRUMENTS.

AN IMPROVED PORTABLE STERILIZER FOR SURGICAL INSTRUMENTS AND DRESSINGS.

HORACE G. WETHERILL, M.D.
PROFESSOR GYNECOLOGY, UNIVERSITY OF DENVER, DENVER, COLO.

In the *University Medical Magazine* for August, 1896, I described "A Compact Portable Sterilizer for Surgical Instruments and Dressings." The use of this sterilizer for some months has led to alterations and improvements which make it much more satisfactory than the original instrument. The illustration shows its present form when set up for use, as well as when ready for packing.

the reflected heat of the lamp, and the occurrence of fire from the boiling over of the alcohol in the lamp if by any oversight it has been overfilled. A light folding frame is provided for the sterilizer to rest upon when the lamp is used; of course when other sources of heat are at hand, it and the lamp may be dispensed with.

The whole instrument knocks down in very small space for carrying about, and readily goes into an ordinary dress suit case, or a telescope bag 15 by 9 inches, 6 inches high, leaving plenty of room in the sterilizer, as well as in the bag about the sterilizer, for other articles.

As none of the joints of this sterilizer are dependent upon solder, it will endure any degree of heat short of that which will fuse the copper of which it is made; and if the heat is so regulated as to avoid scorching the dressings, the steam chamber may be taken off the water pan, and used as an oven, so drying and doubly sterilizing its contents.

The best features of this instrument as now designed are, its light weight, its knocking down into very small space for carrying about, its great capacity and efficiency, its simplicity, and best of all its small cost, as compared with other sterilizers.

ASSOCIATION NEWS.

Section on Practice of Medicine.—Program :

TUESDAY, JUNE 1ST.—AFTERNOON SESSION.

1. Address of Chairman. The Treatment of Dilatation of the Heart. John H. Musser, Philadelphia, Pa.
2. The "Schott Treatment" of Cardiac Disease. W. B. Camac, Baltimore, Md.
3. The Prognosis and Therapeutic Indications in Heart Disease. D. L. Rochester, Buffalo, N. Y.
4. A case of Anasarca with Apparent Chronic Nephritis and Dilated Heart, with recovery. F. Billings, Chicago, Ill.
5. Reduplication of Heart Sounds (by invitation). C. F. Hoover, Cleveland, Ohio.
6. The Use of Digitalin, with Reference to Dose. Henry Beates, Philadelphia, Pa.
7. True Angina Pectoris. T. L. Maddin, Nashville, Tenn.
8. The Prognosis and Therapy of Heart Disease in Childhood. Henry Koplik, New York, N. Y. Discussion opened by F. A. Packard, Philadelphia, Pa.
9. Report of a case of Chronic Recurrent Endocarditis; Mitral Insufficiency; Enlarged Liver; General Edema and Ascites; Returning Compensation. H. W. McLauthlin, Denver, Colo.
10. Gonorrheal Endocarditis. W. F. McNutt, San Francisco, Cal. Discussion to be opened by W. S. Thayer, Baltimore, Md.
11. Two Cases of Abdominal Aneurysm. James C. Wilson, Philadelphia, Pa.
12. Tracheal Tugging. Harry Toulmin, Philadelphia, Pa.
13. The Relation of Digestive Disturbances to Cardiac Disease. H. W. Rogers, Cleveland, Ohio.
14. The Relationship of Organic Disease of the Heart to Pulmonary Tuberculosis. G. W. Webster, Chicago.
15. The Diagnosis of Pericardial Effusion. A. O. J. Kelly, Philadelphia, Pa.
16. Hydrotherapeutics. S. C. James, Kansas City, Mo.
17. Internal Medicine a Specialty in Itself, and its Relation to the Recognized Specialties, Particularly to Bacteriology. G. B. Harrison, Washington, D. C.
18. The Physical Treatment of Chronic Cardiac Disease (in so-called Schott Method). H. N. Heineman, New York, N. Y. Dinner of the Section at the Aldine Hotel at 7 P.M.

WEDNESDAY, JUNE 2D—MORNING SESSION.

19. Discussion on Sero-diagnosis in Typhoid Fever: *a*, Principles Underlying Sero-diagnosis, William H. Welch, Baltimore, Md.; *b*, Sero-diagnosis, Wyatt Johnston, Montreal, Canada; *c*, Clinical Report on Sero-diagnosis, R. C. Cabot, Boston, Mass.; *d*, Clinical Report on Sero-diagnosis, W. H. Bloch, Baltimore, Md.; *e*, The Serum Test for the Diagnosis of Typhoid Fever, H. M. Biggs, New York, N. Y.; *f*, Clinical Report on Sero-diagnosis, S. S. Kneass, Philadelphia, Pa.; *g*, Clinical Report on Sero-diagnosis, J. H. Musser and John M. Swan, Philadelphia, Pa.
20. Elsner Method of Diagnosis in Typhoid Fever, Mark W. Richardson, Boston, Mass.
21. Observations on Two Examples of Typhoid Meningeal Infection (by invitation). A. P. Ohlmacher, Cleveland, Ohio.
22. Relapses in Typhoid Fever. Wm. Osler, Baltimore, Md.
23. Differential Diagnosis of the Continued Fevers. J. A. Witherspoon, Nashville, Tenn.
24. Diet in Typhoid Fever. F. C. Shattuck, Boston, Mass.
25. Statistics in Hemorrhagic Typhoid Fever. R. G. Curtin, Philadelphia, Pa.
26. Perichondritis of the Larynx in Typhoid Fever, with Specimens and Photographs: Photographs of Intra-uterine Amputation and one of Elephantiasis. M. H. Fussell, Philadelphia, Pa.
27. Typhoid Fever. J. E. Woodbridge, Cleveland, Ohio.
28. The Rational Antiseptic Treatment of Typhoid Fever. H. O. West, Galveston, Texas.
29. The Treatment of Typhoid Fever. J. N. Upshur, Richmond, Va.
30. One Hundred Cases of Typhoid Fever. H. G. McCormick, Williamsport, Pa.
31. A Plea for Intestinal Antisepsis in the Treatment of Typhoid Fever in Conjunction with the Brand and other Methods of Treatment. Joseph Leidy, Philadelphia, Pa.

WEDNESDAY, JUNE 2D—AFTERNOON SESSION.

32. The Diagnosis of Leprosy. James C. Wilson, Philadelphia, Pa.
33. Hydrophobia. C. W. Dulles, Philadelphia, Pa.
34. The Clinical Symptoms, Bacteriologic Findings and Post-

mortem Appearances in cases of Infection of Human Beings with the Bacillus Pyocyaneus. L. Barker, Baltimore, Md.

35. Some Observations on Grippe. J. Sharp, Kansas City, Mo.
36. Trichinosis and the Trichina Spiralis. F. A. Packard, Philadelphia, Pa.
37. Notes on an Epidemic of Cerebro-spinal Meningitis. H. A. Moody, Mobile, Ala. Discussion to be opened by Simon Flexner, Baltimore, Md.
38. The Diagnosis and Prophylaxis of Scarlet Fever. E. Foster, Augusta, Ga.
39. Myxedema, with Report of Two Cases. J. M. Anders, Philadelphia, Pa.
40. Report of a Case of Raynaud's Disease. G. A. Fackler, Cincinnati, Ohio.
41. The Treatment of Exophthalmic Goitre and other Vasomotor Ataxias with Preparations of the Thymus Gland and of the Adrenals. Solomon Solis Cohen, Philadelphia, Pa.
42. Light Headaches. J. K. Mitchell, Philadelphia, Pa.
43. A Reliable and Harmless Way to Diminish and Cure Over-fatness. W. T. Cathell, Baltimore, Md.
44. The Importance of the Habit of Prognosis to the Development of the Individual Physician. Louis F. Bishop, New York, N. Y.
45. Plasmodium of Malaria, Illustrated by Lantern Slides. Judson Daland, Philadelphia, Pa.

THURSDAY, JUNE 3D—MORNING SESSION.

46. Some of the Clinical Uses of the X-Rays in Medicine. P. H. Williams, Boston, Mass.
47. The Application of the Roentgen Rays to Medical Diagnosis. C. L. Leonard, Philadelphia, Pa.
48. Miliary Tuberculosis. J. T. Whittaker, Cincinnati, Ohio.
49. Tuberculosis Antitoxin. Prof. E. A. de Schweinitz, Bio-Chemical Laboratory, Department of Agriculture, U. S.
50. Anti-tuberculin. J. McFarland, Philadelphia, Pa.
51. A Report on Treatment of Tuberculosis. D. L. Rochester, Buffalo, N. Y. Discussion to be opened by S. Solis-Cohn, Philadelphia, Pa.
52. Oxytuberculin in Tuberculosis. J. O. Hirschfelder, San Francisco, Cal.
53. A Further Report on the Treatment of Tuberculosis by Iodoform Inunctions (by invitation). L. F. Flick, Philadelphia, Pa.
54. Curability of Pulmonary Tuberculosis. E. B. Borland, Pittsburg, Pa.
55. Title not given. Paul Paquin, St. Louis, Mo.
56. Some Deformities of the Chest in the Light of its Ancestry and Development. Woods Hutchinson, Buffalo, N. Y.
57. A Study of Certain Physical Signs of Disease of the Chest. J. N. Hall, Denver, Colo.
58. Pneumonia; its Etiology, Pathology and Inferential Treatment. A. A. Young, Newark, N. Y.
59. Management and Treatment of Malignant Types of Croupous Pneumonia. D. S. Campbell, Detroit, Mich.
60. The Hot Bath in the Treatment of Pneumonia. J. Eichberg, Cincinnati, Ohio. Discussion to be opened by J. P. C. Griffith, Philadelphia, Pa.
61. Cheyne-Stokes Respiration. N. S. Davis, Jr., Chicago.
62. Multiple Neuritis in Influenza. H. B. Allyn, Philadelphia, Pa.

THURSDAY, JUNE 3D—AFTERNOON SESSION.

Meeting at Houston Hall, University of Pennsylvania, 34th and Spruce Streets.

63. Discussion of Anemia, its Causes, Pathology and Treatment. *a*, The Nature and Varieties of Anemia, Alfred Stengel, Philadelphia, Pa.; *b*, The Relation of Infection to Anemia, A. C. Abbott, Philadelphia, Pa.; *c*, The Alterations in the Blood and Methods of Determination, A. E. Taylor, Philadelphia, Pa.; *d*, The Salivary and Gastric Functions, S. M. Hamill and D. L. Edsall, Philadelphia, Pa.; *e*, The Nervous System in Anemia, Joseph Sailer, Philadelphia, Pa.; *f*, The Spinal Cord in Pernicious Anemia, C. W. Burr, Philadelphia, Pa.; *g*, Disorders of the Organs of Special Sense in Anemia, Wm. Campbell Posey, Philadelphia, Pa.; *h*, The Treatment of Anemia, William Pepper, Philadelphia, Pa.; *i*, The Hydratic Treatment of Anemia, Simon Baruch, New York, N. Y.
- Discussion continued by W. S. Thayer, Baltimore, Md.; R. C. Cabot, Boston, Mass.; J. S. Herrick, Chicago, Ill.
64. A Consideration of the Pathology of Unusual Forms of Hodgkin's Disease (Lymphosarcomatosis). Simon Flexner, Baltimore, Md.
65. Leukemia. F. W. Thomas, Marion, Ohio.
66. A Case of Acute Lymphatic Leukemia with Streptococcus Infection. J. B. Herrick, Chicago, Ill.

67. Lymphatic Leukemia, with Report of a Case. T. G. Ashton and A. H. Stewart, Philadelphia, Pa.

FRIDAY, JUNE 4TH—MORNING SESSION.

68. Discussion on Gout. To be opened by Woods Richardson, Buffalo, N. Y. *a*, The Gastro-intestinal and Hepatic Relations and Manifestations of Gout, Charles Stockton, Buffalo, N. Y.; *b*, The Cardio-Vascular and Renal Relations and Manifestations of Gout, N. S. Davis, Jr., Chicago, Ill.; *c*, The Nasopharyngeal and Pulmonary Manifestations of Gout, Harrison Allen, Philadelphia, Pa.; *d*, The Nervous System in Gout, Charles K. Mills, Philadelphia, Pa.; *e*, Special Senses, Charles A. Oliver, Philadelphia, Pa.; *f*, The Relation of the Alloxur Bodies to Gout, or a Uric Acid Diathesis, with Demonstration, T. B. Fletcher, Baltimore, Md.; *g*, The Relation of Uric Acid to Neurasthenia, F. S. Pearce, Philadelphia, Pa.; *h*, The Cutaneous Manifestations of Gout, John V. Shoemaker, Philadelphia, Pa.; *i*, The Treatment of Gout, H. C. Wood, Philadelphia, Pa.

Discussion continued by J. I. Whittaker, Cincinnati, Ohio; J. B. Marvin, Louisville, Ky.; William Osler, Baltimore, Md.; Wm. E. Hughes, Philadelphia, Pa.

69. Some Remarks upon the Uric Acid Diathesis and its Treatment. Charles F. Craig, Danbury, Conn.

70. Rheumatoid Arthritis. David Riesman, Philadelphia, Pa.

71. A Further Report on Tachycardia (Dilatation of the Stomach). Max Einhorn, New York, N. Y.

72. On the Local Treatment of Diseases of the Stomach, with Special Reference to the Employment of Silver, Alumol, Ichthyol and Bismuth; Description of Newer Apparatus for the use of the same. D. D. Stewart, Philadelphia, Pa.

73. A Remarkable Case of Gastrocnemius, with Symptoms Simulating Hepatic Colic. D. D. Stewart, Philadelphia, Pa.

74. As to the Utility of a Knowledge of the Percentage of Hydrochloric Acid in the Stomach Contents, and the Practical Value of Certain Commonly Employed Methods for its Estimation. D. D. Stewart and Henry Leffmann, Philadelphia, Pa.

75. Gastroptosis. Charles D. Aaron, Detroit, Mich.

76. Relation of Fat Necrosis and the Pancreas. H. U. Williams, Buffalo, N. Y. Discussion to be opened by W. L. Coplin, Philadelphia, Pa.

77. The Diagnosis of Abdominal Effusion and Growths. James Tyson, Philadelphia, Pa.

78. Clinical Aspects of Jaundice, with Illustrative Cases. T. S. Latimer, Baltimore, Md.

79. Chronic Inflammation and Ulceration of the Duodenum, with Resultant Reflexes. J. M. Allen, Kansas City, Mo. Discussion to be opened by Boardman Reed, Philadelphia, Pa.

80. Cirrhosis of the Liver. J. B. Marvin, Louisville, Ky.

81. A New Test for Lactic Acid. J. P. Arnold, Philadelphia, Pa.

FRIDAY, JUNE 4TH—AFTERNOON SESSION.

82. Conclusions from a Year's Examination of Urine. J. A. Scott, Philadelphia, Pa.

83. Nephritis without Albuminuria. A. R. Edwards, Chicago, Ill.

84. The Curability of Bright's Disease. Elmer Lee, Chicago, Ill.

85. Demonstration of Diabetic Blood and Urine Tests. Ludwig Bremer, St. Louis, Mo.

86. The Treatment of Diabetes. F. P. Norbury, Jacksonville, Ill. Discussion to be opened by James Tyson, Philadelphia, Pa.

87. Case of Primary Renal Tuberculosis. J. D. Steele, Philadelphia, Pa.

88. The Medical Treatment of Appendicitis. W. F. McNutt, San Francisco, Cal.

89. The Treatment of Cancer by Zinc Mercuric Cataphoresis. C. B. Massey, Philadelphia, Pa.

90. Experience in the Treatment of Epilepsy According to the Method Suggested by Niemeyer. Matthew Woods, Philadelphia, Pa.

91. Medicine as an Exact Science. W. J. K. Kline, Washington, D. C.

92. Eighteen Years of Observation of Pulmonary Tuberculosis in Asheville, N. C. J. H. Williams, Asheville, N. C.

93. To What Extent are the Symptoms of Disease as Usually Treated Conservative. W. C. Spalding, New York, N. Y.

Section on Materia Medica, Pharmacy and Therapeutics.—Program.

TUESDAY, JUNE 1ST.

1. Address of Welcome to the Delegates from the American Pharmaceutical Association.

2. Chairman's Address. Warren B. Hill, Milwaukee, Wis.

WEDNESDAY, JUNE 2D.

3. Discussion of Subjects Referred to the Section on Mate-

ria Medica, Pharmacy and Therapeutics, by the American Pharmaceutical Association.

4. On the Therapeutical Properties of Alcohol and the Reasons Why None of the Fermented and Distilled Liquors Used as Beverages Should be Recognized in the U. S. Pharmacopoeia as Medicinal Agents. N. S. Davis, Chicago, Ill. Discussion, Paul Paquin, St. Louis, Mo.

5. Dismissal from the U. S. Pharmacopoeia of Spiritus Frumenti, Spiritus Vini Gallici, Vinum Album, Vinum Rubrum. Replacement of official wines by vinegars. Dismissal of all tinctures having a fluid extract of the same drug official. Substitution for such tinctures and fluid extracts, a 50 per cent. tincture under a distinctive title. Change of formula for Dover's Powder back to that of the 1890 U. S. Pharmacopoeia by using potassium sulphate in place of sugar of milk. Discussion, H. C. Wood, Philadelphia, Pa.

6. Patent Medicines and Our Patent Laws. F. E. Stewart, Detroit, Mich.

THURSDAY, JUNE 3D.

7. Report of the Committee on Joint Investigation. Strophanthus. *a*. Comparative Investigation of the Varieties of Commercial Strophanthus. Smith Ely Jelliffe, New York City, N. Y. *b*. Composition. Alfred R. Dohme, Baltimore, Md. *c*. Physiologic and Therapeutic Action; a Clinical Study. R. W. Wilcox, New York City, N. Y.; *d*. The Pharmacology of Strophanthus. E. M. Houghton, Detroit, Mich.

Constituents of Viburnum Barks. Professor Coblenz. Guaiacol Valerianate and Creosote Valerianate. Frank Woodbury, Philadelphia.

Carvacrol Iodid. A. H. Cohn, Milwaukee, Wis.

The Experimental Basis of the Dietetic and Medicinal Treatment of Hyperacidity and Gastritis. J. C. Hemmeter, Baltimore, Md.

FRIDAY, JUNE 4TH.

8. Nuclein Solution; a Clinical Study. Oscar R. Tomlinson, Mt. Vernon, N. Y.

9. The Effects of Serum and Special Antitoxins in Pure and Mixed Cases of Tuberculosis. Paul Paquin, St. Louis, Mo.

10. Anti-streptococcic Serum; a Clinical Report. Harold Sorby, Chicago, Ill.

11. The Serum Therapy of Tetanus. A. F. Lemke, Hospital, Ill.

12. Thyroid Extracts. W. H. Neilson, Milwaukee, Wis.

13. Treatment of Mental States by Toxins. O. A. King, Lake Geneva, Wis.

14. Practical Difficulties of Psycho-therapeutics. G. V. I. Brown, Duluth, Minn.

SOCIETY NEWS.

Ninth International Congress of Hygiene and Dermography, which was to have opened in Madrid next October has been postponed until April, as the Spanish Government is otherwise occupied at present.

St. Louis Medical Society held a regular meeting April 17. Papers were read by T. F. Prewitt, on "Resection of both Hip-Joints for Tuberculosis," and J. B. Ross, on "Pathologico-Histological Notes on Mastitis Glandularis Cystica (Reclus) and Mastitis Diffusa Nodosa (Phocas)."

American Medical Editors.—The following has been written to the Editors:

My Dear Doctor: At a meeting of the Committee of Arrangements it was decided that the next Dinner of the American Medical Editors' Association shall take place in Philadelphia, at the Aldine Hotel, on Tuesday, June 1st, at 8:30 P.M. It is confidently expected that this will be a most enjoyable and successful occasion. We write, therefore, to ask if you will inform the Chairman by return mail if we may expect you to be present, and also if you will include the names of any friends that you may desire to invite. The subscription will be \$5 per plate including wine. It is earnestly desired that you will give this matter immediate attention so that all arrangements may be completed.

The annual meeting will be held at the Aldine Hotel at 7 P.M.

Yours sincerely, JUDSON DALAND, Chairman,
319 S. 18th Street, Philadelphia.

H. A. HARE, President of the Association.

Second International Congress of Railroad and Maritime Sanitation and Hygiene, convenes at Brussels next September, to discuss questions of great practical importance to the profession and to the public, and incidentally to lead to a better appreciation by the public and the administrations of railroads, etc., of the immense services rendered by the profession. We note among the addresses to be delivered: "Should the medical service form a part of the administration, or should it be connected with the employes' organizations? Quantitative determination of the chromatic sense. Simulation of optic and aural disorders. Accident service, etc." For further details see *Gaz. Med. de Liège*, March 4, or apply to Dr. De Lantsheere, rue de l'Association 50, Brussels.

The Eighteenth Balneologic Congress met at Berlin in March. Neisser spoke of "Balneotherapeutics in Syphilis," stating that he considers mercury the only certain remedy for this disease; it acts directly upon the specific virus and diminishes the dangers of heredity. Iodin is ineffectual in the early stages and is only adapted for tertiary phenomena. There is no mineral water that can take the place of the mercury, and some, like sulphur waters, directly counteract its effect, as they form in combination with it an insoluble mercurial sulphid. But in some cases of intolerance of mercurial frictions, electric sublimate baths can be advantageously combined with it. Mineral waters, on the whole, favor mercurial treatment as they promote general metabolism. The effect of the mercury is also enhanced when it is more rapidly eliminated from the organism and more frequently renewed, than when it is stagnating in it. In every case saline waters and "drink cures" can be recommended. He prefers injections to inunctions and urged that every physician should be familiar with the treatment of syphilis, as he disapproves of the idea of specialists for this disease. Winternitz of Vienna stated he had never treated a case of Basedow's disease with hydrotherapeutics that had not been very much benefited by it. Cold applications at the back of the neck always improved the cardiac action, and temporarily arrested the tremor. Similarly favorable results were obtained by packs and compresses in reducing the hypertrophy of the gland, and the sweats. But the chief benefits of hydropathic treatment are felt in the metabolism and the disturbed functions of the organism. Hydrotherapy in this disease must go hand in hand with a strictly regulated diet. He has entirely cured the severe attendant diarrhea with milk.

We notice that in one of the discussions a member observed that: "Sleeplessness is always an indication of commencing paralysis." Eulenburg of Berlin proclaimed anew the advantages of "Motion Therapeutics" in cerebral and spinal diseases, and described various cases in which marvelous benefits had been derived.

BOOK NOTICES.

Transactions of the American Association of Obstetricians and Gynecologists, Vol. ix. For the year 1896. Philadelphia: Wm. J. Doran, 1897.

We have already given an abstract of the proceedings of this flourishing society (*JOURNAL*, Oct. 10, 1896, p. 811) and it only remains to congratulate the Publication Committee upon the handsome setting they have given the papers and the high grade of work the society is doing.

An excellent biographic sketch of the late Hiram Corson by Dr. Thraill Green of Easton concludes the volume.

Forty-three members attended the meeting which was held at Richmond, Va., under the presidency of our colleague, Joseph Price. The next annual meeting will be held at Niagara Falls, N. Y., Aug. 17-20, 1897.

Transactions of the Eighteenth Annual Meeting of the American Laryngological Association, 1896: pp. 303. New York: D. Appleton & Co. 1897.

This meeting was held in Pittsburg, May 14, 15 and 16, 1896, under the presidency of our colleague, Dr. W. H. Daly. Forty Fellows were present. Brief obituary notices of Professor Wilhelm Meyer of Copenhagen and Wm. Chapman Jarvis of New York are included in the minutes of the meeting.

The papers are of a high standard and several of them would find an appropriate place in a work on general surgery. The papers on Sarcoma of the Nasal Chambers by Dr. A. A. Bliss of Philadelphia, on Naso-pharyngeal "fibroid" Tumor by E. F. Ingals, Chicago, and on Deviation of the Nasal Septum by Dr. Jno. O. Roe, are of interest to general surgeons as well as to the laryngologists.

The volume is well printed and the illustrations unusually good.

Sixth Annual Proceedings of the Association of Military Surgeons of the United States, held at Philadelphia, May 12, 13 and 14, 1896. Pp. 442. Cleveland: Medical Gazette Publishing Co. 1896.

This handsome volume contains, besides the minutes of the meeting, the addresses and papers presented. All of which are interesting and some of them of enduring value. The original papers in the volume are by Col. C. H. Alden, U. S. A.; Major D. A. Kuyk, Va. Vol. Inf'y.; Capt. J. J. Erwin, O. N. G.; Capt. J. E. Pilcher, U. S. A.; Major Geo. W. Adair, U. S. A.; Lieut.-Col. W. H. Forwood, U. S. A.; Col. Dallas Bache, U. S. A.; Lieut. H. R. Stiles, U. S. A.; Major Valery Havard, U. S. N.; Major Jno. Van R. Hoff, U. S. A.; Commander Jno. C. Wise, U. S. N.; Capt. Myles Standish, Mass. Vol. M.; Capt. J. M. Banister, U. S. A.; Major P. F. Harvey, U. S. A.; Major Paul R. Brown, U. S. A.; Lieut. H. G. Beyer, U. S. N.; Lieut. H. L. Chase, Mass. V. M.; Capt. C. E. Woodruff, U. S. A.; Capt. Louis La Garde, U. S. A.; Lieut. Thos. C. Craig, U. S. N.; Major C. C. Foster, Mass. V. M.; Major D. M. Appel, U. S. A.; Lieut. H. A. Arnold, Penn. N. G. This volume will go into the library as a valuable addition to the literature of military surgery. The next meeting will be held in Columbus, Ohio, May 25, 26 and 27.

First Aid in Illness and Injury. By Capt. JAMES E. PILCHER, M.D., U. S. A. Pp. 322. Fourth edition; 12mo (\$2 net). New York: Chas. Scribner's Sons. 1897.

This book has been regarded with much favor by those engaged in "first aid" work, and by the medical officers of the National Guard. It contains a great deal of elementary information in anatomy and physiology, and has also embodied in it the recent regulations for the drill of the hospital corps of the army. The language of the author is well chosen and his teachings are sound. There are few books of this class that are superior for the purposes and uses of the national guardsman.

International Clinics. A quarterly of clinical lectures on medicine, neurology, surgery, gynecology, etc., and specially prepared articles on treatment, by professors and lecturers in the leading medical colleges of the United States, Germany, Austria, Great Britain and Canada. Edited by JUDSON DALAND, M.D., Philadelphia: J. MITCHELL BRUCE, M.D., F.R.C.P., London, and DAVID W. FINLAY, M.D., F.R.C.P., Aberdeen, Scotland. Vol. i. Seventh series. 1897. Pp. 352. Philadelphia: J. B. Lippincott & Co.

There are forty-five clinical lectures in this volume representing a wide range of cases, and they represent the views of gentlemen having at their disposal a vast amount of material: the result is that a volume is produced of the highest practical value. General practitioners desiring to keep pace with modern views of treatment, in many cases far in advance of those promulgated in the text books. The publishers have done their work well.

Saint Thomas Hospital Reports. New series. Edited by Dr. T. D. ACLAND and Mr. BERNARD PITTS. London: J. & A. Churchill. 1897.

Hospital reports are always welcome because they seem to bring us face to face with the actual treatment of disease, and to practitioners they have perennial freshness. The text-book and the monograph may be scientific but marvelously dull, but the hospital report has an ever present interest.

The contributors to this volume are F. R. Walters, W. W. Wagstaffe, H. H. Clutton, Robert Cory, Henry Betham Robinson, T. H. Kellock, F. P. Caiger, W. Wellington Lake,

Chas. R. Box, C. S. Wallace, W. H. Tate, Herberly Toomes, A. H. P. Downey, E. C. Stabb, H. G. Turney.

The volume under consideration is fully equal to its predecessors.

Twentieth Century Practice. An International Encyclopedia of Modern Medical Science. Edited by Dr. THOMAS L. STEDMAN. In twenty volumes. Vol. ix. Diseases of the Digestive Organs. Pp. 820. New York: William Wood & Co. 1897.

In many respects this volume will naturally be the most popular of the series on account of the subject. The contributors are C. A. Ewald, M.D., Berlin; Kendal Franks, M.D., Johannesburg, South Africa; V. P. Gibney, M.D., New York; Carlo Gioffredi of Naples; Werner Kummel, M.D., Breslau; Johann Mikulicz, M.D., Breslau; Jno. B. Murphy, M.D., Chicago; Mariano Semmola, Naples; Alfred Stengel, M.D., Philadelphia; Jno. B. Walker, M.D., New York.

The names of the authors insure high class work and the reader is not disappointed. The volume is profusely illustrated and uniform in style with its predecessors. The volume has made good its claim to fairly represent the medicine of the present day.

NECROLOGY.

FRANK ABBOTT, M.D., New York University Medical College, 1871, died suddenly of cardiac disease at his home in New York city April 20. He was born at Shapleigh, York County, Maine, Sept. 5, 1836, and was descended from one of the Puritan settlers in that part of the country. When twenty years old he became a student in the office of a dental surgeon in Oneida, and then removed to Johnstown, N. Y., where he practiced as a dentist until 1863, when he came to New York and finally after a medical course received the usual degree. Notwithstanding his membership in the New York Academy of Medicine and other medical associations, his bent was toward dentistry, and in that specialty he attained an enviable prominence. In 1866 upon the formation of the New York College of Dentistry he was appointed clinical instructor, then Professor of Operative Dentistry and Oral Surgery, and finally in 1869 the Dean of Faculty, a place which he held up to his death.

JAMES CALDWELL MORTLAND, M.D., at Edgerton, Ohio, April 20, 1897. He was born May 23, 1834. After studying a year in the medical department of the University of Michigan at Ann Arbor, he practiced his profession at Edgerton, Ohio, until the fall of 1870, when he entered the Bellevue Hospital Medical College of New York city, and was graduated March, 1871. Returning to Edgerton he resumed practice until his death. As a professional man he was upright, honest and faithful in his duties and obligations. He was free from any encroachment upon the rights of others. In the language of the school, his was a practice of which it might be said, There was no poaching there. As a citizen he was honored and respected and loved by all. He was a member of the AMERICAN MEDICAL ASSOCIATION.

Prof. NICOLAI VON ZDEKAUER, M.D., aged 82. The Nestor of Russian physicians in age and influence, Physician to the Court, president of numerous scientific societies, etc. There has not been a single medical, hygienic nor sanitary measure of importance adopted in Russia in the last half century that did not owe something to him. Son of a Vienna medical man established in Russia, he rose to the utmost eminence, and all unite in extolling his culture, affability and intellect. He was one of the first who took a course of lectures from Scoda in one of the Vienna prisons, in the then much ridiculed and abused art of percussion and auscultation. When he returned from a tour of inspection of foreign hospitals, etc., in 1857, his report led to a complete reformation of the systems of heating and ventilating in vogue in Russia, not only in hospitals, but in theaters, hotels, palaces, etc. His contributions to medical literature were numerous and important.

JAMES A. ETHRIDGE, M.D., a well-known physician of Macon, Ga., died March 14 from the effects of chloroform. Dr. Ethridge was about to undergo an operation for fistula, and almost at the first inhalation of the chloroform his pulse and

respiration ceased, and every effort to resuscitate him failed. Upon a preliminary examination of Dr. Ethridge no contra-indication to the use of chloroform could be discovered by the physicians in attendance. Dr. Ethridge was about forty years of age, and had practiced his profession successfully in Macon for many years. He was a member of the Board of Health of Macon, visiting physician to the city hospital, and surgeon to the Georgia Southern and Florida Railroad.—*Atlanta Medical and Surgical Journal*.

ANDREW OTTERSON, M.D., New York University Medical Department, 1844, died April 14, in Brooklyn, N. Y., of which city he was a health commissioner for three terms. He was born Feb. 22, 1822, near Amsterdam, N. Y., and was the son of a Dutch Reformed clergyman. On the occasion of the fiftieth anniversary of his entrance into the medical profession the Kings County Medical Society of which he was an ex-president, tendered him a banquet whereat many notables were present. As a sanitarian his opinion was held in esteem.

Prof. CARL SATHERBERG, aged 84, was one of the pioneers in Swedish gymnastics. For thirty years chief of the Stockholm Orthopedic Institute and his orthopedic appliances were awarded prizes at numerous European expositions. Besides his fame as a physician, he made a name for himself as a writer and poet, and composed a number of songs that are still very popular in Sweden.

J. J. MARSTON, M.D., McGill University, Montreal, 1863, on April 17, was found in his office chair, dead from cardiac disease at his home in Cheyenne, Wyoming. He served as a surgeon under Sheridan and Custer in their stirring Indian campaigns. A son in Princeton University and a widow are his survivors.

WM. GOODENOUGH WHEELER, M.D., Geneva Medical College, New York, 1845, a native of Columbus, N. Y., died April 17, at Chelsea, Mass. During the civil war he was an examining surgeon for the United States forces. He had reached the age of 76 years.

Dr. MORVAN, France, in his 79th year. A scientific investigator, public-spirited citizen and able practitioner. Although located in an obscure corner of Bretagne his name is familiar by its connection with various affections, among them the analgesic paresis, known as Morvan's disease.

SHERMAN S. STREET, M.D., of Arkville, N. Y., died April 2, aged 94 years. After having been graduated in Vermont, he began practice at Roxbury, N. Y., about 1840, but during the anti-rent difficulties, removed to another part of the same county. He retired from practice only within a few years of his death.—L. H. Colladon, M.D., Geneva, Switzerland, aged 55.—Dr. Durozier, Paris, aged 71. Known as a writer on cardiac pathology.—John Wilson McLean, M.D., College of Physicians and Surgeons, New York, 1859, died at his home in Norwalk, Conn., April 19, in his 60th year.—Enos L. Brooke, M.D., Pennsylvania Medical College (now extinct) 1848, died April 9, from accidental burns at West Pikeland, Chester County, Pa. He was in his 80th year.—Leroy McLean, M.D., Albany Medical College, New York, 1855, died at Troy, N. Y., April 23, in his 67th year.

MISCELLANY.

Professor v. Esmarch has been honored in many ways on the occasion of his silver wedding celebrated in February at Kiel, where in his 75th year he is still teaching with undiminished energy and popularity. His wife is the geborene Princessin Henriette zu Schleswig-Holstein-Sonderburg-Angustenburg, and aunt of the German Empress.

Osteomalacia.—Meslay reviews the literature on this subject and dismisses medical treatment as ineffective, while with surgical treatment success has been definitely and permanently secured in 80 per cent. of the cases treated. Porro who first applied surgical treatment to this disease, now has a record of 56 cases with 32 successes, 24 failures, and 70 double castrations resulting in 58 cures and 12 failures.—*Gaz. Méd. de Paris*, March 27.

The Generosity of Madame Charcot.—The widow of the late Professor Charcot has resigned the annual pension of 2,000 francs which she received from the state in favor of other widows and children of professors or *agregés* of the Faculty of

Medicine of Paris who have died without leaving provision for their survivors. Madame Charcot has refunded all the money she has received from the pension since the death of her husband.

The Great Emerson on the Horse-chestnut.—A pleasant story recorded of Ralph Waldo Emerson is a story he told of a friend who carried a horse-chestnut as a talisman or protection against rheumatism. "He has never had it since he began to carry it; and indeed, it appears to have had a retrospective operation, for he never had it before."

Care Required From Old Person.—The supreme court of Nebraska holds, in *Village of Culbertson v. Holliday*, Jan. 7, 1897, that the law does not require of an old person the exercise of greater care to avoid injury than it requires of a young and vigorous one. It requires of each the exercise of ordinary care. It requires of neither the exercise of extraordinary care.

New Attempts in Sero-therapeutics of Infective Diseases.—Weissbecker has continued his experiments with children in pneumonia, typhoid or scarlet fever, making one injection in each case of 10 c.c. of serum from the blood of patients convalescing from the same disease. The effect varied in different cases, but all experienced immediate and permanent euphoria, and were able to eat afterward with continuous good appetite. The injection also materially shortened the duration of the disease in some of the cases. —*Semaine Méd.*, March 24.

A Medical Man's Valuable Collection of Chinese Works.—The late Dr. Lockhart, the first medical missionary sent to China by the London Missionary Society, presented to the society before his death a remarkable collection of Chinese books and works relating to China and neighboring countries, in ten European and fifteen Oriental languages. The *London Times* says that at a special meeting, held in the Mission Hall a fortnight ago, the Rev. R. Wardlaw Thompson, foreign secretary of the society, stated that a catalogue, which the Rev. Goodeve Mahbs had just completed in three large volumes, showed the library to consist of 2,600 bound works and an enormous number of pamphlets. Dr. Lockhart had spent £1,000 on the books; the present value of the collection was much higher. The collection included works not to be found in the British Museum and was without a rival in the world.

Elements of Damage.—Disfigurement, the supreme court of Iowa holds, Dec. 12, 1896, in *Newbury v. Getchell & Martin Lumber and Mfg. Co.*, is a proper element of damage to be considered in personal injury cases. And such is said to be the general rule. But the court holds that a minor can not recover the cost of medical attendance; not, at least, until he has paid the bill. The explanation given is that the father, or, in the event of his death, the mother, is primarily liable for the bill, and, in the absence of proof to the contrary, it must be assumed that it is charged to him or her. If so charged, the minor can not recover for it. If not so charged, until it is paid, the liability is still, as stated, primarily that of the father or mother, and it must be presumed that he or she will meet the obligation.

Turkish Hospital Service on the Greek Frontier.—That the Turkish soldier is a formidable fighter has been long known, but it will be a matter of surprise to most people to learn from the military correspondent of the *Times* that Turkish organization has made rapid strides during the last few years, especially in the matter of military railways and hospitals. Writing from Salonika with Edhem Pasha's force, the correspondent refers to the creditable state of the medical service. He says: "The main hospital here is as good as many in Europe and has a large reserve supply of beds and medicines; the doctors are properly trained and the ambulances well equipped and officered. A very reasonable order has just relegated all the Christian military surgeons to the depots, while the fighting line is to be supplied with Mahomedans only. A little dysentery is the

only disease from which the entire army of occupation, more than half of which has been brought from the distant provinces of Anatolia, has suffered."

"Sound Health."—"Sound health," as used with reference to an application for life insurance, the supreme court of Wisconsin says, in the case of *Boyle v. Northwestern Mutual Relief Association*, Feb. 23, 1897, has been defined to mean a state of health free from any disease or ailment that affects the general soundness and healthfulness of the system seriously. The word "serious," it adds, is not generally used to signify dangerous, but rather to define a grave, important or weighty trouble.

Non-essential Experience of Expert.—Where there is no apparent connection between the experience acquired by a physician in a certain capacity and his qualification as an expert in a given case, the appellate term of the supreme court of New York holds, in *Brown v. Third Ave. Co.*, Feb. 26, 1897, that it is not error to exclude questions relative to such experience, when he is being qualified as a medical expert in such case. To illustrate, the court holds that it is not error to rule out questions regarding the duties of the witness as a member of a board of health where there is nothing to show that the duties of a member of a board of health would give the testimony of the witness greater value in the case.

Successful Laparotomy in the First Hour of Life.—Professor Bayer recently performed a radical operation on a newborn infant with a very large umbilical hernia, rupture of the sac, and evagination of almost the entire large and small intestines. He enlarged the mouth of the sac, replaced the intestines, excised the hernial sac, and closed the wound, using 20 grams pure chloroform, which was well tolerated. Recovery was prompt and uneventful. The choice between Breuss' percutaneous ligature, Olshausen's extraperitoneal method and the customary laparotomy with excision of the sac and suture of the mouth, is in favor of the latter, which is the best and most reliable in cases like the above. There are thirty-three cases on record with twenty-six recoveries; the present is the third on record performed during the first hour after birth, and the first in which there was rupture of the sac, which is an unconditional indication therefore for laparotomy in umbilical hernia. —*Cbl. f. Chir.*, April 3, from *Prager Med. Woch.*, No. 31, 1896.

The Treatment of Fractures by Massage.—From a careful consideration of the subject Woolsey (*Medical News*, March 20, 1897, p. 353) expresses the opinion that the treatment of fractures, especially occurring near joints, by immobilization, whether ambulatory or not, leaves something to be desired in, *a*, the time required; and *b*, the functional result obtained. The treatment of such fractures by massage and passive motion shortens the time required for bony union by one-third or one-half, and vastly improves the immediate functional result. This mode of treatment is especially applicable and important for fractures near joints. Its application is easy. It relieves pain and swelling, hastens callus formation and solidification, and prevents atrophy of muscles and stiffness of joints and tendons. Splints should be applied in the intervals between the daily applications for fifteen or twenty minutes of massage for the first ten or twenty days, according to the nature of the fracture and the tendency to displacement, or until consolidation occurs. This treatment, in conjunction with the ambulatory plan, promises an ideal method. Oblique fractures of both bones or of the only bone of a limb or fractures near the middle of the limb, with a tendency to displacement, should be immobilized until consolidation has begun to take place. Ambulatory treatment is indicated for the latter class of fractures, for fractures of the lower extremities in the alcoholic or the very aged, and for fractures of the neck of the femur in the aged. The plan of immobilizing the limb for a short time

in the best possible position, and then applying massage and passive motion, promises equally good results and especially adapts the method to private practice, in which it is particularly indicated on account of the shortened time required for union and the excellent functional results.

The Hospitals of London in Howard's Time.—The *Scalpel* quotes from "An Account of Lazarettos" by John Howard, some of the defects that existed in some of the London Hospitals, only a little more than a hundred years ago. The time of the publication of this book was 1789. Of Guy's Hospital he says: "That the wards in this hospital are in general too low. In the old wards the beds and testers are of wood and infested with bugs. In all the hospitals the beds are old and crowded against the walls. . . . I am fully persuaded that very much depends upon the patients lying on clean beds. The beds must be very offensive from the succession of patients with the various disorders who lie on them." At the Westminster Hospital a sum was paid every year for the destruction of bugs. Upon this he observes: "If the annual sum paid in several hospitals for the destruction of bugs were expended in airing, beating and brushing the beds, the end would perhaps be better answered. For in the country, where the air is fresh and freely admitted into lodging rooms, there were few or no bugs. In the hospitals in Sweden I observe a very good mode of sweetening the beds; on every fine day a certain number were brought into the open air and beaten and brushed on a deal machine made for the purpose. I could wish that such a practice were adopted in our hospitals, and that the rest of the bedding were more frequently washed and aired." At London Hospital, Whitechapel, he notes: "1, no cisterns for water, the vaults offensive; 2, the medical and chiralurgical patients are together; 3, in a dirty room in the cellar there is a cold and hot bath which seems seldom to be used; 4, the wards had not been whitewashed for some years; 5, it has not within or without the appearance of neatness; 6, no vegetables are given to the patients." At Saint Bartholomew's he notes "that the wards being doubled have not the advantage of opposite windows." At the Middlesex Hospital he observes, "the rooms are damp and dirty." At St. Thomas's he tells us "there is no water closet."

Western Reserve University; A Four Years' Course.—In the College number of the JOURNAL the Medical College of the Western Reserve University, Cleveland, Ohio, was tabulated as requiring three years of attendance before graduation. We are pleased to announce that four years of study are required by this institution.

New York.

MONEY FOR THE HOUSE OF REFUGE.—During the present session of the State Legislature the Senate Finance Committee voted \$32,700 to put the Refuge in good sanitary condition. There is a movement on foot to place the institution at once under the control of the State Board of Charities, who with more absolute power may manage with more satisfaction.

A MEDICAL COLLEGE BURNED.—A fire of unknown origin broke out at 3 A.M., April 23, in one of the buildings of the New York Infirmary for Women and Children, which in repairs alone will cause a loss of \$20,000. The building in question was devoted to uses of the Woman's Medical College, but the main buildings in which the Infirmary is situated escaped. These were occupied by about one hundred nurses and patients, fifteen of the latter being children. There was no excitement and every precaution had been taken. An ample insurance will cover the loss on furniture, surgical and scientific instruments.

Hospitals.

The finance committee of the Evanston, Ill., Hospital Association has begun an active canvass for funds with which to erect a new hospital building. The estimated cost is \$26,000. —At the regular monthly meeting of the Mary Thompson Hospital for Women and Children, Chicago, Dr. Lucy Waite of Chicago was elected chief physician and surgeon of the hospital, to fill the vacancy caused by the resignation of Dr. Marie J. Mergler. —At the annual meeting of the board of directors of the Central State Hospital, Virginia, trustees, the following officers were elected: superintendent, Wm. F. Drewry, Petersburg; first assistant physician, R. C. Styll, Hollins Institute; second assistant physician, James R. Garlick, Richmond; third assistant physician, John M. Henderson, Southampton County. —At the annual meeting of the Eastern State Hospital, Virginia, trustees, the former officers were re-elected. —The annual meeting of the directors of the Western State Hospital at Staunton, Va., was held April 15, and the officers were re-elected.

THE PUBLIC SERVICE.

Army Changes. Official List of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from April 10 to 23, 1897.

Capt. Nathan S. Jarvis, Asst. Surgeon, is relieved from duty at Willet's Point, N. Y., to take effect on the expiration of his present leave of absence, and ordered to Ft. Huachuca, Ariz., instead of Ft. Clark, Texas, for duty.
Major John Van R. Hoff, Surgeon (Vancouver Bks., Washington), is granted leave of absence for one month, with permission to apply for an extension of one month.
First Lieut. George D. DeShon, Asst. Surgeon (Washington Bks., D. C.), leave of absence granted is still further extended to include May 1, 1897.
Capt. Edward C. Carter, Asst. Surgeon (Ft. Harrison, Mont.), is granted leave of absence for one month, with permission to apply for an extension of two months.
First Lieut. Carl R. Darnall, Asst. Surgeon, upon return of First Lieut. Frederick P. Reynolds, Asst. Surgeon, to Ft. McIntosh, will proceed to Ft. Ringgold, Texas, and report for temporary duty during the absence on leave of Capt. Walter D. McCaw, Asst. Surgeon.
First Lieut. Leigh A. Fuller, Asst. Surgeon, will proceed from Ft. Meade, S. Dak., to Ft. Harrison, Mont., and report for temporary duty at that post during the absence on leave of Capt. Edward C. Carter, Asst. Surgeon.
Capt. Ogden Rafferty, Asst. Surgeon, is granted leave of absence for three months, with permission to apply for an extension of one month, to take effect upon his relief from duty at Ft. Bliss, Texas.
Capt. James D. Glennan, Asst. Surgeon, is relieved from duty at Ft. Sill, Oklahoma Ter., and ordered to Ft. Clark, Texas, for duty, relieving Major Henry S. Kilbourne, Surgeon.
Capt. Walter D. McCaw, Asst. Surgeon, is granted leave of absence for one month, to take effect upon arrival at Ft. Ringgold, Texas, of First Lieut. Carl R. Darnall, Asst. Surgeon.
Lieut. Guy C. M. Godfrey, Asst. Surgeon, is ordered by the Secretary of War, as necessary for the public service, to proceed to St. Paul, Minn., and report in person to the commanding General, Dept. of Dakota, for temporary duty in that Department, and when his services shall no longer be required to return to his proper station at Ft. Sheridan, Ill.
Major Charles Smart, Surgeon, is ordered to proceed to Ft. Sill, Oklahoma Ter., at the proper time to accompany Troop E, First Cavalry, on a practice march, for the purpose of making a thorough test of the emergency ration recently established by the President, and when his services are no longer required with the command to return to his station in Washington, D. C.

PROMOTIONS.

First Lieuts. Francis A. Winter and William E. Purviance, Asst. Surgeons, to be Asst. Surgeons with the rank of Captain after five years service, March 9, 1897.

Change of Address.

Brown, M. M., from Chicago to Pipin, Wis.
Clausen, J. J., from Chicago to 1327 E. 8th St., Kansas City, Mo.
Dodd, Oscar, from Reliance Bldg. to 103 State St. (Columbus Mem. Bldg.), Chicago.
Danforth, I. N., from 903 W. Monroe St. to 758 Adams St., Chicago.
Edmunds, G. W. A., from 420 to 260 Webster Av., Chicago.
Farquhar, E. M., from Chicago to Early, Iowa.
Gardner, E. D., from Davison to Hancock, Mich.
Gibon, Albert L., from 8 W. 12th St. to Reform Club, 238 5th Av., New York, N. Y.
Hand, W. R., from Kensington to Elbow Lake, Minn.
Hummel, A. L., Adv. Agency, from 108 Fulton to 100 William St., New York, N. Y.
Haven, Jos., from 90 Warren Av. to 57 Gordon Terrace, Chicago.
Johnson, L. D., from 103 Dekalb St. to 819 W. Harrison St., Chicago.
Mattes, R. J., from 107 W. 5th St. to cor. Van Buren St. and Wayne Av., Dayton, Ohio.
Price, J. E., from 722 W. Division St. to 792 N. Washtenaw Av., Chicago.
Robinson, F. B., from Venetian to Reliance Bldg., Chicago.
Schurtz, R. E., from 566 Ogden Av. to 891 Sawyer Av., Chicago.
Senn, E. J., from 31 Washington St. to Room 406 100 State St., Chicago.
Sherman, W. P., from 12010 Stewart Av. to 707 W. 120th St., West Pullman, Chicago.
Sells, C. from 1523 to 1719 Chestnut St., Philadelphia, Pa.
Weidner, Calvin, from Westford, Mass., to L. Box 274, Manchester, Conn.
Ziegler, Joseph, from 125 to 100 State St. ("The Reliance"), Chicago.

LETTERS RECEIVED.

Allen, J. M. (2), Liberty, Mo.; Asher, A. & Co., Berlin, Germany; Atkinson, Wm. B., Philadelphia, Pa.
Bruner, W. T., New Haven, Ky.; Bliss, C. N., Washington, D. C.; Bailey, Wm. Curtiss, Las Vegas Hot Springs, N. M.; Blakiston, P., Son & Co., Philadelphia, Pa.; Breedlove, J. W., Fort Smith, Ark.
Conner, P. S., Cincinnati, Ohio; Canfield, Wm. B., Baltimore, Md.; Caldwell, W. S., Freeport, Ill.
Dalton, M., Summerfield, Ill.; Divine, Chas. A., Ann Arbor, Mich.
Elliot, G. W., Richvalley, Ind.; Erwin, J. J., Cleveland, Ohio.
Fair, H. D., Red Key, Ind.; Fite, C. C., New York, N. Y.
Gaillard, D. L., Terrell, Texas; Gohm, J. P., Old Mines, Mo.; Gary, B. R., Newport News, Va.
Hoffman, Adolph, Chicago; Hotel Walton, Philadelphia, Pa.; Hand, W. R., Elbow Lake, Minn.
Johnson, H. L. E., Washington, D. C.
Kansas City Medical College, Kansas City, Mo.; Kleha, A. C., Citronelle, Ala.
Lord & Thomas (2), Chicago.
McVey, W. E., Topeka, Kan.; Myers, F. C., Kalamazoo, Mich.; Moore, N. B., Springfield, Ark.
Northwestern University Medical School, Chicago.
Orendorf, Otis, Yates Center, Kan.
Paris, S. W., Louisville, Ky.
Reed, W. W. (2), Fowler, Colo.; Ravogli, A. (2), Cincinnati, Ohio.
Stephens, R. S., Dover, Del.; Sewall-Clapp Mfg. Co., Chicago; Scheppegrell, W., New Orleans, La.; Standard Mfg. Co., Waterloo, Iowa; Smith, Q. Cinnatus, Austin, Texas; Schottler, G. J., Dexter, Minn.
Tucker, Willis G., Albany, N. Y.; Taylor, J. A., Montpelier, Ind.
Wood, H. L., Whitewater, Kan.
Xanten, F. A., St. Paul, Minn.
Zeit, F. Robert, Medford, Wis.

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ADDRESSES.

ADDRESS DELIVERED AT THE OPENING OF THE GARRETT MEMORIAL BUILD- ING, PENNSYLVANIA HOSPITAL.

PHILADELPHIA, APRIL 23, 1897.

BY J. M. DA COSTA, M.D., LL.D.

PHILADELPHIA, PA.

It is difficult for anyone intimately connected with an institution so old and renowned as the Pennsylvania Hospital to estimate fully the influence on thought and action of its very antiquity and renown. From the rooms that preceded the one we inaugurate, from the old rotunda, from the newer building in which until now successive generations of eager students assembled, have gone forth lessons that stamped themselves into the professional mind; lessons that stood by the listener in many a trial; lessons of readiness, of expertness, of cool determination in the surgeon; of profound analysis, of keen detection, of skill in meeting untoward symptoms, in the physician. In the rooms that were anterior to this, have stood and taught those who were not unworthy successors to Rush, who for thirty years was the most conspicuous medical figure in this hospital, as indeed, by his learning, captivating eloquence and ardent zeal he was the most conspicuous figure in the profession in the United States; and to Physick, the dignified surgeon, who bringing with him into our century the appearance and manner of another time, stood before his class with his hair powdered and clubbed, their idol, as in the tones of his cultivated voice he gave admirable illustrations of the conservative surgery of which he was the great exponent. In those rooms taught John K. Mitchell, the versatile and gifted, with the eye of genius foreseeing the part minute organisms play in the production of disease; George B. Wood, as methodical and accurate in his statements at the bedside as everywhere in his respected career; William Pepper, clear in his descriptions and consummate in unraveling obscure processes; William Gerhard, take him for all in all, the greatest observer and clinician America has produced; John F. Meigs, inheriting with his famous medical name an interest in this hospital from the illustrious and inimitable teacher whom also it is our boast to have had on our list, and showing here the same skill and kindness that made him the most sought after physician in the community. In the old rooms also has been heard the voice of Barton, the pride of his colleagues, whose wonderful skill and ingenuity remained a tradition for long years, joined to regret for the early retirement from a profession in which, still young, he attained the first rank; of Norris, the truthful, honest, conscientious gentleman and teacher; of Joseph Pancoast, the brilliant surgical artist, devising processes that seemed to be the result of intuition, and practis-

ing long before it was taught, a kind of antiseptic surgery, of which he himself did not recognize the importance or wider application; and of Agnew, the most esteemed man of our day in the American profession, cool, skilful, daring, yet of the soundest judgment, and a clear, concise, admirable teacher.

Thus from the days, 130 years ago, when Bond enthusiastically, with the full approbation of the managers, introduced clinical teaching into the Pennsylvania Hospital, and therefore on this continent—for it was in this hospital that the first bedside instruction in medicine was given—up to our time, there has been a succession of men bestowing publicly their best thought and experience, without reward, or thought of reward, on those who were to come after them.

It is scarcely possible for one who has been long associated with this hospital, and watched its workings with the eye of affection, to abstain from mentioning the present and his colleagues. But if I may not speak of the living, I know and feel the influence they exert; I am aware of the love they bear this ancient and renowned institution; I see and hear in many ways how worthily they strive to emulate and equal the best records of the past, and to let the teachings of the Pennsylvania Hospital be distinguished, as in the past, for truthful exposition, sound practice, for enlightened, not blind, conservatism, for earnest wish and endeavor to contribute to medical progress.

The traits of the many distinguished teachers that have been connected with the hospital, and the influence of the character of the hospital itself, have made indeed a great school of both practical medicine and surgery developing on rational lines. The men have formed part of the hospital, the hospital has formed part of the men. Nor is it only by oral teaching that the Pennsylvania Hospital has been helping to mold and guide the generations that have come here for instruction. It has also done its part in addressing the wider audiences to be reached through writings. It has given many an enduring gift to the profession at large. From this hospital has emanated or been chiefly promulgated the simplest, most direct and most useful treatment of fractures, recognized and commended the world over; the method of manipulation in the reductions of dislocations; the use of animal ligatures in surgery; the distinction of typhoid fever as a separate form of fever in America, and as preëminently the fever of this country; some of the earliest, and to this day the best, descriptions of remittent fever and its consequences; the connection of joint affections with spinal diseases; the now universally adopted treatment of sunstroke by ice, and other forms of treatment that have become standard. To this, and it is but a partial list, may be added the description of many new operative processes by such masters in the art as Barton, Pancoast, Agnew, Levis; essays and clinical lectures innumerable by observers

like Gerhard, Stewardson, Pepper and Hutchinson. And all have the same stamp of directness, truthfulness, careful observation and practical value. It is greatly to be regretted that so much of this literature is scattered, and has not been collected in the way Guy's Hospital and other great hospitals bring together the work of their men. Some years ago the attempt was made, and two volumes were issued: but the undertaking had to be abandoned with reluctance on account of the expense, with all the greater reluctance because the volumes were most warmly received and lauded.

But to return to the clinical teaching of the hospital. It has taken a profound hold on the medical mind of the country, more profound, perhaps, than we who live in large centers realize. If I may be pardoned for speaking of what has happened to me personally, and of what is, I know, equally the experience of my colleagues; I have often, when summoned out of town into a remote region, met a physician who, as soon as the immediate cause of our conference had been attended to, would ask me about some person whose malady he had heard expounded ten, fifteen, or twenty years before at the Pennsylvania Hospital; or quote, in support of his view of the disorder before us, a case there seen, and describe it so vividly that it seemed as if it had been but yesterday met with. And once, in the wilds of Colorado, encountering a middle-aged man who introduced himself to me he asked, almost as his first remark, "Did the patient brought before us at a clinic," the date of which he mentioned, "recover"? "What were the subsequent symptoms?" "And did all turn out as supposed?" I am ashamed to say his memory of all the circumstances was better than mine, and I could only give him a general answer, which, I fear, lowered me greatly in his estimation.

This wide diffusion of knowledge, this living interest in the doings of a hospital, is one of the advantages of clinical teaching, and it is certain that the hospital that neglects it, neglects a great means of doing widespread good. Moreover, it shuts itself off from the world: it has no ardent friends everywhere with its name on their tongues: it becomes purely local in its character and aims. It never takes rank with the first institutions of its kind, and must be content with a second- or third-rate reputation. Establishments for the sick existed in the time of the Romans. Hospitals, as we understand the term, have been founded since the fourth century. They were spoken of in the Council of Nicæa in the year 325 as institutions well known and deserving support and encouragement. The Hôtel Dieu, with its motto, *Medicus et Hospes*, began to receive the sick and destitute about the year 600. The Grand Hospital of Milan, with its several thousand patients, occupies the same building it did in 1456. But who has heard or knows anything of these hospitals, unless from their walls has gone forth something that has taught and been made of use to others; something that, in the minds of regardful men, has become identified with the progress of investigation and of ideas: something that, thrown on the billows of thought, has been carried far onward in the ocean of knowledge.

Clinical teaching, rightly conducted, is a benefit to the sick. There is an opinion that it is only of use to the medical profession, and especially to those about to enter it. To them, indeed, it is invaluable, and through them to whole communities. But it is valua-

ble, too, to the patients themselves. The very publicity of it, the hundreds of critical eyes with which it is observed, ensure that the best thought is given to the helpless and the sick. There must be accuracy, there must be the most strenuous efforts for relief, where there are many keen watchers; and the influence of all this is that the habit thus acquired is transferred toward work, which in its turn becomes more exact. There is very rarely any objection on the part of the patient to having his case publicly investigated. On the contrary, he likes it; he regards it as a mark of interest. To most teachers it has happened to see offended women bursting into tears, because, owing to inability to do so in the time allotted, they had not been taken to the clinic room after being spoken to about it; they were provoked at the favoritism thought to have been shown. Then it must be always remembered that the very ill, or any whom it might possibly injure, are not brought before a class. No one with a spark of humanity thinks of such a thing. Certainly in this hospital the claims of patients have never been subordinated to bedside teaching, and judging by the past, and the record to which we hold, never will be. We recognize, indeed, that we bring to this new room much from the time gone by. We are sensible that the old memories, the old traditions, the old spirit, are moving with us into this admirably arranged edifice. We feel their power, and no member of this ancient hospital can be unmindful of the strength of their hold on his fullest exertions and truest sympathies.

But the splendid room in which we are assembled has other uses than merely those connected with teaching. It is but a part of this Garrett Memorial Building which will be alike a lasting monument to the generous philanthropists that endowed it, and to the forethought, the sagacity, the advanced knowledge of those that planned it. Here is seen in a completeness, nowhere, I believe, as yet equaled, an operating pavilion in which to make modern surgical treatment with its marvelous antiseptic results even more than ordinarily successful. The most minute details are attended to; years of professional experience have contributed to their elaboration. It is the perfection of mechanical ingenuity, the apotheosis of cleanliness, and, with its numerous attractive appliances, its movable tables, its large brass instruments, its adjacent tiled and marble dressing rooms, would be fascinating, if one could only prevent a thought of the grim purpose of all this beauty from entering the mind. Then in this building with its combinations of means, other most valuable arrangements are manifest. There is a room devoted exclusively to operations upon those with infectious diseases that can be filled with live steam at a slight pressure; a room for the employ of the X-rays; there is electric apparatus for resuscitation and treatment; there are rooms for etherization. Then in other parts of the building, for it is more than a mere structure for lecturing and operating purposes, are rooms with every facility for immediate treatment of those brought here too ill or too severely injured to be moved further; there are "quiet" or recovery wards for those whom noise might injure, or who have passed the worst stages; and receiving wards for the reception and distribution to the appropriate places of all patients who are not too ill to be at once assigned to the main medical or surgical hospital. Here then is a building of wide intent and beneficent purpose, planned to meet what years of thought and experience have shown to be most desirable, and exe-

cutted in a manner that makes it not only a credit to the Pennsylvania Hospital, but to the city and the country.

This building, too, is only one of the improvements that the present Board of Managers has gradually effected. They have step by step transformed the hospital. An admirable school for nurses with a separate building erected by the generosity of the Misses Blanchard; a surgical hospital due to the munificence of the family of their former president, Wistar Morris, whose memory it worthily celebrates; an endowed outdoor department with every facility, the gift of William E. Garrett, Jr., one of the same family that gives this Memorial Building; the reconstruction of the old building in a manner that makes it the equal of any modern hospital; now this thoroughly adapted structure—surely all this shows careful thought, far-sighted action. The community which believes in them has little by little, occasionally in large sums, supplied them with the means, and, as it is seen how they are used, the springs of benevolence are expanding into broad streams. But they never can be too broad; the need is still great. This hospital, once to a considerable extent supported by those who entered it, is now almost entirely a free hospital, open at all times to those of every nationality and every creed. It still spends more than its income in their support; but, owing to the feeling of attachment and pride which the community has for it, and the reliance on a management which one of my former colleagues in an address has described as an active, intelligent body which never wastes, never misappropriates, it meets all demands and increases steadily. It instinctively attracts to it both in its managers and warm friends those who love their fellowmen, who have a genius for philanthropy, and calls forth the large bequests that, in virtue of the affection and trust it has inspired, have alone made possible the changes in this hospital which are so splendidly transforming it. If it continues to grow on these broad lines it will not be long before, in addition to its antiquity and renown, it will be cited as being one of the foremost developments of the hospital idea in its best form among the modern hospitals anywhere. How all this would have delighted the benevolent souls who founded it! How gladly Bond would be with us today, viewing the growth of what his humanity suggested: and if, at the first meeting of the managers in December, 1756, to inspect the new wards before the sick were admitted, they could have foreseen to what the hospital would attain what would have been their gratification! Perhaps the then president of the board, the great American, Benjamin Franklin, did; and we can see in the pleasure in his benign face, in the light in his large gray eyes, that there has come to him the vision of what, through the natural sciences so dear to him, through the intelligent care of successors as worthy and as true to their trust as the friends that there surrounded him, had grown to be structures as complete as his imagination could have pictured, and as full of such appliances as his genius would have delighted in, and have surely added to. If there could come to us from that vision into the unseen world an expression of the appreciation it occasioned, warm words of approbation would surely reach those whose crowned efforts we are today inspecting.

But in all the changes you, the directors of this great charity, are effecting, one appeal we still make to you for action in a matter we know you are contemplating,

and the importance of which our daily work forces on us. Give us a laboratory, commensurate with the dignity and reputation of this hospital. It will be one more claim to gratitude, not only of the profession, but of the ill and injured, and in its far-reaching results, of science and of posterity. It is no longer possible, it is becoming scarcely conceivable, that physician or surgeon can recognize disease as completely, or treat it as well as it can be treated, without the aid of laboratory facilities. Good work he may still do; but it will not be his best, and very far from the best that can be done. The time has passed for mere bedside labor, and in justice to the sick and injured, in justice to those exposed to possible contagion, laboratory work must supplement or guide professional effort. Crown then your work with what is a recognized need of the day, crown it with what will have the beginnings in it to develop with the wants a portentous future; crown it with a laboratory that now and in times to come will gladden those who look for guidance to this famed institution.

But we know well that for the great plan of which the completed structure we are now in is but a part, neither means nor opportunity exists to accomplish everything at once. For all that has been done already there is true appreciation and gratitude. For the building which is formally opened today let us here express it: It stands as a monument of generosity, of enlightenment, and of ideas carried to perfect conclusion. Noble was the thought that conceived it; noble the thought in one who bore the name of a family that was already among the great benefactors of this hospital to add to a large bequest all that was needed to make the ardently desired beneficent plans a reality. In this Garrett Memorial Building, with an equipment in which nothing that the most advanced science can suggest is absent, pain is to be abolished, the best possible results ensured to the injured and distressed. From here lessons will go forth that will penetrate into every hamlet. Men now, and men in years to come, will, during many an arduous struggle of a long career, turn to it with a sense of gratitude to the generous donor through whose aid many of their difficulties are smoothed, by giving them an opportunity of witnessing how difficulties could be best overcome. And, further, he who is brought to these emergency wards, stricken or so injured that he can not be moved another step without the gravest risk, the most destitute, the most wealthy, will be treated with appliances and in a manner that not many years ago the most powerful of the earth could not have commanded, and will learn to give thanks reverently that there were noble-minded souls that so splendidly and thoughtfully provided for his dire necessities.

ADDRESS

BY THOMAS G. MORTON, M.D.

PROFESSOR OF ORTHOPEDIC SURGERY IN THE PHILADELPHIA POLYCLINIC;
SURGEON TO THE PENNSYLVANIA HOSPITAL, THE ORTHOPEDIC
HOSPITAL, ETC.

We are here assembled to celebrate with appropriate ceremony the opening of the latest addition to the resources of the Pennsylvania Hospital, the "Walter Garrett Memorial," designed to be occupied as a reception pavilion, a clinical, operative and lecture hall and a surgical ward for children. The managers of the hospital, ever mindful of the best interests of the institution under their care, having decided that increased facilities must be provided in order to keep pace with the modern rapid strides of

improvements in surgery, one year ago authorized the construction of this building. Under the supervision and direction of Mr. Addison Hutton and Dr. Thomas S. K. Morton, this memorial building has been planned and constructed. No pains or expense have been spared in the effort to make this the equal of, if not superior to, any other structure of its description in the world. I may add that it has been erected through the generosity of a member of a family of philanthropists, to whom the hospital is already greatly indebted for very generous gifts.

Permit me briefly to invite your attention to the admirable internal arrangements of this building. All the sick and injured brought to the hospital, either by our ambulance, the police patrol or otherwise, are admitted at the southern entrance of the main hall, on the first floor; where all details connected with the patient are immediately recorded. Male patients are taken into the large reception ward on the right of the hall, and female patients and children into a similar ward on the left.

Patients with illness or injuries which do not require their admission into the general wards will here receive appropriate temporary treatment, after which they will be dismissed and directed to return to the out-patient department on Spruce Street.

Patients who are to remain in the hospital for treatment are transferred from the reception ward to the large room beyond, where they will be bathed and otherwise put in proper condition before being taken to the main wards in the hospital appropriate to their disease or injury.

Should an important surgical operation be required, after the same preliminaries as far as possible, the patient will be brought by the elevator up to this hall.

On the first floor, conveniently situated, there are also baths and lavatories, flushing sinks, a steam closet where bedding and clothing may be warmed or dried rapidly, and rooms for ticketing, bagging and storing clothing. One small room contains a steam sterilizing oven, in which infected clothing can be thoroughly cleansed and germs and vermin destroyed. At the northern end of the corridor is a well-appointed diet kitchen.

In the center of the building on the eastern side is located a capacious elevator, of most approved pattern; it is surrounded by a beautiful broad marble stairway. From the first floor there is direct communication with the basement of the hospital by an enclosed corridor, thus affording ready access to all the various wards. This building, it will be seen, therefore becomes the center of distribution of patients to the entire hospital.

All patients admitted to the hospital between sunset and morning will be temporarily accommodated in this building, so that there need not be any disturbance during the night in the general wards, which heretofore has often been unavoidable.

On the second floor, upon which we are at present, the complete series of rooms and arrangements to facilitate modern surgical purposes are not equaled by those of any other hospital in the world. Large double doors lead from the landing or stairway into this commodious clinical or main operating hall. Situated to either side of the corridor and in communication with this clinical hall are rooms where patients can be etherized before being brought into this room for operation.

This hall has excellent acoustic properties, and it

is brilliantly lighted by the ample, glazed dome during the day, and by Welsbach and electric lights at night. The students or spectators enter by a special gate upon Eighth Street near Spruce, and on approaching this hall will find, on the landing halfway up, a coat and toilet room. The seats, which as you notice are in seven tiers, number in all two hundred, are so arranged that there is no obstruction to observation from any portion of the room.

On either side of this operating space, as you may have observed, are sinks, flushing-tanks, wash-basins and pipes for bringing steam for sterilizing purposes. There are also two large water sterilizers, the largest ever made, and here, too, are steam closets for heating blankets, etc., racks for supporting glass reservoirs holding antiseptic solutions; here are also movable glass tables for the dressings and instruments. Behind, and to one side of this operating space, there are doors which open to the dressing rooms for nurses, utilizing for this purpose the space beneath the seats. Nurses who are to assist in the operations, here prepare themselves, their hands and clothing, with the same scrupulous care as the surgeons.

On the other side are rooms in which the sterilized dressings for the entire hospital will be manufactured in accordance with the requirements of antiseptic, with the aid of four high pressure steam sterilizers. Retiring rooms for patients recovering from the effects of anesthetics are also suitably and conveniently arranged. A novel feature on this floor is a room where operations may be performed on patients having virulent and dangerous diseases; after which everything in the room will be subjected to the antiseptic action of live steam, thus destroying all germs and overcoming, in great measure, the danger of communicating contagious disease.

The small operating rooms also situated on this floor are most convenient and complete. An enclosed corridor connects with the main floor of the surgical pavilions of the hospital, so that patients may be transported by the most direct route to the other parts of the building, or from thence to this hall.

On the third floor is a spacious children's ward, capable of accommodating twenty-five beds, with all the conveniences for the little patients and their nurses, including a bright playroom and sun parlor.

I would call your attention particularly to the most approved system of heating and ventilation, to the cemented floors, to the lighting, which is either by gas or electricity, and to the absolutely fireproof character of the building.

At this time you may very properly inquire the necessity for this outlay, and for all the costly appliances to which your attention has just been directed. To properly reply will require a very brief exposition of the facts and theories upon which the modern system of antiseptic surgery rests. If a ray of sunlight be permitted to enter a dark room, innumerable particles of so-called "dust" are seen floating in the pencil of light. These moving atoms have been ascertained by the late Professor Tyndall, to be principally living germs, microscopic in size, and believed to be of vegetable origin and character. Many of these germs are harmless, while others cause serious or fatal disease. Therefore, we exclude from wounds all living germs, and so prevent blood poisoning, or septic infection.

Surgery today is so surrounded by precautions that absolute antiseptic can be secured. The various

apparatus and appliances to which your attention has been directed, has been found to be capable of destroying disease-generating germs, and the means taken to attain the object, form collectively in surgery what has been termed the antiseptic treatment of wounds.

Sterilization of dressings or of instruments is the complete destruction of any living microorganisms present and the prevention of the growth of others. Water is usually sterilized by boiling, surgical dressings and instruments by moist or dry heat, and wounds during operation are kept free from germs by the use of germicide or aseptic solutions. The importance and necessity of antiseptics in surgical manipulation has, as you know, only been recognized within a comparatively recent period.

The method, however, of purifying water by the use of heat has been known and practiced by the Chinese for many centuries, both for household purposes and for washing wounds. It is also a curious and interesting fact that the precaution was adopted by Cyrus the Great, twenty-four hundred years ago. Herodotus, the Father of History, in referring to the expedition of Cyrus against the Assyrians, says, "The great King, in his warlike expeditions is provided from home with cattle and all other necessities for his table. There is also carried with him, water of the river Choaspes, which flows near Susa, for the King drinks of no other; wherever he goes he is attended by a number of four-wheeled carriages drawn by mules, in which the water of the Choaspes, being first boiled, is disposed in vessels of silver."

The consideration of the very complete appointments of this surgical building, leads me to remark that the great development and present position of usefulness of the Pennsylvania Hospital is the result of an evolution, due not entirely to its management, which has ever been prudent, efficient and successful, and as such has elicited universal commendation, but in simple justice to those who have passed away, it may be said that the reputation of the Pennsylvania Hospital is in great measure due to the character of its medical staff.

Let me briefly direct your attention to the remarkable personnel of the members of the Medical Staff who served this hospital in its early days, the men who contributed so much to the reputation of the institution, which they so faithfully served.

I find that between the opening of the hospital, and the close of the century, from 1752 to 1799, inclusive, there were twenty physicians all told who served on the staff and devoted themselves to the care of the insane, the sick and injured. They were all men of exceptionally high character, eminent not only in their own vocation, but having acquirements and accomplishments which made them leaders in the community, and active and influential in all its social affairs. They held positions of great responsibility and honor in public life; they had great literary ability and were classical scholars. Most of them had traveled and had been graduated abroad, and they were always received with marked attention in the medical centers at London, Oxford, Edinburgh, Bonn, Berlin, Vienna, and in Italy. They were preëminently men of affairs, and were constantly being called upon to take an active part in the administration of Government. It will, I think, be a matter of surprise to you, as it was to me, when looking into the lives of those medical men who served before the opening of this century, to find how important were the public services rendered, apart from their arduous daily professional work.

Thomas Bond was the originator of the Hospital. At the outbreak of the Revolutionary War, when past his sixtieth year, he entered the military service of his country, and rendered distinguished service by organizing the Medical Department of the Army. He was the founder of the Humane Society, and its first president, Thomas Graeme, was a Judge of the Supreme Court of the Province of Pennsylvania. He had previously been a member of the Provincial Council and subsequently was Collector of the Port of Philadelphia and also Naval Officer.

John Redman was the first president of the College of Physicians of Philadelphia; he was one of the most active of the eminent men who organized that honorable society and was a member of the Common Council of Philadelphia.

Thomas Cadwalader was a member of the Provincial Council of Pennsylvania, and Medical Director of the Army Hospital.

William Shippen was twice elected by the assembly of Pennsylvania a member of the Continental Congress.

John Morgan, at the time of the war between Great Britain and her Colonies, and France, held a lieutenant's commission in the Army, but he acted chiefly as a field surgeon. During the Revolution he was appointed by Congress, director general and physician-in-chief to the general hospitals of the American Army.

William Shippen Jr. was physician-in-chief to the flying camp, and Congress elected him director general of all military hospitals of the armies of the United States.

Preston Moore was provincial treasurer and trustee of the general loan office.

James Hutchinson, when on his way home from France, was entrusted with dispatches from Franklin, then American minister. His vessel, when off the American coast, was chased by a British ship of war, and being determined to save his dispatches, he left in an open boat and, landing under the fire of the enemy, succeeded in his mission; but the vessel was captured and everything belonging to him, including his valuable medical library, which he had carefully collected in England and France, was lost. He became surgeon-general of Pennsylvania, subsequently senior surgeon to the flying camp; was a member of the committee of safety, and he was frequently consulted by Washington on matters relative to the medical department of the Army.

John Jones served in the colonial army in 1775, against the French. He was the intimate friend of Franklin, and his physician during his last illness, and physician to General Washington. He was president of the Humane Society of Pennsylvania.

Foulke was president of the Executive Council of Pennsylvania.

Caspar Wistar was present at the battle of Germantown, but unable on account of religious principles to carry arms, he sought the wounded and was active among those who were administering relief; while Physick, on account of his valuable services to medical literature and medicine, bears the honorable title of "Father of American surgery."

And what shall I say of the immortal Benjamin Rush, the physician of the port of Philadelphia, fleet surgeon of the Pennsylvania navy, physician general of the military hospitals of the middle department of the American army, treasurer of the United States

Mint, a member of the convention of Pennsylvania for the adoption of the Federal Constitution, a member of the Continental Congress, a signer of the Declaration of Independence, and recognized by all as the American Sydenham?

Thirteen of the twenty medical officers referred to were active in organizing the American Philosophical Society, several were founders of the College of Physicians of Philadelphia, and also of the College of Philadelphia, which afterward became the University of Pennsylvania, while ten became professors in the latter institution; several were honored abroad by election to membership in the Academy of France, the Royal Society of London and other foreign associations. Is it any wonder that the reputation of this hospital advanced so rapidly with such brilliant men in its service?

Volumes could be written to record their merits and embalm their memories; but all may be condensed in the single statement, that with them education never militated against personal goodness, for whether in peace or war, in pestilence or plague, in poverty or wealth, they worked nobly "for the good of their fellow beings and the glory of God."

If Franklin, who was the first secretary and afterward president of the Board of Managers, could today revisit this hospital, which he was so largely instrumental in establishing, he would find that wonderful changes had taken place. To begin with, at the time of his death in 1790, only the east wing was built, for the center and west wing were only commenced and finished about the close of the last and early part of this century. He would now find nothing remaining of the hospital, as he knew it, save the walls of the east wing, while the original plan as afterward completed has, within the last year or so, been subjected to an entire internal remodeling, and other buildings than those originally planned have been erected upon the grounds. He would even find the electric fluid which he successfully conducted along the string of his kite, now successfully employed in the institution whose corner stone he laid, as the customary means of sending the human voice to each portion of the entire range of buildings, and also of illuminating the halls and wards.

In conclusion, I wish to direct attention to the important educational services rendered by this institution. The Pennsylvania Hospital may properly be styled the Mother of American Hospitals from the fact that it was the first hospital in this country; but its reputation, which extends through the length and breadth of our land, has been gained not alone because of the tens of thousands of sick and injured charitably cared for, but also from the fact that medical instruction, bedside and clinical, has been a prominent feature from 1752 to this present time, and has been the means of disseminating the best medical thought and practice all over our country. The hospital, during its earlier days, stood forth as the sole representative institution for medical education, offering the only means for systematic instruction in medicine and surgery on this side of the Atlantic Ocean, and this instruction which has continued for nearly a century and a half, was permitted to suffer only a temporary interruption inseparable from the social disturbances accompanying the War of Independence, when the hospital was occupied by Colonial and British troops for their sick and wounded.

The number of students attending the hospital

lectures became so great toward the close of the last century that the managers, instead of crowning the center building with a dome, according to the original plan, decided to utilize the space by converting it into a clinical lecture room, and it was used until 1868, when the present, but now abandoned, octagon clinical hall was opened. Thirty years have now elapsed, and the building then considered the best for the purpose which could be planned, has now been found unsuitable, and has been superseded by this structure. What a like term of years in the near future may evolve in hospital construction, it would be presumptuous to even consider; but it really seems as if perfection has been attained and all possible surgical requirements met, by the erection of this magnificent building, which is this afternoon formally presented to the contributors of the hospital.

ORIGINAL ARTICLES.

PAST AND PRESENT OBSTACLES TO THE RADICAL CURE OF HERNIA, WITH DEMONSTRATIONS.

Read at the Third Annual Meeting of the American Academy of Railway Surgeons held at Chicago, Sept. 23, 24 and 25, 1896.

BY PROF. E. WYLLYS ANDREWS, M.D.

SURGEON TO THE WABASH RAILWAY.
CHICAGO.

Foremost among the obstacles which formerly stood in the way of success with radical cure of hernia was sepsis. This was no more true of hernia than of other abdominal work, but in the days now past when all wounds suppurred in the course of healing and when it was rightly thought that opening into the peritoneum was almost a sin, hernia work could not and did not prosper.

Directly dependant upon this obstacle of sepsis (including septic peritonitis) was that of timidity or conservatism, which acted as a blight upon the best surgeons up to about the time of Macewen's method. This tended in two ways to prevent progress: 1, by limiting the extent of the work, thus promoting half measures; 2, by leading many authorities to condemn radical-cure work altogether.

A third obstacle to success by operators of the past has been the extreme multiplicity of operations proposed and the complicated nature of many of them. It is hardly profitable to dwell upon obsolete methods but I have only to remind you of the names of Cooper, Gerdy, Wood, Heaton, Warren, Ball, Nussbaum, Barker, Sewell, Russell, Czerny, Macewen, McBurney, Woelfler, O'Hara, Lucas-Championnière and ask how many of us can even remember the multitude of methods these names stand for. You may turn over old treatises and scarcely come to the end of radical cure methods you will find. Through them all runs the perverted idea of trying to avoid the simple and essential feature of the modern method, namely, laying open the hernial canal. There were subcutaneous sutures with or without invaginating the scrotum. There were operations for "sewing the pillars." There were ingenious transplantations of muscles, fascia, bone plates and sponge grafts to plug up the canal. There were injections of irritants and astringents which as you know had an extensive use at one time and are still exploited. There were numerous forms of lacing and narrowing the canal by sutures passed in from without.

What has become of them all? They have been abandoned the world over because of their danger or inefficiency. The crux of radical-cure work is in the question of recurrence. Hitherto the rise and decadence of hernia cures have been like morning and evening of the same day. Of the scores of ingenious operations in the pre-antiseptic era not one, even the most rational, but was followed by such a train of relapses as soon to bring it into discredit. It will surprise any one, who will take time to look over the standard treatises of only five or ten years ago, to find how distrustful the best surgeons were of all radical-cure work. The conscientious writer could but admit that the numerous relapses and the occasional deaths made the operation hardly advisable. This feeling of distrust was intensified by the fact that many of the methods which failed so signally had been widely heralded in the beginning as infallible.

With the improvements of Macewen and Bassini began a new era. The "open method," the key to success was introduced. Although I think the Bassini method superior to Macewen's, it is fair to give Macewen credit for the central idea, that of dealing directly with the internal abdominal ring. We must not omit to mention that our own Dr. Henry O. Marcy claims to have used essentially the same method some years before either the Scotchman or the Paduan. In inguinal hernia there is but one strategic point, the internal abdominal ring. If this be reconstructed everything else below that point can be ignored. No operator would attempt to obliterate a scrotal sac as a means of preventing return of a scrotal hernia, any more than he would put a bandage around the scrotum instead of a truss above. It is just as irrational to attempt the closure of the external ring or whole inguinal canal while neglecting the internal ring, which is the only practicable point of preventing the return of the hernia.

Now the modern operations, while they are immeasurably superior to the old, also have some obstacles, and as many of you know I have tried to avoid these by a new operation, the imbrication method, which a number of other American surgeons have used with satisfaction.

Among these may be mentioned Dr. L. L. McArthur, Dr. Jas. Burry, Dr. L. Greensfelder and Dr. Bailey of Chicago, some of whom report that they have adopted it after extensively using other methods. Dr. Cole of Montana (five cases) and a number of my professional friends at various places have kindly informed me of their success with it.

Dr. Wm. J. Mayo of Rochester, Minn., has had a large and successful series of herniotomies. He informs me that he uses the imbrication method in large hernias but continues to employ Bassini's operation for those having moderate or small-sized rings. This is in accordance with my own experience, the need of something to supplement Bassini's method having been found very apparent in certain hernias.

I have preferred in my own work to adopt the new method in every case, as it adds no complexity and certainly gives greater security, but I must admit that Bassini's operation in the favorable cases with small rings gives excellent satisfaction also.

To select my method for the bad cases is at once a high compliment and a severe test of merit, too severe, in fact, to be fair, unless cases be classified in making up statistics.

Having stated that even modern operations encoun-

tered obstacles, I am prepared to sustain the proposition by reference to nearly two hundred herniotomies which I have made mostly within the past six years by every method now at all recognized.

Kocher's method ("Verlagerung's Methode," I, II and III) in spite of the eminence of its author, seems to me a step backward, in that it is not an open dissection of the canal. The twisted or sharply flexed neck of the sac drawn outside the external oblique can not but form a funnel or dimple on the peritoneum. The suturing of the aponeuroses is inefficient, blind and endangers the cord in any but the most expert hands. Furthermore the retraction of the sac by the forceps is not practicable except in cases which pass through the external ring, and not always in them. I have seen many sacs, large and small, which never could have been so treated. It is not possible to determine beforehand whether this is true or not. We have, therefore, in Kocher's operation a method which may or may not be applicable to any given case and we may be forced to change our plan after beginning the operation.

O'Hara's operation is somewhat like Kocher's, with certain steps left out.

Macewen's operation, with its pad of folded sac, is in my judgment easily overestimated. That the sutured and puckered sac really unites into a solid mass in all cases I know of no way of proving. That serous exudate and adhesions gradually give way we do know to be a fact. Nevertheless I have sometimes used the Macewen sac treatment in connection with Bassini's and my own operations in preference to cutting it off. We should be careful not to place too much reliance upon the treatment of the sac as a step in radical cure. The sac is a result, not a cause of the hernial protrusion, and its removal is an incidental not a decisive factor in its cure. If the aponeurotic walls are left weak a new sac will have no trouble in forming, whatever has been done with the old one.

Macewen's suture closing the whole thickness of the abdominal wall into one mass destroys obliquity of the inguinal canal and the natural valvular arrangement. The same thing is true of Halsted's modification of Bassini's operation. With this last admirable operation fewer obstacles are met and its popularity in America, which seems to have exceeded that in Europe, is, in my judgment, well deserved.

As you know, Bassini's essential improvement consists in a careful suturing of the posterior wall of the inguinal canal, so as to reconstruct the internal abdominal ring. To do this it is necessary to split open the canal, to draw aside the cord temporarily and to get rid of the sac permanently.

The suturing of the posterior wall of the canal is a species of plastic operation. It restores the length and obliquity of the canal and contracts the internal ring so that it will transmit the cord, and only the cord, from within outward. The hernia can not now descend because it is stopped at its very point of exit. If it had been stopped at some other point—say in the canal or at the external ring—it would sooner or later make a way in the looser tissues around the obstruction and reappear to the discredit of surgery. Herein lay the weakness of the older methods. They did not go to the strategic point, the internal ring. The external oblique aponeurosis is sutured by Bassini over the reconstructed canal *edge to edge*. This is entirely changed in my operation as will be seen. [The writer, with Dr. Allport's assistance, here dem-

onstrated upon the cadaver the complete Bassini operation and followed this by performing on the opposite side his own or the imbrication operation.]

Now as my subject is "Obstacles," permit me to refer to some drawbacks even to the success of the Bassini operation just seen. As certainly as you do a number of these operations you will come upon cases where its execution is difficult. These are cases of large internal ring with corresponding defect or absence of the posterior wall of the canal. They are not always large hernias, but sometimes the defect is so great that no muscular nor tendinous tissue appears between the ring and the rectus border. Now the repair of the posterior wall becomes difficult because it involves suturing into apposition structures wide apart. It is well enough to place one or two of the lower stitches into Poupart's ligament and the rectus sheath, but when these tissues must be depended upon too largely to repair the posterior wall the result is very unsatisfactory.

The obvious remedy for such a defect is the use of a flap from some neighboring part to fill this gap.

It seems to have occurred to several operators to attempt this in various ways. Flaps formed of fascia lata and even of a portion of the thigh muscles, such as the tensor vaginæ femoris, have been suggested. Woelfler advocated the use of the anterior sheath of the rectus muscle turned outward and sutured into the ring and posterior wall. The problem is to rebuild this deficient wall with a flap of some analogous tissue, which can be brought into position with ease and certainty without additional dissection or damage to other parts. To this end I use the structure nearest at hand, the *upper* segment of the divided external oblique, sliding it gently from its former position in front of the cord to a corresponding one behind it. Observe that its fibers are not changed in direction or even separated from the muscle behind. It is simply incorporated *with* the material Bassini uses in the posterior flap. I can not insist too strongly on the importance of using all the conjoined tendon and transversalis fascia present as part of this flap, since some operators have seemed to think it only necessary to include the layer of aponeurosis of the external oblique. This may be a kind of "imbrication" but it is not my method. Here I desire to call attention to the smooth firm appearance which the canal presents with this new structure incorporated. Of its strength and its unimpaired nutrition there can be no question. The question first suggested on seeing this step in the technique, is whether perhaps we have put the parts under too great tension (see Coley & Bull, *Sajous' Annual*, 1896, Vol. III). The fact is that there is never great tension here as shown by the ease with which these deep sutures are drawn. The overlapping is only 2 or 3 cm. Is it not true that in a dilated canal the anterior wall is stretched, and that, by thus disposing of the upper flap, we simply make the tension equal in front and behind the cord? Consider, also, how much firmer the union must be between overlapping surfaces than between those united edge to edge as by Bassini.

The *lower* flap of external oblique aponeurosis now remains as a covering to the cord, and is gently laid and sutured overlapping the upper with the cord between them. It is perfectly obvious to you that we now have the same anterior wall as before to the inguinal canal, namely, this aponeurosis. The external ring is also restored as before or perhaps a little

smaller. Into the posterior wall, however, is introduced a new and strong layer. Three layers now occupy the place of two and are so interwoven that they support each other and the tension is equally shared by the two lines of suture. I attach some importance to this point as I have found that in the Bassini method the deep row bears all the stress, and the edge to edge union of the aponeurosis over the cord is not always perfect.

I can not refrain from stating that I have found the principle of imbrication applicable to other purposes such as uniting abdominal wounds after ordinary celiotomy near the linea alba and linea semilunaris; but in this part of the subject I can not hope to interest you at the present time.

DISCUSSION.

Dr. COLE—I had the pleasure about a year ago of witnessing a demonstration of this operation by Dr. Andrews upon a living subject, and since then have had an opportunity to make the operation in five cases, and while that comparatively does not amount to very much, yet I wish to say the operation is to my mind an ingenious improvement upon the Bassini operation and one that will prove satisfactory. Before seeing Dr. Andrews I was prejudiced in favor of the Kocher operation; in suitable cases I still think it is an admirable operation, but I do not think it is so well suited to the average case presented as the practical modification and improvement by Dr. Andrews. You all know what the feature of the Kocher operation is, putting the sac through the upper torsion and making a new operation. I think I have done the operation in three or four cases.

Dr. MAYO—I wish to thank Dr. Andrews for his very clear demonstration of his method of operating for the radical cure of inguinal hernia. He is to be especially congratulated that he has wasted so little time on the peritoneal sac. In the past the treatment of the sac has been altogether too much insisted upon. The peritoneum and skin are the coverings of a hernia and neither has any particular retentive strength. Dr. Andrews wisely shows this in a negative way by dealing almost entirely with the muscles and aponeurosis. The proper restoration of these structures settles the question of radical cure. The sac may be cut off, or as done by Macewen, puckered up about the internal ring; it matters little so long as it is not allowed to evert between the important muscular and aponeurotic structures and prevent their firm union. Like the sac, the skin has no retentive power and is important mainly from the fact that it can only by great difficulty be rendered reliably sterile, and as suppuration is one of the most common causes of failure by introducing relatively weak scar tissue in the place of structural union of tissues, the greatest care in dealing aseptically with the skin is absolutely necessary. Dr. Andrews' method of placing the sutures is a good idea, for in case suppuration should take place the deeper parts of the wound might escape. Greig Smith long ago pointed out that scar tissue is essentially the same between different tissues and always unreliable and that it should be covered by normal structures if possible. Bassini's operation does this most admirably, the line of sutures of Poupart's ligament being protected by the over-lying flap of the external, and the sutures in the external oblique being protected underneath by the deeper tissues pulled under by the previous line of sutures. But when the space of the internal ring is large the traction necessary to bring the conjoined tendon to Poupart's ligament at the lower angle is great and the union endangered by cutting of the sutures. It is to this class of large hernias it seems to me Dr. Andrews' operation can be beautifully applied; it readily protects this weak point by the strong external oblique fascia which is drawn under in his method. Hal-

sted's operation is one which depends on scar tissue union in one line from within out and succeeds only by leaving in permanent silver wire sutures which act as an internal truss. I have done the Halsted operation a number of times with good success. The Kocher operation is defective in drawing the relatively weak sac between the muscles. After an operative experience of 125 cases of radical cure I had come to the conclusion that the Bassini was the most rational operation and I now practice it almost exclusively. Dr. Andrews' modification of the Bassini in the large hernias, where the defect in the abdominal wall is considerable, will be of great value.

A MEMBER—I am very glad indeed to have had this very clear description; it seems to me to be one of the best operations I have ever seen. I never have had much experience—in all probably thirty cases—but on the majority I did the Halsted operation, except in introducing the stitches I devised a little scheme of my own. I used altogether the heavy common gut but instead of inserting the sutures in the same manner as Halsted does on the side, I insert the suture on the top about a third of an inch and draw it out again on top, so instead of the edges coming in contact, the edges were turned into the canal; so you have an edge turned down and that seems to me to abate the tendency to a new hernia forming in the new ring, as in the Halsted operation, because in this method of inserting stitches you have instead no raw bulging edges. This edge where it is carried on the upper ring projects downward, and that downward projection interferes with the proper union and a new hernia is formed. My greatest difficulty is to draw it tight enough to be safe and at the same time to prevent strangulation of the cord. My cases have rarely recurred; the oldest, I think, is a little over six years old; most of them have been in the hospital and I have seen very little of them afterward; some of them I have traced two years, but I have heard of but one or two out of twenty of that method that have lapsed. One case I have had under observation continuously; I was an attendant in the hospital at that time; he had a very large hernia which had troubled him for twenty or thirty years. In this case my upper suture above the cord gave way, causing a protrusion; as soon as I discovered that I opened it and trimmed the edges and inserted a new suture, and that is six months ago and it is very good yet.

Dr. ANDREWS—Of course I am gratified to hear of Dr. Cole's favorable report of cases done by my method. I had the pleasure of meeting Drs. Cole and Galbraith a year ago and showing them my operation, but to hear that this method has been introduced as far as Montana is a surprise. The Kocher operation, like others which depend upon the sac, only seems to me a step backward. Sac adhesions are untrustworthy to retain a hernia. Farther, can any diagnostician tell us whether or not he has congenital hernia before operating? How can Kocher's method be used without a separable sac?

As to the sac, it does not make any vital difference what you do with it. You know the operation of O'Hara consists of cutting off the neck of the sac and retracting the stump, without, however, the deep sutures of Kocher. He leaves the scrotal part of the sac in the scrotum and no harm results in most cases. In a few cases I have dealt with the sac by pushing it back entire. This was when one was found having no distinct neck. Of course a majority of cases have so well-defined a sac that it is easy to strip it gently from its bed and ligate it off. I was particularly pleased with Dr. Mayo's remarks on the sac question. We must not put dependence upon peritoneal tissue for permanent repair, but upon careful reconstruction of the aponeurotic walls. I stand firmly on this principle as embodied in Bassini's and my own method, and distrust the type of operations depending upon sac closure or adhesions. In case of a very large cord or any veins, I do not advocate removing any of them; I always leave two fair-sized veins on the cord and I think one needs to take special pains to avoid

the artery; it is not difficult as it is large, and if you get your artery mixed in with the sutures I think it would most certainly cause gangrene of the testicle.

HEREDITARY ATAXIA—FRIEDREICH'S DISEASE.

A clinical lecture delivered before the Woman's Medical School of Northwestern University.

BY DANIEL R. BROWER, M.D.

PROFESSOR OF MENTAL AND NERVOUS DISEASES WOMAN'S MEDICAL SCHOOL, NORTHWESTERN UNIVERSITY; PROFESSOR OF MENTAL DISEASES AND THERAPEUTICS IN RUSH MEDICAL COLLEGE, ETC.

[Reported by Cunera R. Scheffer, M.D., Clinical Assistant.]

We have before us today, as patients, three members of the same family. In the antecedent history, we can neither see any positive evidence nor gain any information as to venereal disease or alcoholism, two of the most prolific causes of lesions in the nervous system; but we do find a striking record of pulmonary tuberculosis. On the maternal side, two aunts and two uncles, as well as the grandmother, died of this disease. The mother, a French-Canadian, is living and in good health. She is small in stature. On the paternal side there is a history of health and longevity, but we are told that the children were "scrofulous." The father, of the same nationality as his wife, died somewhat over a year ago, of organic heart trouble. So far as our uncertain knowledge can testify, the cousins have had no diseases other than those common to childhood.

In the immediate family there were eleven children, four of whom are not living. Three of these died of acute illnesses, while the fourth was a hydrocephalic baby. There are two grown sons apparently healthy. Three young daughters are in a poor physical condition, having enlargement of the post-cervical glands, and are markedly undersized. We will now turn to the patients.

Case 1.—This boy is 12 years of age, and American born. For the last four years he has had trouble in walking. It began with a slight stagger and has been steadily, and during the past year rapidly, increasing. Notice his style of locomotion. The toes are brought to the ground first, and the feet are widely separated. This is suggestive of spastic paraplegia. He can not walk at all with his eyes closed. There is incoördination of the upper extremities also. There is no atrophy. The deep reflexes are absent, but the plantar, a superficial one, is still intact. This difference is due to the separate paths taken by the sensory fibers upon their entrance into the spinal cord. The deep reflexes enter the posterior columns directly, while the superficial pass into the cornua through Lissauer's zone, and it is not until the posterior horn is involved that the superficial reflexes are lost. Rectal, vesical and sensory symptoms are entirely lacking. Notice the back; scoliosis is a common accompaniment of this disease. There is a double curvature similar in outline to the letter S.

Case 2.—This boy is 21 years old, and was born in Canada. His ataxia has been progressive from the age of 14. His gait is like his brother's, but with a much more widened base, and you see he can not walk at all without the aid of a chair, which he pushes in front of him. There is the same incoördination of the upper extremities, and something that was not found in the first case, a difficulty in speech, shown by his thick, halting articulation. Reflex irritation and the spinal curvature are the same, and in addition to the latter, we have another common deformity, the

turning up of the great toe, which was noticeable a few moments ago. It is not a constant symptom. Frequent pains are present in this case, but notice that they are of late development.

Ophthalmic examination reveals no ciliary or pupillary diminution of reflex, but the field of vision is abnormally contracted in every direction. Nystagmus is not demonstrable today.

Analysis of urine gives negative results. Analysis of blood shows 82 per cent. of hemoglobin, and the excellent record of 4,870,000 red corpuscles.

Case 3.—This young woman is 24 years of age and Canadian by birth. Variola was the starting point of her disease nineteen years ago. The ataxia has progressed until the lower limbs have reached the paralytic stage, and the upper ones an advanced incoördination, the speech becoming more and more faltering, until it is at times unintelligible. Atrophy is pronounced, and the superficial, as well as the deep, reflexes are abolished. There is the same double spinal curvature here, and the hyperextension of the great toe. The last few years have developed lancinating pains in the limbs. The mind is much impaired. Ophthalmic examination, rendered uncertain by corneal opacity and enfeebled mental condition, shows no abnormality. Analysis of urine reveals nothing further than a high specific gravity with an abundance of urates. The analysis of the blood gives us 58 per cent. of hemoglobin, and the extremely poor record of 1,330,000 red corpuscles.

The stigmata of degeneracy is very marked in all three cases, as observed in the tables below.

Diagnosis: These are cases of Friedreich's disease or hereditary ataxia.

Symptoms: 1, the ataxia, beginning in the lower limbs and extending to arms and tongue; 2, the spinal curvature; 3, gradual development of paraplegia; 4, loss of knee jerk; 5, that the symptoms began in childhood; 6, the absence of Argyll-Robertson pupil, of anesthesia, of vesical symptoms, of severe pains, of intention tremor, of spasticity of the gait. These several symptoms readily differentiate these cases from posterior spinal sclerosis and multiple sclerosis.

As to cerebellar heredo-ataxia, I believe the form of the disease before you is identical with it in pathologic process, the one beginning in the cerebellum and giving eye symptoms and exaggerated reflexes in the start, and traveling downward; the other commencing in the lower region of the cord with loss of reflex and no sensory or eye manifestations, and passing upward, finally involving the cerebellum.

Pathology: The seat of the morbid changes is at first the posterior and lateral columns of the cord, later the anterior cornua and finally the nerve structure. In some cases there is developmental failure; in others, an inflammation resulting in a steady encroachment of the connective tissue on the nerve elements.

Prognosis and treatment: The prognosis of the disease is clearly demonstrated before you. We have no cure. Our province lies in protecting the other children as soon as one case is diagnosed. The family surroundings should be the best hygienically, and every care taken for the prevention of infectious disease, which hastens the development of the ataxia. A nutritious diet is necessary, and medical treatment when indicated by the general physical condition. For the disorder itself nerve stretching might be palliative. Alterative treatment coupled with the best

of hygiene, will give as good results as we are able to bring about by the science of today.

| CASE 1. | CASE 2. | CASE 3. |
|--|---------------------------------|-----------------------------------|
| Height, 4 feet 3½ inches. | 5 feet 2 inches. | Well developed. |
| Occiput, full. | Full. | Flattened. |
| Bregma, sunken. | Flattened. | Flattened. |
| Forehead, full and narrow. | Narrow and low. | Narrow and low. |
| Hair, dark. | Dark. | Dark. |
| Hair on face. | Scanty. | Considerable. |
| Hair on body. | Considerable. | Normal. |
| Face, sunken. | Sunken. | Normal. |
| Zygomata, normal. | Left more promin't. | Right more devel- |
| Ears, a, long and narrow; b, | Jug-handle shape; | Tubercle on right. |
| Darwinian tubercle on left | left higher than right. | |
| Nose, defects to left. | Deflects to right. | Normal. |
| Thyroid gland, enlarged. | Almost a goitre. | Goitre. |
| Eyes, right higher than left. | Left higher than R. | Sunken. |
| Jaws, lower arrested, width | L. arrested, w. u. 2½ | W. u. 1½ in.; h. v. ½ |
| upper 2½ in.; high vault | in., h. v. ½ in., a. | in.; a. p. 1½ in. |
| ½ in., anterior post. ½ in. | p. 1½ in. | |
| Alveolar process, hypertrophy. | No abrasion. | Hypertrophy. |
| Teeth, six permanent lower, | Abnormal muscular | Abrasion, upper lateral |
| and upper abrasion. | development of | Double spinal cur- |
| Body, arrest of chest walls, | right shoulder; | vature; emaciat'n |
| post. cerv. and ing'l glands | double spinal | |
| enlarged, double spinal | curvature. | |
| curvature. | | |
| Breasts. | Unusually full. | Right not so fully |
| | | developed as left. |
| Tibia, flattened. | Flattened. | Flattened. |

Dr. Mary Hollister and Dr. Eugene S. Talbot furnished the ophthalmic and anthropologic data respectively.

INFLUENCE OF DIET, IN A CASE OF DIABETES MELLITUS, UPON THE ABNORMAL CONSTITUENTS OF URINE AND UPON THE GENERAL CONDITION OF THE PATIENT.

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Clinical History.—The patient was a married man, 33 years of age, and of excellent previous health. There was no history of any neurosis, but he stated that his mother had been a great sufferer with neuralgia and had periods of great mental depression. His life had chiefly been spent in open-air work, and on the first of March he had obtained a position as policeman, his weight at that time being 148 pounds. At about that time he first noticed a polyuria and white spots, which evaporating drops of urine left on his shoes. The diagnosis of his condition was not made, however, until the following August, when loss of weight and increasing weakness compelled him to resign his position. He came, on the last day of September, under the care of the writer. At that time his weight was 132 pounds, the general condition was fair, except for emaciation and weakness, with occasional cramps in the legs and a dull pain in the lumbar region. Up to this time his diet had consisted almost entirely of carbohydrates, especially the sweeter pastries, cake, etc., there being an especial craving for such foods. He had never been a spirit drinker. Physical examination showed sound heart and lungs, liver slightly decreased in size, spleen small. There was marked tympanites. On this date the twenty-four hours urine amounted to 8,360 c.c. There was a specific gravity of 1,027 and it was neutral or faintly acid to litmus. No odor of acetone could be detected either in the breath or urine, although a small amount was demonstrated to be present in the latter by Gunning's iodoform test. No reaction with ferric chlorid could at this time be obtained. Sugar was present to the amount of 11 per cent. making a daily excretion of 920 gm. The urea excreted amounted to 67 gm.

October 3, patient placed on rigid proteid diet for forty-eight hours. Thirst is much increased and there is a severe frontal headache with malaise. The urine, on testing with ferric chlorid, gives a strong, ruby-red reaction. It is strongly acid to litmus. Amount 9,370 c.c., specific gravity 1.030, sugar 4.25 per cent. The iodoform reaction had increased in volume fifteen to twenty times.

October 4, appetite greatly increased; otherwise condition unchanged; sugar 1.25 per cent. Ferric chlorid and iodoform reactions greatly increased.

October 8, general condition unchanged; weight 125 lbs.; sugar 3 per cent.; iodoform and ferric chlorid reactions still increasing.

October 12, severe frontal headache for two days: much vertigo and patient feels weaker; sugar 2.25 per cent.

October 16, headaches continue with increasing severity; spasmodic twitching of facial muscles; weight 122 lbs.; sugar 3.25 per cent.

October 22, general condition the same: characteristic urine reactions increased; sugar 5 per cent.

October 26, patient nervous and depressed; frontal headaches continuous. Patient fainted but recovered in a few minutes. Sleep very poor and bowels obstinately constipated; urine shows 0.1 per cent. of albumin; sugar 2.25 per cent.; ferric chlorid reaction shows a maximum intensity; weight 118 lbs.

November 6, condition gradually becoming worse; appetite enormous and considerable dyspepsia. Patient is very weak; sleep poor; memory failing and mind wanders at times, especially at night: urine reactions the same; sugar 5 per cent.

November 12, persistent headache with facial neuralgia; vertigo frequent and insomnia great; sugar 6 per cent.

December 6, mind wanders continually and patient is subject to great depression; much vertigo, nervous irritability and insomnia.

December 7, pulse 108, weak and intermittent; pains all over body. Patient is slightly delirious a considerable part of the time and very despondent and melancholic; urine reaction with ferric chlorid very large.

December 9, cerebral symptoms somewhat improved and sleep obtained by use of hypnotics; bowels badly constipated and much dyspepsia present; sugar 6.25 per cent.

December 14, condition is unchanged; appetite enormous; urine reactions marked; sugar 5.25 per cent.

December 26, has visited in the country for a fortnight; felt much improved at first, but the last few days has had severe headache and vertigo; sugar 6.25 per cent.

January 15, great mental depression with muscular weakness: tormenting frontal headache; urine passed in twenty-four hours 7,230 c.c.; sugar 5.25 per cent.; ferric chlorid and iodoform reactions very large.

January 20, patient is depressed and delirious at night; has bad dreams and sleep is poor. Bromids are given in small doses with relief: weight 112 lbs.; urine in twenty-four hours 7,880 c.c.; sugar 5.25 per cent.

January 28, general condition unchanged, no improvement; sugar 6.25 per cent. Ferric chlorid and iodoform tests very large.

February 3, condition is unchanged: urine passed in twenty-four hours 9,680 c.c.; sugar 7.25 per cent.

February 8, condition is worse; headache is so severe as to induce frequent fits of crying: sleep is poor and vertigo almost constant; amount of urine 10,900 c.c.; sugar 7 per cent.

February 16, patient threatened with collapse. Vomiting; is unable to walk up stairs. Pulse 128, weak and intermittent, with shallow and hurried respirations. For weeks appetite and thirst could not be satisfied. Weight 108 lbs.; sugar 7 per cent.

February 20, condition somewhat improved as regards headache and cerebral symptoms. Urine 9,150 c.c.; sugar 6.5 per cent.; urine reactions strong.

February 22, the condition of the patient steadily becoming worse, it was thought advisable to stop the treatment by proteid diet and allow carbohydrates with the addition of eggs and milk. The patient was encouraged to use alcohol freely, particularly in the form of eggnog, and was urged to restrict the quantities of drink taken as far as possible.

February 26, patient much improved; cerebral symptoms almost disappeared; appetite much less but thirst increased. The patient drank thirteen quarts of milk in the twenty-four hours. The ferric chlorid reaction in the urine much diminished.

February 29, great subjective improvement. Patient feels much better and stronger.

March 3, feels perfectly well except for muscular weakness. Twenty-four hours urine 9,469 c.c.; sugar 7.75; ferric chlorid reaction greatly decreased in intensity.

March 8, strength returning: no cerebral symptoms. Weight 113 lbs., showing a gain of five pounds on this treatment. Ferric chlorid reaction only moderate: sugar reaches its maximum on a carbohydrate diet 9.5 per cent.

March 14, patient rides or walks out every day for short distances; had bad dreams but no other cerebral symptoms. Urine 9,820 c.c.; sugar 7.5 per cent.

March 18, still improving: sugar 7 per cent.

March 22, one month after employing a mixed diet the patient finds himself subjectively better in every way. He has gained in weight and muscular power and the previously marked cerebral symptoms have almost entirely disappeared. Headaches and vertigo, which were formerly almost constant under a proteid diet, are now only occasional and not as severe as formerly.

March 28, patient feels well except for muscular weakness.

March 29, no headache. Patient sleeps well. Ferric chlorid reaction still persists, but is only a small fraction of its former intensity while under a proteid regimen.

April 1, condition unchanged; sugar 5.75 per cent.

April 5, patient still improving, although is still very weak. Sleeps well and has little cerebral trouble; sugar 6.5 per cent.

April 9, has been working out of doors and contracted considerable bronchitis. Otherwise in good condition, although has had two severe headaches which were, however, of brief duration. For experimental purposes the patient was put temporarily on a purely meat diet; sugar 7 per cent.

April 12, patient's cough worse. Headache troubled him yesterday. Urine passed after two meat meals gives an intense ferric chlorid reaction and contains 12.43 grams of ammonia. If the ammonia was excreted for the full twenty-four hours in the same ratio the daily excretion would amount to about fifty times that of health.

April 14, cough much worse with severe pain under left scapula; pulse 120 and weak; respirations short and hurried, 51 to the minute. Physical examination shows dulness on percussion under left scapula, with fine crepitant râles. Temperature 104.4. Diagnosis: Pneumonia. A "pneumonia jacket" was ordered and small doses of morphin with ammonium carbonate administered.

April 15, patient suffering great pain, to quiet which morphin in sixth-grain doses was given by mouth. Physical examination showed extension of the pneumonic process. Pulse 106; 102.6. Eggnog given every two hours.

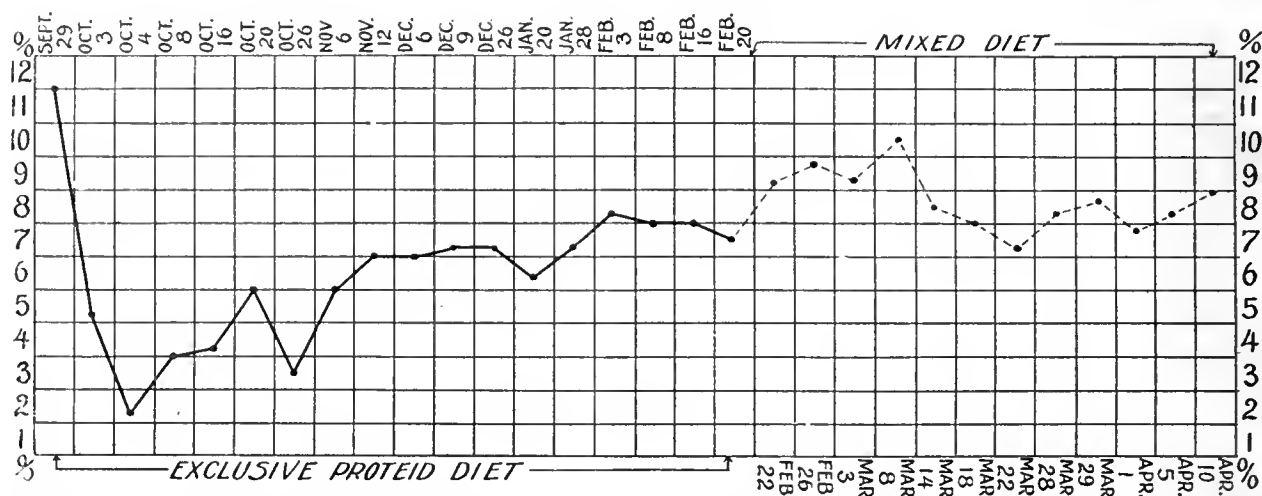
April 16, has been suffering extremely all night as he refused to take the morphin. Temperature 104.4 and pulse 140. At the desire of the family small doses of morphin were given subcutaneously as were also stimulants. At this time the patient endeavored to urinate but was unable to do so. Shortly afterward he became quiet under the morphin, the action of the heart steadily growing weaker in spite of careful stimulation. Death followed five hours later. About one hour before death he broke into profuse perspiration, the first one in a year. Unfortunately a postmortem examination could not be made.

Influence of diet.—That the ingestion of various food stuffs exerted a marked influence upon the excretion of certain abnormal constituents of the urine was very noticeable. Although, according to the accepted treatment of diabetes, there should have been a great diminution or absence of sugar from the urine while under a proteid diet, in this instance such a diet has had by no means the effect which was to have been expected. Before proceeding to a discussion of the influence of diet upon the several constituents of the urine individually, it may be well to make a general statement to the effect that an exclusive proteid (meat) diet has in this case been observed to directly produce and increase the quantity of certain of these bodies, that this state of things is accompanied by, and is probably in part the result of, an excessive tissue waste and that these abnormal bodies so produced are probably important factors in the production of cerebral symptoms which may so increase as to ultimately in fatal coma. It has also been observed that a return to a mixed diet from a proteid regimen greatly increases the amount of certain of these bodies, this increase being accompanied by marked physical and mental improvement. As has already been stated, this patient came under treatment feeling perfectly

well except for muscular weakness. His weight at that time was 132 pounds. Subsisting almost entirely upon carbohydrates, there was a sugar output of about 980 grams in the twenty-four hours. A rigid exclusion of all carbohydrates was now ordered, the patient being allowed the usual diabetic bill of fare but, from choice, subsisting almost wholly upon meats and animal broths. On October 3 the sugar excretion had fallen to 4.25 per cent., the following day, five days after instituting treatment, bringing the sugar down to 1.25 per cent., the smallest amount to which it ever fell while under the care of the writer. On October 8, there was a rise to 3 per cent. and on October 22, after considerable variation, it reached 5 per cent. During the next three weeks there was a fluctuation of several per cent. on both sides, and on November 12 it had risen to 6 per cent. From that date until February 20, a period of fifteen weeks, there was at no time a variation of more than 1 per cent. from this point. The proteid diet, then, during the five months of its continuance, had succeeded in permanently diminishing the sugar excretion not quite one half. The quantity of urine eliminated daily continued at about the same point—9 liters. Accom-

forms, together with eggs and milk. The use of gruel, rice, oatmeal, bread, etc., was encouraged. Following this treatment, on February 22, the sugar excretion amounted to 6.5 per cent. February 28, it had risen to 9.75 per cent. March 3, there was a slight fall to 8.75 per cent., while on March 8, two weeks after giving a mixed diet, it reached 9.5 per cent., its maximum under this treatment. March 14, it stood at 8.5 per cent., and on March 22, exactly one month after instituting a mixed diet, the sugar secretion had again reached the 6 per cent. mark, which had so long been the average under proteid treatment. There was no great subsequent variation from this point.

But it may be objected that nothing had been gained by a mixed diet, since the sugar excretion remained at about the same proportion. It must be reiterated that the quantity of sugar excreted is in itself of no importance and that a patient with a large sugar secretion is in no more immediate danger of death than one secreting a fraction of that amount. In fact, from a study of this case, the writer is convinced that a patient secreting only a few grams of sugar on a strictly proteid (meat) diet is in a far more precarious condition than one who excretes



panied by what symptoms had this reduction of some 5 per cent. of sugar been accomplished? On February 20 the patient weighed 108 pounds, showing an actual loss of body weight of 24 pounds. Progressive weakness had confined him to his room for the past three months and severe dyspepsia had resulted from excessive ingestion of proteids. Severe cerebral and nervous symptoms had been almost constant for three months. He was daily subject to severe headaches, vertigo and neuralgia; memory had failed and the mind frequently wandered, these symptoms deepening in several instances to slight delirium. There had been one fainting fit, and sleep had been obtained with difficulty and was disturbed by bad dreams and nightmare.

It may be objected that all these physical and mental symptoms were due to the natural progress and increasing severity of the disease itself and that there was necessarily no relationship between them and the diet administered.

On February 22, however, the patient being apparently on the verge of coma and collapse, the treatment by proteid diet was abruptly discontinued and all meat interdicted, the patient being allowed moderate amounts of carbohydrates in easy assimilable

several times that quantity under a carbohydrate or mixed diet. Following the return to a mixed diet this patient showed rapid improvement in every way. He had made an actual gain in weight of twelve pounds, while his strength had so returned that, instead of being bedridden, he was able within a few days to take short walks and drives. The most noticeable and complete change, however, was the almost immediate disappearance of the cerebral symptoms, not relatively but absolutely. There was hardly a trace of cerebral trouble for several weeks, while under a proteid diet headaches and vertigo had been of almost constant occurrence. Sleep was readily obtained and was refreshing, while all traces of depression and melancholia had disappeared. Furthermore, a return to proteid diet was followed by a return of headaches and vertigo.

The following curve shows the sugar excretion between September 29 and April 10, and is based upon the full twenty-four hours urine in each case. It will be readily seen that, in this case at least, a purely proteid diet was not followed by a great permanent increase in the sugar output nor did a return to a mixed diet permanently increase its excretion. In this instance, therefore, the treatment by an exclusive

proteid diet in the hope of cutting off the sugar supply and so preventing its appearance in the urine has entirely failed in its object while at the same time it has apparently induced and aggravated those mental and physical conditions which are premonitory of coma. On the other hand, these symptoms have abated at once on a return to a mixed diet.

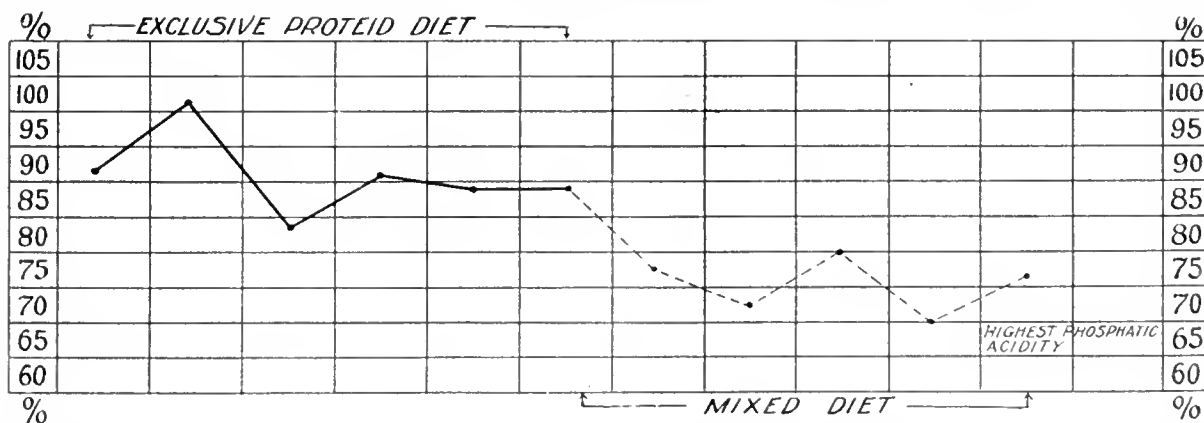
During work on the sugar excretion it was noticed that the percentages of sugar varied greatly at different times in the twenty-four hours. Urine passed in the early morning contained only a relatively small quantity of sugar, but this steadily increased until the maximum was passed at about the middle of the afternoon. It then gradually diminished and the urine passed in the late evening only contained a small amount. Such a variation in the excretion of sugar will show the necessity of basing all quantitative estimations upon the entire twenty-four hours' excretion. The ferric chlorid reaction, showing the presence of aceto-acetic acid, could not be obtained from this case previous to beginning treatment, but it appeared with considerable intensity within forty-eight hours after the institution of a proteid diet. It was also noticed that this reaction obtained its maximum two or three hours after a meat meal and was least in the urine passed just previous to such inges-

siderable increase while under the latter treatment. This fact, in connection with the fact that the urine acidity always rose after the ingestion of large amounts of meat by this patient would seem to show that the amount of diacetic acid excreted depended entirely upon the amount of proteid which the system was obliged to decompose. If diabetic coma is due to an acid toxemia, as is now generally believed, a too rigid meat diet must without doubt be a main factor in its production.

The following curve shows the urine acidity so found under both mixed and proteid diet. Under a mixed diet there is a decrease of 14.69 per cent. of acidity, although the acidity under both conditions of diet was in excess of what it was possible to attribute to acid phosphates.

With regard to the excretion of ammonia under mixed and proteid diet it was found by a large number of experiments that while under a meat diet the ammonia excretion was about twelve times that of health, but that the change to a mixed diet was at once followed by a decrease of about one-third in the ammonia excretion.

In this case, then, the restriction to an exclusive proteid diet resulted in a diminution of the sugar excretion about one-half. This was accomplished at



tion. These latter facts were repeatedly noted. This is evidence in favor of the theory that diacetic acid is produced directly in the decomposition of proteid—more especially of the albumin ingested, but also to a certain extent of the body tissue itself—and is not, as has been advanced, a result of the oxidation of sugar.

With regard to oxybutyric acid, the amount of this body present in the urine of this case was at no time large and probably never exceeded 3 to 5 grams in the twenty-four hours. There was, however, a marked increase in the amount of this acid while under a mixed diet. This agrees with Hugoumeq (*Am. Jour. Med. Sci.*, October, 1887), who seems to be about the only one who has observed the influence of foods on diabetic urine, and who believes that a meat diet is a prime factor in the production of this body.

For the purpose of supplementing the results given by the ferric chlorid reaction determinations of the acidity of the same specimens of urine were also made. The results so obtained approximated very closely with the variations of the ferric chlorid reaction, showing that aceto-acetic acid was the chief factor in the production of the high urine acidity found in this case. Determinations of the urine acidity in urines passed under proteid and mixed diets showed a con-

the expense of the general health and comfort of the patient, and was accompanied by the appearance and progressive increase of certain abnormal constituents of the urine which were of far more clinical significance than was sugar itself. A return to a mixed diet, in which moderate amounts of carbohydrates were allowed, resulted in the immediate physical and mental improvement of the patient and decrease of the abnormal bodies in the urine. Furthermore, this mixed diet did not permanently raise the sugar elimination beyond what it had been for some months under proteid diet.

CYSTITIS IN WOMEN.

Read at the Nashville Academy of Medicine, Dec. 17, 1896.

BY WILLIAM D. HAGGARD, Jr., M.D.

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There is no more prevalent, distressing or intractable mnlady in the whole range of gynecic affections than cystitis. It is a subject that rarely comes up for discussion in medical societies. It seems that our appreciation of the difficulties and limitations in its treatment, combine to render our interest in the disease lukewarm. Your essayist feels like apologizing

for its introduction before this presence, especially as he has nothing new to offer; yet the extreme distress attending it so far exceeds the majority of conditions that enlist our interested therapeutic and surgical endeavors, that a review of some of the obstacles to its cure and an invoice of our resources should be of the utmost moment.

A perusal of the classical literature on the subject is a most ponderous undertaking, and the detailed description of trivially remote and ridiculous idiopathic causes begetting a host of vaunted remedies is disquieting and mystifying.

Sepsis, "the leaven which leaveneth the whole lump," is the key to both etiology and treatment. The failure to appreciate the causative factorage of pus-producing germs; the rational methods for their extermination and the correction of their depredations, is the entire solution to the misinterpreted etiology and unsatisfactory treatment in the hands of our predecessors. Hitherto the inflammatory and other ailments of the female urinary system, has been illy understood, and lagged in the wonderful progress made in collateral branches of our art, particularly in the revised pathologic conception and treatment of the associated organs.

The most incisive changes in the diagnostic phase of these disorders have been wrought by the perfected cystoscopic methods devised and popularized by Prof. Howard A. Kelly. His labors have led to a more correct appreciation of the infective nature of these maladies, together with the proper means and instruments for their detection and direct treatment. For long, urinary diseases in the opposite sex have been endowed with the best efforts of general and special surgeons, but the corresponding class of diseases in women has been the step-child to obstetrics and the "ugly duckling" in gynecology. The monumental labors of Kelly, supplying methods for differentiation, has placed the keystone of accurate diagnosis to the arch of symptomatology and treatment builded by Skene and Emmet.

While recognizing that the overwhelming majority of cases of inflammation of the bladder result from pyogenic microorganisms introduced from without, the instrumentality of such causes as exposure to cold, retention and decomposition of urine, calculi, foreign bodies, entozoa, neoplasms, tuberculosis, mechanical injuries, croupous and diphtheritic inflammations, and the secondary infection from rupture of an adjacent pus collection, is unquestioned. Yet unclean catheterization must stand the impeached sponsor for the majority of cases of this affection. The extension of septic urethritis, particularly gonorrheal, is another source of infection. It is to the prevention of these two large classes of cases that I desire to refer especially. Unclean, rather than unnecessary catheterism, should be the subject of censure. I believe that more cases in obstetric practice should be catheterized and fewer cases in gynecologic surgery. The over-distended bladder in parturient women, unsuspected by the patient and unnoticed by the nurse, should always be the subject of closest scrutiny from the accoucher. Do not wait for dribbling, but insist upon careful measurement and computation of the total daily amount of urine. Urination should be encouraged, even to allowing the woman to sit up on the bed-pan in normal cases after the first few hours. In difficult cases, and where the patient is unable to pass her water, systematic clean withdrawal should be practiced.

In the post-operative care of gynecologic cases, I am especially anxious to encourage voluntary urination, by allowing hot water to trickle over the vulva, by vaginal irrigation, where there is no outside operation or gauze within, and this failing, by hot enema (unless there is sphincter repair). These methods faithfully employed are usually successful. I can commend enemata as the most effective of all methods to encourage micturition. These means failing, the method of catheterization is all important. I append the rules for preparing catheter, and precautions necessary in passing it, in use in the Woman's Hospital.

1. Catheter to be boiled in boric acid solution 4 per cent. for ten minutes.
2. Catheter to be brought to bedside in the vessel of solution in which it has been boiled.
3. Nurse to place patient in proper position for introduction of catheter.
4. Prepare the parts by washing with bichlorid solution 1-3000.
5. Nurse to scrub hands with brush, soap and water for three minutes.
6. Scrub nails and hand with brush and bichlorid 1-1000.
7. Nurse not to touch anything after cleansing hands except catheter, great care being taken not to touch bed, clothing or anything else with catheter before its introduction.
8. This order of preparation as suggested must be followed.

These instructions are printed, placed in suitable places in each ward and cottage and also reproduced in the "Rules for Nurses." Such rigid measures are in pleasing contrast to the routine of "drawing the water under the bed-clothes." They will also serve to accentuate the essential features: Aseptic condition of catheter, antiseptized field of manipulation, clean hands, and the maintenance of an unbroken chain of asepsis throughout. As "a chain is no stronger than its weakest link," so the slightest inconsistency in technique may frustrate our most elaborate details. The use of the family jar of vaselin is a common error. In reality no lubricant is needful, but if it were, its sterilization should be a matter of course. It may be added, that glass or metal catheters are preferable to rubber, for obvious reasons.

The prevention of extension in gonorrheal urethritis should enter largely into our active combative efforts in this disease. With the onset of *ardor urinae* the urethra should be irrigated, after the conclusion of the daily disinfection of the vagina, with a 1-20,000 solution of bi-chlorid. The instillation of a few drops of 4 per cent. cocain solution should precede the irrigation, which should be confined to the urethra by pressing its proximal end well up under the symphysis so that none of the fluid enter the bladder.

The habit of long retention of urine by women, through motives of modesty, or inability to evacuate the bladder at regular or suitable intervals, is mentioned as a cause. Over-distention causing a cutting off of the blood supply to the mucous membrane of the bladder, with total or partial death, has resulted in an exfoliation of the entire mucous membrane in sheets and flakes. Jewett reports such a case after retention ninety-six hours amounting to nine pints. I will also mention the danger of accidental chemical injection of the bladder in the subsequent care of plastic cases in gynecology. One of the most desper-

perate and aggravated cases of cystitis I ever saw occurred from the accidental introduction of the irrigating catheter into the bladder and injection of quite a quantity of bichlorid solution 1-5000, in a tight restoration of the posterior vaginal wall. I have known that accident to happen sufficiently often to have a special irrigating tube made for these cases that will not go into the urethra.

Decomposition of urine is in most cases the result of bacteria ingress. Ammonia salts from the broken down urea convert the normal slight acidity of the urine into a marked alkalinity, thus precipitating amorphous phosphates, which unite with the magnesia salts to form the ammonio-magnesium compound, the crystals of which are such a constant constituent of cystitic urines. This chemic change continues as long as the decomposing agent is present. The other casual factors are self-explanatory.

In the initial stages of inflammation of the bladder the mucous membrane undergoes the pathologic changes incident to catarrhal processes of that tissue elsewhere, which are intensified by the resulting abnormal condition of the urine. In the presence of pus the mucous membrane breaks down in shreds and admixing with the pus in the urine gives the characteristic sediment in turbid phosphatic urine. Prolonged irrigation is necessary to remove this debris to allow of cystoscopic inspection. The involvement may be localized in hyperemic patches, or general to some demonstrable point of irritation or inspection. Blood may be extravasated under the membrane from contraction on overcharged capillaries, which appear in ecchymotic spots. It also may cover over certain abraded areas after extravasation.

The anatomic changes in the chronic form, like the natural history of this affection, is more a change of degree marked by an arbitrary chronologic standard. A constant change, however, of chronic cystitis is the hypertrophy of the bladder wall and the lessened capacity from resulting contraction.

After thickening of the bladder wall, occlusion of the ureters occurs with damming back of the urine, causing dilatation of the ureters and renal pelvis, hydronephrosis. Infection, also, extending will give rise to pus kidney. Diphtheritic inflammations may result in any amount of destruction, that sometimes perforates the bladder and involves adjacent structures.

Frequency of micturition and intense burning, bearing-down pain, during and immediately afterward, are the most evident symptoms. The frequency sometimes amounts to literally 100 times a day, and the constant desire sometimes keeps the woman on the vessel for hours at a time. The pain in severe cases becomes excruciating, causing the patient to scream out in frenzy. It is a clinical picture pathognomonic and distressing. Retention is rare and incontinence infrequent in acute cystitis. Hematuria depends upon the intensity of the inflammation and may vary from a few drops at the end of urination, to such a considerable quantity as to appear almost pure blood. There is an aching, bearing-down feeling of weight in the perineum that is sometimes associated with rectal tenesmus. The supra-pubic region is tender, and the discomfort is increased sometimes with the slightest jar. The legs are drawn up in the recumbent posture, and if the sufferer is able to walk, it is accomplished with pain causing her to shamble in a stooping position.

In graver septic and diphtheritic cases, constitu-

tional symptoms supervene; fever, chills and sweats, sometimes delirium, ending in suppression, uremia and death.

The appearance of the urine is characteristic in chronic cystitis. It is murky and filled with shreds that may be seen floating around. If allowed to stand it will present a thick, slimy sediment that sticks to the bottom of the receptacle when it is inverted. If bacterial fermentation has occurred, either within or without the bladder, the deposit will consist of the alkaline phosphates of a dark brick-red color. Microscopic examination will demonstrate the crystals in the last condition and abundant pus cells, sometimes with red corpuscles as well, frequently entangled in long mucous cylinders. Bladder epithelium will be scattering and more or less abundant, in the acute and chronic forms, respectively. It is quite impossible to discriminate between cystitis and pyelitis by the epithelium found microscopically. The presence of pus or blood gives a decided reaction for albumin. The odor is ammoniacal and fetid. Specific gravity is variable and inconsequential. The absence of the findings in clinical manifestations of cystitis, distinguish cystitis from irritable bladder, a reflex from some cause that patient examination will often reveal.

Aside from the distinct gain in making direct applications to localized diseased areas, the most valuable aid of the cystoscope is the exact diagnosis of the existing condition. Kelly found a sinus communicating with a tubercular ovary which would have been impossible otherwise. In addition to furnishing visual inspection of the entire vesical mucosa, it affords means for determining the presence or absence of disease of one or both ureters and kidneys, which otherwise might be regarded as a cystitis. The accuracy and value of this procedure is scarcely paralleled in mechanical aids to diagnosis, since the introduction of the clinical thermometer.

I believe it is an axiom in medicine that the greater the number of remedies recommended in a given disease, the less reliance can be placed in any of them. This is typically true of the disease under consideration. The whole list of balsams and oils, astringents and antiseptics, acids and alkalies, diuretics and opiates, have been used with routine empiricism. Irrigations have been practiced with nearly everything that is soluble in water, and many drugs that are not. Some misguided enthusiast inspired with a great love for "the eternal fitness of things," has even recommended irrigation with normal urine. I spent the greater part of six months of my residence in a large hospital washing bladders, and have about settled its scope and limitations, at least to my own satisfaction. Instead of using the multitude of irrigating solutions that have been urged by this and that observer, I think we may reduce the number to about four, which are employed for as many reasons. For ordinary purposes normal sterilized salt solution (dram to the quart) is the most useful fluid, in that, it is readily soluble, more cleansing than water, non-irritating and sterile. In chronic cases with alkaline fermentation, a half saturated solution of boric acid seems to be more efficacious. Kelly recommends bichlorid solution 1-100,000, increasing the strength by taking off 5,000 until about 1-20,000 is reached. The infinitesimal strength suggested may be the explanation of why bichlorid has been almost excluded from the bladder.

Salicylic acid is an excellent germicide and is especially efficacious in penetrating the thick slimy con-

of muco-pus that invests the bladder wall. Eight grains dissolved in an ounce of alcohol and added to a pint of hot water is equal in efficiency to Thiersch's solution. The sovereign remedy in the treatment of inflamed mucous membrane is nitrate of silver, one-tenth to one-half per cent. Stronger solutions should be avoided, and if it causes much pain, a strong salt solution should be injected to convert the nitrate into a harmless chlorid.

All local means are quite inferior to the direct application of remedial agents through the cystoscopic tube, which insuring application to the affected area only, allows the employment of much stronger solutions of silver, 3 to 10 per cent. once a week.

The correct apparatus for bladder irrigation should consist of a glass jar or fountain syringe with gravity tube and glass catheter. The distal end of the rubber tube should have a glass tip to connect by a short piece of tubing with the catheter. The tip facilitates detachment from the intermediate rubber tube instead of the catheter itself. The detachment and readjustment causes unnecessary pain. Where the organ is intolerant to even a few ounces, the little glass piston syringe should be used.

In this synopsis of treatment as frequently occurs in actual practice, I have hastened to the local means to the exclusion, thus far, of the general systemic management, a neglected but important matter.

In the early cases, patients should be put to bed and composure enjoined. She should have a mild non-stimulating diet, milk being the chief article, occasionally dashed with cream to prevent the constipation. Salines here as in all pelvic inflammations are invaluable. Relief from pain had best be obtained if possible from topical means, viz.: the quite hot vaginal douche, Sitz bath, hot-water bags, or compresses to the hypogastrium. Internal medication should be confined to correcting abnormal conditions of the urine; acetate of potash for hyperacidity and benzoic acid for excessive alkalinity.

It is unnecessary to state that many cases are intractable to all forms of medication, and it is fortunate that there remains a perfect assurance to these wretched individuals of complete and entire radical relief. I refer to the artificial vesico-vaginal fistula as applied to the cure of otherwise incurable cases of cystitis in women by that venerable benefactor to suffering women, Dr. Thomas Addis Emmet.

This operation, like the plastic operations devised by Dr. Emmet, is unique in that it has remained unchanged since it was given to a waiting world by its illustrious originator.

The two essentials of rest and drainage are fulfilled and by the union of vaginal mucosa to vesical mucosa patulency of the opening is insured. The beneficence of this procedure to the afflicted sufferers is best proven by their disinclination to have the fistula closed. The operation is best performed in Sims position. The vesico-vaginal septum just behind the urethra is fixed with a tenaculum and incised in the middle line, with knee-bent scissors, on the point of a block-tin sound introduced through the urethra. The mucous surfaces of bladder and vagina are united by silver sutures. Irrigation and time complete the cure. The sutures are removed on the tenth day.

The only caution I will urge is the reiteration of the advice of the great master himself: "Do not close the opening too soon, six months is an average time."

It is a gratifying circumstance that one of the most

dreaded maladies that woman is prone to, is curable by one of the simplest and most satisfactory operations in surgery.

SURGERY ONE HUNDRED YEARS AGO.

AN HISTORICAL STUDY

BY DR. GEORGE FISCHER.

DEDICATED TO THE GERMAN SURGICAL ASSOCIATION.

TRANSLATED FOR THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION
BY CARL H. VON KLEIN, A.M., M.D.

CHAPTER V.—SURGICAL INSTRUCTION AND LITERATURE.

(Continued from page 840.)

During the violent epidemics which prevailed among the troops in the field the enormous number of six hundred physicians and surgeons died within eighteen months. The lack of these was sorely felt, because instruction had almost come to a standstill during the Revolution, and out of eleven French schools scarcely two remained in the least active. At this time Chaussier, who had been called from the convent to Paris, and had rendered the greatest service in the reorganization, founded, in coöperation with Fourcroy in 1794, the nucleus of three new schools in Paris, Montpellier and Strasburg. They founded the *Ecole de Santé* in Paris, one of the finest fruits of the Revolution, which through the need of the moment, proved a brilliant success, and forced into the background the medical schools which had previously dominated in Montpellier. It accomplished the union of medicine and surgery, while at the same time it *trained physicians and surgeons*, among whom there was no division, except that the few who showed a special inclination for it, devoted themselves particularly to the larger operations. Legally every student was obliged to study theoretical and practical surgery. In order to have the necessary number of students, each district must furnish a certain quota: Paris 300, Montpellier 150, Strasburg 100. The state allowed each student 1,200 livres, and vouchsafed to him free access to the practical lectures. Medicine and surgery, together with all the accessory sciences, and also the history of medicine, were taught and twelve chairs, each with an ordinary and extraordinary professor, were created. In the Paris school Chaussier expounded anatomy and physiology, Fourcroy medical chemistry, Lassus and Percy, after the death of Chopart, surgery, Pinel medicine, Lallemand and Sabatier operation, Baudelocque obstetrics; Pelletan and Boyer, after Desault's death, conducted the surgical clinic, Corvisart the medical. Chaussier was a very eloquent and active teacher, who created a new terminology in anatomy and established regular quiz-practice. The study of anatomy was always prized very highly by the French surgeons, in-so-much that most of their literary activity began with such writings, followed by surgical works. Among the most interesting lectures were those of Fourcroy, which were generally so crowded that many were turned away, in spite of the fact that his lecture room accommodated about 1,200 students. He charmed by his unconstrained, penetrating and polished discourse, and frequently blamed his own countrymen because they so neglected the literature of other nations, while he himself valued so highly the services of the German chemists. Lallemand lectured on operations on the hard parts; Sabatier, in clear but somewhat rapid diction, treated of the soft parts.

For practical instruction there were three clinics in

use, in the Hôtel Dieu, in the Charité, and the clinique de perfectionnement in the hospital of the Ecole. The last had twenty-eight beds for difficult and unusual cases, but especially for operation cases, which the professor asked from his colleagues. This did not work well, as a rule, for according to an old custom, those came almost always to the Hôtel Dieu and the professor retained them there. He had in any case to give instruction concerning them, and nothing was more natural than that each professor should keep the most interesting material for himself. Upon the establishment of the school, Desault gave the surgical instruction in the Hôtel Dieu. In this brilliant period so much was being accomplished that the men of the Revolution sought to unite these clinics as closely as possible with the Ecole. But Desault was not greatly interested in it, because he had not been asked for advice at its founding, and in general did not approve of the plan. It might have been also that his prejudice against the accessory sciences, of which the Ecole made very much, contributed to keep him aloof from it. He died soon after. His successor, Pelletan, let things take their own course. The two men were not to be compared. While Desault studied his lectures with the greatest care and never neglected them, Pelletan frequently failed to give a lecture, was negligent, egotistical and poor in results. He divided the lectures with his assistant, the young Giraud, who after the death of Desault, with his pupils, Bichat, Boyer and Lallemand, were among the best teachers of surgery in Paris. Both conducted *pensions*, a provision at that time very useful and beneficial to the cause of instruction. They took young men into their houses and to their tables, gave them instruction in operations privately, took them to visit patients, and reserved for them the best places at the operations in the hospitals. Pelletan charged 1,000 francs quarterly, but fulfilled his promises badly, while Desault furnished board about two-thirds cheaper and favored his pupils in every way possible.

The surgical clinic in the Hôtel Dieu had two rooms, one for men with about 300 beds, and one for women with 150, closely crowded together. Instead of pursuing Desault's method, and performing the operations altogether in the amphitheater, Pelletan almost always operated on the patients in their beds. Let us accompany him upon a *surgical visit*, in order to learn about them along with the *French students*. In the morning, at six o'clock, it begins. As soon as Pelletan enters the room the noise and the running about commence. He and Giraud are followed by thirty internes, to each of whom a certain number of beds are allotted; behind these other students with their clattering wooden shoes. These were generally worn during the Reign of Terror, because of the lack of leather, and continued to be used by most of the students on account of the dirt. Each one pushed in behind Pelletan, so that they often trod upon his feet. When a patient is bound they all crowd to the bedside, in consequence of which only six or eight students can see well. "La jugulaire," cries the surgeon; that is, here a bleeding is to be made on the V. jugularis. Those behind climb upon stools and punch each other in the ribs in order to get forward as much as possible; finally the surgeon is so crowded that he himself scarcely has room. A "Silence, messieurs!" does not suffice. The noise grows louder. A "diable!" or "au nom de Dieu!" follows. Noise and crowding increase, so that the foremost students are pushed

over the bed of the patient. It becomes dark around the bed, even on a clear day: "la chandelle!" calls the surgeon; "vous m'étouffez!" the patient struggling for air; "l'eau fraîche!" a student, to refresh his fainting comrade. "Je vous donne un pair de soufflets" sounds from the other side. A student breaks through a bedstead and laments. Pelletan does not know how to help himself; crowded with instruments around him, he takes a handful of blood and calls out, "Je vous jette le sang dans le figure." Under such circumstances the operation is completed. This confusion moves Pelletan to perform a few operations at four o'clock in the morning and to cut the visits short. There was generally a mistake in the clinics, which the visits rendered too hurried; students were not examined, therefore they lounged about inattentively. Sabatier's lecture furnished another student picture. This surgeon was very cordial to strangers and usually gave them a place in the enclosure. The students murmured over this because they could see nothing, but their professor did not change his method. One day, when a few friends were present, a chorus of a thousand voices cries, "Out from the enclosure!" Sabatier, usually a very quiet, peaceable man, sprang up and cried, "I hope, fellow citizens, that I am allowed the privilege of admitting into this enclosure anyone I desire!" Immediately all was still. Sabatier seated himself, whereupon loud and general applause arose, one of the sudden changes of sentiment which one sees almost daily in other things among the French (Wardenburg). The students were classified, according to their accomplishments, into *commencés*, *commencés*, *commencés*, and in regard to their attendance at lectures, were summoned from time to time by the professors. This strictness was occasioned by foresight for the army, for the *avancés* could, if necessary, be assigned to the field. Two examinations were held yearly. In the Charité *Boyer* officiated as second surgeon, along with the genial but indecisive first surgeon, *Deschamps*. Boyer, a former assistant of Desault, in the best years of his life, was uncommonly active, earnest and decisive, and operated with a steady and sure hand; in fact, one of the best of the Parisian surgeons. His private instruction was of the best, as well as the most popular. Boyer conducted dissections, gave lectures on anatomy, surgery and operations, conducted courses in operating, and examined the students. Since he took only two private pupils, for a certain fee, one could accompany him in his private practice.

The medical clinics attached to the Ecole de Santé in Hôtel Dieu, accomplished nothing; their instruction did not amount to anything; by reason of the hurried visits they were of no real benefit; they ran from one bed to another, inspected so quickly and so incompletely, that they scarcely had time to see, much less to think. There was no instruction tablet at any bed. *The medical clinic of Corvisart, in the Charité, the first which was opened in France*, was much better. According to the statement of his pupil, Dupuytren, he made it the most famous of that time, and there in a period of fifteen years the most excellent physicians of France were trained. Corvisart, an eager follower of Stoll, made very accurate sections, and as a practitioner he was much sought. The Ecole possessed a beautiful library of about 24,000 volumes, which was built up during the revolution, out of the libraries of the Académie de Chirurgie and of the defunct societies. It was under the protec-

tion of Sue and Moreau. It was free of access, but lent only one book at a time to each student. Among the collections, the cabinet of surgical instruments was accessible to all, and was very complete, having been especially enriched by the bequest of Desault. The pathologico-anatomic cabinet contained Desault's specimens, many of wax, and the collections of the veterinary school of Alfort.

The German saw in Paris, the center of the sciences, everything at once, which he could wish for the study of medicine, but no one traveled to Paris for the sake of medicine, and in 1783 Loder wrote from the French capital: "Whoever comes here to study medicine appears to me as one who should go to Constantinople to get instruction in the orthodox Lutheran creed." There was no doubt that the French physicians, in respect to medical knowledge, were behind the Germans; the reverse was true in surgery. Hôtel Dieu had the greatest attraction for the German surgeon. In order to make the most systematic use of this, he had to select and study the most interesting patients, ingratiate himself especially with the internes, and on afternoons accompany them to the sick-beds. In these visits it was the policy to push when one was pushed, in the effort to get as near as possible to the surgeon. The foreigner could nowhere find collections as complete as in Paris. All the practical lectures of the Ecole were very good, and it offered fine facilities for private courses, as well as for anatomy (Bichat) as for surgery. For quick information there were printed collected lectures in the Ecole, with yellow, white and red covers; an almanac was also issued which bore, now a national, now a royal imprint, giving information concerning the institution, the teachers, their residences, etc. Close beside the school lived several booksellers, who dealt chiefly in medical works.

A rare opportunity to see and to hear was offered in like measure in England. It was a principle there that from the beginning of their studies, the students must see the sick daily, while in Germany they began with theoretic lectures, in England the manual part of surgery must first be mechanically learned. One must see the sick, how they were operated upon and bandaged, and then for the first time he studied the propedeutic branches. Although properly only a single famous school existed, in Edinburgh, still there were in London many distinguished physicians and surgeons who gave private lectures, offered courses, and instructed young men in the hospitals. In London there was a mass of material for surgeons and a great many operations were performed. The "pupils" could assist in the hospitals, in bandaging, bleeding, caring for fractures, and the like, and enjoyed free access to the patients at all hours. In special cases, which occurred outside of the regular visiting hours, the boxkeeper, who looked after the bandaging materials, would summon the students for a fee of half a guinea. Certain English teachers, like their French colleagues, took boarders into their houses for 80 to 100 guineas, gave them lectures, and took them to visit private patients. Percival Pott was the best and most popular surgeon of his time in London. In this respect the genial *John Hunter* came next, although his discourse was difficult to understand, as his speech and expression were peculiar. Furthermore it was painful to him to speak, as it was to his brother William, and always cost him much effort. The powerful man, who did not fear a fight with leopards, always took thirty drops of laudanum before the first lecture

in every course in order to overcome somewhat his nervousness. He never depended upon his memory. By reason of his genius and penetrating understanding, his lectures, which were accompanied by the exhibition of beautiful specimens, were of the greatest importance. John Hunter gave an especial impulse to the science by the founding of several societies. In 1767, he with Fordyce and the mechanic Cumming, founded a private society of scholars, which met in a coffee house after each sitting of the Royal Society, and discussed the latest discoveries in all branches of science. Later he founded for the London students the Lyceum Medicum Londinense, which held meetings every Friday, and gave a prize of six guineas in gold to the student who wrote the best thesis on a given question. In the winter of 1786 he founded in his own house a medical club, and invited there every Sunday all the prominent physicians and surgeons of London, as well as strangers who were recommended to him. Here numerous guests met in the evening from 8 to 11, discussed scientific questions and were served with coffee, tea and refreshments. Else, Bromfield and Blizard were good surgical teachers. Blizard attended very regularly, and met many colleagues who would not willingly soil their fingers and never touched a patient except at the first examination and operation, but he left no patient who was not bandaged by himself, or by the students in his presence. London possessed excellent museums. The most famous was that of William Hunter, which was rich in the rarest specimens, and once in the week was open, free to the public. Besides, Hunter possessed fine collections of shells, corals, petrifications, a coin cabinet which was said to surpass even that of Vienna; also a library. By his will these collections were to be used for thirty years by his heirs for the benefit of Drs. Bailly and Cruikshank of London, to further their lectures; at the end of that time they went to the University of Glasgow. Next after this, was the museum of J. Hunter (of which more later), Rackstrow, with many anatomic and pathologic preparations. Even then as now, the English surgical instruments were the best, but were very dear; an umbilical truss for adults cost ten guineas, a simple inguinal truss, five guineas, a double one, six guineas. The articles of the instrument-maker, Savigny, in London, illustrated and described in catalogues, were world-renowned. Shel-drake was called as truss-maker to the Westminster hospital; he also wrote much concerning rupture and deformities. The beadle of the Collegium Chirurgicum made very good bougies.

We have mentioned that the cost of living and of visiting the London hospital drove many young men to *Edinburgh*, in which University a spirit of freedom dominated all the medical sciences. Here the first English clinic was instituted. The students organized medical societies, where by the exchange of their ideas they developed themselves symmetrically and learned to express themselves with facility. Therefore, the most of the Edinburgh inaugural addresses with their compact, unvarnished descriptions, without the adornment of the tedious citations of German works, raised the university to great honor. They first became known in Germany through the *Göttinger Anzeigen*, in which H. von Haller recommended them for imitation. Edinburgh possessed a fine academic hospital, which was erected at the suggestion of Alexander Monro, and possessed a number of emi-

nent surgeons, among them that same Monro with his two sons, Benjamin Bell and others.

The facts given show very plainly that Germany, by reason of the lack of hospitals, and of facilities for a thorough practical training, stood far behind foreign nations. No wonder then that the German surgeon in his home was thrown upon the study of books. Let us therefore make a few observations, concerning the *literature of the subject*. In the first half of the century the leather-bound books of the German surgeons, appeared almost regularly with a verbose dedication to some distinguished patron; then followed the preface which was adorned with some kind of religious sentiment, praise of the divine goodness and humble thankfulness for the providence which vouchsafed the author health and time to write the book. Very often the close friends of the author had urged him, and he had unwillingly published it. He did not forget, however, to take some notice of the possibility of unfavorable criticism. The conclusion of the preface was made up of two or more expressions of good will by colleagues in Latin or German verse. The following poem from C. L. Walther's "Med. chir. Schatz," of the year 1715, will serve us an example:

As the honey bees of Hybla yield us their sweet stores,
They seemingly invite us to share in their industry.
A song for all humanity the busy insect pours,
A peace song for all nations that war by land and seas;
Herr Walther in his labors heeds the lesson of the bees,
He falters not nor wearies, and counts no labor vain,
And his life is consecrated to the healing of disease.
Rich success crowns his endeavor and to all the world is gain.
This book of so rare value, Science claims it for her own,
And for each it holds a treasure, let who wishes freely ask.
Would the poet sing his praises, let him sing of work well done.
I bespeak a wreath of laurel justly crowning his long task.
May God grant that, like the roses, he may bloom another year
With a second season's harvest, rich and plenteous, ripe and fair.
To his most honored colleague these few lines are hurriedly addressed
by
CARL ANDREAS HARDE, Surgeon, Halle.

In the books themselves, which were generally insipid and prolix, the Almighty was asked for his blessing on every important operation. At the end the author took a pious leave of his reader. The copperplates in most of them, were of extraordinary beauty. Comparing with these the writings of the second half of the century, we find that the later books lack the poetic effusions, but the turgid dedications, and the pious prefaces in which the authors seek to defend themselves against ungrounded and malicious criticism, remain very much the same; and also the insipid exhortations to others to write books in which a surgeon frequently first asked learned physicians whether or not his works deserved to be published. As, for example, Bilguer assures Theden he never would have become an author, if he had not been inspired by Zimmermann, and begs the pardon of the physicians when he, in speaking of a medical question, ventures into their territory. C. C. von Siebold waged a ceremonious war with his friends before he published his surgical daybook.

The *servility* of the former century had also affected the scholars and physicians so that they often assumed a groveling attitude toward high rank and wealth and were dazzled by external glory. They were not ashamed to dedicate altogether insignificant works, scarcely three or four pages long, to princes and dukes. And the thanks? When Morand presented the *Memoirs of the Akademie der Chirurgie* to Pope Benedict XIV., he received an answer from the Pope. E. Plutner says in this connection that a German prince showed this honor to every insignificant French author on similar occasions, but to a German he would scarcely condescend to be gracious. In 1764 Pro-

fessor A. F. Pallas dedicated his "Surgery," to the "Hoch- und Wohlgeborenen, Hoherfahrenden und Hochgelharteten Herrn, Herrn Albert Freiherrn von Haller," his great, most gracious and honorable patron. In order to honor the celebrated A. G. Richter, they admitted his infant yet in its cradle to membership in the Academy of Göttingen, and one of the teachers, Köler, dedicated to it in its fourth year, as the "best and most hopeful of boys," synopses for the study of the Latin language. The physicians joined in the adulation given to the hero of Germany, Frederick the Great, after the battle of Rossbach, insomuch that George Forster in Berlin complained that even the most reserved and intelligent people deified the king, and groveled foolishly. The *Berliner Medicinisch-chirurgischen Nachrichten* was dedicated to the crown prince, Frederick, by Professor Schaarschmidt, and the Surgeon-Generals Bilguer and Schmucker, dedicated their "Chirurgische Wahrnehmungen," to his majesty, and Surgeon-General Theden, his new "Bemerkungen und Erfahrungen." The medical biographer Börner launches the following rhapsody: "Your most glorious royal majesty of Prussia, in whose blessed person are united the wisdom of Solomon, the spirit, courage and strength of Alexander the Great, the benignity of Emperor Titus, a possessor of true learning, a protector of the Muses, a patron of scholars, King Frederick." Even the philosophic Zimmermann, who went to Berlin in 1771 to be operated upon for rupture by Schmucker, was so dazzled by Frederick the Great, that his friend Meckel, in whose house he lived, could write the following: "Zimmermann, completely enraptured by the exceeding glory of his royal majesty, felt as though he had been given a new life, that he should have the fortune to see and to honor personally the greatest wonder of our century, our most wise king of Prussia. For the well known kindness and humanity of our most gracious monarch, not only called the English surgeon before the throne but quickened and uplifted him at the first glance, into a sort of amazement, at the most gracious and beneficent words and speech to such a degree that, completely enraptured with joy and love, he was for an hour and a half a spectator and admirer of this royal genius, of his great learning and wisdom, and of his deep insight even into medical science. He often said that these precious hours had fulfilled the desire of his life, and that he had arrived at one of his most glorious days, when he was able to see and speak to and love the hero of his century." Later, Zimmermann wrote to Meckel in French that he had slept well every night during his sickness "except that one in Potsdam, when after the interview with the king, he was made sleepless for joy, as if in an ecstacy of delight."

(To be continued.)

SOCIETY PROCEEDINGS.

Medical Association of Georgia.

Abstract of Proceedings of the Forty-eighth Annual Meeting, held at Macon, Ga., April 21, 22 and 23, 1897.

FIRST DAY—MORNING SESSION.

The Association convened in the Academy of Music, and was called to order at 10 A.M. by the President, Dr. GEO. H. NOBLE, of Atlanta.

Prayer was offered by the Rev. F. M. REESE of Christ Church.

Addresses of Welcome were delivered by Dr. W. F. HOLT

and Hon. N. E. HARRIS, of Macon, the response to which was made by Dr. FRANK M. RIDLEY, of La Grange.

The Society elected 101 new members.

After the presentation of the report of the Committee of Arrangements by Dr. Howard J. Williams, of Macon, and the report of the Committee on Program, by Dr. Louis H. Jones, of Atlanta, the reading of papers was proceeded with.

The first paper read was by Dr. M. A. CLARK, of Macon, entitled

ENTERO COLITIS OF INFANCY.

The author prefers the term entero-colitis to intestinal catarrh, because it more fully expresses the pathology of the disease. While in adults and children we recognize enteritis and colitis as separate and distinct diseases, yet in infants the symptoms are not sufficiently well marked to enable us to differentiate them. The inflammation of the small and large intestines may be ulcerative, membranous, or, as is more frequently the case, a simple inflammation of the mucous and submucous linings of the intestines.

Causation.—Cold is often a cause of entero-colitis, and in a majority of the severer cases, it plays an important part. The most important factors, however, in the causation of this disease are temperature and diet, which the author considered at some length. The majority of fatal cases are bottle-fed infants. Of 1,943 fatal cases reported by Holt, only 3 per cent. were wholly breast fed. All writers agree that outside of the cities, especially in the rural districts, it is of far less severity.

The author then dwelt upon the symptomatology, diagnosis and prognosis of the disease.

Coming to the treatment, he said the first and most important duty of the physician is to prevent disease. So in this disease, we must consider preventive treatment. Every infant should wear throughout all seasons flannel next to the body until the period of infancy is passed and childhood well established. With reference to diet, the all important factor, not only in the cause of this disease, but also in the cure of it is diet. In the majority of cases the infant is bottle-fed, yet we find some severe cases that are breast-fed. In every case we must examine the milk to see that it is suitable, and when not, have the diet changed at once. All writers are agreed that next to mother's milk, cow's milk is the best food for infants. The many ways of preparing the milk have been so well shown by Smith, Rotch, Holt and others, that the author simply referred his hearers to their valuable works.

At the onset of the disease, when the tongue is heavily coated and the stools of a greenish color, he gives a laxative. He finds tannin a most valuable remedy for diarrhea. It is insoluble in the stomach, and in the intestines is converted into tannic acid, the best astringent. By its use he has overcome what would have proved to be prolonged and severe attacks of this disease. The pepsinase is an aid to digestion and tends to suppress nausea. Where there is much tympanites bismuth is an excellent remedy. The author remarked concerning this drug that we are often disappointed in its results because it is given in too small doses. He does not hesitate to give a child of six months 20 grains of the subnitrate every two hours, when the stools are frequent and the bowels tympanitic. The salicylate is recommended by some as being more antiseptic. He prefers the subnitrate, as he gets better results from its use. With tannin, the ideal intestinal astringent; bismuth, the reliable antacid; water, the great cleanser, and hyd. perox. the most potent antiseptic, with strict attention to diet and clothing, we may reasonably expect the majority of cases to recover.

Dr. K. P. Moore, of Macon, reported some very interesting and unusual cases in abdominal and gynecologic work.

FIRST DAY—AFTERNOON SESSION.

Dr. HENRY R. SLACK, of La Grange, read a paper with this caption:

BLUE PYOKTANIN IN THE TREATMENT OF INOPERABLE MALIGNANT GROWTHS,

and reported five cases. The author at first referred to contributions on this subject by Professor von Mosetig and Willy Meyer. He speaks of its advantages as follows:

1. Its analgesic effects are marked, as patients soon rest easily without the aid of morphia.
2. The improvement of the function of the part involved. A man who could hardly speak so as to be understood talked without difficulty after the third injection.
3. The improvement in general health which has taken place in all five of the cases.
4. The element of hope that is added to the life of suffering men, brightening the remainder of their sojourn.

While the author does not claim to have cured his patients,

still he has relieved their pains and rendered them less burdensome to themselves and their friends. He agrees with Dr. Meyer in von Mosetig's conclusions, that it has been proved by practice, that parenchymatous injections of inoperable malignant growths with pyoktanin can produce disappearance of malignant tissue, though in exceptional cases, and can heal neoplastic ulcerations. Pyoktanin, when properly used, is certainly a palliative treatment for cancer that deserves an honest, hopeful trial, for by its use many have been relieved and some cured.

Dr. J. B. MORGAN, of Augusta, read a paper entitled

THE TREATMENT OF CUTANEOUS CANCERS.

In discussing the treatment of skin cancers, it is well to understand at the beginning that the author does not intend to define the different varieties of cancer, or to discuss the different theories as to their etiology. A fact of paramount importance in the successful treatment of cancers of the skin is that everything depends upon early and thorough removal of all diseased tissue. The general consensus of opinion now is that all cancers can be cured, if thoroughly removed before the epithelial cells have infiltrated the connective tissue and neighboring glands: for it is generally conceded that it is the proliferation and infiltration of the epithelial cells which cause cancer to invade other tissues and organs and become disseminated through the system. This being the case, the only treatment that can offer anything like a cure, is the one which has for its object the early and complete removal, or destruction, of all the morbid epithelia. In cancer, where we find no limiting membrane, no sharply defined guide as to the extent of the infiltration beyond the tumor mass, other local means than the knife may be more properly indicated for its successful removal. The object of the author's paper was to emphasize this point. He is a strong believer in the use of the knife in suitable cases, and frequently employs it.

In the last four years he had treated fourteen cases of skin cancer with caustics, and in not a single instance has he seen the slightest indication of a recurrence. Five of the cases were from three to four years old; three of them from two to three years old, and the other six were treated within the last two years. One of the number died from pneumonia three years after being operated upon; the others are all living and in good health. Caustic potash quickly liquefies tissue, and at one sitting a very large tumor can be destroyed. Chlorid of zinc as a caustic can be used in stick form, in solution or in a paste. It causes more pain than either caustic potash or arsenious acid. Bougard's paste is one of the best means we possess in the treatment of small cutaneous cancers. To apply these caustics successfully demands a certain amount of experience, but which anyone can acquire after applying them two or three times. The greatest cause of failure in their use is the neglect to treat the case energetically until thoroughly satisfied that all diseased tissue has been removed.

Dr. S. RUMBLE of Goggansville followed with a paper entitled

PUERPERAL ECLAMPSIA, WITH REPORT OF CASES.

The author presented the following conclusions:

1. That puerperal eclampsia is a disease the etiology of which is as yet *sub judice*.
2. That it often develops after the uterus is emptied of the product of conception.
3. That morphia is the most positive and prompt remedy which can be used to arrest the eclamptic seizure. It obtunds nervous sensibility and arrests muscular spasm. It counteracts irritation of the nerve centers, whether the irritation is due to a toxemia or is of a reflex character.
4. That veratrum is not only an unreliable remedy, but one fraught with danger in this disease.
5. That chloroform and chloral hydrate are excellent adjuvants to morphia in arresting the spasms and maintaining the equilibrium of the nervous centers.
6. That cerebral congestion is a result and not the cause of the convulsion. Hence the author does not favor blood letting.
7. We can do a great deal in lessening the frequency, if not the ratio of mortality, in this disease by timely and proper prophylactic treatment.

Dr. M. B. HUTCHINS of Atlanta reported

TWO CASES OF MALIGNANT TUMOR AFFECTING THE BREAST AND THEIR TREATMENT

and made some remarks upon malignant growths in general.

Case 1.—Mrs. A. G., age 38; occupation, housework and washing. Scirrhus of the right mammary gland. She first noticed a "small lump" in the right breast, just above and to the right of the nipple. She stated that her husband had struck her there several times. Has had one child. No abscess of the breast. Examination showed a hard, rather well-defined

tumor the size of a small orange in the middle and upper part of the gland. The upper part of the nipple was slightly retracted. There was occasional stinging sensations. The essayist could feel no enlargement of gland either at the lower border of the muscle or in the axilla. The patient weighed 175 pounds and was in robust health. She had quite a mustache and chin beard.

Drs. L. P. Stephens and J. L. Campbell assisted at the operation. Every antiseptic precaution was employed. Elliptical incisions were made well away from the borders of the tumor, in the healthy skin, from the narrow part of the pectoralis major to the sternum and down to the pectoral sheath. The sheath of the muscle and the mammary gland were removed by a clean dissection, no tearing, leaving a clear wound with only the muscle fibers at its floor. There was no perceptible gland at the lower edge of the muscle, nor could any be felt in the axilla. The excision was done in less than ten minutes. There was very little hemorrhage. Redundant fat under the edges of the incisions was trimmed away with scissors, then the flaps were made with a knife. An inch incision was made in the lowest part of the gland cavity for drainage. It was necessary to ligate but one artery in the whole wound, hot water and torsion controlling the rest of the bleeding. The wound was brought together with four deep tension sutures of silkworm gut, about an inch apart. Then a continued suture of catgut was made from the outer end to near the inner, where a small opening was left for drainage with 10 per cent. iodoform gauze. The line of suture was covered with iodoform one part, boric acid five parts, then many layers of 10 per cent. iodoform gauze, salicylated cotton and three wide bandages were applied; the arm being included finally and additional support given the wrist with a towel. Two days later the gauze drain below was removed and the incision closed with one suture. Five days after the operation all dressings were removed. The surface was perfectly clean, and the wound seemed to have healed *per primam*, except at the outer end and at the internal drainage opening. The gauze was removed from the latter, being followed by about half an ounce of bloody fluid. After pressure to remove any remaining fluid, another piece of gauze was inserted. The low drainage incision was granulating nicely, with a little oozing of bloody serum visible. Dressings were made as at the time of operation. Eight days after the operation the inner drainage and the four tension sutures were removed. There was perfect primary union save at the two extremities. Suture removed from the lower drainage incision also. This wound was clean and healing. Surface covered with a lighter dressing and the arm left free. Two days later only the lower drain remained unhealed. Healing was complete in the lower drain eighteen days after the operation. At the inner end of the main incision there was a lump of compressed fat. Patient was seen nearly four months after the operation for the last time. The inner half of the united wound showed perfect union, the outer half a line of cicatrix. A small cicatrix marked the site of the lower drain. There was no sign of recurrence, nor of glandular involvement. She left the city and the author has not seen her since. He was informed that she remained in good health. The operation was done in this case with full knowledge of its probable incompleteness, this being due to the wishes of the patient and to the fact that it was preferable to complete it at such later time as it should become necessary. Four months later the time seems not to have arrived.

Case 2 was similar in many respects to the one reported and was successful in its results.

A paper entitled "Influenza with different Phases and Nervous Tendencies," by Dr. W. O'DANIEL of Bullard's was read by title, at the request of the author.

SECOND DAY—MORNING SESSION.

Dr. J. S. TODD of Atlanta contributed a paper entitled

CAUSE AND PREVENTION OF TUBERCULOSIS. IS IT A CURABLE DISEASE?

The author stated that tuberculosis, so long as it remained an unmixed infection, was not a deadly disease, and he believes it to be in this stage one of the most easily curable of the bacterial diseases. Except in the form of acute miliary and meningeal tuberculosis, it was but seldom the direct cause of death. As soon as it became a mixed infection, and was something more than tuberculosis, it then took rank as the most fatal of all diseases now afflicting mankind. In combatting this disease there were two points of attack, and if the wisdom and skill of the profession be directed to these the death rate from tuberculosis would be much reduced in the near future. The first and most important method of dealing with the disease consisted of the application of preventive measures. Second, the one with which he was now concerned, consisted of the

treatment of the disease while it remained an unmixed infection. When this was done tuberculosis would cease to be "the terror of the laity and the cross of the physician."

Dr. J. C. OLMSTED of Atlanta followed with a paper on "Expert Testimony in Criminal Cases involving the Plea of Insanity."

Dr. V. D. LOCKHART of Maysville reported an interesting and instructive case of cystocele complicating labor.

Dr. E. H. RICHARDSON of Atlanta read a paper entitled "Atypical Fevers."

Dr. W. L. CHAMPION of Atlanta followed with a contribution entitled

MEDDLESOME INSTRUMENTATION IN URETHRAL DISEASES.

The author stated that with our knowledge of the anatomy of the urethra and of the dangers of passing small steel instruments, false passages should be a thing of the past. The soft bougies, though not as durable as the steel sounds, accomplish the same results, and should always be used when a small instrument is called for; and even the larger ones are just as serviceable and produce less pain on introduction.

The routine practice of passing sounds into the bladder in treating strictures in the penile portion of the urethra is not only useless but bad surgery. There is always a liability of infecting the bladder and producing irritation of the prostatic urethra. The short, straight sound passed through the stricture accomplishes the same result as the curved instrument, and the danger of producing complications is lessened.

In treating stricture of the urethra by dilatation, how often should we pass an instrument? This question has been written upon, argued and discussed at length, and there seems to be a wide variance of opinion as to the length of time that should elapse between the sittings. In the use of sounds for the treatment of stricture there can be no fixed law in regard to the intervals to be allowed between the sittings.

Each case must be watched separately, and the results of the introduction of the instrument noted, so as to determine when to use the instrument again. His opinion is that the majority of men not studying the effects produced by an instrument passed through an organic stricture, influenced by the patient's desire for a rapid cure, are prone to pass instruments too often, thereby setting up an acute inflammatory condition and prolonging the treatment. The author's experience in the treatment of urethral strictures coincides with that of Dr. Keyes of New York.

With reference to internal urethrotomy in the deep urethra, there were men who did this operation with but few accidents, but the best practice was to positively refuse to interfere unless the patient would submit to the external operation. The custom of doing internal urethrotomy in the office, and allowing the patient to go home in a hack or on a car could not be too strongly condemned. It was an operation fraught with danger, and so we should guard against any mishap, giving the patient the best treatment possible. The operation should be done at home, and the patient kept in bed for at least five days, and it would be safer still to require a week's rest.

In closing the author emphasized the importance of urethral irrigation before surgical operations upon the urethral canal, whether it be only the passage of a sound or an internal urethrotomy. If this was done there would be fewer cases of urethral fever and less irritation and inflammation after using instruments. Within the past twelve months, he had used "hydrostatic irrigation" in the treatment of inflammatory conditions of the urethra and bladder, and considers it far superior to any other method.

Dr. E. R. ANTHONY, of Griffin, contributed a paper on the relations of the State Board of Medical Examiners to the profession of the State.

SECOND DAY—AFTERNOON SESSION.

Dr. LOUIS H. JONES, of Atlanta, read a paper entitled "Physical Signs in Diseases of the Lungs."

Dr. A. W. STIRLING, of Atlanta, followed with a contribution entitled

REMARKS ON CERTAIN OCULAR DISTURBANCES OF GENERAL INTEREST.

The author confined himself to one or two of those ocular lesions which are likely to be of general interest. Of conjunctival affections he mentioned one-sided hyperemia, which he said should always suggest a foreign body in the conjunctival sac or on the cornea. Few of the minor operations in surgery would better repay the practitioner than a dexterous manipulation of the eye in such cases, and one should not be hasty in excluding a foreign body.

Passing to the cornea, the speaker said that our chief inter-

est lies with ulcers and with foreign bodies. The latter were often difficult to find, and when found may be deeply embedded in the corneal tissue, and not always quite easy of removal. Even after the simplest abrasion by the foreign body, or by the instrument used in its removal, the protecting epithelium was destroyed, and not infrequently germs thereby gain access to the corneal tissue, and severe ulceration, with or without hypopyon results. Strict antisepsis was therefore advisable, frequently also a bandage for twenty-four hours, and sometimes atropin. Corneal abscesses and ulcers had a very varied etiology, and were often dependent upon general ill health. They usually demanded shade, atropin and antiseptic applications, but when near the periphery eserine might replace atropin in the absence of iritis. Should the ulcer perforate, there was then less likelihood of prolapse of the iris into the wound. Some of the severest forms of ulcer might be rapidly cut short by certain destructive agents, notably the electric cautery, the sharp spoon, strong solutions of perchlorid of mercury, mercury in glycerin, or alcohol, and frequently very prompt treatment in them also is required to save the whole eye from destruction.

While cataract is looked upon as usually a purely local disturbance, except in the rare cases in which it is associated with certain diseases, as diabetes, there is one form of opacity in the lens which is believed to have important relationships to conditions of general health. This is called zonular or lamellar, and sometimes congenital cataract, and is by far the most frequent type of lenticular opacity met with in children. It affects a varying amount of the lens and the opacity produced by it may be so slight as to interfere but little with vision, or so great as to disqualify its owner for ordinary work.

The author then passed on to the consideration of iritis, saying that it was a fairly common disease, and one which, on account of circumstances, has frequently to be treated in great measure by the non-specialist. The likelihood of an attack proving destructive to vision depends to a great extent upon its early recognition and prompt and energetic treatment.

Dr. SAMUEL LLOYD, of New York, gave an excellent demonstration of Roentgen rays. He showed skiagraphs of a case of knock-knee, of congenital disappearance of the fingers and toes, and a case of scissor-legs, upon which he operated some weeks ago. The latter patient was a young girl whose thigh bones were crossed, thus preventing her from using the limbs. About nine weeks ago she was taken to the Post-Graduate Hospital of New York, when Dr. Lloyd performed the operation of osteotomy. Both thigh bones were fractured and placed in position for a normal reunion. The bones were subjected to a ten minute exposure of the ray, and by the use of the fluoroscope Dr. Lloyd was able to announce a perfect union of the bones. He related other experiments which were equally successful, which were made with fractured bones of the knee and elbow and with diseased bones of the hand. Dr. Lloyd also showed skiagraphs of a case of fracture of the forearm and one of osteoma of the clavicle.

THIRD DAY—MORNING SESSION.

Dr. R. M. HARBIN, of Rome, read a paper entitled

RAPID DILATATION OF THE UTERUS A CONSERVATIVE OPERATION.

His attention was recently called to an article in the *British Medical Journal* by Dr. Fournel, condemning rapid dilatation of the uterus as not being a conservative operation. So far as his observation goes, the dangers from the operation were very slight, where proper precautions have been taken. Divulsion of the uterus offers more relief in selected cases than the more complicated and dangerous operations, and should be done before advising the latter. The main indications for the operation are narrowness of the os and cervix of the uterus, flexions with dysmenorrhea and sterility, and the reflex symptoms arising from same. Personal observation leads the author to believe that many cases of obstinate nausea and vomiting of pregnancy could be relieved by rapid dilatation, shortly before an expected conception, as the practitioner often had to perform abortion in cases that conceived very soon afterward, rendering the operation again necessary. The cause of dysmenorrhea and sterility in a majority of cases was mechanical, and dilatation is usually followed by a relief of the symptoms, if not a cure of the sterility. The contraindications are pyosalpinx and acute peritonitis. In an aggravated case of chronic pelvic peritonitis rapid dilatation can be done with safety after a few weeks of general and local treatment. The operation should be done about a week before menstruation, and the technique was simple.

Dr. W. M. S. GOLDSMITH, of Atlanta, made some remarks on

FISTULA IN ANO.

The relative frequency of fistula in ano, as compared with other

rectal affections, induced the author to consider this subject. Some differences of opinion exist among authors as to the frequency of fistula. Allingham states that in a collection of 4,000 consecutive rectal cases in the Out-patient Department of St. Mark's Hospital, 1,057 were fistula in ano, 196 abscesses, 151 of which subsequently became fistula, and that for a period of several years, two-thirds of the cases operated on in this hospital were for fistula. The author believed that the incision of all fistulous tracts and sinuses, and the complete section of the sphincter muscles with the knife is the only method by which the surgeon can assure the patient that the operation will result in a rapid and successful cure. The author has yet to see a wound made in the area usually involved fail to promptly and satisfactorily granulate, provided it has had the benefit of a thorough eradication of all morbid tissues. To further elucidate this point, suppose all branches and pockets have been opened, should the operation be pronounced completed? Decidedly no. And just here, in the opinion of the author, Dr. Mathews executes a procedure that is rather tedious, in that he advises the excision of the whole bottom of the wound, using pinch forceps and curved scissors, and states that he is not satisfied with simply scraping out the sinuses. Dr. Goldsmith thinks the careful use of the Volkmann spoon, together with the application of peroxid of hydrogen, is far preferable. After incising the main tract and all sinuses, satisfying himself that the superior extremity of the original tract is reached, and making a rather prolonged search for pockets and hidden branches, he trims away the over-hanging edges of skin along the entire cut area, paying particular attention to the edges and vicinity of the original external apertures. This is followed by a thorough curettage of the bottom of the sinus, and the removal as far as possible of every particle of the so-called pyogenic membrane. The wound is irrigated and sponged as dry as circumstances will permit. The author now uses peroxid of hydrogen, full strength, applied in the form of a spray by an ordinary hand atomizer. This valuable agent has an excellent effect on the debris unavoidably retained in the wound. The hydrogen used in this manner penetrates into every minute pocket and cuts out particles of tissue that is impossible to remove, except by the total excision of the entire lining membrane. Having decided acid reaction, it is most valuable in checking the otherwise profuse oozing, accompanying the simple curetting or excision. The splendid results attained by the use of peroxid of hydrogen in the manner described, are obtainable in other lines of work where the same action is desired, and has been used by Dr. Westmoreland and the author most satisfactorily in the treatment of chronic osteomyelitis and all varieties of indolent ulcers.

Dr. HUNTER MCGUIRE of Richmond, Va., read a paper (by invitation) entitled

REMARKS ON APPENDICITIS

with a report of twenty-six cases operated on during the past twelve months. The author considered, at the outset, the importance of operating for appendicitis during an interval between attacks. All of the nineteen cases of chronic, or relapsing appendicitis embraced in the report recovered. In looking over his record book for previous years he finds that he has operated on 33 other cases with only one fatal result, thus making a total of 52 consecutive operations for this form of appendicitis with one death. One of the cases was operated on for him by Dr. Joseph Price. The results he has attained he says are no better than many other operators have had, and he attributes his success largely to the fact that, if possible, he operates during the quiescent stage, as originally suggested by Mr. Treves in 1886, when danger of sepsis has passed and inflammatory symptoms have disappeared. The danger is practically nothing if the surgery is clean.

Under the head of symptoms which determine the safety of postponing operative interference until the acute stage has passed, the author said when we remember that fully one-half of all the cases of appendicitis recover from the first attack; that spontaneous resolution takes place when peritonitis, exudation and sometimes even suppuration, have been present; and that a large number of cases which recover without an operation in the primary attack remain well and have no recurrence of the disease, the question of when to operate is a very nice, difficult and always an important one. Dr. McGuire agrees with Dr. Wyeth, that if we have a competent surgeon, one skilled in abdominal work, and the patient can be operated on within twelve hours of the first symptoms of the attack 99 per cent. will be cured. But we frequently see the cases after these twelve hours have expired and surgeons of experience in such work are not always within call. He is not in favor of an operation in all cases as soon as a positive diagnosis is made.

Value and limits of saline purgation.—In an ordinary case,

not a fulminating one, after a short time the pain abates, the fever lessens, the pulse gets slower, the abdomen less hard and tender, and all the urgent symptoms more or less subside, they do not disappear, but are less pronounced, and then there comes in a remedy which in his hands has been as certainly valuable for good as quinin in malaria or arsenic in neuralgia: that is, saline purgatives, given in frequent doses until the patient is freely and repeatedly purged.

Relative frequency of the disease in the two sexes.—From the reports of many surgeons we learn that appendicitis is much more common in males than in females, the proportion stated being one to four. This has not, however, been the author's experience. In his cases for the past year, thirteen were females and thirteen were males, and this has been about the proportion of all of his cases, amounting now to 155, the cases being nearly equally divided between the two sexes.

Dr. McGuire then dwelt on the differential diagnosis between appendicitis and disease of the ovaries and tubes.

With reference to the technique of operation, he has this to say: "In fulminating cases the abdomen should be opened by a long incision, the gangrenous appendix ligated and cut off, and the belly washed out with gallons of sterilized water. Six or eight strips of iodoform gauze should be carried through the incision to different parts of the cavity. The wound should not be sutured, but every facility afforded for easy drainage. If such a case is not seen until the bowels are distended with gas, and the patient prostrated or collapsed, it is useless to operate. I have never seen a case of fulminating appendicitis without premonitory symptoms. A careful inquiry into the past history will always show former attacks, which possibly at the time were not recognized. In cases where there is a deep-seated localized abscess it should be rendered accessible by a free abdominal incision. The abscess should be carefully walled off from adjacent tissues by pieces of gauze and then opened. The pus should be sponged out and the appendix carefully searched for and removed. The abscess wall should be dissected out and the bowels examined to see that they are intact. It is impossible to treat such cases extraperitoneally, and when you have exposed the cavity to the danger of infection there is no more excuse for doing incomplete work than in other forms of abdominal surgery."

In cases where the abscess has approached the anterior abdominal wall and become adherent to the peritoneum, he simply opens and drains it, and makes no effort to extract the appendix if not loose, or to remove the wall. To endanger the infection of the general cavity by too prolonged an attempt to find the appendix is not good surgery.

In cases of chronic or relapsing appendicitis, Dr. McGuire does not advise an operation until the patient has had two attacks. Sometimes the inflammation which attends the first attack renders the patient free from a second attack, because of some obliterating pathologic change in the appendix. He makes one exception to this rule. If, several weeks after the first attack he finds induration or tenderness, or both, over the region of the cecum, he advises the patient to have the operation done at once. The operation should always be done between the attacks. In every case all adhesions should be freed, and any portion of the omentum in contact with the appendix, which is suspected of being contaminated, should be removed.

THIRD DAY—AFTERNOON SESSION.

Dr. J. C. LEHARDY, of Savannah, read a paper in which he outlined an act to create a Commissioner of Health and Drainage for the State of Georgia.

Dr. J. D. CHASON of Iron City, read a paper entitled

PUERPERAL SEPTICEMIA: ITS CAUSE AND TREATMENT.

The author regards a patient with this disease in a position strikingly analogous to one bitten by a snake. A poison is introduced into the blood which causes minute changes in the tissues and also produces a decided shock to the nervous system. The patient may be prostrated by the primary depression. If this can be averted here, as in snake bite, the patient will recover, unless the diffuse changes have too deeply involved vital organs. In this disease we must stop the generation and absorption of poison, and if this can be done we need not fear the slight damage done by the poison already absorbed.

The indications for the treatment are threefold: 1, to stop the generation and absorption of the poison; 2, to neutralize the poison already absorbed by free stimulation; 3, to increase the action of the excretory organs with a view to the elimination of the poison already absorbed and to prevent further absorption.

Dr. R. R. KIME of Atlanta, followed with a paper on

THE PRESENT STATUS OF PUERPERAL INFECTION.

The author said that the keystone to success in puerperal

infection is elimination and drainage, counteracting absorbed toxins and germs, checking their further development, and sustaining the patient by such remedies and measures as will conserve the vital forces of patient the most. After more than ten years of practical demonstration of drainage, both uterine and alimentary, in puerperal infection, the author is more fully convinced than ever of its utility. Not only does it lessen suffering, relieve more cases of puerperal infection, and save more lives than any other means now at our command, but also prevents more pelvic complication, saves more uteri, tubes and ovaries from subsequent disease and leaves them in a condition to perform their normal functions, which can not be said of any other plan of treatment known to the profession of today. All cases of puerperal infection should be fed systematically liquid, easily digested food, and where they fail to take sufficient nourishment some of the prepared foods should be given. Of medicinal remedies, quinin given in 5 to 10 grain doses, every four to six hours, acts well in many cases, tending to check germ development and inflammation, incidentally helping to control temperature without detriment to the patient. Strychnia combined with bitter tonics, antiseptics or digestants, given every four hours with nourishment, is beneficial in most cases. In weak, debilitated cases some form of iron should be given. Hypnotics should be given if needed to procure rest or sleep. Stimulants in moderation, systematically given, will do good in very weak cases; yet strychnia, quinin and digitalis are more permanent and beneficial in their results.

Surgical measures are indicated when the infection becomes localized with pus formation, and some claim in general peritonitis. Pus accumulations in the broad ligaments, as a rule, should be drained through the vagina by Henrotin's method, whether they be due to cellulitis, peritubal inflammation or ruptured pus tubes. In pyosalpinx and ovarian abscess authorities differ as to whether the vaginal or abdominal route is best.

Hysterectomy is advocated in cases of thrombo-phlebitis, multiple abscesses in uterine wall, etc., but it is a very difficult matter to diagnose the condition requiring such a surgical procedure. Where the septic infection is so marked as to produce such serious lesions of the uterus, it has usually passed beyond the reach of hysterectomy before a differential diagnosis can be made demanding such an operation. While the infection is progressing the author doubts the utility of such a measure, but after the infection and inflammation have become localized in the uterus, tubes, or ovaries, then it is time to consider such operative measures as are best suited to the individual case.

Dr. J. L. HIERS of Savannah, read a paper entitled "Some Interesting Ophthalmological Cases" in which he reported 87 cases of phlyctenular and corneal ulcers treated with tincture of iodine, 74 cases requiring only one application, 9 cases two applications, 2 cases a third application, and 3 cases had to be cauterized by the actual cautery.

Dr. GEORGE HORNE of Americus, read a paper on "Lupus of the Nose, its Medical and Surgical Treatment." The author reported three cases of this disease which were successfully treated by the use of pyoktanin.

Dr. J. M. CRAWFORD of Atlanta, reported a successful rhinoplastic operation for the loss of the nose. He also reported a case in which he operated for removal of the drum membrane and necrosed bones in chronic suppurative aural catarrh.

Several papers were read by title and referred to the Committee on Publication.

The following officers were elected: President, Dr. J. B. Morgan of Augusta. First Vice-president, Dr. L. G. Hardman of Harmony Grove. Second Vice-president, Dr. J. L. Hiers of Savannah.

The next place of meeting to be Cumberland Island, on the third Wednesday in April, 1898.

Eczema in Cyst Fluids and their Diagnostic Significance.—Observation of a case of pancreatic cyst in which the fat-emulsifying action was very slight and irregular, induced Zehuisen to investigate the fermentative action in various fluids, transudations, exudations, ovarian cysts, etc. He found that diastatic fermentation was almost invariably present, while the tryptic and fat-emulsifying action was invariably absent. The results with urine were contradictory. The discovery of fat-emulsifying and tryptic action is therefore very important in diagnosing a pancreatic cyst, while diastatic fermentation has no significance in this respect. —*Wien. Klin. Rundschau*, March 14 from *Cbl. f. Inn. Med.*, No. 40, 1896.

Special Courses in Medicine and Surgery to be given in Philadelphia the Week Preceding and that Following the Meeting of the American Medical Association.

The course of instruction, which is free to members of the AMERICAN MEDICAL ASSOCIATION for the week preceding and that following the meeting of this ASSOCIATION in Philadelphia, includes a series of clinical lectures and demonstrations given by the Faculty of the teaching colleges of Philadelphia, and of laboratory, dispensary and ward demonstrations given by the staff of the various hospitals of the city and medical institutions.

The college courses are as follows:

COLLEGE COURSES.

WOMAN'S MEDICAL COLLEGE OF PENNSYLVANIA CLINICS.

Monday, May 24, 12 m., Gynecology, Hannah T. Croasdale.
1 p.m., Obstetrics, Anna E. Broomall.
Tuesday, May 25, 12 m., Pediatrics, Edward P. Davis.
1 p.m., Neurology, Charles K. Mills.
Wednesday, May 26, 12 m., Medicine, Frederick P. Henry.
1 p.m., Ophthalmology, Amy S. Barton.
Thursday, May 27, 12 m., Otolaryngology, Charles H. Burnett.
1 p.m., Dermatology, Henry W. Stelwagon.
Friday, May 28, 12 m., Laryngology, Emma E. Musson.
1 p.m., Surgery, John B. Roberts.
Saturday, May 29, 12 m., Medicine, Frederick P. Henry.
1 p.m., Orthopedics, James K. Young.
Monday, May 31, 12 m., Gynecology, Anna M. Fullerton.
1 p.m., Obstetrics, Anna E. Broomall.
Saturday, June 5, 12 m., Pediatrics, Edward P. Davis.
1 p.m., Neurology, Charles K. Mills.
Monday, June 7, 12 m., Medicine, Frederick P. Henry.
1 p.m., Surgery, John B. Roberts.
Tuesday, June 8, 12 m., Otolaryngology, Charles H. Burnett.
1 p.m., Dermatology, Henry W. Stelwagon.
Wednesday, June 9, 12 m., Laryngology, Emma E. Musson.
1 p.m., Orthopedics, James K. Young.
Thursday, June 10, 12 m., Otolaryngology, Charles H. Burnett.
1 p.m., Dermatology, Henry W. Stelwagon.
Friday, June 11, 12 m., Laryngology, Emma E. Musson.
1 p.m., Ophthalmology, Amy S. Barton.
Saturday, June 12, 12 m., Medicine, Frederick P. Henry.

PHILADELPHIA POLYCLINIC CLINICS.

Monday, May 24, 12 m., Laryngology, W. J. Freeman.
1 p.m., Ophthalmology, S. D. Risley.
Tuesday, May 25, 12 m., Medicine, P. C. Griffith. 1 p.m., Neurology, Charles K. Mills.
Wednesday, May 26, 12 m., Otolaryngology, B. A. Randall. 1 p.m., Dermatology, Van Harlingen.
Thursday, May 27, 12 m., Obstetrics, E. P. Davis. 1 p.m., Pediatrics, J. M. Taylor.
Friday, May 28, 12 m., Surgery, J. B. Roberts. 1 p.m., Orthopedics, T. G. Morton.
Saturday, May 29, 12 m., Genito-urinary, T. R. Neilson.
1 p.m., Gynecology, B. F. Baer.
Monday, May 31, 12 m., Laryngology, A. W. Watson.
1 p.m., Ophthalmology, Edward Jackson.
Saturday, June 5, 12 m., Medicine, S. Solis-Cohen. 1 p.m., Neurology, Charles K. Mills.
Monday, June 7, 12 m., Otolaryngology, R. W. Seiss. 1 p.m., Dermatology, J. A. Cantrell.
Tuesday, June 8, 12 m., Obstetrics, E. P. Davis. 1 p.m., Pediatrics, J. M. Taylor.
Wednesday, June 9, 12 m., Surgery, L. W. Steinbach.
1 p.m., Orthopedics, H. A. Wilson.
Thursday, June 10, 12 m., Genito-urinary, Edward Martin.
1 p.m., Gynecology, J. M. Baldy.
Friday, June 11, 12 m., Laryngology, E. L. Vansant. 1 p.m., Ophthalmology, G. E. de Schweinitz.
Saturday, June 12, 12 m., Medicine, A. A. Eshner. 1 p.m., Neurology, C. W. Burr.

MEDICO-CHIRURGICAL COLLEGE CLINICS.

Monday, May 24, 12 m., Medicine, Wm. E. Hughes. 1 p.m., Pediatrics, W. C. Hollopeter.
Tuesday, May 25, 12 m., Dermatology, John V. Shoemaker.
1 p.m., Orthopedics, J. P. Mann.
Wednesday, May 26, 12 m., Genito-urinary, J. V. Shoemaker. 1 p.m., Gynecology, W. E. Ashton.

Thursday, May 27, 12 m., Surgery, Ernest Laplace. 1 p.m., Ophthalmology, L. Webster Fox.
Friday, May 28, 12 m., Medicine, J. M. Anders. 1 p.m., Neurology, C. W. Burr.
Saturday, May 29, 12 m., Laryngology, A. H. Cleveland.
1 p.m., Otolaryngology, E. B. Gleason.
Monday, May 31, 12 m., Obstetrics, W. Frank Haehnlen.
1 p.m., Pediatrics, W. C. Hollopeter.
Saturday, June 5, 12 m., Gynecology, W. E. Ashton. 1 p.m., Orthopedics, J. P. Mann.
Monday, June 7, 12 m., Surgery, Ernest Laplace. 1 p.m., Genito-urinary, J. V. Shoemaker.
Tuesday, June 8, 12 m., Dermatology, John V. Shoemaker.
1 p.m., Ophthalmology, L. Webster Fox.
Wednesday, June 9, 12 m., Medicine, J. M. Anders. 1 p.m., Neurology, C. W. Burr.
Thursday, June 10, 12 m., Laryngology, A. H. Cleveland.
1 p.m., Otolaryngology, E. B. Gleason.
Friday, June 12, 12 m., Medicine, J. M. Anders. 1 p.m., Pediatrics, W. C. Hollopeter.
Saturday, June 13, 12 m., Orthopedics, J. P. Mann. 1 p.m., Surgery, Ernest Laplace.

JEFFERSON MEDICAL COLLEGE CLINICS.

Monday, May 24, 12 m., Medicine, H. A. Hare. 1 p.m., Neurology, F. X. Dercum.
Tuesday, May 25, 12 m., Demonstration in Bacteriology, W. M. L. Coplin. 1 p.m., Dermatology, H. W. Stelwagon.
Wednesday, May 26, 12 m., Laryngology, W. S. Jones.
1 p.m., Ophthalmology, H. F. Hansell.
Thursday, May 27, 12 m., Orthopedics, H. W. Wilson.
1 p.m., Surgery, J. H. Brinton.
Friday, May 28, 12 m., Genito-urinary, Orville Horwitz.
1 p.m., Gynecology, E. E. Montgomery.
Saturday, May 29, 12 m., Obstetrics, Edward P. Davis.
1 p.m., Pediatrics, E. E. Graham.
Monday, May 31, 12 m., Medicine, H. A. Hare. 1 p.m., Neurology, F. X. Dercum.
Saturday, June 5, 12 m., Otolaryngology, S. MacC. Smith. 1 p.m., Medicine, J. C. Wilson.
Monday, June 7, 12 m., Laryngology, D. Braden Kyle. 1 p.m., Ophthalmology, G. E. de Schweinitz.
Tuesday, June 8, 12 m., Orthopedics, H. A. Wilson. 1 p.m., Surgery, W. W. Keen.
Wednesday, June 9, 12 m., Genito-urinary, Orville Horwitz.
1 p.m., Gynecology, J. C. DaCosta.
Thursday, June 10, 12 m., Obstetrics, Edward P. Davis.
1 p.m., Surgery, W. Joseph Hearn.
Friday, June 11, 12 m., Surgery, J. M. Barton. 1 p.m., Gynecology, E. E. Montgomery.
Saturday, June 12, 12 m., Surgery, J. Chalmers DaCosta.

UNIVERSITY OF PENNSYLVANIA CLINICS.

Monday, May 24, 12 m., Surgery, John Ashhurst. 1 p.m., Orthopedic Surgery, De F. Willard.
Tuesday, May 25, 12 m., Genito-urinary, Edward Martin.
1 p.m., Gynecology, C. B. Penrose.
Wednesday, May 26, 12 m., Obstetrics, B. C. Hirst, Subject: Labor obstructed by a contracted pelvis and its management.
1 p.m., Pediatrics and Surgery, J. P. Coyne Griffiths, T. Wm. White.
Thursday, May 27, 12 m., Medicine, Wm. Pepper. 1 p.m., Neurology, H. C. Wood.
Friday, May 28, 12 m., Otolaryngology, B. Alex. Randall. 1 p.m., Dermatology, L. A. Duhring.
Saturday, May 29, 12 m., Laryngology, C. P. Grayson. 1 p.m., Ophthalmology, W. F. Norris. (This one only).
Monday, May 31, 12 m., Surgery, John Ashhurst. 1 p.m., Orthopedics, De F. Willard.
Saturday, June 5, 12 m., Genito-urinary, Edward Martin.
1 p.m., Gynecology, C. B. Penrose.
Monday, June 7, 12 m., Obstetrics, B. C. Hirst. 1 p.m., Pediatrics, J. P. C. Griffiths.
Tuesday, June 8, 12 m., Medicine, James Tyson. 1 p.m., Neurology, H. C. Wood.
Wednesday, June 9, 12 m., Otolaryngology, B. Alex. Randall. 1 p.m., Surgery, F. Wm. White.
Thursday, June 10, 12 m., Laryngology, C. Grayson. 1 p.m., Medicine, John Musser.
Friday, June 11, 12 m., Surgery, John Ashhurst. 1 p.m., Orthopedics, De F. Willard.
Saturday, June 12, 12 m., Genito-urinary, Edward Martin.
1 p.m., Gynecology, C. B. Penrose.

LABORATORY WORK.

Monday, May 24, 10 a.m., Philadelphia Board of Health, Practical Bacteriology (City Hall), A. C. Abbott.

Tuesday, May 25, 10 a.m., University Hospital, Skiagraphy (Pepper Laboratory), C. Lester Leonard.

Wednesday, May 26, 10 a.m., University of Pennsylvania. Skiagraphy (Department of Physics), A. W. Goodspeed.

Thursday, May 27, 10 a.m., University of Pennsylvania (Department of Hygiene) Pathogenic Bacteria, A. C. Abbott. 10 a.m., Medico-Chirurgical College, Skiagraphy, C. L. Furbush. 10 a.m., Woman's Medical College, Microscopic examination of urine, sputum and blood, A. A. Stevens.

Friday, May 28, 10 a.m., University of Pennsylvania (Department of Hygiene) Pathogenic Bacteria, A. C. Abbott. 10 a.m., Medico-Chirurgical Skiagraphy, C. L. Furbush. 10 a.m., Jefferson Medical College, Examination of urine, sputum and blood, H. F. Harris.

Monday, May 31, 10 a.m., Woman's Medical College, Examination of urine, sputum and blood, A. A. Stevens. 10 a.m., University of Pennsylvania (Pepper Laboratory), Practical Bacteriology, D. Reisman. 10 a.m., Jefferson Medical College, Pathogenic Bacteria, W. M. L. Coplin.

Monday, June 7, 10 a.m., Medico Chirurgical College, Demonstrations in rare Tumors, Joseph McFarland. 10 a.m., Polyclinic, Skiagraphy, Max J. Stern. 10 a.m., Jefferson Medical College, Surgical Disinfection, J. Chalmers DaCosta and T. L. Rhoads.

Tuesday, June 8, 10 a.m., Medico-Chirurgical, Demonstrations of rare Tumors, Joseph McFarland. 10 a.m., Polyclinic, Skiagraphy, Max J. Stern. 10 a.m., Jefferson, Practical Disinfection, W. M. L. Coplin.

Thursday, June 10, 10 a.m., University of Pennsylvania (Chemical Laboratory), Urinalysis, sugar, albumin, etc., John Marshall. 10 a.m., University of Pennsylvania (Pepper Laboratory), Practical Pathology, D. Reisman. 10 a.m., Jefferson Medical College, Autopsies (Methods, W. M. L. Coplin).

Friday, June 11, 10 a.m., University (Chemical Laboratory), Urinalysis, John Marshall. 10 a.m., Woman's Medical College, Bacterial Demonstration, B. Lewis.

Daily at the Pepper Laboratory from 3 to 5 in the afternoon, under the personal supervision of Dr. Alfred Stengel, Director, A. E. Taylor will demonstrate blood; S. S. Kneass, will show bacteria; W. G. Spiller and Joseph Sailer will exhibit pathologic specimens of the nervous system; C. Lester Leonard will carry on his work with the Roentgen rays; D. L. Edsall will show the modern methods of investigating diseases of the stomach; Samuel Hamill will examine sputum; G. S. Woodward will explain the methods of testing milk.

The Laboratories of Bacteriology, Pathology and Histology of the Jefferson Medical College will be open daily at 11 o'clock under the charge of Drs. D. Braden Kyle and W. M. L. Coplin.

SURGICAL COURSE—DAILY OUT-PATIENT DEPARTMENT.

8 a.m., Woman's Hospital: Drs. Kate W. Baldwin, Clara Reimel, Margaret Butler, Elizabeth Clark, Caroline Van Horn, Catherine Storm and Miriam Butt.

9 a.m., Hospital and Dispensary of the Alumnae of the Woman's Medical College of Pennsylvania: Mary R. Wilcox, Rachel Skidelsky.

9:30 a.m., West Philadelphia Hospital for Women: Linda M. Stewart, R. Anna Breed, Elizabeth Griscom, Mary Griscom, Anna Sharpless and Helena Goodwin.

10 a.m., St. Agnes Hospital: Ellwood R. Kirby.

10 a.m., Pennsylvania Hospital: Joseph M. Spellissy.

10 a.m., German Hospital: (Mondays, Wednesdays and Saturdays) George D. Ross and A. D. Whiting.

10 a.m., Methodist Episcopal Hospital: Jas. P. Hutchinson, 11 a.m., Howard Hospital: Henry Kiersted.

11 a.m., Children's Hospital: James P. Hutchinson and Robert G. LeConte.

11 a.m., Polyclinic: T. S. K. Morton and L. W. Steinbach.

12 m., Jefferson Medical College Hospital: J. Chalmers DaCosta.

12 m., Presbyterian Hospital: J. P. Tunis.

12 m., University Hospital: Charles H. Frazier.

12:30 p.m., St. Joseph's Hospital: Drs. McKee and Baker.

1 p.m., Medico-Chirurgical College Hospital: B. P. Shimwell.

5 p.m., Polyclinic Hospital: John B. Roberts and Max J. Stern.

6 p.m., West Philadelphia Hospital for Women: Esther L. Blair, Helen Murphy and Margaret Butler.

SURGERY CLINICAL LECTURES AND WARD DEMONSTRATIONS.

Monday, May 24. 11 a.m., Polyclinic: T. S. K. Morton. 12 m., University of Pennsylvania: John Ashhurst, Jr. 1 p.m., Methodist Hospital: E. W. Holmes. 3 p.m., Presbyterian

Hospital: Henry R. Wharton. 5 p.m., Polyclinic: John Roberts.

Tuesday, May 25. 11 a.m., Polyclinic: L. W. Steinbach. 12 m., Pennsylvania Hospital: T. G. Morton. 1 p.m., Episcopal Hospital: T. R. Neilson. 3 p.m., St. Agnes Hospital: Edward Martin. 5 p.m., Polyclinic: Max J. Stern.

Wednesday, May 26. 11 a.m., Polyclinic: T. S. K. Morton. 11 a.m., Pennsylvania Hospital: John Ashhurst, Jr. 12 m., University of Pennsylvania: J. William White. 1 p.m., Methodist Hospital: E. W. Holmes. 3 p.m., Presbyterian Hospital: Henry R. Wharton. 5 p.m., Polyclinic: John B. Roberts.

Thursday, May 27. 11 a.m., Polyclinic: L. W. Steinbach. 12 m., Medico-Chirurgical: Ernest Laplace. 1 p.m., Jefferson: John H. Brinton. 3 p.m., Howard Hospital: Edward Martin. 5 p.m., Polyclinic: Max J. Stern.

Friday, May 28. 11 a.m., Polyclinic: T. S. K. Morton. 12 m., Polyclinic: John B. Roberts. 1 p.m., Episcopal Hospital: T. R. Neilson. 1 p.m., Woman's Medical College Hospital: John B. Roberts. 3 p.m., Presbyterian: H. R. Wharton. 5 p.m., Polyclinic: John B. Roberts.

Saturday, May 29. 11 a.m., Pennsylvania Hospital: Richard Harte. 11 a.m., Polyclinic: L. W. Steinbach. 12 m., Pennsylvania Hospital: T. G. Morton. 1 p.m., Philadelphia Hospital: Edward Martin. 3 p.m., Methodist Hospital: E. W. Holmes. 5 p.m., Polyclinic: Max J. Stern.

Monday, May 31, 11 a.m., Polyclinic: T. S. K. Morton. 12 m., University of Pennsylvania: John Ashhurst, Jr. 1 p.m., Presbyterian: H. R. Wharton. 3 p.m., St. Agnes Hospital: Edward Martin. 5 p.m., Polyclinic: John B. Roberts.

Saturday, June 5, 11 a.m., Pennsylvania Hospital: Richard Harte. 11 a.m., Polyclinic: L. W. Steinbach. 12 m., Medico-Chirurgical: Ernest Laplace. 1 p.m., Philadelphia: Edward Martin. 3 p.m., Children's Hospital: H. R. Wharton. 5 p.m., Polyclinic: Max J. Stern.

Monday, June 7, 11 a.m., Polyclinic: T. S. K. Morton. 12 m., Medico-Chirurgical Hospital: Ernest Laplace. 1 p.m., Woman's Medical College: John B. Roberts. 3 p.m., Children's Hospital: H. R. Wharton. 5 p.m., Polyclinic: John B. Roberts.

Tuesday, June 8, 11 a.m., Pennsylvania Hospital: John Ashhurst, Jr. 12 m., Episcopal Hospital: T. R. Neilson. 1 p.m., Jefferson Hospital: W. W. Keen. 3 p.m., Howard Hospital: Edward Martin. 5 p.m., Polyclinic: Max J. Stern.

Wednesday, June 9, 11 a.m., Polyclinic: T. S. K. Morton. 12 m., Polyclinic: L. W. Steinbach. 1 p.m., University of Pennsylvania: J. William White. 3 p.m., Children's Hospital: H. R. Wharton. 5 p.m., Polyclinic: John Roberts.

Thursday, June 10, 11 a.m., Polyclinic: L. W. Steinbach. 12 m., Medico Chirurgical Hospital: Ernest Laplace. 1 p.m., Jefferson Hospital: Joseph Hearn. 2 p.m., Howard Hospital: Charles Frazier. 3 p.m., St. Agnes: Edward Martin. 5 p.m., Polyclinic: Max J. Stern.

Friday, June 11, 11 a.m., Polyclinic: T. S. K. Morton. 12 m., Episcopal Hospital: T. R. Neilson. 1 p.m., Woman's Medical College: John Roberts. 3 p.m., Presbyterian Hospital: H. R. Wharton. 5 p.m., Polyclinic: John B. Roberts.

Saturday, June 12, 11 a.m., Polyclinic: L. W. Steinbach. 12 m., Jefferson Medical College: J. Chalmers Da Costa. 1 p.m., Methodist Hospital: E. W. Holmes. 3 p.m., Philadelphia Hospital: Edward Martin. 5 p.m., Polyclinic: Max J. Stern.

Dr. Max J. Stern will give two cadaveric demonstrations of the technique of some modern surgical operations at dates to be later announced.

The following Out-patient Departments will be open for the treatment of medical cases at the hours named:

8 a.m., Woman's Medical College: Kate W. Baldwin, Clara Reimel, Margaret Butler, Elizabeth M. Clerk, Caroline Van Horn, Katherine L. Storm, Miriam M. Butt.

9:30 a.m., West Philadelphia Hospital for Women: Linda M. Stewart, R. Anna Breed, Esther L. Blair, Elizabeth W. Griscom, Mary W. Griscom, Helen Murphy, Anna P. Sharpless, A. Helena Goodwin, Margaret Butler.

9 a.m., Hospital and Dispensary of the Alumnae of the Woman's Medical College of Pennsylvania: Miriam M. Butt, Rebecca Fleisher, Rachel Williams.

10 a.m., Pennsylvania Hospital: Henry Fisher.

10 a.m., Episcopal Hospital: Clarence Lincoln and Cyrus Moore.

11 a.m., St. Joseph's Hospital: Washington Baker (Tuesday and Friday).

11 a.m., Howard Hospital: A. E. Roussel and Charles Wirgman.

12 m., St. Agnes Hospital: A. H. Strecker.

12 m., Jefferson Hospital: Julian L. Salinger and T. G. Ashton.

12 m., University Hospital: M. Howard Russell.
 12 m., Medico-Chirurgical Hospital: G. W. Pfromm.
 1 p.m., Orthopedic Hospital: S. Weir Mitchell, Wharton Sinkler, Morris J. Lewis.
 12 m., Presbyterian Hospital: Guy Hinsdale.
 2 p.m., Episcopal Hospital (Mondays and Thursdays): Harvey Shoemaker.
 4 p.m., St. Joseph's Hospital: Telt (Monday, Wednesday, Thursday and Saturday).
 6 p.m., West Philadelphia Hospital for Women: Lida M. Stewart, R. Anna Breed, Esther L. Blair, Elizabeth Griscorn, Helen Murphy, Anna P. Sharpless, A. Helena Goodwin, Margaret Butler.

MEDICINE.

CLINICAL LECTURES AND WARD DEMONSTRATIONS.

Daily—11 a.m., Presbyterian Hospital, Roland Curtin; 3 p.m., Presbyterian Hospital, John Musser; 4 p.m., Municipal Hospital (Infectious Diseases), Wm. M. Welch.

Monday, May 24, 11 a.m., St. Agnes', B. Stahl; 12 m., Jefferson, Hobart A. Hare; 12 m., Medico-Chirurgical, William E. Hughes; 3 p.m., Philadelphia Hospital, Frederick A. Packard; 3 p.m., Polyclinic (Diseases of Chest), Judson Daland; 5 p.m., Polyclinic, A. A. Eshner.

Tuesday, May 25, 11 a.m., St. Agnes', A. A. Stevens; 12 m., Polyclinic, Crozer Griffith; 1 p.m., Philadelphia Hospital, John Musser; 2 p.m., Polyclinic (Diseases of Stomach), D. D. Stewart; 3 p.m., University Hospital, Alfred E. Stengel; 3 p.m., Philadelphia Hospital, Frederick A. Packard; 3 p.m., Polyclinic (Diseases of Chest), Thos. J. Mays; 5 p.m., Polyclinic (Diseases of Chest), A. E. Tussey.

Wednesday, May 26, 11 a.m., St. Agnes', B. Stahl; 12 m., Woman's Medical College, F. P. Henry; 12 m., Polyclinic, S. S. Cohen; 3 p.m., Philadelphia Hospital, W. E. Hughes and F. A. Packard; 3 p.m., Polyclinic (Diseases of Chest), Judson Daland; 5 p.m., Polyclinic, A. A. Eshner.

Thursday, May 27, 11 a.m., St. Agnes', A. A. Stevens; 12 m., University, William Pepper; 1 p.m., Philadelphia, John Musser; 2 p.m., Polyclinic (Diseases of Stomach), D. D. Stewart; 3 p.m., Polyclinic (Diseases of Chest), Thos. J. Mays; 3 p.m., University Hospital, Alfred Stengel; 4:30 p.m., St. Joseph's Hospital, H. B. Allyn; 5 p.m., Polyclinic (Diseases of Chest), A. E. Tussey.

Friday, May 28, 11 a.m., St. Agnes', B. Stahl; 12 m., Medico-Chirurgical, J. M. Anders; 3 p.m., Philadelphia Hospital, W. E. Hughes and Frederick Packard; 3 p.m., Polyclinic (Diseases of Chest), Judson Daland; 5 p.m., Polyclinic, A. A. Eshner.

Saturday, May 29, 11 a.m., St. Agnes', A. A. Stevens; 12 m., Woman's, F. P. Henry; 1 p.m., Philadelphia, John Musser; 2 p.m., Polyclinic (Diseases of Stomach), D. D. Stewart; 3 p.m., University, A. E. Stengel; 3 p.m., Polyclinic (Diseases of Chest), T. J. Mays; 5 p.m., Polyclinic (Diseases of Chest), A. E. Tussey.

Monday, May 31, 12 m., Jefferson, Hobart A. Hare; 1 p.m., University, A. E. Stengel; 3 p.m., Philadelphia Hospital, James Tyson; 3 p.m., Polyclinic (Diseases of Chest), Judson Daland; 4:30 p.m., St. Joseph's Hospital, L. Marshall; 5 p.m., St. Joseph's Hospital, A. A. Eshner.

Saturday, June 5, 11 a.m., St. Agnes', A. A. Stevens; 12 m., Presbyterian, John Musser; 12 m., Polyclinic, J. P. Crozer (Griffith); 2 p.m., Polyclinic (Diseases of Stomach), D. D. Stewart; 3 p.m., Polyclinic (Diseases of Chest), Thos. J. Mays; 3 p.m., Philadelphia Hospital, A. E. Stengel; 4:30 p.m., St. Joseph's Hospital, H. B. Allyn; 5 p.m., Polyclinic (Diseases of Chest), A. E. Tussey.

Monday, June 7, 11 a.m., St. Agnes', B. Stahl; 12 m., Medico-Chirurgical, Wm. E. Hughes; 12 m., Woman's Medical College, F. P. Henry; 12 m., Polyclinic, S. S. Cohen; 3 p.m., Philadelphia Hospital, James Tyson; 3 p.m., Polyclinic (Diseases of Chest), Judson Daland; 5 p.m., Polyclinic, A. A. Eshner.

Tuesday, June 8, 11 a.m., St. Agnes', A. A. Stevens; 12 m., University, James Tyson; 2 p.m., Polyclinic (Diseases of Stomach), D. D. Stewart; 3 p.m., Philadelphia Hospital, Alfred E. Stengel; 3 p.m., Polyclinic (Diseases of Chest), Thos. J. Mays; 5 p.m., Polyclinic (Diseases of Chest), A. E. Tussey.

Wednesday, June 9, 11 a.m., St. Agnes', B. Stahl; 12 m., Medico-Chirurgical, J. M. Anders; 3 p.m., Philadelphia, James Tyson; 3 p.m., Polyclinic (Diseases of Chest), Judson Daland; 5 p.m., Polyclinic, A. A. Eshner.

Thursday, June 10, 11 a.m., St. Agnes', A. A. Stevens; 12 m., Polyclinic, J. P. Crozer Griffith; 1 p.m., University, John Musser; 2 p.m., Polyclinic (Diseases of Stomach), D. D. Stewart; 3 p.m., Polyclinic (Diseases of Chest), Thos. J. Mays;

3 p.m., Philadelphia Hospital, A. E. Stengel; 4:30 p.m., St. Joseph's Hospital, L. Marshall; 5 p.m., Polyclinic (Diseases of Chest), A. E. Tussey.

Friday, June 11, 11 a.m., St. Agnes', B. Stahl; 12 m., Medico-Chirurgical, J. M. Anders; 3 p.m., Polyclinic (Diseases of Chest), Judson Daland; 3 p.m., Philadelphia Hospital, James Tyson; 5 p.m., Polyclinic, A. A. Eshner.

Saturday, June 12, 11 a.m., St. Agnes', A. A. Stevens; 12 m., Woman's Medical College, T. P. Henry; 2 p.m., Polyclinic (Diseases of Stomach), D. D. Stewart; 3 p.m., Polyclinic (Diseases of Chest), T. J. Mays; 3 p.m., Philadelphia Hospital, A. E. Stengel; 5 p.m., Polyclinic (Diseases of Chest), A. E. Tussey.

Alfred Stengel will give two demonstrations of the performance of autopsies at the German Hospital on date which will be announced later.

NEUROLOGY.

HOSPITAL SERVICES FOR MENTAL AND NERVOUS DISEASES.

The following neurologic services for outdoor patients are conducted daily:

Hospital of University of Pennsylvania, 12 to 1 p.m., H. C. Wood.

Hospital of the Jefferson Medical College, 12 to 1 p.m., F. X. Dercum.

Medico-Chirurgical Hospital, 1 to 2 p.m., C. W. Burr.

Polyclinic Hospital, 3 to 4 p.m., Charles K. Mills and C. W. Burr.

Orthopedic Hospital and Infirmary for Nervous Diseases, 1 to 2 p.m. Physicians, S. Weir Mitchell, Wharton Sinkler and Morris Lewis; Assistant Physicians, J. M. Taylor, Guy Hinsdale and J. K. Mitchell; Electrician, J. H. W. Rhein.

The Neurologic Department of the Philadelphia Hospital, which includes beds for three hundred cases of organic nervous disease, and the Insane Department of the hospital, with more than eleven hundred patients, is visited at least three times a week by each member of the neurologic staff on duty, with whom arrangements can be made to visit the wards. The neurologists now on duty are James Hendrie Lloyd and C. W. Burr.

Dispensary services for nervous diseases are also held at the Howard Hospital, Broad and Catherine Streets, and at the Northern Dispensary, Sixth Street and Fairmount Avenue.

CLINICAL LECTURES AND WARD DEMONSTRATIONS.

Monday, May 24, 3 to 4 p.m., Philadelphia Polyclinic, Clinical Lecture, C. K. Mills. 4 to 5 p.m., Clinical Lecture, C. W. Burr.

Tuesday, May 25, 3 to 4 p.m., Infirmary for Nervous Diseases, Clinical Lecture, W. Sinkler. 4 to 5 p.m., Clinical Lecture, J. K. Mitchell.

Wednesday, May 26, 3 to 4 p.m., Philadelphia Polyclinic, Clinical Lecture, C. K. Mills. 4 to 5 p.m., Electrotherapeutics, J. W. McConnell.

Thursday, May 27, 3 to 4 p.m., Philadelphia Hospital, Clinical Lecture, J. H. Lloyd. 4 to 5 p.m., Pepper Laboratory, University Hospital, Clinico-pathologic Demonstrations, W. G. Spiller.

Friday, May 28, 3 to 4 p.m., Jefferson College Hospital, Clinical Lecture, F. X. Dercum. 4 to 5 p.m., Electrotherapeutics, M. H. Boehrroch.

Saturday, May 29, 3 to 4 p.m., Philadelphia Polyclinic, Clinico-pathologic Demonstrations, A. O. J. Kelly. 4 to 5 p.m., Infirmary for Nervous Diseases, Electrotherapeutics, J. H. W. Rhein.

Monday, May 31, 3 to 4 p.m., Philadelphia Hospital, Clinical Lecture, C. W. Burr. 4 to 5 p.m., University Hospital, Electrotherapeutics, Charles S. Potts.

Saturday, June 5, 3 to 4 p.m., Jefferson College Hospital, Clinical Lecture, F. X. Dercum. 4 to 5 p.m., Infirmary for Nervous Diseases, Electrotherapeutics, J. H. W. Rhein.

Monday, June 7, 3 to 4 p.m., Philadelphia Hospital, Clinical Lecture, J. H. Lloyd. 4 to 5 p.m., Clinical Lecture, C. W. Burr.

Tuesday, June 8, 3 to 4 p.m., Infirmary for Nervous Diseases, Clinical Lecture, W. Sinkler. 4 to 5 p.m., Clinical Lecture, J. K. Mitchell.

Wednesday, June 9, 3 to 4 p.m., Philadelphia Polyclinic, Clinical Lecture, C. K. Mills. 4 to 5 p.m., Electrotherapeutics, J. W. McConnell.

Thursday, June 10, 3 to 4 p.m., Philadelphia Hospital, Clinical Lecture, J. H. Lloyd. 4 to 5 p.m., Pepper Laboratory, University Hospital, Clinico-pathologic Demonstrations, W. G. Spiller.

Friday, June 11, 3 to 4 p.m., Jefferson College Hospital, Clinical Lecture, F. X. Dercum. 4 to 5 p.m., Electrotherapeutics, M. H. Boehrroch.

Saturday, June 12, 3 to 4 p.m., Philadelphia Polyclinic. Clinico-pathologic Demonstrations, A. O. J. Kelly. 4 to 5 p.m., University Hospital, Electrotherapeutics, Charles S. Potts.

GYNECOLOGY AND OBSTETRICS.

In the following Out-patient Departments the diseases of women will be treated daily at the hours stated.

8 a.m., Woman's Hospital: Marie K. Formad, Frances Hachette, Sarah Chapin, Caroline Purnell and Ruth Clement. 9:30 a.m. and 12:30 p.m., West Philadelphia Hospital for Women: Lydia M. Stewart, R. Anna Breed, Elizabeth Griscom, Mary Griscom, Anna Sharpless, Helena Goodwin.

12 m., Jefferson Medical College Hospital: John M. Fisher. 12 m., Medico-Chirurgical College: Walter B. Woods.

12 m., University of Pennsylvania: John H. Girvin and Lawrence S. Smith.

12 m., Howard Hospital: B. C. Hirst, John B. Shober.

12 m., Hospital and Dispensary of the Alumnae of the Woman's Medical College: Lucy M. Tappan, Mary E. Allen, Mary W. Griscom.

6 p.m., West Philadelphia Hospital for Women: Esther F. Blair, Helen Murphy and Margaret Butler.

West Philadelphia Hospital for Women: Tuesdays and Fridays are operating days, 2 p.m.

At the Polyclinic B. F. Baer will operate Mondays and Saturdays at 1 p.m.; J. M. Baldy will operate Tuesdays and Wednesdays at 10 a.m.; H. A. Slocum will operate Tuesdays and Fridays at 5 p.m.

OPERATIONS AND CLINICS—GYNECOLOGY AND OBSTETRICS.

Monday, May 24. 10 a.m., Howard Hospital: John B. Shober. 12 m., Woman's Hospital: Hannah T. Croasdale. 1 p.m., Woman's Hospital (Obstetrics): Anna Broomall. 3 p.m., Lying-in Charity: G. M. Boyd, O. Hopkinson or J. R. Wilson.

Tuesday, May 25. 10 a.m., Private Hospital: Joseph Price. 1 p.m., University Hospital: C. B. Penrose. 3 p.m., University Hospital (Obstetrics—ward visit): B. C. Hirst.

Wednesday, May 26. 10 a.m., St. Joseph's Hospital: E. E. Montgomery. 12 m., University Hospital (Obstetrics—labor obstructed by a contracted Pelvis and its management): B. C. Hirst. 1 p.m., Medico-Chirurgical Hospital: W. E. Ashton. 3 p.m., Jefferson Maternity (Obstetrics): E. P. Davis.

Thursday, May 27. 10 a.m., Kensington Hospital for Women: C. P. Noble. 12 m., Jefferson (Obstetrics): E. P. Davis. 3 p.m., Jefferson Maternity (Obstetrics): E. P. Davis.

Friday, May 28. 10 a.m., Gynecian Hospital: J. M. Baldy. 1 p.m., Jefferson Hospital: E. E. Montgomery. 3 p.m., Lying-in Charity: G. M. Boyd, O. Hopkinson, W. R. Wilson.

Saturday, May 29. 9 a.m., Philadelphia Hospital: R. C. Norris. 10 a.m., Polyclinic: B. F. Baer. 12 m., Jefferson (Obstetrics): E. P. Davis. 3 p.m., University of Pennsylvania (Obstetrics): B. C. Hirst.

Monday, May 31. 10 a.m., Kensington Hospital for Women: C. P. Noble. 12 m., Medico-Chirurgical (Obstetrics): W. Frank Haehnlen. 12 m., Woman's Medical College: Anna M. Fullerton. 3 p.m., Lying-in Charity: G. M. Boyd, O. Hopkinson, W. R. Wilson.

Saturday, June 5. 9 a.m., Philadelphia Hospital: R. C. Norris. 10 a.m., Private Hospital: Joseph Price. 12 m., Medico-Chirurgical: W. E. Ashton. 3 p.m., University Hospital (Obstetrics—ward visit) B. C. Hirst.

Monday, June 7. 10 a.m., Howard Hospital (Gynecology): B. C. Hirst. 12 m., University Hospital (Obstetrics): B. C. Hirst. 2 p.m., Lying-in Charity: G. M. Boyd, O. Hopkinson and W. R. Wilson.

Tuesday, June 8. 10 a.m., Polyclinic: B. F. Baer. 12 m., Polyclinic (Obstetrics): E. P. Davis. 3 p.m., University of Pennsylvania (Obstetrics): B. C. Hirst.

Wednesday, June 9. 10 a.m., St. Joseph's Hospital: E. E. Montgomery. 12 m., Jefferson Medical College: John C. Da Costa. 10 a.m., Jefferson Maternity (Obstetrics): E. P. Davis.

Thursday, June 10. 10 a.m., St. Agnes Hospital: W. H. Parish. 12 m., Polyclinic (Obstetrics): E. P. Davis. 1 p.m., Polyclinic: J. M. Baldy. 3 p.m., Jefferson Maternity (Obstetrics): E. P. Davis.

Friday, June 11. 10 a.m., Gynecian Hospital: J. M. Baldy. 1 p.m., Jefferson Hospital: E. E. Montgomery. 3 p.m., Lying-in Charity: G. M. Boyd, O. Hopkinson, W. R. Wilson.

Saturday, June 12. 9 a.m., Philadelphia Hospital: R. C. Norris. 10 a.m., Methodist Hospital: George E. Shoemaker. 1 p.m., University Hospital: C. B. Penrose. 3 p.m., University, (Obstetrics—ward visit): B. C. Hirst.

OPHTHALMOLOGY, OTOTOLOGY AND LARYNGOLOGY.

The following list contains the hours and hospitals at which the visiting physicians interested in ophthalmology, otology

and laryngology will find clinics and dispensary services, and where they may see the active work in these departments of medicine and surgery.

MONDAY, MAY 24.

Ophthalmology.—8 a.m., Gertrude A. Walker, Women's Medical College; 9 a.m., J. Thorington, Polyclinic; 12 m., W. Sweet, Polyclinic; 1 p.m., L. W. Fox, Medico-Chirurgical; 2 p.m., de Schweinitz or Veasey, Jefferson; 2 p.m., Norris or Mellor, University of Pennsylvania; 2 p.m., Norris, Harlan, Risley, McClure, Oliver, Wills; 2 p.m., Mary Getty, Dispensary of Alumnae of Women's Hospital, 1212 South 3rd Street; 3 p.m., Mary Getty, West Philadelphia Hospital for Women; 3 p.m., L. Ziegler, St. Joseph's; 3 p.m., A. G. Thomson, Children's; 4 p.m., T. B. Schneideman, Polyclinic; 4 p.m., G. E. de Schweinitz, Philadelphia.

Otology.—8 a.m., Eleanor Adamson, Women's Hospital College; 1 p.m., B. A. Randall, University of Pennsylvania; 1 p.m., E. B. Gleason, Medico-Chirurgical; 1 p.m., Ralph Seiss, Polyclinic; 1 p.m., Kate W. Baldwin, Dispensary of the Alumnae of the Women's Medical College; 2 p.m., A. H. Cleveland, Presbyterian; 3 p.m., S. MacCuen Smith, Jefferson.

Laryngology.—8 a.m., Eleanor Adamson, Women's Hospital; 11 a.m., E. L. Vansant, Polyclinic; 12 m., C. P. Grayson, University of Pennsylvania; 12 m., W. S. Jones, Jefferson; 12 m., A. H. Cleveland, Medico-Chirurgical; 1:30 p.m., W. Freeman, Children's; 2 p.m., A. Watson, Polyclinic; 4 p.m., G. M. Marshall, Philadelphia.

TUESDAY, MAY 25.

Ophthalmology.—8 a.m., Elizabeth Snyder, Women's Medical College; 9 a.m., Jackson, Polyclinic; 12 m., H. F. Hansell, Polyclinic; 1 p.m., Chas. S. Turnbull, German; 1 p.m., L. W. Fox, Medico-Chirurgical; 1 p.m., Amy S. Barton, Women's Medical College; 2 p.m., Marie W. Haydon, Hospital and Dispensary of the Alumnae of the Women's Medical College; 2 p.m., de Schweinitz or Veasey; Jefferson; 2 p.m., Norris or Mellor, University of Pennsylvania; 2 p.m., W. Thomson, Fisher, Berens, Jackson, Wills; 2 p.m., F. M. Perkins, Presbyterian; 2 p.m., E. H. Rehfuess, St. Agnes; 2 p.m., Harlan and Schwenk, Pennsylvania; 2 p.m., W. C. Posey, Howard; 2 p.m., G. O. Ring, Episcopal; 2 p.m., Gertrude A. Walker, Dispensary of Alumnae of Women's Hospital, 1212 S. 3rd St.; 3 p.m., L. F. Love, St. Mary's; 4 p.m., G. E. de Schweinitz, Polyclinic.

Otology.—8 a.m., Ida E. Gaston and Clara Dercum, Women's Medical College; 12 m., S. MacCuen Smith, Jefferson; 12:30 p.m., J. M. Brown, University of Pennsylvania; 1 p.m., E. B. Gleason, Medico-Chirurgical; 1 p.m., Ada H. Audenried, Dispensary of Alumnae of Women's Medical College; 2:30 p.m., B. A. Randall, Children's; 3 p.m., G. M. Marshall, St. Joseph's; 3 p.m., Randall, Children's.

Laryngology.—9 a.m., Ida E. Gaston, Clara Dercum, Women's Medical College; 11 a.m., J. S. Gibb, Polyclinic; 12 m., D. Braden Kyle, Jefferson; 12 m., A. H. Cleveland, Medico-Chirurgical; 2 p.m., W. Hoch, Methodist; 2 p.m., D. B. Kyle, St. Agnes; 2 p.m., W. Freeman, Polyclinic; 2 p.m., A. W. MacCoy, Pennsylvania; 2 p.m., L. P. Smock, St. Agnes; 2 p.m., G. Hudson Makuen, Polyclinic; 3 p.m., G. M. Marshall, St. Joseph's.

WEDNESDAY, MAY 26.

Ophthalmology.—8 a.m., G. A. Walker, Women's; 9 a.m., J. Thorington, Polyclinic; 12 m., W. Sweet, Polyclinic; 1 p.m., L. W. Fox, Medico-Chirurgical; 3 p.m., de Schweinitz or Veasey, Jefferson; 2 p.m., Norris, Harlan, Risley, Oliver, McClure, Wills; 2 p.m., Norris or Mellor, University of Pennsylvania; 2 p.m., Mary Getty, Dispensary of Alumnae of Women's Hospital, 1212 S. 3rd St.; 3 p.m., Mary Getty, West Philadelphia Hospital for Women; 4 p.m., T. B. Schneideman, Polyclinic; 4 p.m., G. E. de Schweinitz, Philadelphia.

Otology.—8 a.m., Sarah F. Tyson, Women's Medical College; 12 m., S. MacCuen Smith, Jefferson; 12 m., Randall, Polyclinic; 1 p.m., Randall or Brown, University; 1 p.m., E. B. Gleason, Medico-Chirurgical; 1 p.m., Ralph Seiss, Polyclinic; 2 p.m., A. H. Cleveland, Presbyterian.

Laryngology.—8 a.m., Sarah F. Tyson, Women's Medical College; 11 a.m., A. Watson, Howard; 11 a.m., E. L. Vansant, Polyclinic; 12 m., D. Braden Kyle, Jefferson; 12 m., C. P. Grayson, University of Pennsylvania; 12 m., A. H. Cleveland, Medico-Chirurgical; 1 p.m., Kate W. Baldwin, Dispensary of Alumnae of Women's Medical College; 2 p.m., A. Watson, Polyclinic.

THURSDAY, MAY 27.

Ophthalmology.—8 a.m., E. Snyder, Women's; 9 a.m., J. Thorington, Polyclinic; 12 m., H. F. Hansell, Polyclinic; 1 p.m., L. W. Fox, Medico-Chirurgical; 2 p.m., G. E. de Schweinitz, Jefferson; 2 p.m., Norris or Mellor, University of

Pennsylvania; 2 p.m., Jackson, Thompson, Fisher, Berens, Wills; 2 p.m., F. M. Perkins, Presbyterian; 2 p.m., W. C. Posey; Howard; 2 p.m., P. N. K. Schwenk, Pennsylvania; 2 p.m., E. H. Rehfuess, St. Agnes; 2 p.m., Frances Janney, Dispensary of Alumnae of Women's Hospital, 1212 South Third Street; 3 p.m., L. F. Love, St. Mary's; 4 p.m., S. D. Risley, Polyclinic.

Otology.—12 m., Charles H. Burnett, Women's Medical; 12 m., S. MacCuen Smith, Jefferson; 12:30 p.m., J. M. Brown, University of Pennsylvania; 1 p.m., B. A. Randall, Polyclinic; 1 p.m., E. B. Gleason, Medico-Chirurgical; 1 p.m., Ada H. Audenried, Dispensary of Alumnae of Women's Medical; 3 p.m., B. A. Randall, Children's.

Laryngology.—8 a.m., Eleanor Adamson, Women's Medical College; 11 a.m., J. S. Gibb, Polyclinic; 12 m., W. S. Jones, Jefferson; 12 m., A. H. Cleveland, Medico-Chirurgical; 2 p.m., W. Hoch, Methodist; 2 p.m., D. B. Kyle, St. Agnes; 2 p.m., W. J. Freeman, Polyclinic; 2 p.m., A. W. MacCoy, Pennsylvania; 2 p.m., L. P. Smock, St. Agnes; 2 p.m., G. Hudson Mahnen, Polyclinic.

FRIDAY, MAY 28.

Ophthalmology.—8 a.m., G. A. Walker, Women's; 9 a.m., E. Jackson, Polyclinic; 12 m., W. Sweet, Polyclinic; 1 p.m., L. W. Fox, Medico-Chirurgical; 1 p.m., C. S. Turnbull, German; 2 p.m., de Schweinitz or Veasey, Jefferson; 2 p.m., Norris or Mellor, University of Pennsylvania; 2 p.m., Risley, Harlan, Oliver, Norris, McClure, Wills; 2 p.m., G. O. Ring, Episcopal; 2 p.m., Gertrude A. Walker, Dispensary of Alumnae of Women's Hospital, 1212 South Third Street; 3 p.m., Mary Getty, W. Philadelphia Hospital for Women; 3 p.m., L. W. Ziegler, St. Joseph's; 3 p.m., A. G. Thomson, Children's; 4 p.m., T. B. Schneideman, Polyclinic; 4 p.m., G. E. de Schweinitz, Philadelphia.

Otology.—9 a.m., Musson, Women's Medical College; 12 m., S. MacCuen Smith, Jefferson; 12 m., Randall, University of Pennsylvania; 1 p.m., Randall or Brown, University of Pennsylvania; 1 p.m., Ralph Seiss, Polyclinic; 1 p.m., E. B. Gleason, Medico-Chirurgical; 2 p.m., A. H. Cleveland, Presbyterian.

Laryngology.—11 a.m., E. L. Vansant, Polyclinic; 12 m., D. B. Kyle, Jefferson; 12 m., A. H. Cleveland, Medico-Chirurgical; 12 m., Emma E. Musson, Women's Medical College; 1 p.m., Kate W. Baldwin, Dispensary of Alumnae of Women's Medical College; 1:30 p.m., W. Freeman, Children's; 2 p.m., A. Watson, Polyclinic; 3 p.m., Kyle and Jones alternating, Jefferson; 4 p.m., G. M. Marshall, Philadelphia.

SATURDAY, MAY 29.

Ophthalmology.—8 a.m., E. Snyder, Women's Medical College; 9 a.m., J. Thorington, Polyclinic; 12 m., H. F. Hansell, Polyclinic; 1 p.m., L. W. Fox, Medico-Chirurgical; 2 p.m., de Schweinitz or Veasey, Jefferson; 2 p.m., Mellor, University of Pennsylvania; 2 p.m., Thompson, Fisher, Jackson, Berens, Wills; 2 p.m., E. H. Rehfuess, St. Agnes; 2 p.m., Harlan and Schwenk, Pennsylvania; 2 p.m., F. Janney, Dispensary of Alumnae of Women's Hospital 1212 South Third Street; W. C. Posey, Howard; 3 p.m., L. F. Love, St. Mary's; 4 p.m., G. E. de Schweinitz, Polyclinic.

Otology.—8 a.m., Sarah F. Tyson, Women's Medical College; 12 m., S. MacCuen Smith, Jefferson; 12:30 p.m., J. M. Brown, University of Pennsylvania; 1 p.m., B. A. Randall, Polyclinic; 1 p.m., E. B. Gleason, Medico-Chirurgical; 1 p.m., Ada H. Audenried, Dispensary of Alumnae of Women's Medical College; 3 p.m., B. A. Randall, Children's; 3 p.m., G. M. Marshall, St. Joseph's.

Laryngology.—8 a.m., Sarah F. Tyson, Women's Medical College; 11 a.m., J. S. Gibb, Polyclinic; 11 a.m., A. Watson, Howard; 12 m., W. S. Jones, Jefferson; 12 m., A. H. Cleveland, Medico-Chirurgical; 12 m., D. B. Kyle, St. Agnes; 2 p.m., A. W. MacCoy, Pennsylvania; 2 p.m., L. P. Smock, St. Agnes; 2 p.m., G. Hudson Mahnen, Polyclinic; 3 p.m., G. M. Marshall, St. Joseph's.

MONDAY, MAY 31.

Ophthalmology.—8 a.m., G. A. Walker, Woman's Medical College; 9 a.m., J. Thorington, Polyclinic; 12 m., W. Sweet, Polyclinic; 1 p.m., L. W. Fox, Medico-Chirurgical; 2 p.m., de Schweinitz or Veasey, Jefferson; 2 p.m., Norris or Mellor, University of Pennsylvania; 2 p.m., Norris, Harlan, Risley, McClure, Oliver, Wills; 2 p.m., M. Getty, Dispensary of Alumnae of Women's Hospital, 1312 S. 3d Street; 3 p.m., M. Getty, West Philadelphia Hospital for Women; 3 p.m., L. Ziegler, St. Joseph's; 3 p.m., A. G. Thompson, Children's; 4 p.m., T. B. Schneidemann, Polyclinic; 4 p.m., G. E. de Schweinitz, Philadelphia.

Otology.—8 a.m., Eleanor Adamson, Women's Medical College; 1 p.m., B. A. Randall, University of Pennsylvania; 1 p.m.,

E. B. Gleason, Medico-Chirurgical; 1 p.m., Ralph Seiss, Polyclinic; 2 p.m., A. H. Cleveland, Presbyterian; 3 p.m., S. MacCuen Smith, Jefferson.

Laryngology.—11 a.m., E. L. Vansant, Polyclinic; 12 m., C. P. Grayson, University of Pennsylvania; 12 m., W. S. Jones, Jefferson; 12 m., A. H. Cleveland, Medico-Chirurgical; 1 p.m., Kate W. Baldwin, Dispensary of the Alumnae of the Women's Medical College; 1:30 p.m., W. Freeman, Children's; 2 p.m., A. Watson, Polyclinic; 4 p.m., G. M. Marshall, Philadelphia.

SATURDAY, JUNE 5.

Ophthalmology.—8 a.m., E. Snyder, Women's Medical College; 9 a.m., J. Thorington, Polyclinic; 12 m., H. F. Hansell, Polyclinic; 1 p.m., L. Webster Fox, Medico-Chirurgical; 2 p.m., de Schweinitz or Veasey, Jefferson; 2 p.m., Mellor, University of Pennsylvania; 2 p.m., Thompson, Fisher, Jackson, Berens, Wills; 2 p.m., E. H. Rehfuess, St. Agnes; 2 p.m., W. C. Posey, Howard; 2 p.m., Harlan and Schwenk, Pennsylvania; 2 p.m., F. Janney, Dispensary of Alumnae Woman's Hospital, 1212 S. 3d Street; 3 p.m., L. F. Love, St. Mary's; 4 p.m., G. E. de Schweinitz, Polyclinic.

Otology.—8 p.m., Sarah F. Tyson, Women's Medical College; 12 m., S. MacCuen Smith, Jefferson; 1 p.m., B. A. Randall, Polyclinic; 1 p.m., E. B. Gleason, Medico-Chirurgical; 1 p.m., Ada H. Audenried, Dispensary of Alumnae of Women's Medical College; 1 p.m., Brown, University of Pennsylvania; 3 p.m., B. A. Randall, Children's; 3 p.m., G. M. Marshall, St. Joseph's.

Laryngology.—8 a.m., Sarah F. Tyson, Women's Medical College; 11 a.m., J. S. Gibb, Polyclinic; 11 a.m., A. Watson, Howard; 12 m., W. S. Jones, Jefferson; 12 m., A. H. Cleveland, Medico-Chirurgical; 2 p.m., D. B. Kyle, St. Agnes; 2 p.m., A. W. MacCoy, Pennsylvania; 2 p.m., L. P. Smock, St. Agnes; 2 p.m., Hudson MacCuen, Polyclinic; 3 p.m., G. M. Marshall, St. Joseph's.

MONDAY, JUNE 7.

Ophthalmology.—9 a.m., J. Thorington, Polyclinic; 9 a.m., G. A. Walker, Women's Medical College; 12 m., W. Sweet, Polyclinic; 1 p.m., L. W. Fox, Medico-Chirurgical; 2 p.m., de Schweinitz or Veasey, Jefferson; 2 p.m., Norris or Mellor, University of Pennsylvania; 2 p.m., Norris, Harlan, Risley, McClure, Oliver, Wills; 2 p.m., M. Getty, Dispensary of Alumnae of Woman's Hospital; 3 p.m., M. Getty, West Philadelphia Hospital for Women; 3 p.m., L. Ziegler, St. Joseph's; 3 p.m., A. G. Thompson, Children's; 4 p.m., T. B. Schneidemann, Polyclinic; 4 p.m., G. E. de Schweinitz, Philadelphia.

Otology.—8 a.m., Eleanor Adamson, Women's Medical College; 12 m., Ralph Seiss, Polyclinic; 1 p.m., B. A. Randall, University of Pennsylvania; 1 p.m., E. B. Gleason, Medico-Chirurgical; 2 p.m., A. H. Cleveland, Presbyterian; 3 p.m., S. MacCuen Smith, Jefferson.

Laryngology.—11 a.m., E. L. Vansant, Polyclinic; 12 m., C. P. Grayson, University of Pennsylvania; 12 m., W. S. Jones, Jefferson; 12 m., A. H. Cleveland, Medico-Chirurgical; 1 p.m., Kate W. Baldwin, Hospital and Dispensary of Alumnae of the Woman's Medical College; 1:30 p.m., W. Freeman, Children's; 2 p.m., A. Watson, Polyclinic; 4 p.m., G. M. Marshall, Philadelphia.

TUESDAY, JUNE 8.

Ophthalmology.—8 a.m., E. Snyder, Women's Medical College; 9 a.m., Jackson, Polyclinic; 12 m., H. F. Hansell, Polyclinic; 1 p.m., C. S. Turnbull, German; 1 p.m., L. W. Fox, Medico-Chirurgical; 2 p.m., de Schweinitz or Veasey, Jefferson; 2 p.m., Norris or Mellor, University of Pennsylvania; 2 p.m., Thompson, Fisher, Berens, Jackson, Wills; 2 p.m., F. M. Perkins, Presbyterian; 2 p.m., E. H. Rehfuess, St. Agnes; 2 p.m., Harlan and Schwenk, Pennsylvania; 2 p.m., Mary W. Hayden, Hospital of Alumnae of Women's Medical College; 2 p.m., W. C. Posey, Howard; 2 p.m., G. O. Ring, Episcopal; 2 p.m., G. A. Walker, Dispensary of Alumnae of Woman's Hospital; 3 p.m., L. F. Love, St. Mary's; 4 p.m., G. E. de Schweinitz, Polyclinic.

Otology.—12 m., Charles H. Burnett, Woman's Medical College; 12 m., S. McCuen Smith, Jefferson; 12:30 p.m., J. M. Brown, University of Pennsylvania; 1 p.m., E. B. Gleason, Medico-Chirurgical; 1 p.m., B. A. Randall, Polyclinic; 1 p.m., Ada H. Audenried, Dispensary of Alumnae of Woman's Medical College; 3 p.m., B. A. Randall, Children's; 3 p.m., G. M. Marshall, St. Joseph's.

Laryngology.—9 a.m., Ida E. Gasten and Clara Dercum, Woman's Medical College; 11 a.m., J. S. Gibb, Polyclinic; 12 m., D. Braden Kyle, Jefferson; 12 m., A. H. Cleveland, Medico-Chirurgical; 2 p.m., W. Hoch, Methodist; 2 p.m., D. B. Kyle, St. Agnes; 2 p.m., W. Freeman, Polyclinic; 2 p.m., A. W. McCoy, Pennsylvania; 2 p.m., L. P. Smock, St. Agnes; 2 p.m., G. Hudson Mahnen, Polyclinic; 3 p.m., G. M. Marshall, St. Joseph's.

WEDNESDAY, JUNE 9.

Ophthalmology.—8 a.m., Gertrude A. Walker, Woman's Medical College College; 9 a.m., J. Thorington, Polyclinic; 12 m., W. Sweet, Polyclinic; 12 m., Emma E. Musson, Woman's Medical College; 1 p.m., L. W. Fox, Medico-Chirurgical; 2 p.m., de Schweinitz or Dr. Veasey, Jefferson; 2 p.m., Drs. Norris, Harlan, Risley, Cliver and McClure, Wills; 2 p.m., Dr. Norris or Dr. Mellor, University of Pennsylvania; 2 p.m., Mary Getty, Dispensary of Alumnae of Women's Hospital, 1212 S. 3d St.; 3 p.m., Mary Getty, West Philadelphia Hospital for Women; 4 p.m., T. B. Schneidemann, Polyclinic; 4 p.m., G. E. de Schweinitz, Philadelphia.

Otology.—8 a.m., Sarah F. Tyson, Women's Medical College; 12 m., S. McCuen Smith, Jefferson; 12 m., Dr. Randall, University of Pennsylvania; 1 p.m., Dr. Randall or Dr. Brown, University; 1 p.m., E. B. Gleason, Medico-Chirurgical; 1 p.m., Ralph Seiss, Polyclinic; 2 p.m., A. H. Cleveland, Presbyterian.

Laryngology.—8 a.m., Sarah F. Tyson, Women's Medical College; 11 a.m., A. Watson, Howard; 11 a.m., E. L. Vansant, Polyclinic; 12 m., D. Braden Kyle, Jefferson; 12 m., C. P. Grayson, University of Pennsylvania; 12 m., A. H. Cleveland, Medico-Chirurgical; 1 p.m., Kate W. Baldwin, Dispensary of Alumnae Women's Medical College; 2 p.m., A. Watson, Polyclinic.

THURSDAY, JUNE 10.

Ophthalmology.—8 a.m., E. Snyder, Women's Medical College; 9 a.m., J. Thorington, Polyclinic; 12 m., H. F. Hansell, Polyclinic; 1 p.m., L. W. Fox, Medico-Chirurgical; 2 p.m., G. E. de Schweinitz, Jefferson; 2 p.m., Dr. Norris or Dr. Mellor, University of Pennsylvania; 2 p.m., Drs. Jackson, Thomson, Fisher and Berens, Wills; 2 p.m., F. M. Perkins, Presbyterian; 2 p.m., W. C. Posey, Howard; 2 p.m., P. N. K. Schwenk, Pennsylvania; 2 p.m., E. H. Rehfuess, St. Agnes; 2 p.m., Frances Janney, Dispensary of Alumnae of Women's Hospital, 1212 S. 3d St.; 3 p.m., L. F. Love, St. Mary's; 4 p.m., S. D. Risley, Polyclinic.

Otology.—12 m., Charles L. Burnett, Women's Medical College; 12 m., S. McCuen Smith, Jefferson; 12:30 p.m., J. M. Brown, University of Pennsylvania; 1 p.m., B. A. Randall, Polyclinic; 1 p.m., E. B. Gleason, Medico-Chirurgical; 1 p.m., Ada N. Andenried, Dispensary of the Alumnae of Women's Medical College; 3 p.m., B. A. Randall, Children's.

Laryngology.—8 a.m., Eleanor Adamson, Women's Medical College; 11 a.m., J. S. Gibb, Polyclinic; 12 m., W. S. Jones, Jefferson; 12 m., A. H. Cleveland, Medico-Chirurgical; 2 p.m., W. Hoch, Methodist; 2 p.m., D. B. Kyle, St. Agnes; 2 p.m., W. J. Freeman, Polyclinic; 2 p.m., A. W. MacCoy, Pennsylvania; 2 p.m., L. P. Smock, St. Agnes; 2 p.m., G. Hudson Makuen, Polyclinic.

FRIDAY, JUNE 11.

Ophthalmology.—8 a.m., G. A. Walker, Women's Medical College; 9 a.m., E. Jackson, Polyclinic; 12 m., W. Sweet, Polyclinic; 1 p.m., Amy L. Barton, Women's Medical College; 1 p.m., D. W. Fox, Medico-Chirurgical; 1 p.m., C. S. Turnbull, German; 2 p.m., Dr. de Schweinitz or Dr. Veasey, Jefferson; 2 p.m., Dr. Norris or Dr. Mellor, University of Pennsylvania; 2 p.m., Drs. Risley, Harlan, Oliver, Norris, McClure, Wills; 2 p.m., G. O. Ring, Episcopal; 2 p.m., Gertrude A. Walker, Dispensary of Alumnae of Women's Hospital, 1212 S. 3d St.; 3 p.m., Mary Getty, West Philadelphia Hospital for Women; 3 p.m., L. W. Ziegler, St. Joseph; 3 p.m., A. G. Thomson, Children's; 4 p.m., T. B. Schneidemann, Polyclinic; 4 p.m., G. E. de Schweinitz, Philadelphia.

Otology.—8 a.m., Ida E. Gaston and Clara Derecum, Women's Medical College; 12 m., S. MacCuen Smith, Jefferson; 1 p.m., Dr. Randall or Dr. Brown, University of Pennsylvania; 1 p.m., Ralph Seiss, Polyclinic; 1 p.m., Kate W. Baldwin, Dispensary of Alumnae of Women's Medical College; 1 p.m., E. B. Gleason, Medico-Chirurgical; 2 p.m., A. H. Cleveland, Presbyterian.

Laryngology.—8 a.m., Ida E. Gaston and Clara Derecum, Women's Medical College; 11 a.m., E. L. Vansant, Polyclinic; 12 m., D. B. Kyle, Jefferson; 12 m., A. H. Cleveland, Medico-Chirurgical; 12 m., Emma E. Musson, Women's Medical College; 1:30 p.m., W. Freeman, Children's; 2 p.m., A. Watson, Polyclinic; 3 p.m., Kyle and Jones alternating, Jefferson; 4 p.m., G. M. Marshall, Philadelphia.

SATURDAY, JUNE 12.

Ophthalmology.—8 a.m., E. Snyder, Women's Medical College; 9 a.m., J. Thorington, Polyclinic; 12 m., H. F. Hansell, Polyclinic; 1 p.m., L. W. Fox, Medico-Chirurgical; 2 p.m., de Schweinitz or Veasey, Jefferson; 2 p.m., Mellor, University of Pennsylvania; 2 p.m., Thomson, Fisher, Jackson, Berens, Wills; 2 p.m., E. H. Rehfuess, St. Agnes; 2 p.m., W. C. Posey,

Howard; 2 p.m., Harlan and Schwenk, Pennsylvania; 2 p.m., F. Janney, Dispensary of Alumnae of Women's Hospital, 1212 S. 3d St.; 3 p.m., L. F. Love, St. Mary's; 4 p.m., G. E. de Schweinitz, Polyclinic.

Otology.—8 a.m., Sarah F. Tyson, Women's Medical College; 12 m., S. MacCuen Smith, Jefferson; 12:30 p.m., J. M. Brown, University of Pennsylvania; 1 p.m., B. A. Randall, Polyclinic; 1 p.m., E. B. Gleason, Medico-Chirurgical; 3 p.m., B. A. Randall, Children's; 3 p.m., G. M. Marshall, St. Joseph's.

Laryngology.—8 a.m., Sarah F. Tyson, Women's Medical College; 11 a.m., J. S. Gibb, Polyclinic; 11 a.m., A. Watson, Howard; 12 m., W. S. Jones, Jefferson; 12 m., A. H. Cleveland, Medico-Chirurgical; 12 m., D. B. Kyle, St. Agnes; 1 p.m., Ada H. Andenried, Dispensary of Alumnae of Women's Medical College; 2 p.m., A. W. MacCoy, Pennsylvania; 2 p.m., L. P. Smock, St. Agnes; G. Hudson Makuen, Polyclinic; 3 p.m., G. M. Marshall, St. Joseph's.

GENITO-URINARY DISEASES.

The following Out-patient Departments are open daily for the treatment of ambulant cases suffering from genito-urinary diseases:

12 m., University of Pennsylvania, Henry M. Christian.
12 m., Medico-Chirurgical College, W. Newbold Watson.
12 m., Jefferson Medical College, H. R. Loux.
12 m., Methodist (Mondays, Wednesdays, Fridays), D. E. Kucher.

4 p.m., Polyclinic, T. R. Neilson and H. M. Christian.
7:30 p.m., Mondays, Wednesdays and Fridays, demonstrations in cystoscopy and vesical explorations, Edward Martin and James Hutchinson.

Clinical lectures and ward demonstrations by John V. Shoemaker at the Medico-Chirurgical College, Orville Horwitz at the Jefferson College, H. M. Christian and T. R. Neilson at the Polyclinic, and Edward Martin at the University, are scheduled in the college courses.

PEDIATRICS.

The following Out-patient Departments will be open for the study of children's diseases:

8 a.m., Woman's Hospital, Kate Baldwin, F. C. Jones, Margaret Butler.
11 a.m., Medico-Chirurgical, Alexander Ramsey.
12 m., Jefferson, H. M. Shriver.
12 m., University, W. H. Price.
10 a.m., Polyclinic, J. M. Taylor and J. H. McKee.
3 p.m., Hospital and Dispensary of the Alumnae of the Woman's Medical College, Eleanor Jones, Clara Revell, Emma Weeks.

11 a.m., Children's Hospital.
3 p.m., Children's Hospital, J. P. Crozer Griffith.
Clinical lectures on children's diseases by J. P. Crozer Griffith at the University, E. E. Graham at the Jefferson, W. C. Hollopeter at the Medico-Chirurgical, Edward P. Davis at the Woman's Medical, and J. W. Taylor at the Polyclinic, are scheduled in the college courses.

DERMATOLOGY.

The following Out-patient Departments will be open for the study of skin diseases at the hours named:

12 m., Howard Hospital, Henry W. Stelwagon and C. N. Davis.
12 m., Jefferson, E. J. Stout.
1 p.m., University, M. B. Hartzell and C. N. Davis.
11 a.m., Medico-Chirurgical, E. S. Gans.
11 a.m., Fred Douglas Memorial Hospital (Mondays and Fridays), J. A. Cantree.
10 a.m., St. Agnes' (Mondays, Wednesdays and Fridays), C. S. Mears.

12 m., Polyclinic, J. A. Cantrell.
Clinical lectures on dermatology by Louis A. Duhring at the University, H. W. Stelwagon at the Jefferson, J. V. Shoemaker at the Medico-Chirurgical and J. A. Cantrell at the Polyclinic are scheduled in the college courses.

Dr. Cantrell will have ward demonstrations at the Philadelphia Hospital on Mondays, Wednesdays and Fridays, at 3:30 p.m.

Intestinal Pneumatoma. Orland describes a case of occlusion and fatal peritonitis caused by the formation of several walnut-sized, gas-filled tumors near the ileo cecal valve. The protruding mucous membrane subsided to the level after puncture and the escape of the gas, with no evidences of degeneration. Bacilli obtained from the wall of the tumors proved virulent in experiments, but developed no gas. He ascribes their action in the case to alterations in the tissues that transformed them from saprophytes to gas-forming agents. *Cbl. f. Chir.*, April 3.

ASSOCIATION NEWS.

The Philadelphia Meeting of the American Medical Association.

It may interest the members of the ASSOCIATION to know of the very great interest which is being taken in the coming meeting by physicians in all portions of the United States. Every mail brings to me a large number of letters in which the writers promise to be present at the meeting and express great enthusiasm as to the possibilities which it offers to themselves and to the ASSOCIATION itself. Already we have been informed of three special trains from various portions of the West which will bring a large number of delegates to the hospitable doors of Philadelphia, and arrangements are already so far completed that the ASSOCIATION might meet here within a week and find everything in readiness for its complete entertainment both scientifically and socially.

You have already received from the hands of Dr. Martin, the Chairman of the Committee on Hospital Demonstrations, a complete and exhaustive roster¹ which informs visitors of the possibilities offered them for clinical observation in the large teaching institutions and hospitals of Philadelphia. It is believed that this course has been arranged in such a way as to provide visiting physicians with the largest possible amount of practical information which can be obtained either by the bedside or in laboratory work within the short period of a few days or weeks. It will be noted that in this roster hospital and other facilities are offered to visitors for the week before and the week following the meeting. To those physicians who desire to stay longer I may announce that special spring and summer courses have been arranged by those in charge of the laboratories connected with Jefferson Medical College Hospital and the Pepper Laboratory of the University of Pennsylvania, so that those who desire to remain over a period longer than that covered by the roster prepared by Dr. Martin's committee can continue such courses of instruction as they desire. All these courses have been arranged, as I have said, in such a way as to present to the physician the practical advantages he would naturally seek as aids in his daily work.

The appended information in regard to the various meeting places will also, I think, be read with interest by those who have any knowledge of the situation of the various meeting places. To those who do not know them, as has already been stated in the editorial in the JOURNAL of April 24, these meeting places are included in one entire block on both sides of Broad Street and are within a stone's throw of all the large hotels.

PLACES OF MEETING.

The general meetings will be held in the main auditorium of the Academy of Music, Broad and Locust Streets.

Headquarters, Hotel Walton, Broad and Spruce Streets.

Registration Office will be in the lower corridor of Horticultural Hall, Broad Street below Locust.

Postoffice will be in the outer vestibule of Horticultural Hall.

SECTIONS.

The Section on Practice of Medicine will meet in the Broad Street Theater.

The Section on Surgery and Anatomy will meet in the lower hall of Horticultural Hall.

The Section on Obstetrics and Diseases of Women will meet in the main auditorium of Beth-Eden church, Corner of Broad and Spruce Streets.

The Section on Neurology and Medical Jurisprudence will meet in the upper room of Beth-Eden church, entrance on Spruce Street.

The Section on Laryngology and Otology will meet in the central room, tenth floor, Hotel Walton.

The Section on Materia Medica and Pharmacy will meet in the Blue Room of the Academy of Music.

The Section on Diseases of Children will meet in the foyer of the Academy of Music.

The Section on State Medicine will meet in the Red Room of the Academy of Music.

The Section on Dermatology and Syphilography will meet in the foyer of Horticultural Hall.

The Section on Physiology and Dietetics will meet in the banquet hall of the Hotel Stenton, Broad and Spruce Streets.

The Section on Dental and Oral Surgery will meet in Parlor D, Hotel Walton.

COMMITTEE ROOMS.

The Executive or Business Committee will meet in Parlor C, Hotel Walton.

The Judicial Council will meet in the Lower Ladies' Parlor of the Academy of Music.

The Trustees will meet in the Upper Ladies' Parlor of the Academy of Music.

The Nominating Committee will meet in the Green Room of the Academy of Music.

It is hoped by the officers of the ASSOCIATION and by the members of the Committee of Arrangements that every member of the ASSOCIATION will not only make an effort to be present, but that he will if detained send a substitute and urge all his medical friends to accompany him to this meeting, which promises to be the most successful one in our history.

In order to facilitate the business of the meeting I append a list of the chairmen of the various sub-committees to whom gentlemen wishing information in regard to matters falling within their jurisdiction should write direct.

Committee on Ways and Means, including Transportation.—Dr. E. E. Montgomery, 1715 Walnut Street.

Committee on Exhibition.—Dr. Edward Jackson, 1633 Locust Street.

Committee on Reception and Accommodation.—Dr. G. E. de Schweinitz, 1401 Locust Street.

Committee on Registration.—Dr. John Marshall, 1409 Spruce Street.

Committee on Entertainment.—Dr. L. Webster Fox, 1304 Walnut Street.

Committee on Hospital Facilities.—Dr. Edward Martin, 415 South Fifteenth Street.

Committee on Anniversary Exercises.—Dr. John B. Roberts, 1627 Walnut Street.

Committee on General Information.—Dr. H. A. Hare, 222 S. 15th Street.

Committee on Section Dinners.—Dr. Edward Jackson, 1633 Locust Street.

If the readers of the JOURNAL will remember that by a little individual effort they can persuade a friend or friends to add his or their names to the membership of the ASSOCIATION and thereby greatly increase its usefulness they will confer a lasting benefit upon our organization. Yours truly,

H. A. HARE, M.D.,

Chairman of the Committee of Arrangements.

Section on Laryngology and Otology.—Program.

TUESDAY, JUNE 1ST—AFTERNOON SESSION.

1. Address of Chairman. W. E. Casselberry, Chicago, Ill.
2. The So-called Bleeding Polyp of the Septum. Norval H. Pierce, Chicago, Ill.
3. Some Notes Concerning the Influence of Sexual Excitement upon Intra nasal Disease. Charles P. Grayson, Philadelphia, Pa.
4. Nasal and Laryngeal Affections Traceable to Diseases of the Genital Organs. A. B. Kirkpatrick, Philadelphia, Pa.
5. Two Cases of Asthma due to Intra-nasal Obstruction. Wilbur W. Bulette, Pueblo, Colo.
6. Something on the Amusing Side of Nasal Reflexes. Arthur G. Hobbs, Atlanta, Ga.
7. Spasmodic Closure of the Glottis in an Adult. Hamilton Stillson, Seattle, Wash.
8. Salivary Calculi. W. Freudenthal, New York, N. Y.
9. An Unusual Case of Blood-Cyst of the Posterior Nares. John N. Mackenzie, Baltimore, Md.
10. A Clinical and Experimental Study of Atrophic Disease of the Upper Air Passages. J. L. Goodale, Boston, Mass.
11. Some Remarks on Cases of Atrophic Naso pharyngitis. Edward F. Parker, Charleston, S. C.
12. Treatment of Acute Rhinitis. A. R. Solenberger, Chicago, Ill.
13. The Treatment of Chronic Catarrhal Diseases of the Throat in General Practice. J. M. G. Carter, Waukegan, Ill.
14. Fluoroscopy in Certain Forms of the Diseases of the Throat, Nose, Lungs, etc. J. Mount Bleyer, New York, N. Y.
15. Non-specific Perforation of the Nasal Septum, with Report of Cases. J. R. Straw, Ashland, Wis.

¹ See page 886 et seq.

16. Practical vs. Theoretical Tonsillotomy. J. Homer Coulter, Chicago, Ill.

WEDNESDAY, JUNE 2D—MORNING SESSION.

17. A Case of Chronic Abscess of the Base of the Tongue. C. W. Richardson, Washington, D. C.

18. A Case of Polypus involving the Antrum of Highmore. A. E. Prince, Springfield, Ill.

19. A Case of Recurrent Headaches which Continued until Relieved by the Spontaneous Discharge of a Watery Fluid from the Nostrils; the Successive Opening of the Frontal and Maxillary Sinuses and Ethmoidal Cells without Relief of the Recurrent Headaches. W. Scheppegrell, New Orleans, La.

20. Suppurative Ethmoiditis. Robert W. Haynes, Los Angeles, Cal.

21. Studies of the Nasal Fossa and Maxillary Sinus, with their relations. M. H. Cryer, Philadelphia, Pa.

22. Discussion—The Treatment of Empyema of the Frontal Sinus. Opened by J. H. Bryan, Washington, D. C.

23. A Contribution to the Surgery of the Accessory Cavities of the Nose. Max Thorner, Cincinnati, Ohio.

24. Meniere's Disease, with Report of a Case. James M. Brown and Judson Daland, Philadelphia, Pa.

25. Diseases of the Conjunctiva in Relation to Diseases of the Nasal Passages. Robert N. Keely, Philadelphia, Pa.

Discussion opened by J. F. Fulton, St. Paul, Minn.

26. Irruption of Teeth into the Antral Cavities. Alexander W. McCoy, Philadelphia, Pa.

27. Exhibition of Anatomic Sections of the Ear and Accessory Nasal Cavities. C. R. Holmes, Cincinnati, Ohio.

WEDNESDAY, JUNE 2D—AFTERNOON SESSION.

28. Report of Two Cases of Abscess of the Mastoid Region. J. H. Bryan, Washington, D. C.

29. Mastoid Empyema without Objective Symptoms, with Presentation of Patients. S. MacCuen Smith, Philadelphia, Pa.

30. An Historical Sketch of the Operation of Opening the Mastoid for Suppurative Middle Ear Disease. Laurence Turnbull, Philadelphia, Pa.

Discussion opened by D. B. St. John Roosa, New York, N. Y.

31. Phenomena Observed in Twelve Cases at various stages of the Operation of Tenotomy of the Stapedius and Section of the Incudo-stapedial Articulation in Chronic Catarrh of the Middle Ear; Improvement in the Hearing for Low Tones following Wolfe's Operation; Exhibition of Case. E. B. Gleason, Philadelphia, Pa.

32. The Clinical History of Three Cases of Otitis Media Presenting Serious Constitutional Symptoms, with Special Reference to the Vital Indications for Mastoid Operation. Hiram Woods, Baltimore, Md.

33. Caries and Necrosis of the Roof of the External Auditory Canal. Seth Scott Bishop, Chicago, Ill.

Discussion opened by Walter J. Freeman, Philadelphia, Pa.

34. A Case of Rhino-pharyngeal Fibroma, with Projections Extending Through the Two Nasal Cavities to the Anterior Nares. Hanau W. Loeb, St. Louis, Mo.

Discussion opened by E. F. Ingals, Chicago, Ill.

35. Contribution to Our Knowledge of the Diseases of the Naso-pharynx. Emma E. Munson, Philadelphia, Pa.

36. Question Regarding the Etiology of Adenoid Vegetations, as Found in the Naso-pharynx, with Suggestions as to Treatment. Also a Serrated Curette-syringe, New, for the Purpose of Freeing the Vault of Detritus after Operation. M. C. O'Toole, San Francisco, Cal.

37. Adenoids in the Naso-pharynx, with Operative Treatment of the Same. W. M. Roads, Cincinnati, Ohio.

THURSDAY, JUNE 3D—MORNING SESSION.

38. General and Local Anesthesia in Rhinology and Laryngology. Joseph S. Gibb, Philadelphia, Pa.

39. Tonsil and Adenoid Operations under Anesthesia by Nitrous Oxid, and Nitrous Oxid with Hydrogen; a Preliminary Report. W. E. Casselberry and F. Menge, Chicago, Ill. (Paper prepared and read by Dr. Menge.)

Discussion opened by J. O. Roe, Rochester, N. Y.

40. Cocain and Eucain: A Comparison. T. H. Shastid, Galesburg, Ill.

41. Cocain, Its Uses and Abuses in Laryngology. Ledru P. Smock, Philadelphia, Pa.

42. Certain Conditions of the Tonsils which Limit the Usefulness of the Tonsillotomy. Arthur A. Bliss, Philadelphia, Pa.

Discussion opened by Charles H. Knight, New York, N. Y.

43. Fracture of the Nasal Bones. Frederick C. Cobb, Boston, Mass.

44. The Treatment of Chronic Inflammation of the Tonsils. J. A. Ellegood, Wilmington, Del.

45. Peritonitis, Its Etiology and Treatment. Kate W. Baldwin, Philadelphia, Pa.

46. Contribution to the Study of Prophylaxis in Diphtheria of the Upper Respiratory Tractus. Henry L. Wagner, San Francisco, Cal.

47. Municipal Control of Diphtheria. W. K. Jaques, Chicago, Ill.

THURSDAY, JUNE 3D—AFTERNOON SESSION.

48. Three Obscure Cases of Laryngeal Disease: Tuberculosis—Syphilis—Epithelioma. Charles H. Knight, New York, N. Y.

49. Malignant Growths of the Larynx, with Report of Cases. Presentation of a Specimen from a Case of Fatal Extirpation. Robert C. Myles, New York, N. Y.

Discussion opened by J. Solis-Cohen, Philadelphia, Pa.

50. Some Defects of Speech: Their Cause and Treatment with Exhibition of Cases. G. Hudson Makuen, Philadelphia, Pa.

51. Esophagotomy for the Removal of a Tooth Plate Impacted Five Days in the Upper Third of the Esophagus. John O. Roe, Rochester, N. Y.

52. Stenosis of the Larynx. W. S. Jones, Camden, N. J.

53. A Case of Bilateral Gummata with Dangerous Stenosis of Larynx. S. K. Merrick, Baltimore, Md.

54. Tubercular Laryngitis. Ellet Orrin Sisson, Keokuk, Iowa.

55. Tuberculous Tumor of the Larynx. Louis Jurist, Philadelphia, Pa.

56. Sand Burrs in the Larynx. D. Emmett Welsh, Grand Rapids, Mich.

FRIDAY, JUNE 4TH—MORNING SESSION.

57. Otitic Pachymeningitis Externa. Joseph A. Andrews, New York, N. Y.

58. Acute Myringitis. Ralph W. Seiss, Philadelphia, Pa.

59. The Treatment of Tinnitus Aurium. G. Sterling Ryerson, Toronto, Ont.

60. Discussion: Tinnitus in its Relation to Nasal and Aural Affections. Opened by B. Alexander Randall, Philadelphia, Pa.

61. The Treatment of Acute Otitis Media—Acute Earache. J. Hubert Claiborne, New York, N. Y.

62. Acute and Chronic Caries of the Mastoid: Pachymeningitis Externa: Epidural Abscess: Circumscribed Leptomeningitis. Herman Knapp, New York, N. Y.

63. What can be Accomplished by Treatment of the Eustachian Tube. George Morley Marshall, Philadelphia, Pa.

64. Natural Gas and Acute Inflammation of the Eustachian Tube. John Johnson Kyle, Marion, Ind.

65. Eustachian Deafness. A. J. Erwin, Mansfield, Ohio.

66. A Novel Method of the Use of Dry Heat in Middle Ear Diseases, Otalgia, etc. E. L. Vansant, Philadelphia, Pa.

67. Non-surgical Diseases of the Ear. E. L. Klopp, Philadelphia, Pa.

68. Surgical Treatment of Acute Inflammations of the Middle Ear. E. B. Dench, New York, N. Y.

FRIDAY, JUNE 4TH—AFTERNOON SESSION.

69. Larvæ Complicating Middle Ear Disease, Minneapolis, Minn.

70. The Double Current Eustachian Canula in the Treatment of Middle Ear Catarrh. James E. Willits, Pittsburg, Pa.

71. Intra-tympanic Surgical Treatment of Chronic Purulent Otorrhea. C. H. Burnett, Philadelphia, Pa.

72. Ossiculotomy in Chronic Otitis Media. G. A. Stucky, Lexington, Ky.

73. The Venous Channels of the Aural Region: Illustrated with Stereopticon. B. Alexander Randall, Philadelphia, Pa.

Discussion opened by W. E. Casselberry, Chicago, Ill.

74. Catheterization of the Eustachian Tubes through the Mouth. D. Braden Kyle and W. H. King, Philadelphia, Pa. (Paper read by W. H. King.)

75. The Relation Existing between Bright's Disease and Certain Ear Symptoms. Francis Dowling, Cincinnati, Ohio.

76. Some Further Results in Treating Ears by Massage Methods. Louis J. Lautenbach, Philadelphia, Pa.

Section on Diseases of Children. Program:

TUESDAY, JUNE 1ST—AFTERNOON SESSION.

1. Address of Chairman. J. A. Larrabee, Louisville, Ky.

2. The Physiologic Treatment of Diphtheria. Elmer Lee, Chicago, Ill.

3. The Antiseptic versus the Antitoxic Treatment of Diphtheria. C. W. Braymer, Camden, N. J.

4. The Successful Treatment of Diphtheria as Compared with Antitoxin; Exhibition of a Croup Kettle. John H. Coughlin, New York, N. Y.

5. The Past and Present Status of our Knowledge of the

Etiology, Pathology and Treatment of Diphtheria; What we have Accomplished. C. G. Slagle, Minneapolis, Minn.

6. The Serum Therapy of Diphtheria, an Answer to Dr. Lee. Prof. Edwin Klebs, Chicago, Ill.

7. The Specific Use of Diphtheria Antitoxin in Laryngeal Diphtheria. Edwin Rosenthal, Philadelphia, Pa.

8. The Therapeutics of Diphtheria with Special Reference to Antitoxin. W. W. Gray, Bridgeport, Conn. Discussion opened by Frederick A. Packard, Philadelphia, Pa., S. G. Dabney, Louisville, Ky.

Section Dinner on the Evening of the First Day.

WEDNESDAY, JUNE 2D—MORNING SESSION.

9. Intubation. T. C. Evans, Louisville, Ky.

10. The Technique of Extubation. Robert H. M. Dawbarn, New York, N. Y. Discussion opened by Floyd M. Crandall, New York, N. Y.

11. Tests to be Applied to Every Case of so-called Maternal Impressions. Marcus P. Hatfield, Chicago, Ill. Discussion opened by S. W. Kelly, Cleveland, Ohio.

12. Some Causes of Congenital Deformities. Ella E. Barnes, Birmingham, Ala. Discussion opened by Bedford Brown, Alexandria, Va.

13. Tubercular Meningitis. Annie S. Daniel, New York, N. Y.

14. Meningitis a Complication of Measles. Thomas W. Harvey, Orange, N. J.

15. The Clinical Importance of the Eye Symptoms in Arriving at a Diagnosis of Meningitis in Children, with Cases. A. E. Davis, New York, N. Y. Discussion opened by Harold N. Moyer, Chicago, Ill.

16. Hysterical Contractures in Children. Chas. W. Burr, Philadelphia, Pa.

WEDNESDAY, JUNE 2D—AFTERNOON SESSION.

17. Some Fundamental Principles to be Observed in Infant Feeding. L. Emmet Holt, New York, N. Y.

18. The Use of Artificial Foods Largely a Fashion, not a Necessity in Country Practice. W. A. Dixon, Ripley, Ohio.

19. Infant Feeding with Reference to Examination of the Feces. Louis Fischer, New York, N. Y.

20. Condensed Milk as a Food for Infants, its Uses and Limitations. Chas. G. Kerley, New York, N. Y. Discussion opened by J. P. Crozer Griffith, Philadelphia, Pa.

21. The Relation of the Liver to Digestive Diseases of Children. J. M. G. Carter, Waukegan, Ill.

22. Typhoid Fever in Infancy and Childhood. Henry A. Fairbairn, Brooklyn, N. Y.

23. Cases Illustrating Typhoid Fever in Children. J. P. Crozer Griffith, Philadelphia, Pa. Discussion opened by William P. Northrup, New York, N. Y.

24. Some Points in the Treatment of Wasting Diseases of Children. J. P. Cooke, New York, N. Y.

25. How Best to Care for Syphilitic Children. C. Travis Drennen, Hot Springs, Ark.

THURSDAY, JUNE 3D—MORNING SESSION.

26. The Study of the Etiologic Factors of Difficult Defecation in Children and Mechanical Means for its Relief. Thos. Chas. Martin, Cleveland, Ohio.

27. Infantile Constipation. J. W. Byers, Charlotte, N. C. Discussion opened by Floyd M. Crandall, New York, N. Y.

28. The Treatment of Rickets and Rickety Deformities. John Ridlon, Chicago, Ill.

29. The Ambulatory Treatment of Fractures of the Leg in Children. James P. Fiske, New York, N. Y.

30. Van Arsdale's Triangular Splint for Fractures of the Femur in Children, with Remarks on the Use of Cardboard as Splint Material. A. Ernest Gallant, New York, N. Y. Discussion opened by John Woodbury, New York, N. Y.

31. The Treatment of Hernia in Infancy and Childhood. William B. Coley, New York, N. Y. Discussion opened by William L. Rodman, Louisville, Ky.

32. The Operative Relief of Intussusception. C. L. Gibson, New York, N. Y. Discussion opened by Robert H. M. Dawbarn, New York, N. Y.

33. New Methods of Resuscitating Still Born and Feeble Born Children. Bedford Brown, Alexandria, Va.

THURSDAY, JUNE 3D—AFTERNOON SESSION.

34. The Influence of Our Present School System on the Health and Development of the Child. E. Stuver, Rawlins, Wyoming. Discussion opened from the Standpoint of the Physician by Harriet E. Garrison, Dixon, Ill.; and from the Standpoint of the Surgeon by Prof. J. Henry Bartlett, Philadelphia, Pa.

35. The Training and Home Life of Neurotic Children. Ella M. Patton, Quincy, Ill.

36. The Early Recognition and Treatment of Defective Development of Children. Louis F. Bishop, New York, N. Y.

37. Infant Bathing. A. Campbell White, New York, N. Y.

38. Malignant Scarlet Fever. L. S. Baker, Erie, Pa.

39. The Belladonna Treatment of Pertussis. Harriet E. Garrison, Dixon, Ill. Discussion opened by Chas. G. Kerley, New York, N. Y.

40. The Signs and Symptoms of Enlarged Bronchial Glands of Children. Frederick A. Packard, Philadelphia, Pa.

41. Abnormal Respiration in Infants from Obstruction in the Upper Air Passages. Jas. J. Concannon, New York, N. Y.

42. Ventilation as a Prophylactic and Curative Measure. A. J. Work, Elkhart, Ind.

FRIDAY, JUNE 4TH—MORNING SESSION.

43. The Prevention of Tuberculosis in the Predisposed by Appropriate Treatment in Childhood and Youth. John A. Robison, Chicago, Ill.

44. The Management of Children with Inherited Tubercular Diathesis. Jos. Wm. Stickler, Orange, N. J. Discussion opened by Paul Paquin, St. Louis, Mo.

45. Skin Granulomata in Children. Jas. S. Johnston, New York, N. Y.

46. Noma. Thomas Darlington, Kingsbridge, N. Y.

47. The Bullous Eruptions in Infancy and Childhood. C. W. Allen, New York, N. Y. Discussion opened by L. Duncan Bulkley, New York, N. Y., I. N. Bloom, Louisville, Ky.

48. A Plea for the More Common Sense Treatment of Sick Children. A. H. P. Leuf, Philadelphia, Pa.

49. Teething, Its Pathology and Treatment. G. M. Blech, Louisville, Ky.

50. Seed Sown in Childhood and the Harvest Therefrom. Florus F. Lawrence, Columbus, Ohio.

51. The Care of the Baby's Eyes in the Perambulator. Mary E. Baldwin, Newport, R. I.

Section on Physiology and Dietetics.—Program:

1. Address of the Chairman. Augustus P. Clarke, Cambridge, Mass.

2. Diet as a Remedy in Disease. Charles H. Shepard, Brooklyn, N. Y.

3. The Value of Therapeutic Fasting in the Treatment of Acute Fevers. Elmer Lee, Chicago, Ill.

4. Problems in Feeding School Children. Horace P. Makeclune, Somerville, Mass.

5. What are the Characteristics of a True Cardiac Tonic, and what the Physiologic Differences between a Tonic and a Stimulant? N. S. Davis, Chicago, Ill.

6. Diet in Diseases of the Stomach. J. M. G. Carter, Waukegan, Ill.

7. Diet in Diseases of Mexico. Frederick Semeleder, Cordova, Mexico.

8. The Physiologic Combustion of the Animal Oils. J. Wellington Byers, Charlotte, N. C.

9. Some Points in the Physiology and the Congenital Criminal. James Wier, Jr., Owensboro, Ky.

10. The Mechanism of the Activity of Glands. G. Walter Barr, Quincy, Ill.

11. Dietetics—The Pathology and Therapeutics in Diseases of the Stomach. Fenton B. Turck, Chicago, Ill.

12. The Physical Development of Woman. Harriet E. Garrison, Dixon, Ill.

13. Feeding of Surgical Patients. Albert H. Tuttle, Cambridge, Mass.

14. Artificial Respiration in Relation to Physiologic Principles. Edward D. McDaniel, Mobile, Ala.

15. Increasing Consumption of Acidulous Foods and Drinks. Wm. T. English, Pittsburg, Pa.

16. The Relation of Food, Air and Exercise to Healthy Growths and Development. E. Stuver, Rawlins, Wyo.

17. Recent Advances in Mental Physiology. E. P. Hurd, Newburyport, Mass.

18. Physiology of the Sigmoid Flexure of the Colon and Rectum. J. G. Carpenter, Stanford, Ky.

19. The Psychology and Physiology of Hypnotism. Randall Hunt, Shreveport, La.

20. Intestinal Tuberculosis Due to Certain Articles of Food. R. J. Nunn, Savannah, Ga.

21. Pulmonary Tuberculosis with Special Reference to Diet. H. W. Mitchell, New York, N. Y.

22. Alcoholic Beverages. S. S. Herrick, San Francisco, Cal.

23. A Few Remarks on the Diet and General Care of Consumptives in Southern California. Geo. L. Cole, Los Angeles, Cal.

24. Diet of the Insane. Hugh Hagan, Atlanta, Ga.

25. Maranta Arundinacea: its Medical Properties and Dietetic Uses. A. Thomas Cuzner, Gilmore, Florida.

26. The Therapy of Tuberculosis and the Diet for Acute Diseases. John Ashburton Cutter, New York, N.Y.

27. The Hygiene and Dietetics of Chronic Nephritis. Asa F. Pattee, Boston, Mass.

28. Monologue on the Voice of a Larynxless Man. J. Solis-Cohen, Philadelphia, Pa.

29. The Metabolism in the Human Organism and the Potential Energy of Food. W. W. Grube, Toledo, Ohio.

30. Comparison of the Anatomy and Functions of the Cerebrum and the Cerebellum. William Fuller, Grand Rapids, Mich.

31. Hair-Cells of the Crista Acustica on the Ampullae of Aural Areas (Illustrated). B. Alexander Randall, Philadelphia, Pa.

32. Some Important Features in Dietetics: The Effect of Heat on Food; the Uses of Atmospheric Nitrogen; the Ferments in the Human Organism; the Morphologic Development of Cells in Effete Products (Illustrated). Ephraim Cutter, New York, N. Y.

33. Dietetic Treatment for Fatty Degeneration. William F. Holcombe, New York, N. Y.

34. Physiology of the Live Human Heart in Situ Naturali. Alex. Hugh Ferguson, Chicago, Ill.

35. A Neglected Factor in the Economy of Digestion. H. S. Drayton, New York, N. Y.

36. Diet in the Chronic Catarrh of the Gastro-intestinal Tract. Boardman Reed, Philadelphia, Pa.

37. Food and the Agencies of Digestion. Robert W. Hastings, Brookline, Mass.

Section on State Medicine.—Program:

TUESDAY, JUNE 1.

1. Chairman's Address—History of the Section on State Medicine. Elmer Lee, Chicago, Ill.

2. The Abuse of Medical Charities. Landon Carter Gray, New York, N. Y.

3. Flannels and Personal Sanitation—Sweltering and Smothering the Skin contrary to the Nature of the Animal Organism, and therefore Inimical to Health. Charles E. Page, Boston, Mass.

4. The Present Medical Science Education not in Harmony with the Nature of Things. W. H. Dunham, Keene, N. H.

5. Rest. C. F. Ulrich, Wheeling, W. Va.

6. The Progress of the Individual Cup Movement. H. S. Anders, Philadelphia.

7. A National Medical School. Albert Ashmead, New York, N. Y.

8. A Plea for Less Hobby-riding and More Science in State Medicine. Eugene C. Bardwell, Emporium, Pa.

9. The Germ Theory Disproved. Thomas Powell, Los Angeles, Cal.

10. The Physical and Hygienic Care of Children. Randolph Faries, Philadelphia, Pa.

11. Air, its Use and Abuse. James Cokenower, Des Moines, Iowa.

WEDNESDAY, JUNE 2.

12. Quarantine in the United States. Walter Wyman, Washington, D. C.

13. The Advantages of Castration in the Defective. Everett Flood, Baldwinville, Mass.

14. Some Features Respecting the Drainage of Larger Municipalities. Augustus P. Clarke, Cambridge, Mass.

15. Credulity and Skepticism in Medicine. W. G. McFadden, Shelbyville, Ind.

16. Turkish Baths in Hydrophobia. Charles H. Shepard, Brooklyn, N. Y.

17. State Medicine to the Present Time. Franklin Staples, Winona, Minn.

18. More Physicians and Fewer Lawyers in Congress. Ephraim Cutter, New York, N. Y.

19. Some Considerations of the Import of the Occurrence of Pathogenic Spirilla in the Water of the Delaware and Schuylkill Rivers at Philadelphia. D. H. Bergley, Philadelphia, Pa.

20. The Successful Treatment of Snake Bites. J. G. Tuten, Jessup, Ga.

21. The Frequency of Apoplexy among the Higher Classes with Recommendations for Prevention of the Condition and Escape from Fatality. Elmer Lee, Chicago, Ill.

22. An Alcove Dormitory for the Epileptic. Everett Flood, Baldwinville, Mass.

23. Relation of Railway Companies to State Boards of Health. G. P. Conn, Concord, N. H.

THURSDAY, JUNE 3.

24. Tuberculosis Prophylaxis. Raley H. Bell, Atlanta, Ga.

25. A Study of the Blood in Tuberculosis. A. M. Holmes, Denver, Colorado.

26. Bovine Tuberculosis and its Relations to Public Health, with suggestions for Prevention of Transmission—Specimens. Howard Carter, St. Louis, Mo.

27. On the Principles of Prophylaxis for Limiting the Prevalence of Pulmonary Tuberculosis. N. S. Davis, Chicago, Ill.

28. The Contagiousness of Consumption. J. M. Anders, Philadelphia, Pa.

29. The Use of Normal (Horse) Serum in the Treatment of Tuberculosis. Wm. Thornton Parker, Groveland, Mass.

30. Tuberculosis in the Southern Negro, Pointing out the Difficulties of Prophylaxis and the Impossibility of Satisfactory Treatment. J. F. Jordan, Montgomery, Ala.

31. Prevention of Tuberculosis. J. M. Emmett, Atlantic, Iowa.

32. The Present Status of Preventive Means against the Spread of Tuberculosis in the Various States of the Union, Critically Reviewed. S. A. Knopf, New York, N. Y.

33. Present Attitude of Sanitarians and Boards of Health toward Pulmonary Consumption. Benjamin Lee, Philadelphia, Pa.

FRIDAY, JUNE 4.

34. The Necessity of Fixed Criteria in the Study of the Therapeutics of Tuberculosis. Louis Faugères Bishop, New York, N. Y.

35. Alcohol in Modern Medicine: a Collective Study. I. N. Quimby, Jersey City, N. J.

36. Alcoholic Sore Throat. H. S. Drayton, New York City.

37. The So called Stimulant Action of Alcohol. J. M. French, Milford, Mass.

38. Is Alcohol a Food or Stimulant? W. V. R. Blighton, Buffalo, N. Y.

39. The Therapeutics of Alcohol in Disease. F. B. Garber, Dunkirk, Ind.

40. Alcohol versus Chemical Poisons. C. H. Shepard, Brooklyn, N. Y.

41. Non-Alcoholic Treatment in Diphtheria. L. Frissell, Springfield, Mass.

42. Concealed Alcohols in Drugs. T. D. Crothers, Hartford, Conn.

SELECTIONS.

Malarial Fever in the Goose.—Dr. Osler states that he first had his attention called to the malarial infection of birds in 1886 (*Johns Hopkins Hospital Bulletin* for March). In that year a goose was sent by Dr. MacCallum of Dunnville, Ont., to the Toronto Biological Laboratory with a diagnosis of malaria. Dr. Osler was extremely skeptical about it, as at that time, ten years ago, very little was known about the parasitism of birds, but very much to his astonishment he found large numbers of the pigmented intracellular organisms or hemocytzoa. Since that time he has been interested in the subject as having a more or less direct bearing upon the life history of the malarial parasite in man, since it is quite possible that there may come to us very important clues as to the outside evolutions of that parasite by a study of the forms in the aviarrians. As has been remarked by Dr. Barker and others, our research may not with profit be confined to clinical methods; microscopic sections after death yield important information both as to blood and tissue phenomena. We get a very one sided and incomplete view of the structure of these parasites of malaria and of their attacks upon the cells if we scrutinize them only in fresh blood or in smear coverglass preparations, even when dried and stained. In tissues which have been hardened in alcohol it is very easy in sections stained with hematoxylin and eosin or with methylene blue, to make out within the half-grown and full-grown tertian parasites of human malaria a relatively large spherical area which stains feebly, though sometimes very distinctly in nuclear dyes. Peripheral to this mass is a thin superficial layer which does not stain at all in ordinary nuclear dyes. In this peripheral non-basophile layer of the parasite is situated the malarial pigment when it is present. The internal stainable mass may be centrally placed, though it is more usual to see it situated somewhat excentrally, so that the peripheral layer of non-stainable substance may vary in thickness in different parts of the organism. The

internal mass, which is entirely free from pigment, may stain somewhat unevenly, and occasionally it is possible to make out in it an intensely stained nodule which was thought to correspond to what has been described in stained smear preparations as the nucleus. It would seem more rational to look upon it as the nucleolus or as an aggregation of the chromatin within the nucleus, though for the decision of this point we must wait for further investigations. We need to know more about the macronuclei or micronuclei in malarial parasites, such as have formed the basis of so much interesting research of late years in the infusoria. It is indeed to be hoped that the large size of the malarial parasites in birds will permit of the unraveling of the finer structure of these curious organisms. In studying specimens of the spleens of infected birds, we are well nigh bewildered by the enormous masses of malarial parasites to be seen there. At first it seemed almost improbable that the huge brownish masses could consist of malarial parasites. It seemed more likely that they could be explained as forms of blood pigment, but careful study with the oil immersion lens will convince any one that they are in reality aggregations of altered malarial organisms. There is a distinct possibility that in very malarial districts man may harbor the parasites without showing special manifestations. We know that in certain regions all dogs have filaria in the blood, and in many parts of Africa the filaria are present in the natives without causing much trouble. It is quite possible, too, that there may be a minor grade of malarial infection in which the organisms are not present in sufficient numbers to cause fever or the characteristic paroxysms. Dr. Thayer stated that recent observations appear to show that the parasites of birds and human beings are not identical; they are, however, so similar that it is not improbable that the form in which they exist outside of the body and their method of entrance to the body are likewise not unlike the corresponding phases in the life history of the parasite of human beings. There are many more points to be studied with regard to the morphologic and biologic characteristics of the avian hematozoa. In these present observations, for instance, no idea has been formed with regard to the length of the cycle of existence of the parasites. Danilevsky believes that he has been able to distinguish an acute and a chronic form, while Colli divided the parasites of birds into three forms with cycles of existence corresponding to the quartan, tertian and aestivo-autumnal parasites. Here, however, there has as yet been nothing to point out the exact length of the cycle of existence of each generation of parasites. Further, it would be advisable to make careful measurements and observations of the temperature in infected birds, observations which, to be sure, have been made by other authors, but with regard to which there is as yet a lack of agreement. It is also, I think, very important that the intimate structure of the parasites of birds' blood should be carefully followed out; this can be done with much greater facility than in the human being, inasmuch as specimens of tissues can be instantly obtained at any time desired. But really the most important point, it seems to me, as Bignami has emphasized in a recent paper, is to determine, if possible, the manner in which the parasite exists outside of the body, or more particularly its manner and portal of entry. It may well be possible that careful and continued observations of this sort may bring us nearer the solution of the greatest questions in connection with malarial infection. With regard to the remark of Professor Osler concerning the possibility that a human being may harbor the malarial parasites in an active condition for a considerable time without showing distinct clinical symptoms, I must say that the more of the disease one sees the more reasonable seems the possibility that this condition may exist with relative frequency. In many cases of tertian fever after insufficient doses of quinin, or during attempts at spontaneous recovery, a few parasites may be found in the blood for very considerable periods of time with-

out marked symptomatology. The parasite has been found in the blood of illly-defined cases, such as present no paroxysms, but only vague symptoms; in such patients it is fair to assume that the parasites have not accumulated in sufficient number to produce a chill. If now in a certain number of instances a single tertian paroxysm may be followed without treatment by so extensive a destruction of the organisms that fever does not recur for a week or ten days (a not very infrequent occurrence), theoretically there would seem to be no reason why in certain instances a similar destruction might not occur in groups which have not as yet reached a size sufficient to produce actual manifestations; thus there would result an indefinite prolongation of what one might call the incubation period of the infection.

The Antitoxia in Country Practice.—Dr. Herman of Sansdale, Pa., reports four cases from his note-book of diphtheria, in which the results of the use of antitoxin were most satisfactory. He feels confident that with that remedy the type of diphtheria that is encountered by him can be cured, and that no sequelae or untoward complications need be feared. This declaration is made independently of any statement relative to the day on which the initial dose is or should be given. He agrees with the foremost authorities that the early employment of the serum is always most desirable, and also states that the severity and prognosis of a case is not dependent, *per se*, upon the number of hours which may have elapsed since the appearance of the first symptoms, but upon the quantity and virulence of the toxins absorbed into the system, and the cell destruction of the vital organs caused by them. The wide difference between individual cases of the same epidemic of diphtheria and between cases of different outbreaks is thus explained. The best rule for treatment is to give the initial dose of antitoxin immediately after the diagnosis of diphtheria is made. In all doubtful cases it is best to administer it even if a positive diagnosis can not at the time be reached. Prof. H. C. Woods states: "There is no reason at present for believing that antitoxin in moderate quantities does any harm when the child has not diphtheria. When, therefore, any case presents the clinical aspect of diphtheria, antitoxin should be used at once. One point I wish to make prominent here is that carbolic acid, which is but feebly antiseptic except in strong solutions, is a powerful toxic agent in the human system. It is too irritant a drug to use in the preservation of antitoxin. I believe the failure to recognize this fact has resulted in deaths which were falsely charged, in part or wholly, against the antitoxin treatment. Trikresol, which is but feebly toxic, does not irritate the kidney, while it is such a valuable antiseptic that but five-tenths of 1 per cent. is required to positively prevent contamination of the serum. All zymotic diseases necessarily have a most dire effect upon the vital organs; these need sustaining treatment, and it is as important to husband the patient's strength as it is to combat the disease. He had several cases in one family, but only one of them was sufficiently severe to require antitoxin. The disease in this patient only assumed a most malignant aspect, the throat being literally full of the exudate. One thousand units of concentrated antitoxin was injected and the doses repeated on the following day. The effect was again equally favorable. At the same time, a brother physician had a patient, an only child in a neighboring family, who was suffering from a most virulent attack of the disease. Encouraged by the foregoing results the physician borrowed my syringe, and with two doses of 1000 units each, successfully treated his case. The dread that he had always entertained of having this monster, diphtheria, invade his own home and community, has absolutely left him, as he is convinced that in antitoxin he has a remedy that is worthy of complete confidence."—*Medical News*, February 20.

PRACTICAL NOTES.

Oxyuris Vermicularis.—Comby administers in the morning fast-
ing for three days, one of the following powders: Santonin 5
centigrams; calomel 10 centigrams. Apply locally at night as
the child retires, for three days, the following salve inside the
anus: Glycerite of starch, 20 grams; Neapolitan unguent 10
grams.—*Presse Méd.*, March 27.

**Prophylaxis of Tumefaction of the Cervical Gland Consecutive to
Eczema of the Scalp in Infants.**—Antiseptic cleanliness and relief
from the pruritus are the requisites, and Steinhardt recom-
mends for the purpose, washing the child's hands and cleaning
his nails every two hours, washing his playthings at the same
time and changing the clothes and bed linen frequently. The
eczematous regions should be moistened for an hour with fresh
Goulard's lead water, and then the following salve applied:
Salicylic acid 0.50 gram; menthol 1 gram; linseed oil and lime
water \bar{a} 50 grams. Externally.—*Semaine Méd.* March 31.

To Preserve Steel Instruments from Rusting.—Dr. Maréchal in
1893 placed several perfectly new steel instruments, including
bistouries, Pravaz' needles, a nickel watch (open), etc., in the
following solutions: 1, an aqueous 2 per cent. solution of sodium
bicarbonate; 2, ditto sodium carbonate; 3, ditto sodium borate;
4, ditto sodium benzoate; 5, alcoholic 2 per cent. solution
of sodium benzoate; 6, alcohol 95 per cent., 5 grams to 1 gram
sodium borate; 7, alcohol 95 per cent.; 8, water. In 1895, two
years later, the instruments in the first six solutions were found
absolutely intact, without a trace of rust, even when tested
with potassium sulfo-cyanid. But those in the 7th and 8th were
completely covered with rust. He therefore recommends keep-
ing steel instruments in one of the first six solutions to preserve
them from tarnish and rust.—*Gaz. Med. de Liège*, April 1.

Influence of Tobacco on the Nervous System.—Buccelli concludes
from his investigations of 200 patients with nerve and brain
troubles, and others, that tobacco affects the *normal* nervous
system to a comparatively trifling extent, but as soon as the
condition of perfect integrity is impaired, its effect is extremely
and progressively pernicious. The subcortical and bulbar
nerve centers suffer particularly then from the toxic effect of
tobacco.—*Riv. di patol. nerv.*, 1896, page 327.

Traumatism of the Biliary Passages.—Terrier and Auvray assert
in the *Revue de Chir.*, No. 1, that no case of injury to the bili-
ary passages has recovered without puncture or incision, and
that better results follow prompt and adequate laparotomy
than mere puncture which has often to be repeated. They
state the indications for operative treatment as follows: In
case of laceration of the gall bladder, suture or ablation, accord-
ing to the extent of the injury. Ligate an injured ductus
cysticus, and conclude with cholecystectomy. Temporary
drainage of injured ductus hepaticus, and suture of an injured
ductus choledochus, or cholecyst-enterostomy after double liga-
tures. Although these indications are still partially theoretic,
they should be borne in mind in cases of the kind. They report
twelve recoveries in twenty-one cases of injury to the biliary
passages treated by puncture; four recoveries in seven cases
treated with tardy laparotomy, and recovery in both of the two
cases treated with prompt laparotomy.

Hoffa's Method of Treating Congenital Luxation of the Hip Joint.
—Professor Hoffa (Würzburg) has been in Paris recently, and
many were interested in witnessing his operation as he per-
formed it at one of the hospitals. Since Lorenz emphasized
the importance of retaining the muscles, he opens up the artic-
ulation with a front, lengthwise incision at the edge of the
greater trochanter, opens into the capsule in the direction of
the neck of the femur, and by twisting the femur outward,
reaches the acetabulum, which he hollows out to the required
shape, and replaces the head in it, which completes the opera-

tion. The wound is tamponed with sterilized gauze, without
suturing, and a plaster cast applied. Six deaths occurred in his
first 190 cases, but only one in his last 100. Absolute asepsis
is the indispensable requisite of success; massage and gymnas-
tics are also important factors. If suppuration occurs, there
is imminent danger of ankylosis. He has had no relapse in
his last 44 cases of bilateral luxation with pronounced lordosis.
Almost normal position and abduction of the extremities was
secured. The best age for the operation is between 3 and 4. It
is difficult to reduce the femur in older subjects, and Kirmisson's
sub-trochanteric osteotomy is to be preferred, or for bilateral
luxations Hoffa's "pseudo-arthritis," which consists in sawing
off the head of the femur and fixing the end to the pelvis. He
exhibited at the Acad. de Méd. a six-year-old child success-
fully operated by this method.—*Bulletin*, March 16, and *Therap.*
Woch., March 28.

Antitoxins in the Blood After Recovery from Streptococcus Infection.—Neufeld concludes his report of experimental investiga-
tion in this line with the statement that all results were nega-
tive, and hence the outlook does not seem very favorable that
we shall be able to secure artificially in animals what Nature
herself is unable to accomplish in human beings recovering
from streptococcus infection, namely, an accumulation of anti-
toxins in the blood.—*Deutsche Med. Woch.*, March 11.

Rectal Injections in Diabetes with Threatening Coma.—The obsti-
nate constipation in diabetes is due to the more or less para-
lyzed condition of the bowels, unaffected by purgatives taken
into the stomach, or else the violent evacuation induced may
lead to serious accidents. Dr. P. A. Teschemacher recom-
mends an injection of 10 to 40 grams of glycerin three or four
times a week, retained half an hour in the dorsal decubitus, if
possible. He also rests the stomach by administering alimen-
tary injections four times a day, composed of 50 grams of wine,
the same quantity of bouillon, to which somatose has been
added, two eggs and a pinch of salt. At this time nothing
should be taken into the stomach but a few swallows of wine
or brandy, a little beef tea, and pounded ice to quench thirst.
—*Semaine Méd.*, March 20.

Tests in Cases of Apparent Death. Icard suggests that certainty
can be attained in doubtful cases by the subcutaneous injection
of some stain, soluble in water, non-toxic, non-caustic, and
containing a substance not found normally nor accidentally in
the organism. If the stain is then found in the blood or some
remote part of the body, it must have been absorbed, and there
is still life remaining, as absorption ceases absolutely with life.
He recommends fluorescein for the purpose, as 1-1000 gram will
discolor perceptibly forty-five liters of water. Half a gram
injected subcutaneously, will stain in a few minutes the skin,
eyes, mouth, urine and serum a brilliant green, if there is still
life. The iodids are also effective; 25 centigrams will be found
by the starch test in the urine and saliva in a few minutes, if
it is absorbed. Three grams of potassium or sodium ferro-
cyanid can be injected and can be readily distinguished in the
urine by testing it with perchlorid of iron, which forms Rus-
sian blue with it. Another way is to pass a thread through a
fold of the skin. It is thus moistened with the serum, and
turns bright blue after dipping it into weak hydrochloric acid,
and then into perchlorid of iron, if the injected salt has been
absorbed. He also states that aromatic substances are elimi-
nated by the bronchi to such an extent that they are easily
detected if they have been absorbed. These tests should reas-
sure those who are haunted by the fear of being buried alive.

Journal des Sc. Méd. de Lille, April 3.

Injections of Artificial Serum in Uremia.—Richardière in *Union
Médical*, December 5, has used large injections of artificial
serum in two cases with good results. His practice is to
bleed to 300 to 400 grams, and immediately inject slowly into
the cellular tissue 800 grams of serum at the temperature of

the body. The serum is made after Hayem's formula, and is used aseptically. His first case presented intense dyspnea, numerous mucous and subcrepitant râles all over the chest, and nearly all the subjective symptoms of Bright's disease, with extensive edema. Under ordinary treatment the patient got worse, respirations rising to 48 per minute with Cheyne-Stokes character, and suffered from hallucinations, so that six days after admission he was comatose, and dyspnea was still increasing. Bleeding to 300 grams, with injections immediately after, was followed by a fall of pulse rate from 140 to 120; the temperature rose from 37.8 to 37.9 C., and the respiration became slower and regular. During the next few days the urine increased in amount, then fell again, when Cheyne-Stokes breathing reappeared and the state became alarming. The patient was bled again 250 grams, and injected 800 grams; a second injection was given six hours afterward. Temperature rose 35.8 to 37 C., and no further trouble occurred, although the edema persisted; respirations remaining regular, and he remained free from somnolence, passing about one liter of urine in twenty-four hours. The second case presented signs of grave uremia; injection was followed by improvement, which failed again in twenty hours. A second injection was followed by profuse diarrhea, and caused permanent amelioration of the condition. He quotes other cases, and points out that the injection is harmless though painful; it raises the temperature, slows the pulse and steadies breathing previously irregular and of a Cheyne-Stokes character, lessening the rate at the same time. It also increases the amount of urine and seems to have a tendency to produce diarrhea, which he looks on as favorable.

Aid to Diagnosis of Fractures.—It is often difficult to decide after an accident whether a limb is fractured or only bruised. Schröter has been able to decide the matter at once by simply placing the palms of his hands on each extremity of the bone in question and exerting a firm, increasing pressure on it, longitudinally to its axis. If the bone is not fractured, the pressure is not at all painful, and the patient can be reassured at once. But if it is fractured even the first feeble pressure elicits a cry of pain, and the patient is convinced immediately of the necessity of fracture treatment. He suggests the name "bipolar counter pressure" for the test, which he states is probably practised by others, but of which there is no mention in the text books.—*Cbl. f. Chir.*, April 3.

Tuberculous Arthritis in Early Infancy.—Rovsing has observed seven cases of a special tuberculous joint affection, which differs in several respects from the generally accepted picture of tuberculous arthritis. It resembles more a pyarthrum tuberc. acutum and is distinguished by its especially favorable prognosis, even quoad functionem, and the property it shares with tuberculous peritonitis, that it is cured by simple incision, arthrotomy. It commences suddenly with fever, sensitiveness and tumefaction in the joint, and microscopic and bacteriologic tests disclose the presence of the tubercle bacilli. In five cases the knee joint alone was affected, in three several were involved. The necessity of asepsis to prevent mixed infection is evident.

Cbl. f. Chir., April 3.

Intolerance Toward Antipyrin.—Among the discussions that have been going on at the Therapeutical Society of Paris recently, an important one was that which dealt with intolerance of certain drugs displayed by some patients, in particular as regards antipyrin. M. Lyon, M. Dalché, and M. Duchenne reported cases of stomatitis, pemphigus and various rashes produced by antipyrin. M. Blondel related a case where the use of antipyrin produced buccal lesions in a woman exactly like mucous plaques and also a rash resembling syphilitic roseola, so that the diagnosis from syphilis was rendered very difficult. The majority of patients with this idiosyncrasy had no albuminuria, so that it did not seem to depend upon faulty

elimination, but rather on some particular predisposition of the subject. It was possible that in many cases the digestion was at fault, for, on the one hand, these accidents more rarely followed the use of antipyrin in solution than as a powder, and on the other hand, the drug was much better tolerated if given with bicarbonate of soda or some intestinal antiseptic.

Suppurations in the Adipose Tissue Surrounding the Kidneys.—Niebergall states that apparently insignificant trauma may lead to this condition; a false step, digging or stamping with the foot, lifting or carrying heavy weights, riding in a jolting vehicle or on horseback. These may occasion some trifling hemorrhage in the pararenal tissues, followed later by suppuration. Pain is felt in the renal region, and a swelling is noticed apt to be ascribed to a periostatic abscess of the os innominatum. The fever is not characteristic, but there is usually obstinate constipation. Motion is painful, with radiating pains. There is usually a more or less characteristic flexion contracture of the thigh. Prompt evacuation will alone prevent the most serious consequences. He prefers a retro-lumbar incision, with ample provision for the evacuation of the pus out of all the pockets. Secondary tuberculous lesions of the kind may require nephrectomy. The abscesses take a long while to heal even with complete drainage, and the cicatrix is liable to impair efficiency for military service. He reports three cases and reviews seven others, in the *Deut. Mil. Zeitschrift.*, August and September, 1896.—*Cbl. f. Chir.*, February 17.

Glioma of the Brain.—Devic and Courmont (*Revue de Médecine*, April 10, 1897, p. 268) have reported the case of a man, 46 years old, presenting narrowing of the mitral orifice of the heart, who was seized with headache, apparently due to an abscess of the brain seated in the right frontal region. Domestic difficulties were followed by an aggravation of the headache and the development of mental symptoms, with alterations in memory, apathy, suicidal ideas and attacks of sopor. In the course of six months manifestations of ambulatory automatism were superadded. In the further progress of the case the headache increased in severity, insomnia set in, the remaining symptoms progressed and left hemiplegia developed, with bilateral papillary edema. Finally, trephining was undertaken and a glioma removed from the right frontal region. The headache and the edema of the optic papillæ soon disappeared and the hemiplegia became less marked. Improvement continued, though interrupted temporarily by an attack of migratory erysipelas of the face, after which, however, the general condition was satisfactory. Some four months after the operation left hemiplegia followed a mild apoplectic attack, but without the development of the earlier symptoms. Death took place, and postmortem examination disclosed a thrombus at the origin of the right Sylvian artery, with a focus of encephalitis, but without any sign of recurrence of the glioma. From a study of this case the conclusion is reached that certain cerebral tumors may be attended with pronounced mental symptoms, appearing in advance of sensory and motor manifestations. Ambulatory automatism is a rare form of the psychic disorders of this kind. The tumors that occasion mental symptoms are seated most often in the frontal lobes. They exert this influence either by massive destruction of cerebral substance or by causing degeneration of tangential fibers or by simple compression or by reason of their mere presence. Trephining with ablation of the tumor, may be followed by disappearance of the edema of the optic papillæ within forty eight hours, and also by recovery from the hemiplegia and the mental disorder. Cerebral compression is the principal factor in the development of these phenomena. Recovery following extirpation of the tumor, while extremely rare in the case of glioma, may however be complete and may persist if there be no local operative complication, as encephalitis, thrombosis, etc. This fact ought to encourage surgical intervention in the majority of cases.

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SATURDAY, MAY 8, 1897.

THE PHYSICIAN AND THE HOSPITAL.

A subject which at present seems to provoke considerable discussion in medical associations and in medical journals, is the so-called "Dispensary and Hospital Abuse" question. It is by no means a new one, but probably it is being looked at from a different point of view. The profession of medicine, like that of theology, has seldom been considered in a commercial sense. Doctors are supposed to be poor business men and are usually judged by other methods than those which hold in the laws of trade.

The medical guilds and societies which have existed since the earliest times have been concerned more with the advancement of learning and the forwarding of the science of medicine than with any pecuniary betterment of its members. Guilds in the trades have held out for shorter hours of work, more pay, recognition of members of the union, etc. Doctors of Medicine, however, have usually been their own masters. The tools necessary for the profession were owned by themselves individually. Just as in the earlier days of industry, when each shoemaker, each carpenter, each weaver and potter was his own employer and rendered his services direct to the consumer.

In industry things are changed; the factory has come into vogue and a few persons own the tools and the machinery, while the mass of workers are merely "hands," whose product belongs to the factory owner,

who gives in return sufficient only to keep the "hands" alive.

In the medical profession a similar state of affairs is beginning to exist. In the large cities there are no huge factories to employ medical men, but there are huge hospitals which occupy the same relative position. When machinery was introduced the poor individual artisan whose livelihood it took away was very bitter in his opposition. In England the factories were burnt and the machinery for woolen manufacture destroyed by the weavers whom it displaced; but machinery triumphed, concentration of capital increased, the factory system like some great juggernaut swept everything before it, crushing out the lives of the skilled trades and doing away with the individual shoemaker and weaver. Of course, when disinterestedly we take a calm retrospective view of the situation, we feel that this evolution in industry is as important and essential as the change from stage coach to steam locomotive in transportation and not in the least to be regretted.

The medical hospital and institution is in a position to treat the sick with such appliances and with such measures as no individual practitioner can command. There are no great machines required in the art of healing, but the serious surgical operations which demand special care, the BRAND method of handling enteric fever, the MITCHELL rest cure are measures which one can hardly deny are better employed in a hospital than in the home. Then there is specialization. The dispensaries as manned at present are in no position to give accurate or careful treatment to those who make use of them; but what might not an institution, having in its employ paid specialists and demanding a moderate fee for its services, do to systematizing and making thorough the treatment of those who come to it for relief? The patient would meet the registrar, he would then be sent to the ophthalmologist, aurist, laryngologist and other "ists." His urine, sputum and blood would be examined and then the reports of the examinations would come to the head physician or surgeon, who would be in the best position to know what to prescribe. The medicine would be compounded by intelligent and capable pharmacists and the whole institution would be under the strictest scientific management. This is the next advance that will probably come in institutionalism. The first steps have already been taken, but the commercial and eleemosynary sides have been made the most prominent. Organizations of physicians, mutual or coöperative, may be obliged to institute such dispensaries and hospitals in order that they should become all that is demanded of them.

In the city of Philadelphia there are over a thousand positions in dispensaries and hospitals occupied by physicians who receive no pay for their work. Thus nearly one-half of the physicians in practice in that

city are connected with medical relief institutions. Not only do these men and women serve without pay, but by treating patients who are able to pay they prevent other physicians from obtaining such fees which otherwise would come to them. Some would advise that the physician run a dispensary in his own office in opposition to the hospital dispensary. This is not a remedy, and any one who tries it will soon find out that it does not pay. Others advise organization on business principles and we understand such a new medical society has been started in New York city.

The trade unionists fought machinery and were defeated. They preached organization, and organization gave them as weapons only the boycott and the strike, and these failed them because of machinery. The hospital is the *machine*, specialism is a part of it and against these the doctor will find it useless to fight. He must recognize the trend of affairs, the natural evolution which goes from the general to the more particular and again to the organization of particulars into a complete whole. If he be wise he will strive to adapt himself, he will make use of the machinery about him and he will associate himself with others for coöperation.

The doctor through organizations has been able to accomplish much for his own good and that of medicine in general. By legislation, he has raised the standard of requirements for entering on the study of medicine, thus limiting the number who engage in the profession. He has succeeded in controlling the work of medical schools. He has been able to educate the community to respect regular physicians somewhat as the trades unions have been striving to do with their labels. And the medical society's boycott is a very strong one. But something more than legislation is required to meet the newer combinations. Laws will not prove effective in fighting hospitals and dispensaries, either in suppressing those already in existence or preventing their spread.

The doctor as a private physician working for himself will more and more find his position disappearing. There will be general practitioners in out-of-way places as there are now; there will be men of rare talent and ability who will attract by their personality and who will remain individualistic in their work.

But the great mass of town physicians may be obliged to adapt themselves to other conditions, and either become salaried employees of State and private institutions or form mutual and coöperative hospitals and dispensaries, thereby employing themselves; which plan or plans will soonest find adoption the future alone will tell; but the general physician will probably not remain as he is, and sooner or later he will be obliged to choose between the old and new paths.

CEREBRAL HEMORRHAGE FOLLOWING DIPHTHERIA.

That diphtheria, apart from the mechanical interference with respiration to which it gives rise when the larynx is involved, exerts its baneful influence through the activity of poisons generated as a result of the disease-process may be accepted as a fact. Some of the toxic complications and sequelæ are attributable to the presence of the diphtheria-bacilli, others to secondary infection. In either event these possibilities must be constantly borne in mind and be as carefully guarded against as possible. Early administration of the antitoxin is capable of averting in a large degree many of the toxic manifestations, as well as the unpleasant and dangerous results of interference with the respiration through obstruction of the larynx. There is reason to believe further that judicious employ of antistreptococcic serum will serve to mitigate the severity of many attacks of diphtheria, especially when secondary infection exists.

The poisons circulating in the blood as a result of the pernicious activity of the diphtheria-bacilli and other microorganisms exert their toxic influence especially, though not exclusively, upon the parenchyma of manifold tissues and organs. Liver and kidneys are especially prone to suffer and the nervous system scarcely less so. Probably the most common nervous lesion is neuritis, as manifested more particularly by paralysis of the soft palate (with regurgitation of liquids through the nares), cycloplegia (with paralysis of accommodation), foot-drop, abolition of knee-jerks and motor disability. In a much smaller proportion of cases the brain suffers, directly or indirectly. Cerebritis and meningitis would seem to be of rare occurrence. As the result of the action of the poison or poisons of diphtheria upon the blood and the blood vessels hemorrhage into the brain may take place; or from the detachment of endocardial vegetations secondary to inflammation of the lining membrane of the heart, embolism of a cerebral artery may result; or finally by reason of weakness or irregularity of action of the heart in consequence of toxic influences upon the vagus or the intra-cardiac ganglia or upon the heart-muscle itself, cerebral thrombosis may develop. Of a case of the last kind LEVI (*Archiv für Kinderheilkunde*, B. XXII, H. 1, 2, p. 11) has made an interesting report, to which he appends an analysis of the small number of cases previously recorded.

A girl, 6 years old, came under observation at the close of the first week of a severe attack of diphtheria of gangrenous type. Under treatment with antitoxin and repeated irrigation of the nares improvement gradually set in. At the close of the second week, however, speech began to be nasal and in a short while paralysis of the soft palate was evident, with regurgitation of fluids through the nares. The power of accommodation also became diminished. In the

Let us have a Department of Public Health!

third week there appeared at the site of the last (fifth) injection of antitoxin an urticaria-like eruption, which spread in a short time over the entire body, excepting the face. This was accompanied by renewed febrile movement, marked prostration, increased presence of albumin in the urine and for the first time also of hyaline and granular tube-casts. Edema of the face and extremities developed and the action of the heart became irregular. Finally symptoms of endocarditis also appeared. At the end of a month right-sided otitis developed as a further complication. Several days later the patient was suddenly seized with an apoplectic attack, followed by paralysis of the left side of the face and of the left lower and upper extremities. From this considerable amelioration took place in the course of a few hours, but two days later a second attack occurred in which the same parts were affected though now in more pronounced degree. The facial palsy gradually diminished, while that of the extremities persisted. After another interval of nine days the child manifested evidences of weakness of the trunk and neck. Sensibility and reflex activity remained unaffected. Slow improvement followed, although stiffness and weakness remained. Diphtheria-bacilli were demonstrated in the discharges and in the membrane from the throat and nose for a period of six weeks, together with streptococci and other microorganisms. The case is viewed as one of cerebral thrombosis, largely on account of the enfeeblement and irregularity of action of the heart, in conjunction with increased plasticity of the blood, but principally on account of the situation of the lesion on the right side of the brain and the transient and incomplete character of the symptoms.

LEVI has succeeded in collecting from the literature thirty-four cases of cerebral hemiplegia in the sequence of diphtheria, in addition to his own, so that it will be seen that the frequency of this complication is not at all great. The rarity becomes accentuated when compared with the frequency (25 per cent., GOWERS) of other forms of paralysis complicating diphtheria. In the thirty-four collected cases embolism was given as the lesion in fourteen cases and hemorrhage in seven; while in the remaining thirteen the diagnosis was not clear. Reports of necropsies were made in only six cases, in one of which hemorrhage was found and in the remainder embolism. Of the total number of thirty-four cases complete recovery is stated to have taken place in four and death in seven, while the remainder entered upon the chronic stage of cerebral paralysis.

THE BRITISH DOCTOR AND HIS SOCIAL RANK.

DR. MALCOLM MORRIS, in the April issue of his magazine, *The Practitioner*, takes exception to the statements in an editorial in the *JOURNAL* some months ago in regard to the estimation of the medical

profession by British royalty, and its social standing generally in Great Britain. He claims that it misrepresented the facts, that there was "a daring fatuity" in its statements, and that far from being ill-treated by royalty, no profession has been more honored than has that of medicine.

Of course much depends upon the point of view, and what Dr. MORRIS may consider as special consideration may not be so self-evident to cis-Atlantic eyes, but if any injustice has been done to Her Imperial Majesty, the present fountain of honor in the British dominions, our apologies are hereby tendered. It seems hardly necessary, however, to consider that any such are due to the ex-commander-in-chief whose insulting address to an army medical officer was quoted from an English journal in the aforesaid editorial. It is a weak defense to say that this behavior was due to his special ideas in regard to military discipline. As far as that special relative of the royal family is concerned, certainly no very serious injustice has been done.

In spite of Dr. MORRIS's expressed opinion there still remains a doubt as to whether the medical profession has received the consideration that ought to be its recognized due. The personal confidence and friendship of royalty given to its individual members does not necessarily elevate the profession socially, for the same is given to menial attendants. Neither does the making of a few medical baronets or the late elevation to the peerage of a distinguished surgeon, who is not made any more illustrious by the bestowal, give it really any higher social rank as a body, nor do away with the fact that it is the only one of the three learned professions that has, as such, no place in the sixty or more grades of precedence that appear to be still a part of the social law in the British islands. Dr. MORRIS himself admits that the social position of doctors in England is perhaps not what it ought to be, and that is the important question, not what the Queen's intentions may have been.

To an American, the grades which the English medical profession itself makes amongst its members would seem to have a tendency to degrade it as a whole. The controversies that are carried on in British medical journals as to the right to use the title of doctor on a doorplate or a card, are not particularly elevating in themselves: the public recognizes the fact that professional ability is not to be gauged by the title, and, if one is not mistaken, is inclined to grant it to all respectable general practitioners. The fact that it may possibly be given to unworthy individuals does not necessitate the distinctions that are made, when the public does not practically recognize them. It is only in a certain limited social way that they have any value, and that is to the advantage of only a part, and to the disadvantage of the remainder. If they even represented any really important differ-

ences in qualifications, professional or otherwise, that time is now past, for many of the brightest lights of British medicine, among them apparently Dr. MORRIS himself, do not carry the title of M.D., and they are not necessarily inferior in general education or culture to those that do have it. If a man has a university degree let him append it also to his name if he wishes to, and as is done by many; there is no good reason why it should be included in his medical appellations to make a professional distinction, to the disadvantage of his equally qualified and worthy, though perhaps less fortunate, medical brethren.

It is commonly said that science recognizes no national frontiers, and it is on this ground that whatever effects our profession elsewhere is of interest to us here. America and England are the two most closely related nations, with largely the same laws, the same general characteristics, and to some extent the same institutions. Fortunately, however, we have in this country escaped some of the social incubi that still bear down upon our English confrères, and it is to be hoped that British common sense and justice will before long overcome British conservatism in doing away with certain usages and social laws which, as applied to a scientific profession, are irrational and ridiculous.

We have in this country our own troubles, and some of them in the military and naval medical services are occasionally suggestive of those abroad, but such flagrant outrages as that in the BRIGGS case, not long since discussed in English medical and lay journals, could never occur under our institutions. Such an incident shows the actual injustice and hardship that is possible with the system of social distinctions like that existing in Great Britain and its dependencies, and which no amount of philosophy can render easily endurable.

CONGENITAL CEREBRAL DIPLEGIA FOLLOWING EXTRA-UTERINE PREGNANCY.

In a considerable number of cases presenting spastic conditions from birth a history of difficult labor or of instrumental delivery can be secured. There remains, however, not a small number in which such a history is wanting and one is at a loss to account for the manifestations. While the possibility of intra-uterine disease of the fetus, traumatic or infective, can not under these circumstances be denied, there is little actual evidence in support of such a view. This possibility is given strength and may be said to be raised to the dignity of a probability by the report of a case by GROSZ (*Deutsches Archiv für Kinderheilkunde*, B. xxii, H. 1, 2, p. 1) in which spastic manifestations were present in a child born by abdominal section after an extra-uterine pregnancy, examination after death disclosing gross organic changes in the brain sufficient

to account for the symptoms observed during life. When examined, ten days after birth, the child, a female, presented a dolichocephalic head, with a distinct depression upon the left side, which was attributed to the pressure exerted by the adjacent uterus. There was, besides, paresis of the right side of the face and rigidity of the upper and lower extremities upon the right side of the body. Increase of the knee-jerks could not be made out. The head was deflected toward the right shoulder.

On account of the poor state of the mother the child was nourished with sterilized milk, which it appeared to bear well, although it developed slowly. In a short while athetoid movements appeared in the right hand, while some degree of motility returned in the arm. The rigidity in the right lower extremity also diminished somewhat. At the same time loss of power set in in the left upper extremity, together with rigidity and athetoid movements in the fingers. The patellar and the tendo-Achillis reflexes became exaggerated. No derangement of sensibility could be made out. The general condition of the child gradually failed and death took place at the age of four months.

Upon postmortem examination the left cerebral hemisphere, on its convexity as well as at its base, was found covered with a pseudo-membrane, throughout which numerous small hemorrhages were distributed. Both hemispheres displayed evidences of flattening, the left in particular, in conjunction with defects in development and secondary degeneration of cortico-muscular tracts. The right pyramidal tract of the spinal cord was degenerated and the whole of the right half of the cord was less well developed than the left.

This case would seem to show conclusively that cerebral lesions and spastic states may develop in prenatal life; and what is possible under the conditions attending extra-uterine pregnancy seems scarcely less possible under those attending ordinary uncomplicated intra-uterine gestation. Probably few women pass through pregnancy without traumatism, concussion or shock of some sort or some infectious disease or other, influence capable of causing a cerebral lesion, with its developmental imperfections and attendant manifestations. It may easily be that to these groups of causes are due a considerable number of cases of idiocy, spastic paralysis and allied conditions dating from birth.

EUROPEAN STEAMSHIP MEDICAL OFFICERS.

It has been alleged from time to time that anything but care is used in the selection of the surgeons of the various European steamship lines crossing between America and Europe. That there is some basis for this complaint is shown by the results of a criminal trial just concluded in a French court. The correc-

tional tribunal at Marseilles has condemned to two years imprisonment and a fine of 1,000 francs an individual named GOUNEAU, who had found means to get appointed surgeon on board the liner *Les Andes*, although he had never studied medicine. For two years the sham doctor occupied his position and even amputated a leg and performed other operations without serious results to the patient. This case which is but one of a number reported from time to time, indicates that some sort of supervision should be exercised over the medical officers of European steamships. While actions for malpractice by passengers would undoubtedly lie against the steamship companies for improper selection of their medical officers, still this is rather a round-about method and would fall far short of producing immediate benefit.

AN OSTEOPATHY CONSPIRACY.

It is now absolutely certain that the "osteopaths," whoever they are, have an organized conspiracy to have their diplomas recognized, and themselves placed above the regular profession in the eye of the law, in every State in the Union, as the Osteopathy Bills identical in words have been introduced in various legislatures. In most of the States an attempt has been made to sneak the bills through the Legislature without comment, and, as might be expected, with the least possible publicity.

Who is paying for all this energetic action on the part of the legislative Solons in the different States, has not yet been made apparent, but a certain advertising quack in Chicago admitted within the hearing of the writer of this article, that he himself had "put up," and was therefore sure of the passage of this bill. He said it would be the means of breaking down the present laws enacted against quackery and advertising generally.

By reference to another column it will be seen that the bill was railroaded through the Michigan Legislature at a speed that puts legitimate measures to the blush. [See page 910.]

THE JOURNAL SPECIAL TRAIN.

Medical gentlemen from Illinois and vicinity, the Pacific Coast and the Northwest, who intend to be present at the great jubilee meeting of the ASSOCIATION, are invited to go by the JOURNAL SPECIAL, which will go by the Pennsylvania Railway without change from Chicago to Philadelphia. See their advertisement in another column.

CORRESPONDENCE.

Teaching Materia Medica.

PITTSBURG, PA., May 3, 1897.

To the Editor:—So many physiologic actions are accredited to each agent in the text books on materia medica that the average student does not know the difference between the

important or leading actions and those of minor importance. If you ask a recent graduate from any medical school to name the five most important physiologic actions of the common drug, opium, he will probably be unable to correctly answer in a majority of cases. Personal observation, rather than rumor, justifies this statement.

The lack of this essential knowledge of the important drugs is to be deplored; and its remedy should engage the attention of all medical teachers. The great majority of medical graduates know little of pharmacy and less of *materia medica*. They enter practice and waste their lives writing original package prescriptions.

In teaching this important branch too many agents are studied and too few, if any, are mastered. If from the more than a thousand preparations in the U. S. P. fifty leading ones were thoroughly taught, and the student had *enough* of pharmacy to enable him to prescribe or compound prescriptions scientifically, the golden dawn in medicine would be hastened.

Original investigation deserves commendation, but the medical student ought first to follow well-beaten paths, until he has had actual practice. The prescriber who knows a few drugs thoroughly and has mastered the principal physiologic actions of each, is less liable to order agents not needed by his patient.

There has been a noticeable improvement in medical teaching in the last ten years, but much remains to be done. While graduates are sent out from many medical schools after a four years' course, who can not give the principal actions of common drugs like morphin, strychnin, digitalis and quinin, it is time to further revise the methods of instruction.

E. B. BORLAND, M.D.

Requirements for Membership.

GRANDVIEW, IND., May 3, 1897.

To the Editor:—Will you please state to me the requirements for membership in the AMERICAN MEDICAL ASSOCIATION.

Respectfully, W. C. FINCH, M.D.

ANSWER: "The delegates shall receive their appointment from permanently organized State medical societies, and such county and district societies as are recognized by representation in their respective State societies, and from the medical departments of the Army and Navy and the Marine-Hospital Service of the United States.

"Each State, county and district medical society entitled to representation shall have the privilege of sending to the ASSOCIATION one delegate for every ten of its regular resident members, and one for every additional fraction of more than half that number; provided, however, that the number of delegates for any particular State, Territory, county, city or town shall not exceed the ratio of one in ten of the resident physicians who may have signed the Code of Ethics of the ASSOCIATION.

"*Members by Application.*—Members by application shall consist of such members of the State, county, and district medical societies entitled to representation in this ASSOCIATION as shall make application in writing to the treasurer, and accompany said application with a certificate of good standing, signed by the president and secretary of the society of which they are members, and the amount of the annual subscription fee, \$5. They shall have their names upon the roll, and have all the rights and privileges accorded to permanent members, and shall retain their membership upon the same terms."

"Medical Instruction of the Laity in the Lay Press."

WILLETS POINT, NEW YORK HARBOR, April 30, 1897.

To the Editor:—Dr. Shastid's suggestions on the above named subject on page 808 of your issue of April 24, strike one as being very good. Something has already been done in this

direction by Dr. Cyrus A. Edson and others (though Edson signed his articles); and in the leading lay newspapers, particularly the *New York Tribune* and *Times*, short unsigned articles are not infrequently seen which must have been written by physicians.

Dr. Shastid evidently takes the broad view that medicine should no longer be a mere occasionally useful mystery to the laity, but a living, continuously applied help to a higher civilization.

Public instruction will be of great benefit to the masses provided it is conservative, non-dogmatic, free from great detail, and be imparted in popular, but dignified and serious language.

The proposed system is in the line of preventive medicine which has, leaving out surgical matters, already helped the world vastly more than curative.

Reacting, this instruction will tend to beget among the laity more respect for physicians in the everyday affairs of life, and will do much toward blotting out the only too common opinion that, while they are well posted in technical knowledge, they can not be trusted in positions where executive ability is needed. Witness the charter of Greater New York requiring that the president of the board of health *shall not* be a physician.

Likewise it will add impetus to the movement for the creation of a Department of Public Health, the mile-post that most of us hope to see passed in our time—for we do not doubt that we are on the road to it.

Finally, the system, if carefully carried out, will redound to the credit of the AMERICAN MEDICAL ASSOCIATION, and serve to draw its members into a closer union, and to attract new members.

J. D. POINDEXTER,

Captain, Med. Dept. U. S. Army.

PUBLIC HEALTH.

A Study of the Ocular Refraction in School Children.—As the result of a study of the refraction of the eyes of 1,000 school children, with particular reference to astigmatism as shown by the ophthalmometer, Carhart (*New York Medical Journal*, April 17, 1897, p. 520) expresses the opinion that changes in ocular refraction during childhood and adolescence are due to slow distension of the eyeball, caused either by strain of accommodation in an otherwise healthy eye, or by physiologic use of an eye weakened by local or constitutional disease or dyscrasia. Poor light in crowded school rooms is particularly productive of accommodative strain. Such distention of the eyeball results not only in progressive lengthening of the optic axis, but also in alterations of the curve of the cornea. In a considerable proportion of cases, hypermetropic astigmatism is probably congenital, but in much the larger proportion and in all cases myopic and mixed astigmatism are caused by the same process as results in lengthening of the optic axis from the congenital high degree of hypermetropia of infancy to the high degree of myopia seen typically in German universities, and occasionally in our schools. This process of distension is more easily arrested in its earlier stages, and therefore prompt and exact correction of the refractive error, and particularly of low grades of astigmatism, is indicated in all cases to prevent an extension of the process. In cases of compound myopic astigmatism correction of the astigmatic element is of equal, if not of greater importance than correction of the myopic element of the refraction.

Prophylaxis of Yellow Fever in Brazil.—The disease was kept under control and stamped out in Buenos Ayres by the immediate removal of every case as it appeared to the floating hospital, while all the other inmates of the house were taken at the same time to the island quarantine station, where they remained until all danger was past. The house was submitted to a vigorous disinfection during the entire time of their absence, and as a final

measure, all the walls were whitewashed or calcimined. The physician first called to the case was also quarantined in his own house for the same length of time, and the premises disinfected. By these means the disease was restricted to a few isolated cases in the early spring. Dr. A. Simoes proclaims in the *Rev. Med. Chir.* of Brazil the success of inoculations with attenuated cultures of the yellow fever microbe, the micrococcus xanthogenicus discovered by Freire in 1880. Since he was authorized in 1883 by the government to administer them, 11,881 persons have been inoculated, and he states that the mortality among them has been only 0.5 per cent., while among the rest of the population it has averaged 30 per cent. The yellow fever hospital had a mortality of 78 per cent. until the inoculations were introduced, when it fell to 30 per cent. He adds that if all strangers recently arrived, and all persons exposed to contagion, would have themselves inoculated, epidemics would cease and there would only be a few sporadic cases, while vigorous hygienic and disinfecting measures in addition would exterminate the pest altogether.—*Cronica Medica*, October 15.

The Influence of Smallpox Hospitals upon Adjacent Territory.—A recent number of *Public Health* (London) contains an interesting abstract by Dr. Meredith Young of the Local Government Board Report, 1894-5. Dr. Young, in dealing with the question of smallpox, points out that though the thesis of the aerial connection of this disease is regarded by the "bulk of authorities" as a settled question there are many still unconvinced, and he draws attention to the experience of Hastings in 1894, where the facts observed form yet another illustration of the danger of placing these hospitals near to human habitations. It was found in that instance that out of thirty-six cases which occurred within 500 yards of the Hastings Smallpox Pavilion the percentage of smallpox attacks to population varied as follows:

| | Attacks. Per cent. of population. |
|---|---|
| Within 100 yards circle, | 4.2 |
| Within 100 to 200 yards zone | 2.7 |
| Within 200 to 300 yards zone | 1.9 |
| Within 300 to 400 yards zone | 0.9 |
| Within 400 to 500 yards zone | 0.2 |
| Total within 500 yards circle | 1.3 |

Dr. Young adds that the diffusion of smallpox occurred apart altogether from any communication of contagion by infected persons or things, as a most painstaking inquiry showed.

Necessary Police Powers Over Water-sheds.—There is only one correct time for the protection of the water supplies of cities, and that is as early as possible in the formation of the plant. If this protection is put off, or is made to depend upon special legislation, the result is only too apt to become a failure; or if not a failure, it is often the source of inordinate expense. The State board of health of North Carolina has laid before itself the very commendable task of trying to reduce the death rate by typhoid fever, and laws are being framed to begin the work of protecting all the public water-supplies of the State. According to a writer in the *Bulletin* of that board for March, the supplies are peculiarly liable to pollution and the State pays a heavy tax in lives by reason of that fact. How heavy the tax is, the following computation by Dr. R. H. Lewis, Secretary, has been drawn up for the information of the law makers:

"Of all the preventable diseases, consumption alone excepted, typhoid fever is by far the most deadly in our State. In the year 1896 there occurred in eleven cities and towns of the State, having an aggregate population of 105,501, which certified to the accuracy of their mortuary statistics, 107 deaths from typhoid, or 1 in every 967 of the population. Estimating at this ratio for the whole State on a basis of 1,800,000 population, the number of deaths from typhoid fever in North Carolina during the past year was 1,861. Taking the death-rate given by one of the highest authorities in a similar calculation, 10 per cent., there were, during the same time, 16,740 persons

sick of the disease who recovered. Let us see what this meant to the State in dollars and cents, leaving out of consideration entirely the anxiety and sorrow entailed. Valuing each life at \$2,000, time lost by those who recovered on an average of forty-five days of sickness per case at 80 cents per day, nursing, medicines, and doctors' bills at \$25, and funeral expenses of those who died at \$25 each, the statement of the matter in tabular form is as follows:

| | |
|--|-------------|
| 1,861 deaths at \$2,000 each | \$3,722,000 |
| 1,861 funerals at \$25 each | 46,525 |
| Wages of 16,740 convalescents, during forty-five days, at 80 cents | 360,103 |
| Nursing, medicines and doctors' bills for 18,610 cases, at \$25 each | 465,250 |

Total tax levied in 1896 by typhoid fever upon the State \$4,593,878

"Deducting 33 $\frac{1}{3}$ per cent. for every possible inaccuracy or over-estimate, typhoid fever cost the State last year, in round numbers, \$3,000,000.

"Typhoid fever is a preventable disease. It is caused almost invariably by drinking water which has been contaminated with the bowel discharges of another case. To prevent the entrance of the germs into water in the first instance is for the direct benefit of the 125,000 of our people living in fourteen of our largest and most progressive cities and towns. One case of typhoid fever or cholera on a water-shed without proper sanitary oversight, would be liable to poison the whole city, or at any rate all of the inhabitants who use the public water-supply, to spread sickness and death wholesale. Most of the water-supplies in the State are from small, short streams whose water-sheds are thickly populated, and therefore peculiarly dangerous.

"It is the duty of the State to protect the lives of its citizens. Water companies are corporations organized for the purpose of making money. Their object is to declare dividends. A tender regard for the lives and health of individuals does not characterize them any more than other corporations. It is a proverb that corporations are soulless. An annual expenditure on their part of three or four hundred dollars would be required, but it would be more than re-imbursed by the larger consumption which would result from the greater confidence in the purity and safety of the water, that the presence of this law on the statute books would give. It would remove the suspicion and distrust that now exists—and with reason—in the minds of many. Seriously, the bill could be justly entitled 'An Act to Promote the Business Interests of Water Companies.' In a word, its passage would materially promote the public health, and not only not injure but positively benefit the water companies.

"The extension of the police powers of the cities and towns to their water sheds, for the purpose of carrying out the provisions of this act alone is extremely important, because it would provide what is now lacking, the practical machinery which would insure protection."

Since the above was written three water companies, namely, Raleigh, Henderson and Durham, have expressed their approval of the bill and their desire for its passage.

New Jersey Epidemic and Quarantine Law.—*Be it enacted, by the Senate and General Assembly of the State of New Jersey:*

1. No vessel having on board any person or persons affected by yellow fever, cholera, typhus or ship fever, bubonic plague, smallpox, scarlet fever, diphtheria, measles, relapsing fever, or any other dangerous disease of a contagious, infectious or pestilential nature, and no vessel infected by any of these diseases, and no infected baggage, dunnage, rags or hides, shall be brought to any wharf in the State of New Jersey, and no person, persons or property shall be landed in this State from any such vessel without a permit shall have first been issued by the health officer of the port, if there be such officer, and if there be no such officer, then by the local board of health having jurisdiction in the locality.

2. The master of every vessel from a foreign or domestic port which shall pass the quarantine station located at City Island or elsewhere in Long Island sound or the quarantine station at Port Wadsworth or elsewhere in New York bay, and which vessel is allowed by written permit, issued by the proper officer at either of the said quarantine stations, to proceed to any port or place in the State of New Jersey, shall, within twenty-four hours after the said permit is received by him, exhibit said permit and deposit the same at the office of the local board of health of the said port or place of destination, and he shall be entitled, subject to the rules and regulations hereinafter provided for, to receive from the said local board of health, or health officer

of the port, if there be such officer, a permit to land passengers, baggage and cargo.

3. The health officer of the port, if there be such officer, and if there is no such officer then the local board of health of every sanitary district in this State is hereby authorized and empowered to order, whenever in the judgment of said officer or board the public health requires such action, that any vessel which is within the jurisdiction of said officer or board may be removed to the quarantine grounds or to some other place of safety, and may require all of the persons, baggage, merchandise and articles which have been landed from such vessel to be seized, returned on board thereof or removed to quarantine grounds or to other place of safety: if the master, owner or consignee of such vessel can not be found, or shall neglect or refuse to obey any such order of removal, such health officer or board of health may employ such assistance as may be necessary to effect such removal, and all expenses incurred in such removal shall be paid for by the master, owner or consignee of such vessel; such vessel shall not return within the limits of the jurisdiction of said board or officer, nor come to anchor, nor land at any wharf within said limits, without the written permission of the said board of health or officer of the port: any person employed to remove any such vessel, persons, merchandise or articles pursuant to this section shall have a lien on such vessel, its tackle, apparel and furniture for his services and expenses in effecting such removal.

4. The masters of vessels arriving at any port or harbor in the State of New Jersey shall pay to the health officer of the port, if there be such officer, and if there be no such officer, then to the local board of health, the following fees: For inspection of any vessel from a foreign port, five dollars; for inspection of every vessel from a domestic port south of Cape Henlopen, between May first and November first in each year, steamers, three dollars, other vessels one dollar; for medical inspection of every one hundred, or fraction of one hundred, steerage passengers upon transatlantic steamers, two dollars: for each permit issued for the discharge of cargo or baggage brought as freight, twenty-five cents; for sanitary inspection of every vessel after the discharge of cargo or ballast, ten dollars; for disinfection of every vessel from an infected port, or of such vessels as shall require disinfection by reason of exposure to infection or contagion, fifty dollars; for vaccination of persons on vessels on board of which smallpox has developed during the voyage, each twenty-five cents; the health officer of the port, if there be such officer, and if there be no such officer, then the local board of health having jurisdiction in each port and harbor, shall report in writing to the board of health of the State of New Jersey on the first day of October of each year; said report shall state the number of vessels inspected during the preceding year; the number of passengers examined; the number of permits issued; the amount of fees received from each vessel and the total amount of fees received, and said report shall also include answers to all inquiries which may have been addressed by said State board to the said health officer or local board of health.

5. The board of health of the State of New Jersey is hereby empowered to make and alter rules and regulations to prevent the introduction into this State of infected persons and property, and to prevent the spread of any dangerous infectious disease which may have been so introduced; the expenses incurred and the services rendered by any local or State health officer, or by any of their employes, in the discharge of any duty imposed by said rules and regulations in relation to vessels, merchandise, baggage or persons, shall be paid by the master or owner of the vessel in which such persons, baggage or merchandise shall have arrived, and all such expenses, services and charges shall be a lien on the vessels, merchandise or other property in relation to which they shall have been made, incurred or rendered, and if such master, owner or consignee shall omit to pay the same within three days after the presentation of such account, the local or State board of health may proceed to enforce such lien in the manner provided by law; any person or persons who shall violate any of the provisions contained in any rule or regulation made by the said State board of health under the authority contained in this section, shall be punished by a fine of two hundred and fifty dollars, or by imprisonment for a period not exceeding six months, or by both fine and imprisonment.

6. Any person or persons who shall obstruct any duly authorized health officer in the enforcement of any of the provisions of this act, or who shall violate any of the provisions of sections one, two, three and four of this act, shall be guilty of a misdemeanor, and shall be punished by a fine not exceeding three thousand dollars, or by imprisonment in the State prison for a period not exceeding one year, or by both fine and imprisonment.

Approved April 9, 1897.

BOOK NOTICES.

Clinical Lessons on Nervous Diseases.—By S. WEIR MITCHELL, M.D., LL.D., Edin. Pp. 305. Philadelphia and New York: Lee Bros. & Co. 1897.

This is a book by a master and if we mistake not it will prove a very popular one. The book treats of hysteria, recurrent melancholia, disorders of sleep, choreic movements, false sensations of cold, ataxia, hemiplegic pain, treatment of sciatica erythromelalgia, reflex ocular neurosis, hysteric contractions, rotary movements in the feeble minded, etc. Few can speak with more authority than the author.

Lectures on Renal and Urinary Diseases. By ROBERT SAUNDY, M.D., Edin., Fellow of Royal College of Physicians, London, etc. Pp. 434; \$2.50, Philadelphia: W. B. Saunders. 1897. For sale by W. T. Keener, 95 Washington Street, Chicago.

These lectures have some of them been printed before and were very well received, the author's long service in the Birmingham General Hospital having given him exceptional opportunities. They have now been revised and republished in this single volume. A fourth section has been added on miscellaneous affections of the kidneys, which makes the book more complete as a work of reference. The volume is well worthy a place in the library of the progressive physician.

A Clinical, Pathological and Experimental Study of Fracture of the Lower End of the Radius, with displacement of the carpal fragment toward the flexor or anterior. By JOHN B. ROBERTS, A.M., M.D., Professor of Anatomy and Surgery, etc. With 33 illustrations; pp. 76. Price \$1. Philadelphia: P. Blakiston Sons & Co. 1897.

This book is a verbatim reproduction from the transactions of the American Surgical Association for 1896. The paper is a valuable one. The author has wisely concluded to publish it as a separate volume.

La Spedality Infantile in Italia. By ALFONSO MANDELLI, Presidente dell'Ospedale dei Bambini di Cremona, etc. Pp. 648. Milan: Ulrico Hoepli. 1897.

This is a report of the Children's Hospitals in Italy. The work is illustrated with a number of cuts and colored plates, beautifully printed, and they set forth in detail the equipments of the various hospitals devoted to children in Italy and the treatment pursued. It also has the elevations from block plans of most of the institutions. A perusal of the volume will speedily convince the reader that the Italians in practical medicine are fast regaining their ancient prestige.

California of the South. By WALTER LINDLEY, M.D., and J. P. WIDNEY, A.M., M.D., LL.D. Third edition; pp. 335. New York: D. Appleton & Co. 1896.

This work, which is well illustrated, gives in detail the climatic and other conditions of Southern California, and it may be depended upon as a truthful account. There is a map of California in the volume, which has been drawn with the skill which characterizes all the work of the Messrs. Appleton. The book is full of information regarding California and few can read it without a desire to visit the wonderful land, of which after all that has been written only part has been told. The medical reader will find it very helpful to him in the selection of climate for his cases.

Diphtheria and Antitoxin. By Dr. NESTOR THIRARD, F.R.C.P. Pp. 141. London, New York and Bombay: Longmans, Green & Co. 1897.

This little book has its origin in sundry papers read before meetings of the British Medical Association in recent years. It summarizes the result of the antitoxin treatment and free use has been made of the reports of the medical superintendents of the metropolitan asylums and the data brought in the report of the American Pediatric Society, with which report the author is in entire harmony. He regards antitoxin as having robbed diphtheria of most of its terrors. To convince others of that fact seems to be the purpose of the book.

Atlas and Essentials of Gynecology. By Dr. OSCAR SCHAEFFER, privat docent in obstetrics, etc., at the University of Heidelberg. Pp. 288. New York: Wm. Wood & Co. 1897.

This Atlas of Dr. Schaeffer is very valuable and its careful reproduction with its accompanying text gives the reader the concrete advantage of the great gynecologic clinics of Munich. Not only will the book prove an excellent one for students but as well for the general practitioner in any emergency pertaining to the art.

The Diseases of the Stomach. By Dr. C. A. EWALD, Extraordinary Professor of Medicine at the University of Berlin, etc. Translated and edited by MORRIS MANGES, A.M., M.D. Second edition; pp. 602. New York: D. Appleton & Co., 1897.

The name of Dr. Ewald is as familiar as a household word on this side of the Atlantic, and to all who pretend to be acquainted with the literature of the diseases of the stomach Dr. Ewald stands as one of the highest authorities.

This is the second American edition and the great progress which has been made since the appearance of the first edition in 1892 has rendered its revision necessary. We observe with pleasure that in prescription writing the translator has retained the metric system of dosage, although for the benefit of those whose knowledge of metric system is yet limited, he has also translated in the old British system of weights and measures.

Lectures on Appendicitis and Notes on Other Subjects.—By ROBERT T. MORRIS, A.M., M.D. Second edition; pp. 173. New York and London: G. P. Putnam's Sons. 1897.

This is the second edition of the book of Dr. Morris, and as it has been carefully revised and brought up to date, leaves little to be said on the subject and little to criticize. The typography is excellent and the paper is good. Although still a young man Dr. Morris may be classed as one of the pioneers on this subject and therefore speaks with an *ex cathedra* utterance. The book is of high order and compares very favorably with the other recent works on this subject.

Warner's Pocket Medical Dictionary of today, comprising pronunciation and definition of 10,000 essential words and terms used in medicine and associated sciences, by WILLIAM R. WARNER.

This is an excellent little dictionary and will be found very useful to students and others.

NECROLOGY.

DULANEY L. WASHBURNE, M.D., of Louisville, an alumnus and prosector of the University of Louisville is the subject of a warm tribute in the *American Practitioner and News*, April 3. He was born in Jefferson County, near Louisville, in 1855. He received his literary education in the public schools of that city. In 1880 he began the study of medicine under Prof. H. A. Cottell. As a student his progress was exceptionally rapid, and at the time of his graduation his rank was far above the average. He immediately found employment as assistant in the clinics of the University and teacher in the sub department. He served as assistant to Prof. John A. Ouchterlony in the medical clinic till 1886, when he was appointed prosector to the chair of anatomy and quiz master under Prof. J. M. Bodine. Here his proficiency, learning and energy found full scope and profitable exercise. He was a thorough anatomist, an expert dissector, and a teacher of unusual clearness and power. He was faithful and true in every obligation of life, the soul of honor, and the personification of industry and singleness of purpose. To this he added a kindness of heart and a cheerfulness of manner which caused him to be loved by all who knew him. He dies in the plenitude of ardent manhood, just as time had given him through study and experience that professional repose which insures the largest usefulness. The loss to friends, colleagues, students, and clientèle is irreparable; but in consolation, if not in compensation, he leaves behind him the priceless legacy of a stainless character, and a life devoted to science and the good of man.

Dr. JACQUES MAISONNEUVE, the most eminent Parisian surgeon of his day, has died at the age of 87. His death took place at his chateau of Missillac, where he had lived in retirement since 1890. Born at Nantes in 1810, Jacques Gilles Maisonneuve became resident medical officer at a Paris hospital, and afterward prosector at Clamart. In 1840, after a brilliant concours, Maisonneuve was nominated surgeon to the Cochin Hospital. Thence he transferred his services to the Pitié, and finally to the Hôtel Dieu. He soon became noted as the most skillful surgeon of his time, being particularly well known for the number of surgical instruments which he invented, and some of which, for instance the urethrotome, are still in use under his name. Maisonneuve was the first surgeon to perform the operation of resection of the hip-joint, while his conservative surgery was as sensational as his operative. In 1862 he showed before the Academy of Medicine the case of a young engineer whose leg he had preserved by the practical application of the physiologic theories of Flourens as to the reproduction of bone by the periosteum. In this case he removed the fractured tibia, retaining the periosteum, out of which a new tibia was formed. Since 1875 he had retired from the practice of his profession so entirely that many even in his own country thought him to be dead.

PROFESSOR STOCKOVENKOFF, Chair of Dermato-syphilography at Kiew. His sudden death in the midst of his inaugural address at the first meeting of the local physico-medical society which he had just founded, created a profound impression, at home and abroad. He was assiduous in his attendance at International Congresses and was always in the van of progress. His works on the treatment of syphilis with benzoate of mercury, etc., have made his name prominent.

LEONCIO ROS, M.D., a Cuban by birth and the youngest son of Salvador Ros, died in New York city, April 30, not quite a day after receiving burns caused by the explosion of an alcohol jar in the Woman's Hospital, while he and the apothecary were engaged in the sterilization of catgut ligatures. He was a Senior Assistant Surgeon on the House Staff.

W. C. PIPINO, M.D.—The following resolutions were adopted at a meeting of the Western Ophthalmological, Otological, Laryngological and Rhinological Association:

WHEREAS, We have heard with profound regret of the untimely death of our late confrère Dr. W. C. Pipino at his home at Des Moines, Iowa, last summer: therefore be it

Resolved, That our society, realizing the great loss we have sustained, desire to express in appropriate manner our appreciation of his worth as a member of our profession and society.

Resolved, That these resolutions be engrossed upon our society records and a copy furnished the medical journals representing our society, for publication.

J. D. C. HOIT,
FLAVEL B. TIFFANY,
Com.

NEW INSTRUMENTS.

NEW MECHANICAL SAW FOR SEPTAL OPERATIONS.

W. SHEPPEGRELL, A.M., M.D.

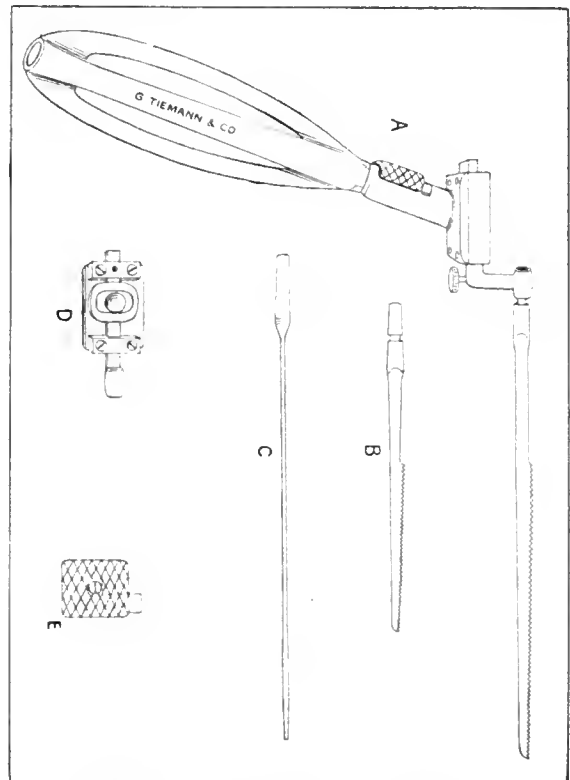
VICE-PRESIDENT OF THE AMERICAN LARYNGOLOGICAL, RHINOLOGICAL AND OTOLOGICAL SOCIETY, ETC.
NEW ORLEANS, LA.

In order to obviate the difficulty and fatigue of operating the nasal saw by hand, and to do this mechanically, by some mechanism which will enable us to use the saw not only with less exertion, but also with greater rapidity and precision, a number of mechanical saws have been devised. These saws are practically all operated by the electric dental motor.

For over a year I have endeavored to devise a saw for nasal operations which would combine simplicity, effectiveness, ease in application, facility of control, and would enable the operator to clearly follow the progress of the operation within the nasal cavity. After changing the model many times so that the last bears scarcely any resemblance to the first, I have at last devised a saw which combines the important features enumerated above, and which has done me excellent service. This saw may be attached to any of the dental motors now sold by dealers.

In this mechanical saw the handle, instead of being at right angles with the direction of the saw, is at an obtuse angle, thus giving it the shape which has been found the most convenient in the ordinary nasal saws, and which prevents the hand which holds the saw from coming too near the face of the patient. In order to permit this position, the driving wheels used in the other mechanical saws, which have been described, can not be used, and the backward and forward movement of the saw is obtained by means of a ball revolving at an eccentric (D). The flexible shaft is attached within the handle (A) and the obtuse angle also prevents the excessive bending of the flexible shaft and the friction which would result from this position.

The second advantage of this instrument is that the saw is at a higher plane than the transforming mechanism, so that it enables the operator to see more fully the work which is



The Scheppegrell Mechanical Saw. (Reduced one-half.)

being done by the saw within the nasal cavity. The third advantage is that the arrangement by which the saw blades are held in position enables the saw to be used not only upward and downward as in the mechanical saws which have been described, but also at any required angle. The fourth, and not least important feature, is, that the movement of the saw may be instantly started or stopped by the movement of a sliding thumbpiece (E) in the handle, and that its movement may likewise be increased from zero to a one-eighth inch stroke without arresting the movement of the motor.

In this saw the whole mechanism is made of steel so as to combine strength with lightness. The handle is of brass, the central part being hollow for lightness and for the admission of the handle of the flexible shaft, and the whole instrument is nickel plated. The movement of the saw is obtained by means of a steel ball which is attached to a shaft at an eccentric. This I believe is the first attempt to apply this principle to an instrument of this kind. The ball revolves within an oblong slot so arranged that it gives a backward and forward movement to the saw holder, to which the saw is attached by means of a binding screw below the saw holder and out of the line of vision. This mechanism is covered by a thin metallic

sheet which slides over the upper part of the instrument and is fixed by means of two small screws, thus protecting the mechanism from dust, etc.

At the upper part of the handle there is a sliding thumbpiece attached to a sleeve (*E*) which raises or lowers the ball in or out of the slot (*D*), thus giving complete control over the movement of the saw and enabling the operator to stop or start it instantly.

The same mechanism which starts and stops the saw may be used to regulate the range of movement from zero to one-eighth inch, the full stroke of the saw. This is effected by gradually raising the thumbpiece, and the action of the saw commences as soon as the upper part of the ball enters the slot, and the full stroke is obtained when the ball is fully within it. At the upper and lower portion of the slot (*E*) respectively, there is a lateral extension by means of which the movement of the instrument may be continued without pressure of the thumb in the upper position, and may be prevented from starting automatically in the lower position.

The instrument is provided with two saws, one long and the other short (*B*). As these saws are reversible on the horizontal axis, they may be used either upward, downward or otherwise.

This instrument may also be used effectively for massage work. The opening into which the saw is inserted will fit an ordinary Buck's applicator, and the mechanism is carried on in the same manner as for the saw. The applicator (*C*) is armed at the end with a pledget of cotton well attached and flattened at its extremity. It is then dipped into the solution which is to be used, and the massage may then be commenced, the strength of the stroke being adjusted by means of the thumbpiece, which also enables the operator to stop or start the movements at will.

AN EFFICIENT AND INEXPENSIVE INSTRUMENT FOR THE REMOVAL OF EAR WAX.

BY ALFRED HINDE, M.D.
CHICAGO, ILL.

Many years ago from a piece of iron wire heated at one end, flattened, and then twisted half a revolution, cooled quickly, and sharpened near its point, I hastily constructed a most efficient ear wax remover. It still continues to be the most suitable instrument for the rapid removal of inspissated cerumen with which I am acquainted. After repeated requests of the students of Rush Medical College I have had Messrs. Sharp &



Smith copy my old instrument—a cut of which is herewith presented and its dimensions given. They have made one instrument blunt-pointed for the removal of softened wax, and one with a cutting edge of three millimeters length at the inner lip or edge of the instrument. This is used where the wax is of greater density and the plug is readily tunneled and removed piecemeal or extracted in one lump if too hard to be broken down.

Handle, length 5.5 centimeters; *drain* 4 millimeters. *Shaft*, length 8 centimeters; *drain*, 2 millimeters. *Twisted extremity* length 18 millimeters. This end consists of a half twist or revolution of a circle whose diameter is 5 millimeters. The end is thinned out and rounded so that it will more readily engage the wax and as already stated, one of the instruments has a cutting inner lip.

MISCELLANY.

Physico-Chemic Prizes.—An English scientist has presented the Académie des Sciences with an endowment representing an income of 4,000 francs, to be awarded each year for the encouragement of new investigations in the physico-chemic sciences. The competition is international and may be retrospective. It will be known by the name of the donor, M. H. Wilde.

Moscow International Congress.—The *Progrès Méd.* announces that a special train with dining and sleeping cars will start from Moscow immediately after the Congress for a free excursion to the Caucasus, for regularly inscribed members of the

Congress. The incidentals of the trip will not be over 150 francs per person.

Increase of Cancer.—Commenting on the recent statements of English statisticians that the deaths from cancer have increased from 177 per million inhabitants to 713 in the last 50 years, or 1 death from cancer in every 23, the French state that in Paris there is 1 death from cancer in every 19 or 20, according to the latest statistics published (1894).—*Nouv. Remèdes*, April 8.

College Exercises.—The annual commencement of the College of Physicians and Surgeons, Chicago, now a part of the University of Illinois, was held April 20. Eighty-three students were graduated.—The annual commencement of the College of Physicians and Surgeons, Baltimore, Md., was held April 15. There were eighty-three graduates.—The commencement exercises of the Beaumont Medical College were held April 15. There were thirty graduates.

Sale of Adulterated Whisky Violates Pure Drug Law.—The supreme court of Ohio says, in *State v. Hutchinson*, Feb. 2, 1897, that the United States Pharmacopeia is adopted by the statute of that State against the adulteration of food and drugs as an authoritative compilation, comprising accepted and known articles of drugs, with a description of their characteristics and qualities, and an approved standard of their strength and purity. Whisky is recognized by that name in the pharmacopeia, where its proper standard of purity and strength is laid down, and, therefore, the court holds, is a drug, within the meaning of the pure food and drug statute. Moreover, it maintains that the provisions of the statute relating to the sale of drugs are not limited in their application to sales by druggists and pharmacists, nor to sales for medicinal or pharmaceutical use; but they extend to all persons, without regard to their vocation, and make no distinction on account of the use intended to be made of the article. This renders the sale of whisky which is adulterated, within the meaning of the statute, an offense against its provisions, though it be sold as a beverage or commercial commodity, and by one who is neither a druggist nor pharmacist. And while the statute referred to is mainly designed for the better preservation and promotion of the public health, the court holds that it is also directed against frauds resulting from the sale of inferior articles for prices which entitle the purchaser to those that are of the required standard.

Congenital Obliteration of the Esophagus, with other Malformations. Bowes (*British Medical Journal*, March 6, 1897, p. 586) has reported the case of a female child, born at term, after a normal labor, the fingers of whose hands pointed upward toward the elbows. The thumbs and both radii were wanting. At rest the outer side of the hand (that is the index-finger and its metacarpal bone) rested against the forearm; but by manipulation the hands could be brought down at right angles with the forearm, but no further, and there was great resistance to supination. The ulna in each arm was a little curved and seemed shorter than normal. On the third day when the mother's breasts had filled with milk, it was noticed that the milk sucked by the child in nursing returned through the nares. No cause for this could be seen in the child's mouth and the progressive wasting led to a suspicion of esophageal obstruction. The use of the bougie was abstained from on account of frequent attacks of cyanosis with much choking, from which the child suffered. The child eventually died on the thirteenth day, and on postmortem examination the upper part of the esophagus was found to consist of a mere cul-de-sac extending about three-fourths inch below the level of the larynx, while the lower part, communicating with the stomach, opened into the trachea close to its bifurcation. The cardiac interventricular septum was deficient in its upper part.

Uric Acid a Factor in Hay Fever.—Dr. Norton L. Wilson of Elizabeth, N. J. (*N. Y. Medical Journal*), believes that in the production of hay asthma there are three important factors: 1, the predisposing constitutional condition; 2, an external irritant; 3, a pathologic condition of the nasal mucous membrane. He asks, a neurosis being present, may not the condition be

due to uric acid irritation, since neurasthenia and lithemia go hand in hand? External irritants, such as the emanation from certain plants, dust, odors, pollen or any other mechanical irritant may be superadded disturbers, so also polypi, spurs or hypertrophies may constitute the third factor. During the attack he concludes that it is better to free the blood from uric acid by the administration of an acid. "Aromatic sulphuric acid or phosphoric acid acts very well. After freeing the blood, gradually extract the uric acid from the tissues by two or three grain doses of sodium salicylate (given three times a day), cut off the acid-producing foods, such as meat, beer, wine, cider, lemonade, etc." Look after hygienic measures, polypi, etc. Begin the crusade against uric acid six weeks or two months before the attack. For local relief Dr. Wilson advises menthol and camphor in liquid albolene sprayed into the nostrils. Where this method is intolerable he would use a 6 or 10 per cent. solution of cocaine and then coat the turbinate region with a thin film of flexible collodion. For the itching of the conjunctiva he would use hot water or yellow ointment. He claims, however, to have hinted rather than given any definite plan of treatment. As regards the asthmatic symptoms three of his patients have suffered quite as much as in former years, but in the next season he shall begin earlier and hopes thereby at least to mitigate their symptoms.

Experts May be Cross-examined from Books.—Although the contents of scientific books can not be read to a jury for the purpose of proving the facts or establishing the deductions stated in them, the appellate division of the supreme court of New York holds, in *Egan v. Dry Dock, E. B. & B. R. Co.*, Dec. 1, 1896, that whenever a person holds himself out as an expert witness, and undertakes to give his opinion upon any scientific matter, it is not only proper to examine him as to the ground of his opinion, but his qualifications as an expert may be tested upon cross-examination in any way which will enable the jury, who are to pass upon the weight to be given to his testimony, to judge intelligently about it. For that purpose, the court says that it is perfectly proper to ask him whether or not the opinion he has expressed agrees with the opinion of other people who are conceded to be learned upon the same subject, because, if an expert witness admitted that the opinion which he expressed was contrary to the opinion which was held upon the same subject by other men who were acquainted with the same science, it might, unless the reasons which he gave for his opinion were satisfactory, tend strongly to detract from the weight which that opinion would otherwise receive. For the same reason, if the witness admitted that text writers of acknowledged authority had expressed opinions contrary to that one which he gave in regard to the matter under examination, that might go to detract from the weight to be given to such testimony. Therefore it has been the custom, at least in the State of New York, to call the attention of expert witnesses, upon cross-examination, to books upon the subject, and ask whether or not authors whom he admitted to be good authority had not expressed opinions different from that which was given by him upon the stand. The reference to books in such cases is not made for the purpose of making the statements in the books evidence before a jury, but solely for the purpose of ascertaining the weight to be given to the testimony of the witness. The extent to which such examinations may go is very largely at the discretion of the court.

The Alleged Origin of Life Insurance.—Under the title of "How Life Insurance was Suggested," the *Insurance Post* publishes the following: A game of cards suggested the system of life insurance. More than two hundred years ago a Flemish nobleman attempted to divide equitably the money staked upon an interrupted game of chance. He was assisted in the task by a Jesuit priest, one of the most accomplished mathematicians of any age. Pascal solved the problem, and in doing so enunciated the "doctrine of probabilities," or laws governing insurance of all kinds. The theory is illustrated by the throwing of dice. When a single die is thrown the chance of throwing up an ace is precisely one out of six, or one out of the total number of sides or faces. In a large number of

throws the chances are in the same proportion. From this Pascal laid down the proposition that results which have happened in any given number of observed cases will again happen under similar circumstances, provided the number be sufficient for the proper working of the law of average. The life of a single individual is one of the greatest uncertainties, but the duration, or rate of mortality, of a large number of individuals may be depicted with great accuracy by comparison with the observed results among a sufficiently large number of persons of similar ages and occupations, and similar to climatic influences.

Election of Officers.—At a recent meeting of the Western Ophthalmological, Otological, Laryngological and Rhinological Association the following officers were elected: President, B. E. Fryer, Kansas City, Mo.; first vice-president, J. Elliott Colburn, Chicago, Ill.; second vice-president, F. M. Rumbold, St. Louis, Mo.; third vice-president, A. E. Bulson, Jr., Ft. Wayne, Ind.; secretary, Hal Foster, Kansas City, Mo.; treasurer, W. L. Dayton, Lincoln, Neb. The next annual meeting will be held in Chicago, Ill., on April 7 and 8, 1898.

A Rare Variety of Congenital Occlusion of Duodenum and Rectum.—Hess (*Deutsche medicinische Wochenschrift*, April 1, 1897, p. 218) has reported the case of male child, born three or four weeks before term, without an anal orifice and unable to pass urine. The prepuce of the penis was represented by a thin, tense, discolored membrane covering the orifice of the urethra and on rupture of which urine escaped. The bladder was apparently enlarged. At the insertion of the scrotum into the perineum the skin was thrown into the slight stellate folds suggestive of a rudimentary anus. Vomiting occurred and the child was unable to take food. In the hope of establishing an outlet from the bowel the pelvic tissues were divided through the perineum but the rectum could not be reached in this way. The establishment of an artificial anus was deferred until the following day, but hemorrhage took place from the wound already made and amid signs of exhaustion death took place. On postmortem examination the stomach was found to be practically normal, with a well-defined pylorus. Continuous with the latter was a large blind sac almost equal in size to the stomach, but evidently the first part of the duodenum. Into this emptied the common bile-duct. There was, however, no communication with the remainder of the intestine. In the situation where the duodenum normally passes beneath the mesentery the continuation of the bowel was found, being attached to the peritoneum by numerous adhesions. The bowel at this point was of smaller caliber than farther on and into it emptied the pancreatic duct. The remainder of the small intestine exhibited no peculiarity. The large intestine was somewhat dilated and terminated in a fibrous band at the level of the bladder, to which it was attached. This portion of the bowel contained meconium, in which the presence of biliary matters could be demonstrated. The walls of the bladder were thickened and adherent to the anterior abdominal wall. In explanation of the malformations present in this case the occlusion of the rectum is attributed to a not uncommon defect in development, while that of the duodenum is attributed to twisting of the bowel at this point and consequent separation of the parts on either side of the constriction.

New York.

THE AMBULANCE SYSTEM IN THE GREAT PARADE.—The formal surrender to the city on April 27, of the mausoleum by the Grant Memorial Fund Committee was a successful procedure. The day was cold, cloudy and marked by the prevalence of very high winds. Only a few trivial accidents occurred and they were mostly due to horses frightened by applause or flying hats and programs. The estimate that the procession mustered 60,000 men is at least approximately correct, but the ambulance system was so perfect in detail that it could afford relief in three minutes to an individual dropping from the ranks or in half an hour could extricate a crowd from a collapsed stand. It is well to add that the spectators were, as is usual in American cities, in the best of humor and the police, fire, military and public parks departments were in harmony as well as under the best discipline.

Detroit.

AT A REGULAR MEETING of the Wayne County Medical Society, held on Thursday evening, April 29, Dr. S. O. Kulick read a paper on the subject of "Antitoxin in Diphtheria." The author of the paper stated that his first treatment of diphtheria by antitoxin was begun somewhat experimentally when he was called to see a pair of twins suffering from the disease. These babies, the author stated, were as near alike as any two children could be, so he determined to use the antitoxin on one case and give iron and potassium chlorate to the other without using antitoxin. Accordingly he injected 1000 units hypodermically in Case No. 1, and prescribed for No. 2 a mixture of iron and chlorate of potash. The result was that case No. 1 was decidedly better on the third day, while case No. 2 did not show any decided improvement until the thirteenth day. This was a strong argument to the author in favor of antitoxin and he accordingly determined to use it thereafter. He has done so, with the following results: Out of fifty-four cases treated three died. Two of these died within three hours after his first visit, from laryngeal croup. Intubation had been advised but had not been accepted. The third death was that of a child who had been sick three days when the doctor was called. The patient had been treated by another physician with calomel and was salivated. The case was malignant. Fifteen hundred units of antitoxin were injected and the iron mixture was administered *per os*. Peroxid and other antiseptic treatment was given the nasal passages. On the fifth day the membranes were shrunken and black and the nose bled freely. He died on the ninth day. Antitoxin had been used about every sixteen hours for several days. In this case it failed to benefit. The author of the paper related the history of another case, that of a girl 5 years old who had been about three weeks sick with measles before he was called. The nose and pharynx were filled with pseudo-membrane. Fifteen hundred units were injected, repeated again in twelve hours and again on third day. On the fourth day stenosis of larynx was so great that the patient became suffocated. The doctor having nothing else at hand, inserted a catheter into the larynx and was gratified to see the patient begin to revive. In forty minutes the child became conscious and began vomiting. He removed the catheter, when she immediately vomited up a large mass of membrane. She went on to complete recovery. In none of his cases did he find any untoward effect from the use of the antitoxin, and in all but the few cases mentioned the injection was followed by a very noticeable change for the better in a few hours. The doctor uses the iron mixture in all cases as adjunct to the antitoxin and washes out the nares. Dr. Gordon gave the history of a case of puerperal eclampsia after childbirth. He had been called hastily to see the case and found a doctor (?) in attendance, who he afterward learned belonged to the school of Christian science healers. The woman was in convulsions, which had been so severe that the right arm had been dislocated at the shoulder. The Christian science gentleman sat there looking at his patient quite unconcerned without making any other attempt than that possibly of silent prayer to relieve the spasms. Dr. Gordon immediately used chloroform, morphin and veratrum viride. As soon as possible he reduced the dislocation. The woman made a good recovery.

THE DETROIT MEDICAL AND LIBRARY ASSOCIATION at its regular meeting Monday, April 26, listened to an interesting paper by Dr. F. L. Newman, entitled, "Incontinence of Urine in an Adult, with Report of a Case." In presenting his paper the doctor lamented the fact that for the last ten years there had only been one or two papers on this important subject in all of the leading medical journals of our country. He touched particularly upon incontinence of urine in young girls, commenting upon the treatment, taking in electrolysis, hygiene, massage and the treatment with different drugs. In speaking of the surgical treatment he noted the stretching of the urethra and the different operations upon the clitoris. He cited different cases which had been under treatment for one year and longer by the different methods. The electrolysis had been carried out with great thoroughness, locally in contact with the urethra or per vaginal route. He described one case, as a typical example of several cases he had seen and told of what treatment had been used, the whole line of medical and some surgical procedures. In conclusion, the author, while not offering any line of treatment himself, said that the profession at large was not able to cope successfully with this difficulty; that most cases of nocturnal incontinence are due to the hypertonicity of the urethra muscle, and in the variety where there is an atonic condition the treatment is least promising.

THE STATE OF MICHIGAN now has another law added to its list of "medical" laws. The "osteopathy" bill was introduced by Senator Barnum of Grand Rapids, Feb. 24, 1897, taken up March 18, referred to the committee on public health, reported by the committee March 19 and has become a law, being signed by the Governor the day after it passed the House of Representatives. In the Senate the bill passed by almost a unanimous vote. In the House the vote was 73 in favor, 0 against. The text of the bill is as follows:

A Bill regulating and licensing the practice of osteopathy in the State of Michigan.

SECTION 1.—The People of the State of Michigan enact, That any person having a diploma regularly issued by the American school of osteopathy of Kirksville, Mo., or any other legally chartered and regularly conducted school of osteopathy, who shall have been in personal attendance as student in such school for at least four terms of not less than five months each before graduation, shall be authorized to treat diseases of the human body according to such system without the use of medicine or surgery, after having filed such diploma for record with the clerk of the county in which such person proposes to practice, and having filed with such clerk an affidavit that the diploma is genuine, and that he or she is the person to whom the same was issued, and that all provisions of this act were fully complied with before the issuing of such diploma; whereupon the clerk shall record such diploma in a book to be provided by him for that purpose, and shall indorse upon such diploma the date of filing and recording the same, for which he shall receive from such person a fee of one dollar. SECTION 2. Any person who shall practice or pretend or attempt to practice the system, method or science of osteopathy in treating diseases of the human body within this State without having complied with the provisions of this act shall be deemed guilty of a misdemeanor, and upon conviction thereof, shall be fined in a sum of not less than fifty nor more than one hundred dollars for each offense: *Provided*, That nothing in this act shall be construed as prohibiting any legally authorized practitioner of medicine or surgery or any other person in this State from curing or relieving disease with or without drugs, or by any manipulation by which any disease may be cured or alleviated.

THE PUBLIC SERVICE.

Army Changes. Official List of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from April 24 to 30, 1897.

Capt. Frank R. Keefer, Asst. Surgeon, U. S. A. (Washington Bks., D. C.), is granted leave of absence for four months and fifteen days, to take effect on or about May 27, 1897, with permission to go beyond sea.

Change of Address.

Anderson, B. C., from Galesburg to 502 Seventh St., Rockford, Ill.
Bennett, Alice, from Thomasville, Ga., to Wrentham, Mass.
Bean, W. B., from Latour to LaGrange, Ark.
Current, O. E., from Albany to Farmland, Ind.
Cool, R. H., from Oakland to 300 Stockton St., San Francisco, Cal.
Cook, J. F. D., from Chicago, Ill., to Doland, S. Dak.
Crawford, S. K., from 471 S. Paulina St. to 440 S. Hermitage Av., Chicago, Ill.
Dental Review, from 66 Madison St. to 96 State St., Chicago, Ill.
De Long, W. H., from Emporia, Fla., to Emporium, Pa.
Elmer, E. O., from 61 Francis Av. to 641 Park St., Hartford, Conn.
Freudenthal, W., from 943 to 1003 Madison Av., New York, N. Y.
Gerhard, G. S., from Phoenix, Ariz., to Ardmore, Pa.
Gapsen, Clarke, from Kankakee to 641 Boulevard Pl., Chicago, Ill.
Krausgrill, D., from Terre Haute to Chesterton, Ind.
May, L. R., from 235 State St. to 6605 Stewart Av., Chicago, Ill.
Pry, E. T., from Douglas to Pine Bluff, Ark.
Perkins, D. S., from 711 Genesee Av. to 1273 Euclid Av., Cleveland, Ohio.
Potts, C. N., from Colorado Springs to Silverton, Colo.
Scates, D. W., from Waco to Waxahachie, Texas.
Todd, F. Walton, from Camp Capitola to Occidental Hotel, San Francisco, Cal.
Watson, F. W., from Tiptonville to Union City, Tenn.

LETTERS RECEIVED.

American Sports Publishing Co., New York, N. Y.; American Therapeutic Co., New York, N. Y.; Ashby, T. A., Baltimore, Md.
Bashore, Harvey B., West Fairview, Pa.; Boulanger, P. P., Quebec, Canada; Belitz, A., Evanston, Ill.; Borland, E. B., Pittsburg, Pa.; Barnes, F. H., Stamford, Conn.; Biddle, James G., Philadelphia, Pa.; Bell, Samuel, Newberry, Mich.
Chapman, O. S., Minneapolis, Minn.; Cain, J. S., Nashville, Tenn.; Carey, A. W., Wild Rose, Wis.
Elliott, A. R., New York, N. Y.
Ferguson & Goodnow, Chicago, Ill.
Gould, George M., Philadelphia, Pa.
Home for Inebriates, Stamford, Conn.; Hotel Walton, Philadelphia, Pa.; Hare, H. A., Philadelphia, Pa.; Hunt, Mary H., Boston, Mass.; Holmes, Frank W., New York, N. Y.; Hummel, A. L., Adv. Agency, New York, N. Y.
Irwin, J. L., Detroit, Mich.
Knopf, S. A., New York, N. Y. (2); Klein, Henry, Chicago, Ill.
Langdon, Stanley H., Norwood, Ohio; Lord & Thomas, Chicago, Ill.
Miller, J. H., Pana, Ill.; Mulford, E. R., Mokena, Ill.; Montgomery, E. E., Philadelphia, Pa.; McMurtry, L. S., Louisville, Ky.; Medical Dept., Tulane Univ., New Orleans, La.; Mullen, T. R., Marcus, Iowa; May, W. L., Guin, Ala.; Mulford, H. K. Co., Philadelphia, Pa.
Parker, W. T., Groveland, Mass.; Pusey, Wm. Allen, Chicago, Ill.
Reed, R. Harvey, Columbus, Ohio; Rardin, J. S., Portsmouth, Ohio.
Savage, G. C., Nashville, Tenn.; Stone, C. L., Chicago, Ill.; Skinner, W. T., Glasgow, Del.
Taylor, J. A., Montpelier, Ind.
Van Note, Wm. B., Lima, Ohio.
Wright, A. L., Carroll, Iowa; Wiley, C. R. (Mrs.), Vineland, N. J.

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ADDRESSES.

TENDENCIES IN MEDICINE.

The President's Address to the Association of American Physicians,
delivered at Washington, D. C., May 4, 1897.

BY J. M. DA COSTA, M.D., LL.D.

PHILADELPHIA.

It is expected of the President of your Association that he offer some remarks as introductory to the scientific papers that are to occupy your attention, and every presiding officer has done so, expressing himself on subjects for some time in his mind or to which he has been recently giving heed. Thus, diversified and excellent addresses have been made, some treating of medicine and its aims in a broad philosophical spirit; some reviewing its achievements; others giving most erudite and valuable historical information. In my turn I ask that you will indulge me if I present a few thoughts on what seem to me in our science the best tendencies of the day, as well as on certain causes that, with all the wonderful work being done, and with the immense energy and industry of the devoted laborers in four continents, retard its still broader and steadier development.

The greatest advance of our time—it seems trite to mention it to such an assembly—is the ardent study of the causation of disease. Students have speculated in all ages on the causes of disease; but these have been, for the most part, half-hearted speculations, made so by the feeling of impossibility of reaching a conclusion, or dogmatic assertions that, believed in for a time, soon became of interest only to the curious searchers for fragments on the shelving beach of science. Now, the recognition of minute organisms, their study, their artificial culture and modes of growth, their secretions, their chemical characters, their likes, their antagonisms, have let us into the secrets of another world and are showing us the way in which infective maladies originate and the laws they obey. We are looking for infection in every disease; we are often keenly pursuing it where it probably does not exist; at all events, not in the shape of bacteria, which in our day we accept as a term almost synonymous with infection. A sense of causation, formerly deficient, has been replaced by a most acute sense, and by a desire for unrelenting search. What is still greatly needed is, I think, an appreciation of how infection may light up slow processes and lead to structural complications, such as are found, for instance, in the exanthemata. We have also much to learn of bacteria that exist normally becoming abnormal in certain perverted conditions, either in manifold growth, as happens with the bacillus coli communis, or in character. What we consider the cause may thus be only the consequence of disease. The soil and its forces, too, are to be studied and critically examined.

But the power of this little, invisible world is

mighty. It is told of Napoleon that he could never understand the fame of Cuvier. He spoke of him, with something like contempt, as only occupied with small things. Yet smaller things conquered even him, the great conquerer. It was the plague bacillus, not Sir Sidney Smith, that compelled him finally to leave Syria and give up his dream of subduing the East like another Alexander.

Other than mere bacteriologic work forms a most valuable part of the contribution of the laboratory to the investigation of disease, and in the last decade has placed this investigation on a much higher plane. The microscopic and chemic examinations of the secretions and excretions and of the blood have become our daily duty. The chemic examinations, which, dealing, as they may be made to do, with the constantly varying problems of life in disease, have been temporarily overshadowed by the ardor of bacteriologic research, will, with widening fields, resume their former prominence. The time is indeed at hand in which, without the ready access to a laboratory manned by experts in all these lines, or the association with a trained laboratory assistant, no physician can do his patients, himself, or his science justice.

Closely connected with the laboratory investigation of disease, especially with its chemic investigation, is the study of the effects of the products generated by decomposition of albuminous matter, producing, when developed in the dead body, the substances known as ptomains, when in the living body as lenkomaines. The recognition of these agents, so frequently poisonous, is explaining many obscure processes, is leading to new and close scrutiny of others and to search after means of neutralizing their toxic influence. It is with pride that this Association can view the history of this branch of research, for the fruits it has yielded have been largely gathered by the efforts of some of its own members.

Another of the best results of the achievements of our time is seen in the effacement of the strict division between medicine and surgery, or rather in the recognition that there are no lines separating them, but lines becoming continuous, on which joint action proceeds. We see this in the whole clinical history of appendicitis and its progressive unfolding; the more the medical part is studied and rendered precise, the more exact become the indications for operation and the appreciation of the chances of this. The same may be said of abscess and of tubercle of the kidney; of the investigations of the character of effusions into pleural, or pericardial, or peritoneal cavity; and of many other well-known conditions that surgeons and physicians are now studying together. This new tendency is sure to counteract not only the excessive specialism of our day, but to give us once more broader physicians and surgeons, taking the keenest interest in each other's work.

One of the greatest improvements in our generation

is in the much better appreciation and larger use of hygienic means, of systematic exercise, of baths, of regulated rest, of out-door life. Then, too, when medicines are given they are much more generally used singly, with a view to their direct effect, and not in excessive combination. Moreover, the substitution of extracts and of active principles for many of the nauseous drugs has taken away the terror and disgust with which medicines were regarded. It is, from a pharmacæutic point of view, at least, no longer a punishment to be ill. The satire of Molière is lost to the playgoers of our generation. The highly appreciated answer of the Bachelor of Medicine, when examined for his doctor's degree, that the remedies are always "Clysterium donare, postea seignare, ensuite purgare," would fall at present on totally unsympathetic ears; for now there are delightful capsules and triturations, and pills of esthetic colors—"dear little pink pills," as I have heard them called, though the dear little pills happened to contain strychnin. And the boy of the period is not tempted to view an open window as the only means of getting rid of the hated bottle; he may, indeed, want to take too much of it, because with all its potency, it is sweet and pleasant.

The tendency of our time is to endeavor to overcome disease, and not merely to observe and palliate its ravages. We are going back to the doctrines of our forefathers, abandoned for a time because, with an expanding knowledge from the study of pathology, the means they possessed were found to be, for the most part, totally inadequate. Thus there was a period of nihilism and expectancy in therapeutics. But so-called rational expectancy is but a confession of impotency. Now the tendency is once more aggressive. We are trying directly to choke or to subvert morbid action, and doing this partly through the old transmitted remedies of former generations, but employed with a better understanding of their real qualities, partly by new agents furnished by chemistry and by constant research in other fields. Of the former, the freer and more scientific administration of digitalis may be taken as an illustration; and the use of mercury, though in a different manner, is infinitely more prevalent than it was some years ago. To bleeding, too, I, for one, believe that we shall return; only it will not be the mere abstraction of blood perverted by disease, but there will be, with this, immediate attempts at the reconstruction of the blood by supplying it with the proper saline fluid and other ingredients. In the second class, the bromids, chloral, the nitrites and nitroglycerin are prominent, as is a whole group of antiseptic agents. Many of these—it is especially true of the nitrites—have come to us from the physiologic laboratory. One of the most interesting attempts at radical therapeutics is the endeavor to counteract the bacteria of disease by substances that form in the body which neutralize their toxic products. This antoxin treatment is brilliant and hopeful, and is being tried in many affections, preëminently in diphtheria, in tetanus and in erysipelas. It can not be said that as yet it has led to any great results, though the evidence is decidedly in its favor in diphtheria. It seems scarcely worth while to push it in erysipelas—at least in erysipelas that the physician sees—for the mortality in this is, under any treatment, but very slight. How valuable the antitoxins will prove as preventives remains also to be solved. More productive thus far has been the use of attenuated virus, as, for instance, in Pasteur's

treatment of hydrophobia; the influence in cholera, in yellow fever, in bubonic plague, is now under keen observation. The effects on tuberculosis must be taken thus far as the expression of hope rather than of fact. The next decade will prove whether the X-rays, which are making such wonderful additions to diagnosis, will also have their therapeutic triumphs. In it, too, we may look for some striking developments of suggestion, not only as explaining mental and morbid processes—what more extraordinary and thought-starting, for instance, than the recently tested production of special cutaneous affections by it?—but as a harnessed therapeutic force. All this is in the line of present investigation, and there will be much disappointment and wasted labor in particular points, but it is not too sanguine to believe that there will be also a solid outcome which will immensely advance scientific medicine.

There are, with all these tendencies of our day that work for good, some which, whether growing out of them or whether the exaggeration of old hindrances, have to be, in the interest of true science, strenuously guarded against. One that is very evident is the tendency to immediate generalization. The discovery of every new bacterium is supposed to instantly revolutionize the science of medicine and is announced with all the air of the unexpectedness of genius. Fortunately or unfortunately, one may be discovered every day, and a man may thus find himself with three hundred and sixty-five opinions on the tenets of his art in the course of the year; but this would not daunt the enthusiasm of the insatiate generalizer:

"Ten thousand great ideas filled his mind,

But with the clouds they fled, and left no trace behind."

Fixity of opinion in medicine is a virtue, if the mind remain open to proof and be in sympathy with advance; and it is this freshness of mind, joined to good judgment, through which is best estimated the true value of the many facts constantly discovered in an advancing science like ours. Clinical medicine, indeed, must continue to be the final court of appeal for the purposes of the practitioner of medicine. Before the court will come and be listened to with sympathetic interest, as eloquent advocates, those who are presenting the claims of special studies. But these must be well supported and judged in their bearing on the whole before new laws are laid down. And we see that the more we investigate and the more we know the more will old questions assume different aspect, the more they will have to be retested; there is no finality—there can be none—in medicine. When the last word is spoken we shall have a perfect science; until then there must remain for us a certain amount of empiricism, especially in treatment.

There is no doubt that, considering the amount of work done and recorded, medicine—especially clinical medicine—would be much more advanced if the records were differently made, and were not so vague as they often are. What is more provoking than to see constantly such loose statements as this: "The examination was negative." Negative as to what? If applied to the action of an organ, as to what part of its action? If to secretions, to what part of their constituents? How much easier to say, even if it have been an incomplete examination, for what exactly they were investigated, and how much more certain to be of use for comparison in similar cases. Worse still is it with the records of treatment. This is an ever-recurring expression: "The usual treatment was

employed." I saw this in a recent volume of *Transactions* with reference to the congestion of the lungs in typhoid fever. What is meant? Is there such a thing as a fixed treatment for it the world over? It might mean dry cups to some; ammonia, turpentine, digitalis, or yet different things to others. Then the utter absence of mention of doses makes it impossible to say whether any remedy was fully tested, or to compare its action when given in small or in large quantities. For very many purposes records, as published, are valueless; in truth, they impede progress, and a little care would make it otherwise.

Then there are records which, made even to the full limit of industrious exhaustion, are so badly and confusedly presented that they bury themselves from the start. A little more time spent on their expression might make them absolute and convincing. It would be, indeed, well if in all our professional literature there were something more of the learning of the scholar and the clearness of the literary artist; men who followed the master, Harvey, in other points besides profound and productive research. A few more Watsons and Pagets, Trousseaus and Hyrtls would make knowledge easier to obtain, more constantly with us, forming much more a part of our daily life and application. It is true that if, in our science, we must choose between profound inquiry and its clear enunciation, we shall choose the former. It is a pity, and it is unnecessary, that there should be any occasion for a choice. The French, with their lucidness in scientific matters, set all other nations an example. The countrymen of Goethe, foremost in investigation, following his avowed contemptuous indifference to style, are the great sinners against clearness and vivid expression. They evidently believe in the reverse of the thought with which Johnson excused the inaccuracies in Goldsmith's "Animated Nature," that, if he once began to make experiments, life would be too short for him to get his book written.

One more tendency of the day let me notice, which is not for good, and undoubtedly retards progress. It is the excessive publication of half-knowledge, of doubtful fact and of loose inquiry. The propensity for authorship is an old disease, but it has assumed a development commensurate with the prodigious development of everything else in the age in which we live. It is harmless in journalism, less so in literature, but positively dangerous in science; for it fills this with immature or false observation, and takes the time of others to remove the obstructions placed in the stream of knowledge. With some, want of sufficient training leads to it and absence of inquiry into what has been already ascertained; in others, in proceeds from a girl-like genius that, in place of letter-writing, pours itself out in medical periodicals, fascinated by penning sentences full of pseudo-scientific commonplace. It is far from being a disease only of the untried or ignorant; famed workers, too, may succumb to it, listening, perhaps, to the entreaties of friendly and sleepless editors. Who knows that it is not, after all, a physiologic function, giving full play to brain-centers in very rare use—centers situated in what Oliver Wendell Holmes has called the idiotic area of the brain.

But whatever the retarding influences, they are not to any extent checking the onward course of medicine. The numerous inquiries, the keen experimentation and close research, the general thoughtfulness,

are developing a resistless scientific method: resistless because it is true. Medicine is no longer an art founded only upon empirical observation, no longer a purely deductive science; it is becoming also an inductive one. The great body of the community is touched with friendly interest in watching its growth. With the advance of the scientific method special systems are crumbling; future ones are impossible. There can be no more pathies; the general intelligence will prevent it; for educated men are recognizing the broad base on which medicine is resting, and that truth is sought in it by the same means that are used in physics and in the highest development of other sciences. In our midst with all this, conviction is becoming clearer, purpose waxing more resolute. We see, without pang, castles which have crowned rocks being turned into dismantled memories, because we know that something stronger, that will defy all time, will stand ultimately on the old commanding sites. Everyone of us must work until he discovers in his work his true self, and then aid with what he finds he can do best in helping all. With every one of us there is a mission to assist the general advance.

THE ANTISEPTIC TREATMENT AND THE LIMITATION OF CLIMATIC TREAT- MENT OF PULMONARY TUBERCULOSIS.

President's Address Delivered at the Meeting of the American Climatological Association, Washington, D. C., May 4, 1897.

BY E. FLETCHER INGALS, M.D.

CHICAGO.

Gentlemen of the American Climatological Association:—In assuming the duties of your presiding officer, I again thank you for the high honor which you have conferred upon me and wish to congratulate you upon the status of this Association. From the origin of this Association to the present time it has steadily increased in numbers and grown in influence until at present its members are scattered throughout the length and breadth of this land and exert an untold influence for the advancement of science, the alleviation of suffering and the prolongation of human life. In 1884 this Association numbered forty-two members. Since that time we have had enrolled, all told, 191 names. Of these, ten have been dropped, thirty-five have resigned and thirty-two have finished their work. During the year just passed we have been called upon to mourn the loss of one of our fellows, Dr. Jacob Reed, of Colorado Springs. Dr. Reed had lived in Colorado Springs over twenty years and was much respected and beloved by his acquaintances. He was a man of strong individuality and an active, earnest physician who will be greatly missed. Today we number 114 active members and the council will present several new names for your consideration.

When this Association was first organized the climatological possibilities of the United States were almost unknown: since then the industry and enthusiasm of our members, aided much by the accurate data obtained by the United States Weather Bureau, has demonstrated the fact that within our borders may be found every variety of climate possessed of value in the healing or prevention of disease. Twenty-five years ago there were a few more or less noted health resorts in the country, where invalids repaired of their

own volition, or were occasionally sent by the few physicians familiar with the locality; but numerous places where invalids may now obtain satisfactory accommodations in the best atmospheric conditions were unknown. That the members of our Association have done much in searching out the more valuable resorts and in securing suitable accommodations for patients can not be gainsaid, and that we have correspondingly added our share to the great work of prolonging human life and mitigating suffering, no one can doubt, but that very much is yet to be learned, that the deductions from our observations are still in many instances crude, and that we have often been too enthusiastic in our hopes for individual localities, can not be denied; yet, as a rule, our members have been reasonably conservative in their estimates of the value of climate and have patiently and conscientiously studied and labored for the advancement of science and the benefit of their patients.

Over-estimation of the value of climate, as well as of drugs, often occurs through inexperience or over-enthusiasm of the physician, and usually the most laudatory articles are from the pens of those having comparatively little information. We all grow more conservative as the years go by and most of us learn that the deductions from some, even of our own, earlier observations are erroneous; therefore, it not infrequently happens that the careful physician finds himself unable to accept the conclusions even of one who may have been painstaking and conscientious in his work. The physician must needs wait two or three years for any climate or any medicine to be tested before he can form a fair estimate of its value. It must be remembered that the varying conditions affecting limited observations may necessarily militate much against the conclusions drawn from them and, therefore, one who is slow to accept new hypotheses should not at once be put down among ancient geologic specimens.

The purpose of this paper is not to build up new theories nor yet as an iconoclast to tear down where we are unable to replace, but to draw the attention of this Association and of those who may read our proceedings, to a few important facts which seem established by experience.

In the title of this paper I have referred to the antiseptic treatment of pulmonary tuberculosis which, in the light of our present knowledge of the origin of the disease, seems to me to have a specific tendency to check its progress, though I would in no way minimize the importance of tonic and supporting treatment and of good hygienic surroundings.

Since the Koch bacillus was recognized as the ultimate cause, that under favorable conditions, produces tuberculosis, there have been unceasing experimentation and careful clinical observation to find some agent or agents that would destroy the microbes without injury to the tissues upon which they rest or within which they may be imbedded. Contemplating this long line of experiments and scrutinizing the vast array of statistics, we are forced to admit that it has not been demonstrated that any remedy, or any class of remedies, has the power to destroy this bacillus when ensconced in the human body, with any degree of certainty; yet when we carefully analyze the various methods of treatment that have been more or less successful in checking the progress of the disease, we nearly always find that they have been of a distinctly antiseptic character.

We must remember that, although the bacillus is the ultimate cause of tuberculosis, it is innocuous excepting under favorable conditions, and therefore those supporting measures that enable the tissues to pen up or to bar out this pestilential microbe must receive a large part of the credit for the successful management of any case. The late Austin Flint, in his work on phthisis, stated that very many of the phthisical patients that had recovered were those who had refused or neglected all treatment. This must not be taken as advice to those suffering from tuberculosis to rely upon mental influences and reject the assistance of science, for it is reasonable to suppose that the majority of those who have recovered without any assistance have done so from the sheer resisting force of their vital processes, and that many of those who did not recover relied too long upon the *vis medicatrix nature*, only to find that it failed at the end, while judicious treatment might have saved their lives.

The fact referred to by Austin Flint reminds us that we must be extremely cautious in attributing to any particular remedy the benefit that may occur in any individual patient, or in any series of patients, with consumption; yet typical cases that have been cured, and have remained well under conditions where the majority of patients would have steadily grown worse and died, may justify us in believing that the remedies used were of some value and that a more perfect application of the same may ultimately lead to even better results. I know, and I wish that the general profession could realize as it should, that no case of consumption can be classed among the cured in eighteen or twenty months and that even many who live for years can never properly be called cured. Nevertheless, I hope to show by a few briefly reported cases that betterment sufficient to commonly be termed a cure may often be obtained from antiseptic treatment. From my own experience I fully believe that aside from tonic and nutritive agents, antiseptics are the only medicines that have any power in checking the progress of tuberculosis, and I as firmly believe that when they are thoroughly used so as to bring the system as nearly as possible to a point of saturation they are of great value in a large percentage of cases, if used in the early stage of the disease.

The first case to which I wish to call attention was treated by the Shurly method and reported, with a series of others, to this Association several years ago, but it has acquired additional interest from the time that has elapsed since that treatment, and from the good health the patient now enjoys, though he remains in the same surroundings as when the disease was contracted. In this instance the patient greatly improved under the use of iodine and, later, oil of cloves, with the occasional use of the extract of hyoseyanus, nux vomica and quinin for cough, appetite and digestion. The chief benefit appeared to come from the antiseptics.

Case 1. V. W. J., aged 29, clerk, came to me in February, 1891, complaining of cough and expectoration of three or four weeks' duration, and stating that he had not been well for four or five months. He was able to attend to business, had not lost much flesh, but the pulse was 96 and the temperature 99. He was raising at the time about two ounces of muco-pus daily and had had two moderate hemorrhages in the past few months. There was not hereditary predisposition to phthisis. Physical examination showed diminished motion with high-pitched respiratory sounds over the left apex as low as the second rib, and indistinct subcrepitant rales. The microscope revealed many tubercle bacilli in the sputum. I instituted the

Shurly treatment, injecting from seven to fifteen of the solution of iodine every two or three days. I gave also a bitter tonic. The injections were continued in this way for about four weeks and subsequently once a week for six or eight weeks longer. At the end of eight weeks it was noted that he was doing well, the weight was normal and there was very little expectoration. Subsequently the patient was seen at intervals varying from one or two weeks to three or four months, or a year or more, at times when he had taken cold, or had some special cause of debility, but he was not kept upon any continuous treatment. Two years after he first began treatment, on account of a renewed cold with increased cough, he was given strychnia, with other bitter tonics, and the oil of cloves as an antiseptic. He took the oil of cloves in twenty-five drop doses for about three months, beginning it at a time when he went South for a vacation of five or six weeks and continuing it six weeks after his return, by which time he had gained fifteen pounds and felt so well that he discontinued all treatment. On two other occasions, when he became run down and the disease seemed to be lighting up afresh, he took the oil of cloves with the result, as he believes, of speedily checking the trouble.

Other remedies consisted of tonics, digestive agents and occasionally hyoscyamus as needed. He was out of the city on two or three occasions, but only for a short time. In January, 1897, when he returned to me on account of a slight cold, he was looking very well, and had had no symptom of tuberculosis for a long time.

Case 2.—The following case was also reported at the meeting just referred to, and as the patient is still in very good health a brief résumé of the history is of interest as it apparently shows good results from the antiseptic use of iodine, although the improvement has been mainly due to climate. I first saw Mrs. W. B. N. in April, 1888, when it was found that consolidation of the left apex extended as low as the third rib; subcrepitan rales extending considerably lower, with a few subcrepitan rales over the upper part of the right apex. She was given tonics and supporting treatment together with inhalations of iodine, under which she steadily improved until the latter part of gestation in the spring of the following year. Shortly afterward she began to decline and steadily failed until in August of the same year when the signs of phthisis had much increased and there was a large vomica in the left lung. She was extremely weak and anemic and her life was despaired of. She was so ill that it seemed impossible to obtain benefit by change of climate, but her friends insisted upon it and took her to California to an elevation of 2,500 feet. During most of her illness she had suffered much from disturbance of the digestive organs, and after arriving in California had what appeared to be an attack of tubercular meningitis; however, she gradually recovered and subsequently went for a few months to an altitude of 3,500 feet, in Texas, and later on to Las Vegas where she remained for a couple of months. At the time she went to Las Vegas I was using iodine according to Shurly's method and at my suggestion her physicians there placed her upon it. During about two months that she remained under the treatment she gained very rapidly and the expectoration greatly diminished. She then went to Colorado Springs where she is still living in comfortable health, though fibrosis has extended well through the left lung. When I first examined the sputum in 1895, it contained many tubercle bacilli. In this case climate undoubtedly should be given the credit for nearly all of the improvement, but although life was saved under the most unpromising circumstances by the antiseptic air of a good climate, yet two periods of especially marked improvement were coincident with the use of iodine, and the improvement was so great that I feel justified in believing that it was aided much by the antiseptic.

Case 3.—In the following case no other treatment was employed than the oil of cloves, which appeared to cause great improvement, but I saw the patient only twice and am unable to ascertain the subsequent history. Mrs. X., about 35 years of age, came to me about two years ago with well marked symptoms and signs of the early stage of phthisis. I ordered for her the oil of cloves in doses ranging from five to twenty-five drops five times daily, and I did not see her again for three or four months. She then returned having lost all of the symptoms of tuberculosis and many of the physical signs. She said she felt perfectly well. The improvement in this instance seemed entirely due to the antiseptic treatment, and the result might safely be called a cure if she still maintains the condition in which I last saw her.

Case 4.—The following case had the benefit of both internal antiseptics and of an antiseptic atmosphere.

Dr. G. C. A., aged 26, had been in good health previous to consulting me on August 18, 1894. He had lost one brother

and two uncles from tuberculosis. Two months before seeing me he had a hemorrhage from the lungs and his temperature ran up to 103. At the time he consulted me his appetite and digestion were good but he had lost twenty pounds of flesh and was having a daily temperature of 100.5 to 103 F. He was coughing considerably and expectorating about one and one-half ounces of muco-pus daily. I found slight dulness at the left apex, low as second rib, with feeble respiration and subcrepitan rales extending down to the fourth rib. Microscopic examination showed many tubercle bacilli in the sputum. Antiseptics were ordered but when I saw him a few weeks later he looked so much worse that I was not at all surprised in a few months to hear the report of his death. However, the report proved untrue, for in November of the same year he had gone to Montana to an altitude of about four thousand feet, where he rapidly improved, gaining fifteen pounds within two months; but when the weather became bad he caught cold and began to fail. Shortly after he went to New Mexico where he again improved. During all this time he had been using guaiacol applied to the surface, and creosote internally. Soon after he arrived in Las Vegas, January, 1896, his cough disappeared and with it the pains which he had formerly suffered in the chest. He soon found that his respiratory capacity was increasing and ere long the difference in the circumference of the chest between inspiration and expiration amounted to five inches and he had gained thirty-one pounds since going to a high altitude. He continued the guaiacol and creosote and also took cod liver oil alternating at times with syrup of the hypophosphites.

This patient is now living in Denver in good health. In this case the almost continuous use of antiseptics was combined with the benefits of a high altitude and dry atmosphere, but the patient attributes much of the benefit to the antiseptics, and I have no doubt he is correct.

Case 5.—In the following case the improvement was apparently due to tonics and alcoholic stimulants. Mrs. D. K. M., aged 25, came to me on Nov. 15, 1895, complaining of pain in the left lung of three months' duration, cough, afternoon fever, dyspnea and loss of strength. She had lost ten pounds in weight in three months. She expectorated a small quantity of thick whitish sputum and about a month previously had raised nearly half an ounce of blood. The pulse when I first took her was 88, temperature normal. There was dulness at the left apex as low as the first rib. Subcrepitan rales numerous at the apex in ordinary respiration and heard all over the left lung on deep breathing. Respiratory sounds were diminished in intensity over the upper half of the lung. Many tubercle bacilli were found in the sputum. She was given moderate doses of nux vomica, hyoscyamus, quinin and carbonate of guaiacol in capsules. She continued these remedies for a year, but it does not appear to me that the doses of guaiacol were large enough to in any way account for her improvement. During this time she took a small glass of whisky before each meal and at bed time, and probably from this cause gained fifteen pounds. A year later, February, 1897, she had gained a few pounds more, was much stronger, being able to walk several blocks a day, coughed very little indeed and that only to clear the throat. Her pulse was reported to be from 84 to 88, but the temperature record I could not obtain. She had a splendid appetite and appeared practically well. This patient went to Manitou, Colo., for ten weeks shortly after she began the treatment and subsequently spent a few weeks in Kansas City, but she was steadily improving before she made these trips. She still takes the whisky occasionally.

Case 6. The following case was uniformly benefited by antiseptic medicines although he also had the advantage of a good climate part of the time. Mr. A. G. A., aged 39, came to me first in September, 1891, complaining of hacking and clearing of the throat for the last three years and hoarseness for the last three weeks and some pain on swallowing. He had lost weight and strength and had experienced five or six hemorrhages from the lungs four months previously amounting to eight or twelve ounces each, as nearly as he could ascertain. He had a poor appetite, and had lost about ten pounds in weight and had suffered from dyspnea upon exertion. His pulse was 72 and temperature normal when I first saw him. The epiglottis and arytenoids were swollen 30 per cent., and the vocal cords considerably congested. There were no distinct sounds over the lungs upon percussion, but there was broncho-vesicular breathing with a few subcrepitan rales extending as low as the second rib in front and to the seventh rib behind. Microscopic examination showed a large number of tubercle bacilli in the sputum. I ordered for him the chlorid of calcium and maltine with hypophosphites, with small doses of cannabis indica and hyoscyamus to relieve cough and nux vomica and quinin to improve the appetite. He went to Colorado where he remained for five months. During

this time and until a month later he continued to take the medicines first ordered. He then called at my office and reported that he had not gained much in weight but had a good appetite and was very well. At this time I ordered for him the oil of cloves in doses of from five to fifteen minims to be taken five times daily. He returned to his home in Northern Wisconsin, where he remained until the following December. He then went again to Colorado for four months and from there returned to his home where he has remained ever since. I first gave him the oil of cloves May 21, 1892, and he took it for sixteen months, half of the time in doses of forty-five drops a day and the remainder of the time in doses of seventy-five drops daily. During this time he had gained about twenty pounds in weight, which he retained until the latter part of August, 1896, when he had another hemorrhage followed by severe gastric disturbance which continued for many weeks. During this attack he lost twenty pounds. In January, 1896, I ordered for him the carbonate of creasote which he took for about sixty days and then went back to the oil of cloves, which he continued to the first of March, 1897, since which time he has taken nothing. He has since then had an attack that he calls gripe and has lost ten pounds more. His appetite is not very good, but his pulse is only 84, temperature normal and he says he feels in fair general health and strength, and has at present very little cough and expectoration. He tells me that he has always improved when taking the oil of cloves, and he attributes most of the benefit that he has received to that remedy.

Case 7.—In the following case the improvement may be attributed to alcoholic stimulants alone. Mr. D. W., aged 47, came to me November, 1894, complaining of having taken cold and having expectorated about five or six ounces of blood in the last few days. He had been feeling poorly for about two weeks. There was a hereditary history of consumption on both sides of the family and he had lost two brothers and two sisters with the disease. His weight was normal, pulse 132, temperature 99.6. Physical examination showed consolidation of the left apex with not very well defined broncho-vesicular breathing and a number of subcrepitant râles. Many tubercle bacilli were found in the sputum. The oil of cloves was ordered for the patient, together with nux vomica, quinin and carbonate of guaiacol, but he appears to have discontinued all treatment after a week or two excepting three to five good drinks of whisky daily. Two years later when I saw him he had gained twenty pounds, the pulse was 102, the temperature normal and there were very slight physical signs of disease. He told me that he felt as well as he ever had in his life. In this instance I am inclined to attribute the improvement to the nutritive and antiseptic properties of the alcohol contained in the whisky. In health the bactericidal properties of the blood are able to destroy the bacilli with which we are constantly being infected; but in the depressed state accompanying actual pulmonary tuberculosis these elements are more or less deficient. If in this condition some antiseptic be introduced in small or larger quantity, according to the condition of the blood, we should be able to make up for this deficiency. If there is any ground for this belief, alcohol is exhaled so freely that it does not seem unreasonable to attribute to it an antiseptic influence in phthisis. The patient did not go out of the city and indeed made no change whatever in his residence or business excepting that he was obliged to take more rest because of great weakness.

Case 8. The following history illustrates the fortunate outcome of a case of tuberculosis without the aid of either antiseptic remedies or antiseptic atmosphere. Although it appeared most unpromising in the beginning, it is introduced with the hope of rendering the reader more conservative in estimating the value of remedies and climates. Mrs. L. B. J., aged 31, came to me in February, 1891, complaining of trouble with the lungs of three years' duration, though she had been worse during the preceding six weeks. There had been consumption on her father's side of the family and she had suffered from inflammatory rheumatism five different winters several years ago. She had a very troublesome cough, especially in the morning, and expectorated about five drams of muco pus during the day, containing some blood at times. She weighed 117, having lost about five pounds. The pulse was 88 and regular, the temperature 100. She had a good appetite but poor digestion. Physical examination revealed dullness over the upper part of the left lung with subcrepitant râles as low as the seventh interspace and the microscope showed many tubercle bacilli in the sputum. She was then ordered moderate doses of cannabis indica and hyoscyamus to relieve cough, nux vomica for her appetite, creasote in small doses and papain for the digestion. She was given also a few injections of the chlorid of gold and soda and of iodine according to Shurly's method, but she objected to it on account of the pain. She

continued internal remedies similar to those first ordered much of the time for about three months and subsequently I only saw her at irregular intervals of several months or a year or more. Four years after she first visited me there were still a great many tubercle bacilli in the scanty sputum, but she had gained flesh and to external appearance was in perfect health. Subcrepitant râles, which at times had been very numerous over the chest, had disappeared. I have not seen her for a couple of years, but my associate saw her upon the street in March of this year and reported that she appeared in excellent condition. After the first three months of treatment she took no remedies regularly, and she has not been out of Chicago for any length of time.

It is unnecessary to cite cases that have been relieved or cured by climatic treatment, because every one who has had much experience in the treatment of pulmonary tuberculosis must have observed many patients who were undoubtedly benefited by change of climate, yet in a large percentage of such cases it is impossible to estimate accurately the real cause of improvement. I have no doubt that in many instances the change of food, of scene and of other surroundings which might stimulate the process of nutrition, has as much to do with the favorable progress of a case as continued residence in a pure atmosphere. This was illustrated in the case of a gentleman who was for several years under my care in the latter part of the eighties suffering from pulmonary tuberculosis, but who without any change of climate maintained a good degree of health that allowed him to attend to business with only now and then a few days' confinement to the house; but at the end of three or four years he began to have hectic fever, to emaciate rapidly and to cough excessively. There were present also numerous pulmonary signs indicating rapid progress of the disease in the lungs. At the time his financial condition was such that he felt unable to go to a different climate, but he obtained the opportunity of making a short trip of only about three weeks to Dakota, from which he returned very much improved. The improvement steadily continued, and in the course of a few weeks more he was as well as he had been for a long time. Subsequently he continued at his business for about four years, then again began to decline and went to the southwest into a dry atmosphere and high altitude, where he again improved for a time, but at the end of a few months he died suddenly from hemorrhage. In this instance certainly very little could be attributed to the pure atmosphere, and we have every reason to believe that the improvement was like that of many other persons whom we every year see gain greatly in mental and physical vigor from short vacations.

If we concede that certain cases may be benefited by a simple change to agreeable scenes and surroundings, we must also admit that certain other cases, when placed in the best climate away from home and friends and under various depressing conditions, speedily grow worse and rapidly decline and die; whereas they might have lived for months, or possibly years, if they had remained at home. Another difficulty in estimating the value of climatic influences arises from the fact that some patients, when they go away from home, continue the same treatment which had been used previously, and therefore it would be unjust to ascribe all improvement to the climatic conditions. Many physicians in favored climates are accustomed to tell patients as soon as they arrive in the pure atmosphere to discontinue all previous treatment; but at the same time some physicians endeavor to impress upon the patient's mind the necessity of yielding

themselves to the climatic influences, with the aid of such remedies only as the exigencies of the physician may demand. I believe that in many cases such advice is most untimely, for if we admit that remedies do any good in unfavorable climates, we must also admit that the same remedies should aid in the restoration to health much more when the patient was placed amid favorable surroundings. I have known not a few who were doing comparatively well at home go to a favorable climate with the result of becoming immediately worse and rapidly declining to death. Some of these I fully believe might have lived much longer if they had not made the trip, and some of them I think might have continued to improve even more rapidly with the trip, if they had continued former remedies.

As I have elsewhere stated, I believe that, all told, about 33 per cent. of patients with pulmonary tuberculosis recover under ordinary conditions, and I think that patients sent early to a high altitude and dry atmosphere have their chances increased fully 50 per cent. This belief is based upon the well-known fact that the records of autopsies show that in 25 per cent. of bodies dying from other diseases than pulmonary tuberculosis, the previous existence of this disease is demonstrated in the apices of the lungs; also upon the oft-repeated statement that a large percentage of those sent early to a good climate recover; and further, upon my personal observation of many cases. After consolidation of the apex of the lung has extended below the third rib, by which time the second stage is generally fully established, I feel that I have ample reason for believing that from 15 to 30 per cent. may be greatly benefited by climate, although life is seldom prolonged more than five or six years. Even after breaking down of the lung tissue has begun, a few may have their lives considerably prolonged by suitable climate. I have no doubt, however, that in the latter part of the disease the fatal result is generally hastened by the fatigue and the mental and physical distress incident to the journey. The physician should carefully study not only the physical, but the social and financial conditions of his patient before recommending a change, and while it is not necessary to say it to the members of this Association, I wish to impress upon others that it is neither scientific nor kind to send patients with consumption indiscriminately to places from which we have simply heard favorable reports. As a rule, in the first stage a warm climate is most salutary, but it is not so important, providing an abundance of sunshine and a dry atmosphere are obtained, although many phthisical patients are better in a southern latitude in winter. It will be found that patients who feel best in winter are likely to be benefited by a comparatively cool climate, the others in a warmer temperature. In the first stages it is desirable, when there are no contraindications, that patients go to an altitude of from six to seven thousand feet, but this is not suitable for persons who are nervous to a marked degree or who have a high temperature, or who have pronounced cardiac disease, emphysema, or laryngeal complications. Laryngeal tuberculosis is generally markedly aggravated by high altitudes. Hemoptysis is not, as is often supposed, a contraindication to a sojourn in a high altitude. On the contrary, bleeding is often promptly checked by this change, and those who seldom or never have hemorrhages in a high altitude frequently experience them quickly upon return to a lower level. In the second

stage of the disease a high altitude is often beneficial, but we can not feel so certain of its results, therefore it is best to send the patient to an altitude of not more than two or three thousand feet, and if they do well, subsequently advise the higher level. A warm, moist atmosphere seldom seems to have any useful effect in prolonging the life of consumptive patients, though it undoubtedly adds to their comfort in certain instances by relieving the irritability of the bronchial mucous membrane. The majority of patients who are unable to take care of themselves seldom receive much benefit from a change of climate, but as a few of them do, the experiment is constantly made, more often, I think, by the friends than by the physician. Wherever practicable, even in the best cases, it would be desirable for friends to accompany the invalid, because we must not forget the necessity of maintaining the nutrition, not only by suitable food, but by cheerful environment foreign to those who, sick and lonesome, find themselves the prey of nostalgia. Before recommending a patient to change climate, we should inquire as carefully as practicable as to his disposition and social and financial condition. If he is unable to obtain the comforts and some of the luxuries of life away from home, it is generally unkind to recommend any change of climate, because the chances are greatly that it would do more harm than good. If he is despondent he should have a cheerful companion. If he is in constant terror from the bacilli floating in the atmosphere, or is depressed by the sight of sickness in others, he should be removed as far as possible from other invalids suffering from tuberculosis. Indeed, this would be a good rule in many cases, but it is hardly ever practicable, because as soon as a locality obtains a reputation in the cure of tuberculosis, many invalids are attracted thither. The physician must remember that he has a duty to others as well as to the patient, and that he must sometimes consider the healthy friends, or more particularly the widow and helpless children soon to be thrown upon the world. Hard-hearted as it may appear, the physician must then answer to his conscience whether it is right to advise the friends to make great sacrifices with the hope of prolonging the invalid's life for a few weeks or months. As a general rule, our duty is to the patient only, but this, like other general rules, is subject to many exceptions. Unhappily, it is only in the minority of cases that experts in the Eastern or Middle States are consulted as to the wisdom of a change of climate by the patients who come under their observation. The greater number come with their minds already made up to go somewhere, so that we can only guide them to the least objectionable place. This explains the fact often observed at health resorts, that the majority of patients sent away might better have been kept at home.

In conclusion, in addition to tonic, supporting and anodyne remedies various antiseptics appear to possess great value in the treatment of pulmonary tuberculosis, but in order to get good effects it is imperative that the system be as nearly saturated with them as possible. They should be given at first in small doses, but the amount should be steadily increased until the maximum dose is obtained, care being always taken not to disturb the digestive organs. For example, with the oil of cloves we may begin with five drops to be given in capsule from three to five times daily after each meal and in the middle of the forenoon and of the afternoon, the medicine always to be

followed by a glass of milk. The second day the dose should be six drops, the third seven drops, and so on, until a dose of twenty-five or thirty drops is given each time.

Creasote can seldom be given in sufficient quantity to have any material effect, because of the disturbance of the digestive organs which it is liable to cause and because of its coagulating effect upon all albuminoids. The same may be said of carbolic acid.

Carbonate of creasote is much more bland and may be given in doses of from five to sixty drops after each meal with great benefit.

Guaiacol may be given in much the same way as the oil of cloves, though in somewhat smaller doses, but it is usually less easily borne than the carbonate of creasote or oil of cloves and often can not be tolerated in sufficient quantity. The carbonate of guaiacol may be used in much the same way as guaiacol itself, but most patients seem unable to take it in sufficient doses.

Oil of cloves and carbonate of creasote are the most satisfactory antiseptics for internal use. Iodin may be used as recommended by Shurly with undoubted benefit, but it causes considerable pain and is open to the objection that it necessitates too constant attendance of the physician; it may also be used advantageously as an inhalant.

Patients should not be sent from home unless their financial and social condition is such as to render the journey and sojourn easy and agreeable.

In the first stage of the disease patients should as a rule go to a high altitude where the atmosphere is dry and as warm as practicable. In the second stage they should be sent to a medium altitude and in the advanced stage, if sent anywhere, it should be to a low altitude.

Patients who have been improving on any course of medication should not discontinue it upon going to a different climate, but, however valuable any remedy may appear, it should not be continued if it becomes clear that it is deranging the digestion.

When sojourning in a favorable climate the patient should be out of doors as much as practicable during the pleasant portion of the day, should avoid excessive heat, excessive cold and unusual fatigue.

Of anodynes to check cough hyoscyamus, camphor, cannabis indica, stramonium and conium are of the most value, because they can generally be taken in sufficient quantities without disturbing the digestion, whereas opiates are usually deleterious in whatever form they may be employed.

The majority of patients sent from home in the latter stages of pulmonary tuberculosis are injured by the journey and their lives correspondingly shortened, though in a small percentage very great benefit is obtained in a warm and very dry climate.

Sciatica Treated by Compression of the Sciatic Nerve.—Arullani has improved upon the digital compression practiced by Negro by substituting a double pad apparatus for the fingers. He has applied it to 40 patients: 2 were improved, 6 proved rebellious, but all the rest, 32, were cured. He recommends compression of the popliteal cavity besides the point where the sciatic nerve emerges in the thigh. The general condition of the patient and the location of the pain are better criteria for the success of the measure than electric tests or the duration of the trouble. For details of the Negro method, see the JOURNAL, Oct. 3, 1896, page 765.—*Gaz. d. Osp. e d. Clin.*, February 28.

ORIGINAL ARTICLES.

THE MEDICO-LEGAL ASPECT OF FLOATING KIDNEY.

Read at the Third Annual Meeting of the American Academy of Railway Surgeons, held at Chicago, Ill., Sept. 23, 24, 25, 1896.

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The rarity of a condition makes it all the more important from a medico-legal standpoint. Cases of frequent occurrence give greater opportunity for their study and consideration. Rare cases offer few precedents and afford but occasional opportunities for observation.

Less than a year ago, I was called to testify as an expert witness in one of these rare cases, which, so far as I am able to learn, has never had a precedent, but its importance impressed me so profoundly that I feel that I owe it to the medical as well as the legal profession to briefly consider it on this occasion. Without referring to names, dates or places, I shall simply state the facts in the case and then proceed to study them from a medico-legal standpoint.

A gentleman of middle age was injured in a railroad wreck which he claimed caused a floating kidney on his right side. Beyond this his personal injuries were comparatively slight. He presented his claim to the company, which did not deny its liability as to the cause of the accident in which he claimed to have been injured, but disclaimed the responsibility of having caused the existence of a floating kidney. The company's defense was based on the fact that the gentleman had, to their positive knowledge, been affected with a floating kidney for years prior to the accident. He had consulted eminent members of the medical profession, who confirmed this diagnosis. Surgeons of high repute were called to examine him after the accident, who found him unquestionably affected with the disease in question.

The claimant admitted having had a floating or movable kidney prior to the accident, but alleged that with the use of bandages and the palliative treatment he had received, he had fully recovered and at the time of the accident was perfectly well, and that although the floating or movable kidney was the same organ that was displaced before, again loosened and was in an abnormal condition as the direct result of the accident.

It will be observed that in a trial of a case of this kind, the prosecution and the defense must depend largely on the medical evidence as to whether the claimant is entitled to damages at all and if so, to what extent. The company admitted its negligence, it acknowledged that he was injured and that he had a floating or movable kidney, but it denied being responsible for the existence of the abnormal condition; hence, it lay with the medical witnesses to show from a clinical standpoint whether it was probable for a patient to make a spontaneous recovery after having had a floating kidney for years, and if so, whether he would be as sound after such recovery, as if the floating or movable kidney had never existed. In the study of this case it becomes necessary to briefly consider the clinical features of a floating or movable kidney.

1. Its frequency.
2. Its tendency to spontaneous repair.
3. Palliative treatment for its relief.

Its frequency.—In this connection, I have been unable to obtain any reliable statistics except that a floating kidney occurs much more frequently in the female than in the male, and that in a large majority of cases, the right kidney is the one effected. For years I have been particularly interested in this subject and during that time have made hundreds of examinations for various diseases common to the abdominal cavity, and with few exceptions have I failed to examine the patient, carefully, for a displaced movable or floating kidney. I have rarely found the left kidney floating, but I have found the right kidney floating or movable in female patients very frequently, so much so that I am inclined to believe that it is much more common than it is generally supposed to be. In all the examinations I have made, I can only recall some two or three cases in which I have found a floating or movable kidney in the male. It seems to be an exceedingly rare occurrence in this sex, so much so that I feel that we are justified in saying that it is only in exceptional cases that we find it existing in the male at all.

Its tendency to spontaneous repair.—There is not a case of movable or floating kidney that has come under my observation in the male or female that has made a spontaneous recovery. In conversation with medical friends who have had experience in this class of disorders, I have thus far failed to find a single case in which there was reason to believe spontaneous recovery had taken place. In fact, if we study the pathology of floating kidney, we can not reasonably expect spontaneous recovery, for the reason that in the true floating kidney, the organ is surrounded with a meso-nephron, and hangs by a pedicle, free to move within the abdominal cavity in any direction. The anatomic relations of the kidney with the peritoneum are such that when it has a meso-nephron, the peritoneum has been displaced to such an extent as to form a capsule, which even the most expert operator is unable to replace. This, being the fact, it is unreasonable and impractical to expect spontaneous recovery.

A movable kidney is distinguished from a floating kidney from the fact that it does not have a meso-nephron, but is free to move underneath the peritoneum, which it dissects from the lumbar muscles, and when once loosened, permits the kidney to move to and fro underneath it like a shuttle.

A displaced kidney may be congenital or post-natal. I recall a case of displaced kidney which I observed a few days ago in an abdominal operation. In this case the kidney was very much distorted and located just over the promontory of the sacrum. The patient had never complained of any pain or trouble with the kidney and had it not been for an operation for the removal of the ovaries and uterus it is quite probable that no one would have been the wiser. In considering a displaced kidney, we shall not include those of a congenital origin, but simply, where it has by some external force been displaced and lodged in another part of the abdominal cavity and anchored there by inflammatory adhesions. The tendency to spontaneous recovery in cases of this kind is not very flattering, and I am frank to say that in my experience I have never had the pleasure of seeing a case in which such displacement existed and spontaneous recovery took place. From these few observations I am led to believe that any one of these conditions may be tolerated by the patient, and the kidney and the surround-

ing structures may so accommodate themselves to their new environments as to relieve the patient from pain to such an extent that he may apparently recover his normal health: as a rule I do not believe that this is true but, on the contrary, I have found in these cases a general tendency on the part of the majority of patients, at least, to get worse. If not troubled with actual pain, they become nervous; their digestive system is disturbed as well as the functions of the kidney itself, which, of necessity, sooner or later lead to grave systemic complications.

Palliative treatment for its relief.—The palliative treatment which has been recommended for years in our text-books for the relief of floating or movable kidney is in my judgment worse than useless. I am not insensible to the fact that our best writers recommend the use of bandages and compresses for the treatment of this disorder, but why they should recommend such treatment is beyond my comprehension, except that somebody who wrote a book sometime before had recommended such a thing and like the traditions of old, it has been handed down from one generation to the next. Certainly there is no logical reason for the use of bandages and compresses in the treatment of floating kidney. If you stop a minute and study the anatomy of the human body you will readily see that no bandage can be placed over the abdomen with safety to the adjacent structures that will have the slightest influence in holding the kidney in its place. It is only necessary for you to cut a cadaver in two, crosswise on a line with the kidney, and you will see at once that the kidney is not *only* protected by the ribs posteriorly, laterally and even anteriorly, but it is also guarded by the vertebræ, which in the majority of cases project beyond the level of the kidney so that if it were practical to bandage a patient so tight that the bandage would rest on the anterior portion of the spinal vertebræ it would not be sufficiently tight to hold the kidney in its normal position. It is only necessary to examine an articulated skeleton to demonstrate this for yourself, when it will be evident how utterly absurd it is to expect beneficial results from this method of treatment. But I imagine I hear some one say that this can be overcome by compresses. Admitting that you can make a compress that will fit down between the ribs and spinal vertebræ so as to make pressure on the kidney, I defy you to hold the kidney in place with any such compress, without injury to the adjacent structures as well as the kidney itself. Worthy Fellows of the Academy, in summing up these observations, I want to call your attention to the fact that a movable or floating kidney in the male is quite an unusual occurrence; that the tendency to spontaneous repair is exceedingly rare; that the palliative methods heretofore advised and used for the treatment of this condition are anatomically and physiologically impractical.

Legal aspects. To properly consider the legal aspects of a movable or floating kidney it is necessary for us to consider, as we have already done, the clinical conditions which exist in these cases. The legal responsibility depends largely on circumstances, and circumstances are usually the offspring of facts. In studying this part of the subject we shall divide it into three divisions. 1. In acute diseases. 2. In chronic cases. 3. In alleged spontaneous recoveries.

The legal aspects in acute cases.—The legal aspects in acute cases of movable or floating kidney depend entirely upon the legal responsibility of the company.

If a claimant has, without any fault of his own, been the victim of an accident, which accident had been entirely the fault of the company and as such has resulted in an acute case of movable or floating kidney it would only be necessary to show that these were the facts in order to establish a claim against the company. The defense would not be justified in setting up the claim that the party may have had a predisposition by reason of general disability, to a displacement of the kidney, because it is presumed it will use every reasonable precaution against injuring any of its patrons whether they be in enfeebled or of robust health.

The legal aspects in chronic cases of floating or movable kidney.—While the company may be responsible to a claimant for injury by reason of an accident, such responsibility is not lessened so far as the company is liable for negligence, but it is lessened by reason of the fact that a diseased condition existed prior to the accident and may have been exaggerated by the accident; but not in fact a primary result of said accident, hence the company should not be held responsible in a case of this kind to the same extent it would be held responsible in a case where no such chronic condition existed.

Allow me to illustrate. A few months ago I was called as an expert witness in a case that was being tried before the United States court, in which it was shown beyond dispute that the claimant had suffered from tuberculosis of the hip joint in childhood and had been treated for the same for years, finally recovering sufficiently from the disease to do a certain class of manual labor but leaving him a confirmed cripple. Outside of this crippled condition his general health appeared to be normal. He was riding in a sleeping car on one of the trunk lines of Ohio when a very trivial accident occurred causing a sudden stoppage of the train, but being in the sleeping car riding with his head toward the engine, he suffered no visible injury whatever, did not know what happened until he got out of the train and made inquiry, after which he went back into the car, went home, and some days afterward complained of his old trouble; was taken down a few weeks later with suppurative morbus coxarius in which there was multiple infection. The abscess was opened by a competent surgeon but the patient died of pyemia and the company was sued for \$10,000 damages. In the trial it was shown that there was a head-end collision, which, of itself, held the company without any further evidence of negligence. It also developed that the claimant had suffered from hip-joint disease long before the injury, and although he had for the time being apparently recovered, yet he was predisposed to its return. The expert witnesses for both the prosecution and the defense confined themselves to scientific and clinical facts rather than taking sides in the case. The attorneys for both plaintiff and defendant, who were among the most able counsel in the State of Ohio, showed a remarkable disposition to get at the real facts and place them fairly and squarely before the jury, which was one of more than ordinary intelligence.

In summing up the evidence brought out in the trial, it showed that a party who had suffered from hip-joint disease prior to any accident had a predisposition to the return of the disease, and hence, a very slight injury that would not affect a healthy person in the least, might result in the return of the tubercular trouble and to that extent the defendant was not liable for damages.

As a legitimate result the jury rendered a verdict accordingly, giving the administrator a few hundred dollars instead of several thousand.

From this I observe that it is only fair and reasonable to assume that where a floating kidney existed prior to an accident, that the defendant in an action for damages is not responsible for its existence, although it may have exaggerated its condition, and hence should only be held liable for such injury as is clearly shown to be the direct result of the accident.

Legal aspects in alleged spontaneous recovery.—If a claimant has suffered from a floating or movable kidney and alleged to have recovered from such abnormal condition, received an injury in which he assumes to have had a return of his former trouble, and on account of return of said condition claims damages, it becomes necessary for him to show, beyond a question, that he had fully recovered from his former diseased condition and to show that his present abnormal condition was wholly due to negligence on the part of the defendant and in no wise the result of the former diseased condition before he is entitled to damages for the same.

In conclusion, it has been my experience that the disposition to spontaneous recovery with or without palliative treatment, in cases of floating or movable kidney, is not warranted by clinical observations. This being the fact a jury is not warranted in awarding the same damages to a claimant as if the whole injury had been caused by the accident, although he may allege to have recovered from his former abnormal condition prior to the accident, but they may award such damages as the evidence shows was the direct result of the accident.

68 Buttles Avenue.

DISCUSSION.

Dr. GALBRAITH—Mr. President and Gentlemen of the Academy: I desire to compliment the Doctor upon his courage in selecting so unique and unsatisfactory a subject for a paper. In the first place the difficulty in making a diagnosis of a floating or loose kidney is readily understood by every member of this Academy. Again, the subject being so unusual that in the doctor's description he has not cited or brought to our notice a case of a loose or floating kidney either so as to speak of idiopathic or traumatic case but has confined entirely those conditions to females. We can readily and in a measure understand that the exciting cause of floating kidney in females is the result of tight lacing, and as the doctor mentioned it is invariably confined to the right side; in connection with crowded and depressed viscera you do occasionally find this condition in a female from this cause. That we should select or bring up a case for discussion of so unusual occurrence struck me as of little benefit either for ourselves or for our companies. I am afraid we are running too much into peculiarities, idiosyncrasies and unique ideas that will not only cause comment from our superior officers but from the public at large. In nearly all the railway meetings of the last two or three years I have attended there have been something new as the result of alleged traumatism. Now as regards the medico-legal aspect and treatment of floating kidney, I doubt if we would be justified to the extent of the heroic and mutilating methods that are advised. In the first place the Doctor has not cited, as trauma or the results, a case that has been approved. I failed to note anything of that kind in his paper. Now we have the palliative treatment; our text books say we will apply a bandage and compress, and in the case of a loose kidney as the result of trauma we have a dozen or more text books stating positively that to apply a compress and bandage is the principal thing. In this the Doctor takes exception to the authori-

ties. Now then are we justified in proceeding to perform an operation that the Doctor has very well and satisfactorily demonstrated? Is that protecting our company, or do we as individuals assume the responsibility of so heroic surgical interference?

Dr. E. WYLLYS ANDREWS—I would like to ask Dr. Reed whether it is not true that perhaps the majority of our cases of floating kidney are accompanied by disease of the organ, of course producing an enlargement, hypertrophied condition or dilatation; that the bandage with an exceedingly large kidney is of use? While it is anatomically true that no force can be exerted on a normal sized kidney, may it not be true that a movable large kidney can be restored and the pain somewhat diminished by a soft compress?

Dr. LEMEN—I would state that my experience with the bandage has certainly given more or less relief in floating kidney, as Dr. Andrews says allowing for an enlarged kidney but especially in a relaxed abdomen: anything that will give support to the abdomen will more or less support the contents therein, and I have had several cases that had a great deal of relief by simple abdominal support. It did not cure the trouble, but acted as a simple palliative measure to relieve the distress as a truss.

Dr. OWENS—I beg to differ with my friend (Dr. Galbraith) in reference to the importance of the subject. The gist of the paper is this: That given a case of floating kidney, or a kidney that is capable of being displaced, and a railroad accident where it could be afterward shown that a displaced kidney existed, and then the evidence comes in that displacement of the kidney once existed and offered in evidence—may be shown from professional standpoint that such displacement did exist but that it had been cured by a bandage and that the jar or shock had displaced it—the question comes, is it possible to cure a floating kidney or displaced kidney by a bandage? I must say I am in full accord with the paper. The kidney may have general support by means of the bandage and it will be helpful and comfortable more or less, but in no sense is it cured. And we ought to be able to show sooner or later that it is not possible to cure a floating kidney and hold it there till it remains fixed in a healthy state by means of the bandage. I did not see anything in the paper that urged an operation, but the plain question is whether we can cure a displaced or floating kidney by means of the bandage, and if we can not we ought to be able to show that such is the fact. I have one case in mind on the Northwestern in which a girl was injured and she had complained of various ill-defined symptoms; she passed through the hands of one or two and finally an expert diagnosed a floating kidney and operated, and it was claimed she was entitled to damages. I think from a medico-legal standpoint the position taken by the writer of the paper is very correct and will be sooner or later recognized.

Dr. RANKIN—It seems to me the most important question is, are we forced to admit that trauma can produce floating kidney? There is such close sympathy between all these organs—they have a common peritoneal covering with the entire viscera—and these organs, with the kidneys, vary so much that it seems to me that we have not sufficient proof that trauma is the cause of floating kidney at all. It is certainly very difficult for me to understand how it could; anything that would displace the kidney would bring on inflammatory reaction around the kidney, which would have the reverse action—make it stick instead of float. Can we under our present state of knowledge admit that trauma can produce floating kidney at all? I doubt it very much.

Dr. HARDEN—One well authenticated case came under my notice. A woman had been treated for some years for floating kidney by compresses: she was better in health and it was claimed she had been cured. She was taken sick something like a year after the supposed cure had taken place and her

case was diagnosed then as an aneurysm, and she went from bad to worse till she was in a hopeless condition. I was called in consultation to see her and I pronounced it floating kidney. She died something like two weeks after that time: an autopsy was made and it was found it was floating kidney and there was no indication of cure in the case: the kidney, like a shuttle, passed about in every direction, and it seems to me the limited description of the kidney and its attachments would bear out the idea that it could not be cured by any such means. It seems to me, an application made through the abdominal tissues and surrounding tissues would be utterly futile in holding in position the kidney. And furthermore I think it is about on a par with the treatment of hernia; when the kidney has lost its attachment, the pedicle has become elongated. I do not believe there is anything that will cure it but shortening the pedicle and tying it up.

Dr. HAWES—I have known a great many cases of floating kidney that were alleged to be very much improved by bandages and trusses and quacks, and for all that, notwithstanding the testimony that has been adduced in their favor I am strongly inclined to the opinion it was not in a majority of the cases a disease of the kidneys so much as a disease of the imagination. There is a large per cent. of the cases where floating kidney is alleged to be found, as we know, in hysteric women, and if we were able to make an exact diagnosis and able to see the exact results of our treatment without being able to give any reasons except such as had been satisfactory to me and the result of observation in the past, I should feel strongly inclined to believe the very respectable per cent. of such cases was discomfort arising from the imagination rather than from the kidney.

Dr. GALBRAITH—Before closing, permit me to say, if memory serves me right upon the literature of this subject, it fully concurs with the evidence we have had here as regards it being almost invariably found in women. I further doubt, as already stated, that there is in this Academy or in this city a case of floating kidney which can be positively proved beyond doubt due to trauma. If that were the case—that such conditions could result from trauma—stop and think, nearly 200 men are injured on the railroad to one woman, and I fail to discover, either from the evidence here or from the text books I can think of, a case where this condition has been alleged and damage proceedings brought against the railroad for this condition in men. Now then we do perform operations successfully for the anchoring of the kidney, but in alleged floating kidney the results of an injury to an employe or a passenger upon a railroad, are we justified in resorting to those methods which the Doctor has described and the text books describe, to cure the condition? I doubt it. I doubt if we would be using proper judgment in resorting to anything of an operative character. As to the medico-legal aspect of assuming responsibility of these cases I am not prepared to remark, but in my judgment we would be to a greater or less extent responsible for the direct result of this operation. In reviewing this subject I find that the text books merely mention the fact that it may be the result of trauma—that is very unsatisfactory (laughter), it is like a great many other subjects in our text books, very unsatisfactory indeed.

Dr. LEMEN—Why would you [Dr. Galbraith] hesitate to operate on a floating kidney that was the result of trauma, any more than on hernia that was the result of trauma?

Dr. GALBRAITH—I think I have made that very plain, that the moment we perform the operation for traumatic floating kidney we are confronted, as the author of the paper says, by a dozen or more text books stating that the bandage, compress and various appliances are recommended.

Dr. REED—I am very sorry our distinguished friend, Dr. Galbraith, "got off the eggs on to the straw." My paper did not consider the question of anchoring the kidney, did not consider it

as coming in this discussion at all; and furthermore, I did not say in the paper that there was such a thing as traumatic displacement of the kidneys; the question is asked whether I ever knew of one—I think I can cite several cases which I have every reason to believe were traumatic. One case of a young girl in this city, lifting a bucket of coal, and as she said, something gave away in her right side, she felt sick and faint, was placed in bed and was an invalid—that was not imagination. Having been a citizen of Columbus she came home, and was brought to me by her family physician; an examination was made and I could very easily, as she was a thin, spare girl, move that kidney from the bottom of the pelvis under the edge of the ribs, a distance of three or four inches, as plain as anything. I made an operation for anchoring the kidney. Two years ago the lady was brought to me with an ovarian tumor and I made another operation—thought I, this is my time to examine the kidney and see whether it is fast or not; because we had a distinguished member of the profession who said the kidney was loose again, and I was more than interested because my operation was challenged. I made that examination, and the kidney was fixed in its normal place. That was a case where lifting occasioned the injury, a floating kidney was found, it was operated on, it got well, and it seems to me that is conclusive that we have such a thing as traumatic floating kidney. In another case a young man playing ball was struck in the abdomen, was taken with severe pain immediately afterward, and from that day to this has never been well, though he was the strongest young man in that section of the country. But on examination you can find the lump in the right side, that can be slipped up and down a distance of two or three inches, and I believe is a floating kidney, the result of traumatism. I can not prove this matter any clearer, but however, let that be as it will, it does not enter into this discussion of the medico-legal aspect of the paper, because here comes a man who was injured on the railway; he admits having a floating kidney, but claims to have been cured of this and now comes up to the company and gets \$12,000 damages, and gentlemen, dare we stand and ignore these facts, if they are facts? Twelve thousand dollars is pretty rare; I would not want to pay it, nor have my company pay it unjustly. The fact is that these cases come to us, we must study them and, as I said in the beginning of the paper, because they are rare, it catches us unprepared, and when this case was tried there was very little testimony that could be gotten at. Further than that, we find the text-book, as I have already said, is absolutely useless because it is false—I do not believe he ever was cured and I do not believe he was entitled to damages. That is the reason I bring this out, and it seems to me it is fair and just and reasonable. Dr. Andrews' suggestion with reference to an enlarged kidney; of course, in an acute displacement of the kidneys in case of congestion we may have hydronephrosis, but generally there is no enlargement in the cases that I have examined: I could not detect any enlargement, but I could move the kidney several inches. But if enlarged I admit the use of the bandage, but I deny that it cured them, and that is the point in law, because the law says they must have been absolutely cured to receive any damage. I want to reiterate, you can not by this treatment cure these cases, and hence, if you can not cure them, they have not a right to damages. The same argument that I have just given you I think obtains as to the matter of imagination. I admit we may have an imaginary tumor and other things in the abdominal cavity, but I do think there is a question in the world but what we have floating kidneys, and if we have floating kidneys from any cause whatever, then my paper holds good, and the case as brought before the company holds good as a possibility.

Dr. COLE In those cases occurring suddenly what is the history with reference to the acute constitutional disease?

Dr. REED—The history is prostration, faintness; they speak

of it as an all-gone feeling, whatever that is like; they feel as if something dropped away from them, and if they stoop it gives them pain; on lifting they feel a dragging pain in the right side; I believe I never saw but two on the left side. One case passed bloody urine after the accident, another I did not observe and could not say.

Dr. GALBRAITH—I think my colleagues will fully concur that what I say is the fact, that the great difficulty in making a differential diagnosis between floating kidney and diseased conditions of other parts of the viscera of the abdominal cavity, and I wish to cite one case where my colleague and the author of this paper, with other very able gentlemen, was called in consultation by me to examine a case of abdominal tumor beyond any question of doubt; they were satisfied, as well as myself, that we had a floating kidney—the floating kidney proved on examination under anesthesia to be gallstones. I removed seventy or eighty gallstones from the gall-bladder.

ON THE TREATMENT OF DIABETES MELLITUS BY A DIET FROM WHICH ALL CARBOHYDRATES HAVE BEEN EXCLUDED.

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Since diet has always played such a prominent and supposedly essential part in the treatment of diabetes mellitus a general discussion of this subject may be of interest, the more especially as there has apparently been of late an under-current of thought to the effect that possibly the complete exclusion of carbohydrates from the diet might not be an unalloyed blessing to the diabetic. The writer hopes to show in this paper, both from careful personal observation of a typical case of diabetes as well as the quoted experience of others upon the salient points, that a diabetic should be placed under no different conditions of diet than are granted the healthy individual and that a rigid exclusion of carbohydrates from the diet is productive of abnormal metabolic changes which result in not only progressive emaciation and weakness, but also in the production of various toxic bodies to which the severe cerebral symptoms of this disease are to be attributed.

I. SUGAR IS ALWAYS PRESENT IN THE BLOOD.

Physiologically.—"Glucose is always present in the blood in quantities varying from 0.1 to 0.15 per cent." (Landois, "Lehrbuch der Physiologie des Menschen," p. 59). "The normal proportion of sugar in the blood does not, as a rule, go up as high as 1 per cent., although it may vary in different individuals" (Cohnheim, "Vorlesungen ueber allgemeine Pathologie," p. 97). "Sugar is a normal extractive of the blood" (Foster, "Text-book of Physiology," p. 50). "The amount of blood sugar remains about the same even during starvation" (Abeles, *Wiener med. Jahrbberichte*, 1875, No. 3).

The following tables of Seegen (*Archiv f. d. ges. Physiol.*, 37, 348-369) show that sugar is always present in the blood irrespective of various diets or fasting.

| | Carotid Blood. percentage. | Portal Blood. percentage. | Blood in Liver Veins. percentage. |
|--------------------------|-------------------------------|------------------------------|---|
| Fasting (8 exp.) . . . | 0.157 | 0.147 | 0.260 |
| Starch Diet (9 exp.) . . | 0.150 | 0.144 | 0.261 |
| Sugar Diet (6 exp.) . . | 0.165 | 0.186 | 0.265 |
| Dextrin Diet (4 exp.) . | 0.176 | 0.256 | 0.320 |

In Diabetes.—"Diabetes is an abnormal increase in the blood sugar" (Cohnheim, *op. cit.* p. 97). "The elimination of sugar in diabetes does go down considerably in diabetes during a prolonged fast but is

always present in appreciable quantity" (Mering, *Tageblatt der 49 Naturforscherversammlung in Hamburg.*) "In diabetes there is a large increase in the blood sugar" (Landois, "Physiologie des Menschen," p. 73). Quantitative determinations have been made upon this point by Külz (*Archiv f. exp. Path. u. Pharm.* vi, p. 140); Mering (*Zeitschrift f. prak. Med.* 18 and 20, 1873), Kratschmer (Voit's "Stoffwechsel Physiologie," p. 230) and many others. It is evident, since the presence of sugar is so diagnostic of diabetes, that further discussion of this point is unnecessary. The occurrence of sugar as a constant constituent of the blood in health and disease has been repeatedly demonstrated.

II. THE ELIMINATION OF CARBOHYDRATES FROM THE DIET DOES NOT CAUSE A DISAPPEARANCE OF THE BLOOD SUGAR.

Physiologically.—"The quantity of blood sugar remains the same even if a diet free from carbohydrates is taken" (Cohnheim, "Vorles. u. allgem. Path." p. 93). Bödeker (Landois' "Physiologie," p. 458) found glucose in the urine of healthy individuals on placing them on a diet composed exclusively of meat and chondrin. "Experiments on animals have shown that if an exclusive meat diet or proteid diet, as fibrin, be administered over a considerable length of time, a certain quantity of sugar and glycogen can always be detected in the liver, muscles and blood" (Foster, "Text-book of Physiology," p. 717). "If animals are subjected to a long course of starvation there is a decrease but no disappearance of the blood sugar, the animal invariably dying before such a result can be brought about" (Foster, *loc. cit.*). "During prolonged fasting sugar does not disappear from the blood." (Landois, "Physiologie des Menschen," p. 322). "The quantity of sugar after long starvation remains the same, although the liver glycogen disappears" (Cohnheim, "Vorles. u. allgem. Path." p. 95). Mering (*Cent. f. d. Med. Wissensch.* No. 53, 1887) has also found that if a dog be starved his blood still contains sugar although the liver and muscles yielded no glycogen.

In diabetes.—In the case experimented on by the writer a strict proteid diet maintained during a period of several months never caused the disappearance of sugar from the urine but the sugar excretion for many months was constant at about 6 per cent. Mering (*Zeitschrift f. prak. Med.* Nos. 18 and 40, 1887) found 39.8 gm. of sugar in the urine of a diabetic who had lived on proteids only for fourteen days. Külz also found that a diabetic, following the ingestion of 300 gm. of casein, free from fat and sugar, excreted under this diet an average of 81 gm. of sugar (*Arch. f. exp. Path. u. Pharm.* vi, 140). It was also found by Kratschmer (*Sitzungsberichte d. k. Wien. Akad.* Bd. 66, 1872) in a large number of experiments that the sugar excretion was still maintained even on a strictly proteid diet, some patients excreting 112 gm. or more during the twenty-four hours. The same writer (Voit's "Stoffwechsel Physiologie," p. 230) records an instance in which a diabetic excreted 62 gm. of sugar without taking food of any sort for thirty-six hours. Voit and Pottenkofer (*Zeitschrift für Biologie*, III, 398) also report a case of diabetes in which there was a sugar excretion of 52 gm. although no food of any kind had been allowed for thirty-six hours. Sugar appears in the urine of rabbits and dogs in starvation following the administration of phloridzin. The above instances, like the prac-

tice of nearly every physician, show that in advanced cases of diabetes neither the exclusion of carbohydrates nor even abstinence from all foods whatever can cause the disappearance of or greatly reduce the sugar excretion. It is evident, then, that the source of the excreted sugar must be sought for elsewhere than in the carbohydrates ingested.

III. SUGAR IS PRODUCED FROM THE INGESTED AND SYSTEMIC ALBUMIN.

In health.—"Sugar is probably produced from proteid decomposition in some part" (Foster, "Text-book of Physiology," p. 724). "The organism has the property of forming sugar out of albumin, probably by the splitting up of the latter into glycogen, which is then converted into sugar" (Cohnheim, "Vorles. u. allgem. Path." p. 106). "The manufacture of sugar is merely a product of healthy metabolism" (Voit, "Handbuch der Phys. des gesamt. Stoffwech." p. 228). "A source of sugar is found in the fats and albuminoids" (Landois, "Physiologie des Mensch." p. 324). "The largest part of the animal diet is converted into sugar. At least two-thirds of each part of albumin consists of carbohydrates, that is, yields carbohydrates" (Seegen, Landois' "Physiologie," p. 324). "Proteid material in giving rise to urea throws off somewhere in the body a large quantity of a carbon containing radical in some combination, since the proteid contains far more carbon than is needed to unite with the nitrogen to form urea. This carbon has a tendency to appear in the form of fats, but it may be supposed that it might, as a preliminary process, take on the form of sugar. It may further be supposed that the sugar is formed from proteids not in the liver but in some other tissue, as muscle. In such a case the hepatic glycogen may be formed by a dehydration of the sugar manufactured elsewhere and brought to the liver by the portal blood" (Foster, "Text-book of Physiology," p. 724). That sugar is formed from the systemic albumin is shown by previous references in which it is seen that the sugar did not disappear from the blood even on prolonged starvation. It is evident that in such cases the sugar excreted must have been a product of the decomposition of the tissue albumin.

In diabetes.—The fact that sugar is produced from albumin in diabetes is abundantly proven by the many cases already quoted in which the sugar excreted could have had no carbohydrate source. It is a notorious fact that many cases of diabetes, from the diet of which all carbohydrates have been carefully excluded, still continue to excrete considerable quantities of sugar. In the case studied by the writer, under a rigorous proteid diet, there was never an entire disappearance of the sugar from the urine.

SUGAR COMES FROM INGESTED ALBUMIN.

"There are some cases of diabetes which continue to excrete large amounts of sugar even if kept on an exclusive albumin diet (Mering, *Zeitschrift f. prak. Med.* 36, 1872). Külz (*Arch. f. exp. Path. u. Pharm.* vi, 140) finds, according to the following tables, that the increased ingestion of albumin causes an increased secretion of sugar. He gave as diet casein free from fat and sugar.

| EXP. I. | | |
|---------|------------------|------------------|
| Casein. | Urine Excretion. | Sugar Excretion. |
| 200 gm. | 4.180 c.c. | 79 gm. |
| 240 gm. | 4.100 c.c. | 70 gm. |
| 300 gm. | 4.950 c.c. | 87 gm. |
| 300 gm. | 6.420 c.c. | 137.1 gm. |

| EXP. II. | | |
|----------|------------------|------------------|
| Casein. | Urine Excretion. | Sugar Excretion. |
| 200 gm. | 4,460 c.c. | 66 gm. |
| 240 gm. | 6,140 c.c. | 65.7 gm. |
| 300 gm. | 6,620 c.c. | 96.7 gm. |
| 500 gm. | 7,210 c.c. | 126.9 gm. |
| 240 gm. | 5,250 c.c. | 86.6 gm. |

"A diabetic who lived on an exclusive meat diet for fourteen days and then fasted thirty-six hours, eliminated during the last twenty-four hours sugar amounting to 34.15 gm. During the next twenty-four hours the patient ingested 300 gm. of casein, free from fat and sugar, and also one liter of meat broth. The sugar excretion for that twenty-four hours amounted to 61 gm. The patient had therefore manufactured 26.85 gm. from the ingested albumin. . . . In another case, in which the sugar excretion was considerably diminished after a fast of thirty-six hours, a marked increase was at once noticed upon the ingestion of coagulated egg albumin" (Mering, *Zeitschrift f. prak. Med.* 40, 1873).

SUGAR IS ALSO PRODUCED FROM THE SYSTEMIC ALBUMINS.

"A diabetic patient kept without food of any kind for thirty-six hours was found to excrete 34.15 gm. glucose" (Mering, *loc. cit.*). "Sugar does not disappear from the urine on fasting" (Block, *Deutsch. Arch. f. klin. Med.* 25, 1880, 470). "The elimination of sugar is often considerably decreased during prolonged fasting, but is always present in certain quantity" (Mering, *Tageblatt der 42 Naturforscherversammlung in Hamburg*). "On fasting thirty-six hours a diabetic excretes 52.1 gm. of sugar" (Voit and Pettenkofer, *Zeitschrift für Biologie*, 3, 383).

From the above observations it is seen that blood sugar is produced from albumin, both ingested and systemic, in health and diabetes. In diabetes there is an excess of the production beyond the consumption and the unoxidized portion is eliminated in the urine. Fats, ingested or systemic, can not be considered as the source, since even the most emaciated diabetic, restricted to a diet of albumin or even fasting, will still excrete a certain amount of sugar. This excessive production of sugar from the systemic albumin by metabolic changes can have but one result—more nitrogen is eliminated as urea than is taken in as nitrogenous foods and a progressive loss of body weight is consequent.

IV. THE EXCESSIVE ALBUMIN DECOMPOSITION, DUE TO THE RIGID ENFORCEMENT OF A NITROGENOUS DIET, INDUCES AN INCREASED METABOLISM AND LOSS OF BODY WEIGHT.

In health. "A man is not able to keep up the equilibrium of his metabolism with pure meat. If obliged to do so he very soon dies. The reason is easily seen. In beef the proportions of the nitrogenous to the non-nitrogenous food-stuffs is as one to one and seven-tenths. A healthy man gives off in the CO₂ of expiration, feces and urine about 280 gm. of carbon daily. If he should take these 280 gm. of carbon out of the carbon of a purely meat diet, he would be obliged to digest and assimilate during each twenty-four hours over two kilos of meat. To accomplish this task the digestive organs of the man are by no means competent. The man would then, under these conditions, be forced to ingest less meat, but this would necessarily mean a supply of the needed carbon from his own bodily tissues, at first from the fats and then from the albuminoids. A purely albu-

minous or proteid diet would act in the same way" (Landois, "Physiologie des Menschen," p. 457). It has recently been shown by Lusk ("Ueber den Einfluss der Kohlehydrate auf den Eiweisszerfall," 1891) that a healthy individual, subsisting upon a purely nitrogenous diet, excretes more nitrogen in the form of urea than is taken in as food, which nitrogenous food, if mixed with carbohydrates, was entirely able to maintain the normal weight. Such an abnormal excretion of nitrogen must, of course, be the result of excessive decomposition of the tissue albumin, and must cause a progressive loss of body weight. Lusk comes to the conclusion that carbohydrates prevent a certain amount of albumin decomposition. If the metabolic equilibrium is destroyed by excluding carbohydrates from the diet the decomposition of the tissue albumin runs in excess of its formation. Voit (*Zeitschrift für Biologie*, 140, 144) has shown by the following experiment that if a certain amount of carbohydrates be supplied, whether albumin be withheld or allowed, a considerable decomposition of the systemic albumin is avoided. In a dog, which needed 850 gm. of meat to support his system, when under a rigid proteid diet, it was found that 500 gm. were sufficient, if small amounts of carbohydrates were supplied, thus saving a decomposition of 350 gm. of meats.

The following table, taken from Lotze ("Allgemeine Path. u. Ther.") shows the great increase of metabolism induced by a purely nitrogenous diet as compared with the metabolism under either a non-nitrogenous or a mixed diet. It gives the urine constituents in health, under various diets, for twenty-four hours.

| | I. Non-nitrogenous Diet. | II. Mixed Diet. | III. Nitrogenous Diet. |
|--------------------|--------------------------------|-----------------------|------------------------------|
| Total solids . . . | 41,680 gm. | 67,820 gm. | 87,440 gm. |
| Urea | 15,408 gm. | 32,498 gm. | 53,198 gm. |
| Uric acid | 0,735 gm. | 1,183 gm. | 1,478 gm. |
| Lactic acid . . . | 5,276 gm. | 2,625 gm. | 2,167 gm. |
| Extractives . . . | 11,894 gm. | 10,508 gm. | 5,145 gm. |
| Sod. phosph . . . | — | 3,673 gm. | 5,421 gm. |
| Earthy phosph . . | — | 1,097 gm. | 3,562 gm. |
| Alkal. sulph . . . | — | 7,026 gm. | 10,399 gm. |

In this experiment animal diet in III consisted entirely of egg albumin, which contained daily 30.16 gm. of nitrogen, of which an average of 25.623 gm. were again excreted as urea. This table shows that an increase in the ingestion of albumin, rendered necessary if the carbohydratic source of carbon is cut off, results in an increased metabolism in which nitrogen is produced in far greater quantities than the system can utilize, the excess of which must be excreted as a waste product.

In diabetes.—In the case experimented on by the writer, a removal of all carbohydrates from the diet immediately induced an enormously increased appetite, while, on a return to a mixed diet, there was a diminution of the appetite; showing that the patient craved and decomposed more food while on a proteid diet than when allowed carbohydrates in moderation. As to body weight, this patient lost sixteen pounds between the time when a polyuria appeared and the restriction of the diet to proteids, a period of about six months. During the first four weeks following the restriction to proteids, this patient lost fourteen pounds, and there was a constant decrease in weight as long as the treatment with proteids was maintained. Further, on a return to a mixed diet, there was an immediate gain in weight, and in three weeks there was an increase of eight pounds. The patient was steadily gaining in weight until his death.

Cohnheim ("Vorlesungen ueber allgemeine Pathologie," p. 110) finds that "the quantity of urea excreted by a diabetic is enormous, often going as high as 150 gm. in the twenty-four hours. This may be explained by the large amount of meat which the diabetic usually ingests. The body in this way is able to keep up itself to the necessary carbon and albumin; but the progressive emaciation of diabetes shows that he is only able to keep this up for a certain time."

According to Voit and Pettenkofer (*Zeitschrift für Biologie*, 3, p. 419) "large amounts of meats and fats (in diabetes) were not sufficient to keep up the body, since the body weight decreased," etc. In a series of experiments made by the same authorities, large amounts of albumin were given with very little carbohydrates, only in milk and beer. The food contained 1590 gm. meat and 168 gm. fat. Of this large amount of meat 1364 gm. were taken into the blood. Of this quantity 1287 gm. were decomposed and excreted and only 48 gm. were stored up. The body weight decreased 201 gm. and the urine contained 397 gm. of sugar. The tables given in the same reference (p. 388-398 and 392-394) also corroborate the above.

All authorities agree with the above quotations, which show that the more albumin is ingested, the more urea is excreted from which it follows that an excessive ingestion of albumin induces increased metabolism. It is also shown that in spite of this increased ingestion of albumin the larger part is excreted unused, the patient constantly decreases in body weight and only a relatively small proportion of the nitrogen ingested is stored up in the system. Since the patient is unable to absorb sufficient albumin he abstracts it from his own body.

V. THE ADMINISTRATION OF CARBOHYDRATES RETARDS ALBUMIN DECOMPOSITION.

It has been shown by Hirschler (*Jahrsberichte der gesamm. Med.*, 1889) that proteids allowed to putrefy and decompose in the presence of a carbohydrate or a carbonate do not yield as many or as much of putrefactive and decomposition products as when decomposing alone. He therefore recommends carbohydrates to retard excessive intestinal decomposition and systemic metabolism. The results arrived at by Voit (*Zeitschrift für Biologie*, 3, 140-144) and Lusk ("Ueber den Einfluss der Kohlenhydrate auf den Eiweisszerfall," 1891), which have been already quoted in this article, seem to confirm this theory of Hirschler's, with regard to the power of carbohydrates in retarding metabolism. According to Landois ("Phys. des Mensch.," p. 459), "while on a purely meat diet, to maintain the body an enormous amount is necessary, while a much smaller portion is sufficient on the addition of fats or carbohydrates. For 100 parts of fat which are added to the meat 245 of dry meat can be saved. If, instead of fat, carbohydrates are used, 100 parts of fat are equal to 230-250 of the carbohydrates. On an insufficient supply of dry meat the addition of fats or carbohydrates still causes a diminished decomposition of the bodily material, and if very large amounts of meats are ingested with carbohydrates the body weight is still more increased than without the latter. The body, in this last condition, takes on more fat than flesh." Ephraim ("Diss.," Breslau, 1885) found that an acetonuria accompanied by an increased metabolism follows the exclusion of carbohydrates from the diet of healthy persons. This acetonuria with its increased metabol-

ism disappears if carbohydrates are again administered. The tables of Lötze, already quoted, also show that the exclusion of carbohydrates from the diet induces an increased metabolism. Duprè (*Practitioner*, 1871) found that in a certain case of diabetes, if considerable amounts of honey were added to the usual diet of the patient, the quantity of urea was greatly diminished. The diet of this patient was gluten bread and meats. It has been found by Voit and Pettenkofer (*Zeitschrift für Biologie*, iii, 398), that the urea excretion of a diabetic in hunger is much greater than when carbohydrates are allowed, showing that under the administration of carbohydrates a lessened breaking down of the systemic albumin takes place. Their results are as follows:

| | Fasting. | Carbohydrate diet. | Mixed diet. | Albumin diet. |
|-----------------|----------|-----------------------|----------------|------------------|
| Urea. | 28.5 | 19.4 | 48 | 62.4 |
| Sugar | 52 | 429 | 464 | 149 |

Ebstein (*Schmidt's Jahrbücher*, 1884, Bd. 204, S. 65) always found the ferric chlorid reaction associated with an increased metabolism as shown by the excretion of urea. He also found if a certain amount of carbohydrates be administered that a certain amount of metabolism is avoided and the ferric chlorid reaction disappears. It was found by Rossbach (*Corresp. d. allgem. ärztl. Ver. f. Thüringen*, 1887) that on placing a diabetic on a meat diet there is a lessened sugar excretion but a much greater metabolism. If this patient is now placed on a mixed or carbohydrate diet a great diminution of the metabolism occurs. In the same way, if a patient be given no food at all for a certain length of time and then be given carbohydrates, it is found that the metabolism is very greatly decreased upon the administration of the latter. If a diabetic has not entirely lost the power of oxidizing sugar, as will be shown in this paper, it is evident that a certain amount of glucose can still be used in the system. If such a quantity of sugar be supplied to the organism in some carbohydrate form it is evident that the amount of albumin decomposition, by which this quantity of sugar, which is so essential to the maintenance of health, can be manufactured is wholly unnecessary and may in this way be avoided. Sugar appears in the urine not because the system has entirely lost the power of oxidizing it but because the pathologic decomposition of albumin in which it is produced does not run exactly even and parallel with the capacity of the system to burn it. In the case experimented on by the writer a return to mixed diet caused a lessened appetite and an increased body weight. Several other cases of diabetes which have come under the notice of the writer and which have been given a mixed diet have maintained relatively good health and became by no means greatly emaciated. The writer is strongly inclined to the belief that the progressive emaciation which is so often seen in diabetes is not so much due to the disease itself as to the unnatural conditions of diet under which the patient has been so frequently placed.

VI. THE DIABETIC HAS AN ESPECIAL PREDISPOSITION TOWARD METABOLISM.

It is a characteristic symptom of diabetes that during the later and severe stages a great emaciation and loss of body weight occurs. The patient observed by the writer lost about forty-five pounds or 30 per cent. of his body weight during the eleven months through which the disease continued, while his excretions of urea rose as high as 75-80 grams in the twenty-four

hours. Many observers have shown that a diabetic is subject to a more rapid metabolism than is a healthy individual. Gachtgen ("Ueber Stoffwechsel beim Diabetes verglichen mit einem Gesunden," Diss. Dorpat, 1872) showed that a diabetic and a healthy individual of the same weight and ingesting the same amounts of a mixed diet differed greatly in their nitrogenous decomposition, the diabetic excreting far more urea than the healthy individual. This result he confirmed by repeated observations. "A diabetic on fasting excreted much more urea than a healthy individual under the same conditions" (Kratzschmer, *Sitzungsber. d. Wien. Akad.*, iii, 66, 1872). It was found by Külz (Ueber Harnauscheidung im Diab., Diss. Marburg, 1872) that a young diabetic girl on the same diet and under the same conditions as a strong, healthy man, excreted 50 grams of urea more than the latter during the twenty-four hours. Cohnheim says ("Vorles. ü. allgem. Path.", p. 110) that "there is an increased metabolism going on in diabetes as is shown by the increased amount of urea excreted. The quantity excreted may go up as high as 150 grams in the twenty-four hours. . . . The increased appetite is simply due to the attempt of the system to make good the excessive albumin decomposition." According to Voit ("Physiologie d. Stoffwechsels," p. 227). "It has been supposed that the increased amounts of urea in diabetes was caused by the large amounts of albumin ingested, but it very soon became evident that the diabetic is obliged to eat so much because the loss and consumption in his body is so enormous." It has been shown by Voit and Pettenkofer (quoted by Lusk, "Ueber den Einfluss d. Kohlenhyd. auf d. Eiweisszerfall," 1891) that a mixed diet which was sufficient to keep a strong, healthy workingman, weighing 71 kilos, in good condition was not sufficient for the needs of a diabetic, weighing 54 kilos, and that the latter lost fat and albumin from his own body.

VII. THE DIABETIC POSSESSES SOME POWER OF BURNING INGESTED SUGAR, SINCE THE INGESTION BEARS NO PROPORTION TO THE EXCRETION.

It has been shown by Külz (Marburg, Elwert, 1874, viii, 222) in a series of experiments carried on upon six diabetics, four of whom had the mild form and two the severe form, as he says, that a diabetic has by no means lost all power of oxidizing ingested glucose. In his first experiment, made upon a mild form of the disease, a certain amount of nitrogenous food was allowed each day, to it being added a daily allowance of 100 grams of dextrose in watery solution, which the patient drank in thirty to forty-five minutes. The patient previous to this experiment was placed on a meat diet until all sugar had disappeared from the urine.

| Experiment. | Twenty-four hours' urine. | C.c. | Sugar excretion. Gm. |
|--------------|---------------------------|-------|----------------------|
| 1 | 1273 | 0.946 | |
| 2 | 1527 | 2.994 | |
| 3 | 2144 | 1.526 | |
| 4 | 1622 | 1.950 | |
| 5 | 1653 | 1.710 | |
| 6 | 1353 | 3.996 | |
| 7 | 1278 | 3.510 | |
| 8 | 1344 | 5.898 | |
| 9 | 966 | 4.536 | |
| 10 | 1226 | 4.914 | |
| 11 | 1299 | 5.220 | |
| 12 | 1454 | 2.319 | |

By this table, therefore, it is seen that this patient only excreted about 3 per cent. of the ingested sugar

unoxidized and had utilized the remaining 97 per cent.

The second experiment was made on a patient suffering from the severe form of the disease. This patient while under a strictly proteid diet had a daily sugar excretion of 47 grams. To the same diet was now added 100 grams of glucose in watery solution which was drunk early in the day.

| | Twenty-four hours' urine. | C.c. | Sugar excretion. Gm. |
|-------------|---------------------------|------|----------------------|
| 1 | 2496 | | 79.8 |
| 2 | 2763 | | 90 |
| 3 | 2444 | | 71.6 |
| 4 | 1905 | | 85.1 |

From these results the average daily excretion of 47 grams must be deducted. On this treatment the sugar excretion only increased from 38 to 47 per cent., showing that in a severe diabetes the patient still retains the power of burning considerable sugar. Seegen says (quoted by Külz, *loc. cit.*) that "in many instances a certain tolerance of starchy diet exists and that it is only when the quantity of carbohydrates is excessive that sugar appears." He then mentions a patient who excreted 4 grams of glucose following the ingestion of 30 grams. The assumption that 26 grams was the maximum quantity which the patient was able to utilize would be erroneous since in further experiments upon the same patient it was found that the administration of 60 grams of glucose was followed by an excretion of only 5.58 grams, and that only 13.13 grams were eliminated after ingesting 90 grams. In a second case the same investigator found an excretion of 5.998 grams after the ingestion of 50 grams of sugar, while the ingestion of 100 grams of sugar was followed by the elimination of only 8.924 grams. Had the organism only been able to oxidize the 45 grams which were not excreted in the first place, the administration of an additional 30 grams should have resulted in a sugar output of 55 grams. On the contrary there was only an increase of about 3 grams. Külz states that he has many times confirmed these results of Seegen. He states that "the assumption that the ingestion of a quantity of sugar, in excess of what appears to be the amount which can be oxidized in the system, will result in the excretion of this amount unchanged in the urine must therefore be considered to be wholly untrue." In the case treated by the writer the sugar excretion, while on a mixed diet, after a slight fluctuation remained for about four weeks—until the death of the patient—at about the same point at which it was constant while no carbohydrates whatever were allowed. While under a mixed diet the patient took fairly large amounts of carbohydrates in the form of bread, oatmeal, rice and hominy, in addition to his other food. This ingestion did not result in any permanent increase in the sugar output and the patient must therefore have utilized a large proportion of the sugar so ingested—while the allowance of carbohydrates was followed by a most marked and rapid physical and mental improvement on the part of the patient.

VIII. THE ABNORMAL METABOLISM WHICH IS ESPECIALLY PRODUCED BY A PROTEID DIET RESULTS IN THE EXCESSIVE PRODUCTION OF TOXIC BODIES.

Leva says (*Deutsch. Arch. f. klin. Med.*, May, 1891): "We found that on the usual diet with high sugar excretion the ferric chlorid reaction was weak and often absent. On proteid diet, however, where the sugar excretion was smaller, the reaction was very strong indeed. In one case, as long as the patient

excreted considerable sugar on the normal diet, no ferric chlorid test was present, but it appeared very markedly as soon as the patient maintained a proteid diet, disappeared again on a return to a mixed diet, and so continued coming and going according to the foods ingested." It was found by Janike (*Schmidt's Jahrbücher*, 1884, 204, 63) in two cases that a pure meat diet originated this reaction and that, if a mixed diet was afterward given, the ferric chlorid reaction disappeared in twenty-four to forty-eight hours.

Rossbach (*Corresp. d. allgem. ärztl. Ver. f. Thüringen*, 1887) placed a diabetic on an exclusive meat and fat diet. During the entire continuance of this treatment strong tests for acetone and diacetic acid could be obtained from the urine. Upon adding carbohydrates to the diet the sugar excretion rose somewhat, but the acetonuria and diaceturia entirely disappeared. Hugounenq (*Am. Jour. Med. Sci.*, October, 1887) has found the production and excretion of oxybutyric acid to be greatly favored, if not actually produced, by an exclusive meat diet. He does not appear to find this acid in urines which have been passed while on a mixed diet.

That this condition holds good in health as well as disease has been shown by Ephraim (Diss. Breslau, 1885). He found by a number of experiments made upon healthy persons, that a diet of pure albumin is followed by the appearance of acetone in the urine. He observed also that if carbohydrates are administered even with large quantities of albumin, no acetone can be detected in the urine. Clarke and Skelton (*Am. Jour. of Obstetrics*, February, 1897) state that "it (acetone) is found in urine and blood, in small quantities normally, and in large quantities in those suffering from abnormal decomposition of organized proteids. During the first twenty-four hours of starvation the amount of acetone increased forty-eight times in the case of Cetti, the starvation artist."

In the case observed by the writer, it was noticed that no ferric chlorid reaction was given by the urine previous to the institution of treatment, but that it at once appeared upon placing the patient upon a diet from which all carbohydrates had been excluded. It was further noted that, on again permitting carbohydrates to be eaten, this reaction was greatly diminished in intensity; that, on temporarily excluding carbohydrates from the diet, this reaction returned with almost its former intensity, and that this reaction was least in urines passed at mealtimes, and reached its greatest intensity in urines passed several hours after the ingestion of large quantities of meats. From the above observations he concludes that acetone, diacetic and oxybutyric acids are products rather of an albumin decomposition than an oxidation of sugar, and that their production is favored, and even directly induced, by the exclusion of carbohydrates from the diet. The production of these substances is probably accomplished in two ways, first, by the direct decomposition of the ingested albumin; and secondly, by abnormal splitting up of the systemic tissues—both caused by the elimination of carbohydrates from the diet.

IX. DIABETES IS DUE TO A DEPRESSED NERVOUS CONDITION, WHICH MUST ESPECIALLY FAVOR THE ACTION OF TOXIC BODIES.

Strümpell believes ("Specialle Pathologie und Therapie") that diabetes is due to a depressed and atonic condition of the nervous system, which may be

either inherited or acquired. This decreased nervous condition causes a predisposition not only for diabetes, but for various neuroses and psychoses also. Schmitz (*Brit. Med. Jour.*, 1883) gives an analysis of 600 cases of diabetes, in which 248 were hereditary. Ninety-six came of neuropathic or psychopathic families; in 183 the exciting cause was acute neurotic disorder. In one-third of a large series of cases reported by Ord (*N. Y. Med. Record*, 1884, p. 230), there was a history of mental anxiety or overwork, and in one-third a history of alcoholism. Quite recently Schmitz (*Berliner klinische Wochenschrift*, July 6, 1891), in an analysis of over 2,500 cases of diabetes, was able to find an hereditary neurotic taint in about 75 per cent. of all cases, in 15 per cent. he could get no history, and in the remaining 10 per cent. the results were negative. "Severe psychoses and melancholia which led to suicide were found in 428 families which had several cases of diabetes in each. In the families of 263 diabetics in which there was only one case there were many instances of insanity, especially of melancholia which induced suicide. I have also found that the evils which most resemble insanity—the morphin habit, alcoholism and onanism—are accustomed to occur frequently in diabetic families." He believes that there must be always a predisposition to induce the occurrence of this disease. There is then a condition of the nervous system in diabetes which is especially depressed and atonic, and it is evident that any toxic bodies acting on the nervous centers, as the oxy-acids are supposed to do, will be resisted to a far less degree than in health. For this reason, therefore, the occurrence of diacetic and oxybutyric acids in diabetes is of most dangerous import. In this connection it may be well to call to mind the neuroses and psychoses to which the diabetic is so liable, the neuralgia, headache, melancholia, vertigo, loss of memory, etc. Are these affections to be considered as the direct result of the disease itself, or as in great part due to the artificial conditions of diet under which, for the past hundred years, it has been customary to place diabetics? The writer is strongly of the impression that if the actual origination of these affections is not due to the rigorous maintenance of a proteid diet, at least it is directly responsible for the aggravation of any such conditions.

X. THE PRODUCTION OF TOXIC BODIES IS PREVENTED OR RETARDED BY THE ADMINISTRATION OF CARBOHYDRATES.

Since it has been shown in this article that the production of toxic bodies is the result of an abnormal albumin decomposition, and as it has also been demonstrated that the administration of carbohydrates retards and prevents this excessive metabolism, it is evident that no elaborate discussion is necessary to prove the truth of the above hypothesis. Suffice it to say that the experience of the writer, as well as the previously quoted observations of others, agree that acetone, diacetic acid and oxybutyric acid are greatly diminished in quantity or entirely disappear if carbohydrates are given. Prevent excessive metabolism, therefore, and toxemia is prevented.

CONCLUSIONS.

The conclusions arrived at in this article can best be shown by a recapitulation of the hypotheses demonstrated. They are as follows:

1. Sugar is always present in the blood.
2. The absence of carbohydrates from the diet does

not cause a disappearance of the blood sugar. *Hence sugar must have some other source than the carbohydrates ingested.*

3. This other source of sugar is the ingested and systemic albumin through a process of decomposition.

4. An increased albumin decomposition due to the rigid enforcement of a purely nitrogenous diet, means an increased metabolism and consequent loss of body weight. *Hence the cutting off of carbohydrates from the diet directly produces an increased metabolism.*

5. *Vice versa*, the administration of carbohydrates retards metabolism.

6. The diabetic has an especial predisposition toward metabolism.

7. The diabetic has by no means lost the power of burning sugar, therefore: *Sugar must, even more than in health, be allowed in order to prevent loss of weight and muscular weakness, which may ultimate in one of the natural endings of diabetes, death by asthenia.*

8. The abnormal albumin metabolism, which is especially produced by a rigid proteid diet, results in the production of toxic bodies.

9. The depressed nervous condition of the diabetic is especially favorable for the action of these bodies.

10. The production of toxic bodies is prevented or retarded by the administration of carbohydrates. *Hence: Carbohydrates should be administered to the diabetic to prevent the formation of certain toxic bodies and the severe and often fatal nervous and cerebral symptoms which they induce.*

That sugar is an important factor in the maintenance of health has long been recognized. Its presence in the blood under all conditions has repeatedly been demonstrated and by its oxidation it is believed to supply heat and energy to the organism. In the system, as is well known, the ingested carbohydrates are converted into glycogen and stored up as such, chiefly in the liver, for future consumption. This reservoir of heat and energy is called upon from time to time according to the needs of the system; a portion of the glycogen is reconverted into sugar, enters the blood current and is oxidized in the ultimate production of water and carbon dioxid. Ordinarily, then, the system receives its sugar in an easily assimilated form and, without any violent chemical changes, it is passed on into the blood current and there oxidized. Should this natural source be now removed by unnatural conditions of diet its manufacture is at once begun from an albumin source by the organism, which, continued over a considerable period, results in a progressive loss of weight due to the increased katabolism caused by production of the necessary sugar. In health this production this manufacture of sugar keeps within the capacity of the system to completely oxidize it. In diabetes, however, this relationship is lost, the production of sugar runs far in excess of its consumption and the portion of sugar which is in excess of what the system is able to oxidize is excreted unburned.

The accepted treatment of diabetes has essentially consisted in placing the patient upon a diet from which all carbohydrates are excluded. This treatment has the sole object of causing the disappearance of sugar from the urine at any cost and is based upon the false hypothesis that if this can be accomplished the disease is cured and that the presence of sugar in the urine constitutes the affection. It can not be too strongly urged that sugar in the urine does not con-

stitute the disease nor is its presence responsible for any pathologic changes or abnormal symptoms. By itself it is merely a symptom and a result of the more morbid processes through which the occurrence of such excessive quantities of sugar in the blood is rendered possible. To treat the sugar excretion can not cure the diabetes. To attempt to treat a constitutional affection like diabetes from a purely symptomatic standpoint would be analogous to attempting the cure of phthisis by treatment directed toward its accompanying cough. The treatment in both should be directed toward the constitutional changes which cause the excretion of sugar in the one case and the cough in the other. The sugar excretion, however, may in one way be pathognomonic since its presence or absence, while on a mixed diet, shows the presence or absence of the diabetes and if, under such a diet, sugar is no longer excreted a cure may be said to have taken place—not because the sugar had simply disappeared from the urine but because the morbid processes, by which the sugar was produced or by which its oxidation was rendered less complete, had ceased to act. It has already been shown that a healthy individual can not maintain a normal systemic condition upon a proteid diet, that a diabetic is especially liable to an excessive metabolism and still it has been the custom to sentence a diabetic, the victim of a disease due to nervous depression, to conditions of diet which directly tend to lower his vitality, to decrease his powers of resistance to the diabetes or to an intercurrent affection and to directly hasten his death by anasthenia or coma. It must be urged that in true diabetes the diminution of the sugar excretion by means of a proteid diet means simply the decrease of a symptom at the expense of an essential disease. It was recently said by Dr. Liebmann (*Boston Med. and Surg. Jour.*, Sept. 3, 1896): "I myself am a sufferer from this disease (diabetes). I can get along very well without potatoes or pastry but I must have bread and if I do not get bread I become so weak that I can not work. I would rather have 3 per cent. of sugar in my urine and for the time being feel strong than have only 1 per cent. or none and feel otherwise."

But, it may be urged, "Why give more sugar since the system is already unable to utilize what is excreted unoxidized?" A detailed explanation of this point will be given in the following paper. Suffice it here to say that the carbohydrate ingestion does not proportionately effect the sugar excretion. If a diabetic be given carbohydrates up to a certain amount it is found that an excess of this quantity does not cause a corresponding increase in the sugar elimination and it is evident that the diabetic still possesses the power of utilizing ordinary dextrose which he has lost to a greater or less degree with regard to sugar produced by the splitting of albumin. The ingestion of carbohydrates can therefore do no harm, but is rather beneficial in that it supplies an easily assimilated sugar to the organism. Are the extremely dangerous cerebral symptoms, the great body waste and consequent emaciation resulting from the enforcement of a proteid diet, are they to be considered as of less importance than the excretion of a few grams of unburned sugar which, it must be reiterated, has but little pathologic and no prognostic significance? A true diabetes can be influenced only unfavorably by the exclusion of carbohydrates from the diet although a simple glycosuria may disappear during or consequent to such treatment. In conclusion, why restrict a patient with dia-

betes to a purely proteid diet? The progress of the disease is not favorably influenced in this way and abnormal conditions are thus produced under which even the healthy individual finds it impossible to maintain his normal systemic condition. A fever patient is carefully nourished and all supporting measures are employed, and yet the processes in diabetes are in one sense similar. Let the diabetic, therefore, live upon a diet which it has been ascertained in his case keeps katabolism at the minimum. Let all depressing measures be avoided and let the treatment be directed not toward the symptomatic sugar excretion, but rather attack its source in those morbid processes by which its excretion in the urine, unoxidized, is brought about.

No means are at present known by which a cure of true diabetes can be rendered certain or even probable and it will probably be as difficult a matter to find a specific for this disease as to find one for chorea or melancholia. The treatment then must be prophylactic; to prevent coma and prolong life by a maintenance of the systemic strength and condition by a retarded metabolism. The writer has endeavored in this article to demonstrate that the employment of an exclusive meat or proteid diet is directly inimical to the accomplishment of these results.

A FECAL FISTULA THROUGH THE APPENDIX RESULTING FROM A PERFORATING APPENDICITIS.

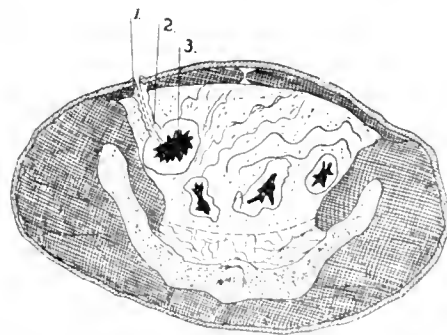
BY J. B. EAGLESON, M.D.

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SEATTLE, WASH.

The patient, Captain J. A. O'B., aged 46 years, a native of Ireland, has been well known among steamboat and shipping men on the Pacific Coast for many years. He had a slight attack of pain in the bowels in February, 1894, for which he was treated in the hospital for two days. It was thought to have been a "bilious attack." In April, 1896, he took his steamer to Cook's Inlet, Alaska, with a party of miners and shortly before his arrival he was seized with a severe pain in the right side of the abdomen, and as soon as the steamer reached her destination he placed himself in the care of Dr. B. W. Rodgers of Oakland, Cal., who happened to be at the Inlet as surgeon for a party of prospectors. He continued to grow worse and, on April 19, Dr. Rodgers operated, with the assistance of a dentist, who gave the anesthetic. The operation was performed in a little shack on the beach while the thermometer stood 9 degrees below zero. A large abscess was opened and the sac removed. It was thought to have been an abscess between the large intestine and the abdominal wall above the appendix. The cavity was drained and packed with iodoform gauze. As soon as the patient was able to bear transportation he was brought to Seattle, where he was placed in the hospital June 5, 1896. He regained his strength rapidly and after a few weeks the wound had all closed but a small sinus through which pus and occasionally fecal matter exuded. Thinking this would close spontaneously, I discharged him from the hospital, June 25, 1896, and in a few days he was able to resume his duties on board his vessel. The fistula was treated by irrigations of bichlorid solution and peroxid of hydrogen, but it refused to close completely, and at times

became quite painful. Hot poultices applied over the wound always relieved the pain and soreness. The discharge was purulent most of the time but occasionally become fecal. His general health remained good and he almost regained his usual strength and weight.

About Jan. 15, 1897, the pains in his abdomen and side became so severe that he was compelled to leave his vessel and go to his home. He had a chill, followed by a high temperature for a few days, and was sent to the hospital for treatment Jan. 22, 1897. The abdominal wall around the fistula was red, swollen and very tender. The pain and soreness were soon relieved by rest in bed and hot fomentations. It was decided to give an anesthetic and dilate the fistula for a more thorough examination, and, if possible to pack it with gauze down to the intestinal opening, and thus endeavor to get it to close. He was operated on January 26, under chloroform anesthesia. At this time a probe introduced into the fistula appeared to enter a small sinus in the abdominal wall in a downward, backward and slightly inward direction for a distance of about four inches, when it entered a free cavity which was evidently the lumen of the intestine. An attempt was made to dilate the external end of the fistula by introducing a pair of hemostatic forceps closed, and then forcibly open them, when, somewhat



1, the fistula through abdominal wall. 2, the appendix, with perforated tip, continuous with fistula. 3, cecum.

to our surprise, the median wall of the sinus gave way and the forceps blade opened into the abdominal cavity when but little force had been applied. A transverse incision was now made to the outer side of the fistula and the finger introduced into the abdomen, when it was discovered that the long sinus traced by the probe was the appendix with its tip adherent to the abdominal wall and perforated. The probe had passed directly through the wall and through the entire length of the appendix into the cecum. The appendix was loosened from the abdominal wall, and, after ligating its mesentery, was tied off with silk and the stump thoroughly cauterized with carbolic acid. The cecum was bound down so that it could not be brought into the wound for a thorough technique of the stump. The wound in the abdominal wall was partially closed with silkworm gut sutures and packed with iodoform gauze. It healed readily and the patient has since been free from pain and tenderness in that side, and is quite strong and robust. There is some tendency to the formation of a hernia through the scar of the first operation. The appendix removed was two and one-quarter inches long and free from adhesions except at the tip where it was attached to the abdominal wall. It contained two fecal concretions about the size and shape of date seeds, which were probably accountable for the pains and the inter-

mittent discharge of fecal matter from the sinus. There was no doubt a perforation at the tip, at the time of the attack of appendicitis, which had become adherent to and formed an abscess cavity on the abdominal wall. The cavity having been opened and drained, finally closed down to a sinus which was kept pervious by the intermittent discharge of fecal matter through the appendix. The accompanying rough sketch will assist in giving a better conception of the position of the fistula and appendix.

PEDERASTY VS. PROSTITUTION; A FEW HISTORIC NOTES.

BY WILLIAM LEE HOWARD, M.D.

BALTIMORE, MD.

In an article written by Dr. Allen, published in the JOURNAL March 13, 1897, reference is made to some historic facts regarding the lives, habits and laws governing the hetairæ during the height of Grecian glory and the subsequent decadent Roman Empire. From reading Dr. Allen's citations of the laws controlling prostitution, one would conclude that the curse of the Grecian warriors and Roman Emperors were women. The truth is that as long as the women were allowed to exhibit their charms and passions the morals of the ancients were only those of all strong nations whose youths were developed in the manly sports and whose occupation was warfare. The presence and freedom of women among the men undoubtedly was the cause of great excessive normal sexual intercourse, but when the hetairæ were suppressed sexual perversion prevailed to a shameful extent, and was the cause of the rapid disintegration of the Roman Empire. One principal reason for this is to be found in the fact that the courtesans of that period represented the education, wit and wealth of their sex. *Aperte mala cum est mulier, tum demum est bona.* We find in ancient times, at all periods and among all people, the love of men for men was prevalent in proportion as the social condition of women was inferior. We see according to Herodotus how strong was the normal sexual instinct among the Scythians when they met the Amazons, who enjoyed equal rights with the opposite sex. Among the ancient Jews women enjoyed a certain amount of liberty and respect, and this race stigmatized the love of men for men as immoral and criminal. This race regarded a numerous progeny as the principal aim in life. Moses said that the Children of Israel were to multiply like the sands of the sea. According to Flavius Josephus abortion was punished with death. Among the ancient Greeks, who looked upon their women as inferior beings, abortion was allowed (Ploss). It was also permitted in Rome. We have only to recall the word sodomy to appreciate the practices which prevailed in the ancient city of Sodom. The habits of the citizens of this city even extended to animals (*immissio penis in anum*). Was not Queen Semaramis accused of having intercourse with her horse? In antiquity, as well as today, Asia must be considered the cradle of pederasty; although one need not go out of Italy to have a boy offered to him for a consideration. Homo-sexual love is by no means an unknown practice in America.¹ Tarnowsky² states that pederasty was introduced into the Orient from Armenia.

The relation between Ganymede and Jupiter was

regarded by the ancient Greeks as an example of love of boys. Xenophon says in his symposium that Jupiter raped Ganymede on account of his soul. Plato in his Phædo gives us more explicit information and speaks more plainly on the subject. He also alludes to practices among men and boys in the gymnasia. The relations between Hercules and Hylas, Achilles and Patroclus, were those of sexual love. Æschines attributes to Homer the intention of speaking of these personages in an erotic sense. I might continue along mythologic lines, but these cited cases are sufficient for my purpose.

The laws of Solon recognized pederasty to a limited extent, although the practice was under certain restrictions, which applied generally to slaves, leaving the free Athenians all possible latitude. The erotic discourses which constitute an important part of Ancient Greek literature, deal largely with pederasty. In Athens there were many temples erected to Eros, protector of homo-sexual love. Athenians tell us that Charmas, lover of Hippias, erected an altar at the entrance to the Academy. The barber shops and baths were the principal meeting places of male lovers, who here practiced pederasty. But it was principally at the gymnasia porticos that masculine love was predominant, being accompanied by coquetry, mincing manners, jealousy and abominable passions (Arnold Hug). Many authors, among them Aristophanes, Plato in his laws, and Plutarch in his erotics, explicitly state the condition of affairs at the gymnasia. There can be no elision of facts, no maladroit euphemism in attempting to explain their statements that pederasty was openly practiced in these public places. Even a personage of the rank and dignity of Callias was made the subject of a comedy of Eupoles, the Antolykos; he was again ridiculed by Aristophanes in his "Birds and Frogs." Callias was the lover of Antolykos. Lysias, the celebrated orator, mentions the prevalence of homo-sexual love in Athens, as does Plutarch. The practice reached its height in the time of Themistocles. To those of my readers who wish further explicit information on this subject I refer to the Symposium and Phædo of Plato, and the Symposium of Xenophon. These latter authors evidently wrote these works with the intention of acquitting or excusing Socrates of the reproach of his loving boys in the carnal sense. Dr. Allen speaks of Socrates listening to the lectures of Aspasia, the celebrated courtesan. Socrates and Alcibiades were victims of homo-sexual love and passions. Any student would rightly construe the language of Alcibiades when speaking of Socrates. Who does not recall all the flatteries, importunities, all the artifices in dress and manner Alcibiades used to seduce Socrates? We know that Alcibiades had numerous lovers. One author, Cornelius Nepos, says that he was greatly loved in the Greek manner (*penis immissio*). Socrates weakly explains his Eros by his desire to exercise influence over youth. Haller passes a very severe judgment on Socrates.³ According to him, Socrates was a debauched philosopher who ever had on his lips the word virtue, and that in reality practiced pederasty. It was the well-known hetaira mentioned by Dr. Allen that instigated Socrates to love Alcibiades in the carnal sense. Pausanias, in his zeal to give pederasty an elevated character, said that those who do not love with the Eros of Urania, that is, those

¹ See Author's paper, Alienist and Neurologist, January, 1896; April, 1897.

² Die Krankhaften Erscheinungen des Geschlechtsinnes, Berlin, 1886.

³ Die Rede des Sokrates in Platons Symposium und das Problem der Erotik; M. Koch, Berlin, 1886.

who do not love men but women, think only of satisfying a vulgar desire.

The noble traits of the Spartans even extended to their laws relating to sexual acts. With them homosexual love was forbidden and punished, although it was undoubtedly practiced secretly to a certain extent. Men who had sexual intercourse with each other were considered incapable of good and noble actions. In Bœotia pederasty was considered a state of matrimony. The same conditions prevailed in Elis and Thebes, and the famous sacred legion of three hundred Thebans was composed of warriors and their lovers. The barbarians condemned the practice and punished severely those addicted to the vice.

What I have said concerning the interpretations of the writing of the ancient authors, only refer to the historians. If we search further and read the poets, even the laymen must admit that the songs of these writers are honeycombed with perverted sexual senses. As an example let us take Anacreon's portrait of his friend Batyttus: "His hair is black and shining, his throat is like ivory and his hips are as beautiful as those of Pollux. Between his slender thighs, his thighs full of joy, I accomplished with modesty an immodest act, which really aspires to love." This ode is teeming with such perverted ideas, and is only excelled in its lupanar incidents by the works of Theocritus. If, as Lessing says, a poet should only feel what he writes, we can only draw one conclusion concerning the habits of the ancient poets.

In closing these cursory historic notes it is only just to make some compensatory statements: Pederasty and respect for women appear to have been in inverse ratio. At the time of which we write women enjoyed but little esteem. Undoubtedly the rigorous separation of the sexes accounts somewhat for pederasty. Female modesty was strictly respected. The Greeks were not indifferent to the propagation of the species, and celibacy, in spite of pederasty, was forbidden. The laws of Lycurgus imposed humiliating punishment on celibates, and in Corinth and Athens celibates were denied decent burial.

We find that pederasty was not prevalent in Rome until after the first period of the Roman Republic, but began to flourish after the Punic wars. The practice was brought to Rome from the Carthaginians. We have, however, evidence enough that it existed under the rule of the Cæsars. Even before this event Titus Veturius, a slave of C. Plautius, was punished by his master for having refused him his favors (Dionysius, Valerius Maximus). According to Polybius a boy could be bought for a talent in Rome. It is a noticeable fact that during the rule of the Cæsars celibacy existed to a great extent, while pederasty was the almost universal practice, although forbidden by laws. Suetonius says that Cæsar was often accused of pederasty. He certainly took along on his campaign a large number of gaily decorated goats for himself and favored officers. During his wars in Asia it is stated that he prostituted himself to Nicodemus. So well known was this that Curio gave him the name of Lupanar; others the Queen of Bithuin. Cicero also states that he sacrificed the flower of his youth to Nicodemus. But Cæsar was not indifferent to the opposite sex and was generally known as the husband of all wives and the wife of all husbands. In most respects Cæsar was effeminate. He did everything possible to attract his own sex by his personal appearance. He had himself carefully

dressed and his face smoothly shaved. He had his body depilated in order to give his skin an effeminate appearance to the touch. Octavius, the first Emperor of Rome, labored under the same accusation as Cæsar. Mark Antony says that he had intercourse with Cæsar, which was the price of his adoption. Of the excesses of Tiberius it is scarcely necessary to speak. He debauched the youths wholesale. Caligula did not pay much attention to the courtesans. Valerius Catullus openly said that Caligula had made him ill by his excesses. Mantegazza says that the following verses refer to Caligula:

"Tres uno in lectu. Stuprum duo perpetiuntur,
Et duo committunt: quatuor esse reor.
Falleris, extremis da singula crimina, et illum
Bis numeres medium, qui facit et patitur."

"There are three in one bed; two are passive in debauchery and two are active. I think there are four. You are in error. Impute one crime to those outside, but the man in the middle, who is both active and passive, you must count twice." This passage is clear enough to enable us to understand the vices attributed to Caligula. The son-in-law of Claudius, Pompey, was stabbed because he was found in the arms of a boy that Claudius himself loved. Nero had the young boy Sporus metamorphosed as far as possible into a woman and publicly married him, exacting for him all the honors due to the wife of a Cæsar. Some wag of the day remarked what a pity it was that Nero's father had not had the habits of his son. (I am indebted to Dr. Moll's *Contrare Sexualemfinding* for many of the historic facts given.)

Prostitution as it existed among the ancients was a sad condition of morals. When it flourished in Egypt and Rome with all its license, wealth and social recognition, there was moral palsy but mental activity. When the hetairæ were suppressed, their magnificent and harmonious banquets neglected, their songs unsung, sexual perversion and inversion became prevalent and mental and physical degeneration was the precipitate left. One was a condition of excessive normal sexual impulsion; the other abnormal sexual propulsion. Of two evils choose the lesser. The proper regulation of prostitution is necessary in our present social condition. History shows this to be a logical sequitur. Nothing but mental obtuseness, obscuration of physical facts and incoherence of a former adolescence can be the excuse for arguing otherwise.

ADVICE TO THE PROSPECTIVE MOTHER ASSISTANCE DURING HER CONFINEMENT AND CARE FOR A FEW DAYS FOLLOWING.

BY J. O. MALSBERY, M.D.

PERU, IND.

Our advice to the prospective mother must necessarily be ineffective, owing to her inherent tendencies and conformity to custom. The advice to have been effective, should have been given and more or less closely observed by her progenitor mother. This advice not having been followed, if given, has led to a change in her anatomy and lessening of her vital and physical forces. Then does it look plausible that we can supplant those inherent defects, if such there be, by advice and rules of habit to be followed during gestation or just prior to confinement, and make her delivery as of yore?

I answer, no. We can do much, however, by hints and suggestions suited to each patient, to lead the prospective mother up to her time of confinement in the best possible manner, considering her heritage, inborn customs and acquired habits of dress, providing, however, that our enjoinders be observed, which will rarely be the case. In what way, then, can we be of most actual service to our patients in this now, but not formerly, critical period? I answer by mechanical art and skill. Some "old-timer" may say: "I have practiced medicine forty years and have only had occasion to use 'this mechanical art and skill' some three or four times during that period." I would suggest that the inference would be that even in these few cases mechanics only was used, devoid of the art and skill.

The question occurs to me: What kind of wives does the popular mind, more especially, perhaps, the middle and what is termed the upper classes, demand? Is it the straight-waisted, square-hipped and heavy-muscled woman of serfdom, with the old-time doctor of "give nature a chance" and the easy birth; or, is it the more symmetrical woman with slim waist, shapely hips and rounded muscles, with the skilled physician who is capable of and knows when and how to apply mechanics with art and skill? Regardless of what the popular mind prefers, we have for our patients, in the classes mentioned, those who do or are at least striving to conform to the second class described. And at least one of woman's great aims in life is nice appearance, and to be consistent with the fancies and demands of man for the beautiful. So we are face to face with a painful and difficult labor, which to be sure, as is claimed by the old-time faddist of "wait and give nature a chance," with a wise and grave look, will terminate at some time and in some way, as a rule, if given time enough. How often we know or hear of a physician sitting, lying or sleeping, usually the latter, about a woman in labor for twenty-four, thirty-six; yea, even seventy-two or more hours, with an occasional injunction, and as he may suppose consolation, "there is nothing to do but to wait and allow nature to have her course."

The contempt of the suffering woman for such a physician should impel her to have him thrown into the street for thus allowing her to unnecessarily suffer, beside imperiling her life, together with that of her child. And, too, for such an insulting remark to mechanical science, art and skill, he should be relegated to the accouchement of *squaws*. I will pass abnormal presentations with the hint that they are many times responsible for the delay and unnecessary suffering, which are finally righted in a measure and delivery accomplished without their having been recognized by the accoucheur who is over-dependent upon nature. There are a few cases, however, of such presentations and other abnormalities, in which nature throws up her hands, and mechanical assistance must be had, or the life of the mother or child or both will be sacrificed. Now these are the cases we are taught by the old-time faddist that mechanical interference will be admissible, hands to be preferred of course, though with a wise but grave look he reluctantly admits that forceps may be resorted to, even though an engine of torture they be.

How often we hear the remarks, "forceps are to be used only when absolutely necessary," "remember that forceps are to be used only to save life," etc.; the humane side of the matter being entirely lost sight

of. It is appalling to know the wide-spread mutilation of the perineum of child-bearing women. It is so common, indeed, that we scarcely find a normal perineum after childbirth. Not the complete destruction of the pelvic floor, to be sure, but enough mutilation to destroy the esthetic effect, which is no small affair.

Now, what is the cause of all this? Not forceps, since they have always been relegated to the back-ground. I answer that it is due to the unskilful, inattentive and careless accoucheur, who is not up in this particular art. Note, if you please, the stride and advancement made in surgery, pathology and other branches of our art in the past few years, while obstetrics is still astride the same old hobbies of "wait and allow nature to have her course," "only use forceps as a last resort," etc. Properly constructed forceps, skilfully applied and carefully manipulated is the same boon to this branch of our art as asepsis has been to surgery and the microscope to pathology. What can be more grateful to the parturient woman than to have her suffering cut short, more beneficial at this period than to have her store of strength and vitality preserved, and of more lasting benefit than to have her perineum un mutilated? A few whiffs of chloroform, the skilful use of a properly constructed pair of forceps, at the proper time and in a gentle manner, will accomplish all that is to be desired.

This does not mean that forceps are to be used regardless of circumstances; but that circumstances will nearly always warrant their usage. I have only a word of direction as to how and when to apply the forceps, skilfully and as soon as you can be of any assistance to your patient. Adapt yourself to the convenience of your patient and not she to your convenience. This bugaboo of squaring your patient across the bed, with feet on chairs and you seated between her limbs, is all uncalled for. You should take your patient as you find her, and without any flurry slip the forceps on by the sense of touch, allow them to gently lock, if not at once the first pain will usually lock them; gentle traction in the direction according as the presenting parts advance during contractions, the other hand to be the sentinel to guard the perineum and direct the movements of the presenting parts; the head delivered, now rests on the hand, and with a reasonable amount of care the shoulder will glide over the perineum and the task is over.

The placenta—the old-time faddist is not satisfied to have allowed his patient to fight her own battle thus far unassisted, but he would have her lay in the muck, exhausted as she is, yet another hour or two to allow the uterus, as he says, to regain itself sufficiently to loosen and expel the placenta. An old hobby conceived in ignorance, born of superstition and nurtured in tradition. The fact of the matter is, the placenta is usually loosened by the last expulsive contraction which empties the uterus of the child. Hence there is no occasion for any delay. The fingers of the convenient hand wound up in the cord close to the placenta, with the other hand grasping the fundus of the uterus through the abdominal wall, now gentle traction with firm compression like unto the squeezing of a sponge over the fundus, is all that is required to remove the placenta, and at the same time this firm hold on the uterus, crowding it over to the one side, will rid it of all clots as the placenta is expelled, and continual pressure and kneading for a short time will prevent relaxations and the subsequent

formation of clots, and thereby rid our patient of the annoying "after-pains."

Our patients, as a rule, are not kept in bed long enough after confinement, while their diet is too strenuously restricted during this period. The mother now has a rapidly developing child to nourish (instead of a slow and by a different process as before delivery), together with her own strength, to maintain, nurture, shield and protect. She should therefore be allowed a liberal diet of nourishing food. She should be confined absolutely to bed during the first three weeks after her delivery. The next three weeks she may divide her time between being up and about the house and resting on the couch, while the next three weeks should be spent in gradually resuming her household duties.

Regarding the use of the douche following delivery, there should be no fixed rule, but each case should be conducted according to indications and symptoms. The rise of temperature and a fetid discharge will be indicative of the douche, which should always be used with the patient in the recumbent posture, sterilized warm water probably being as effectual as any antiseptic combination. Sore nipples and suppurating breasts are in all cases preventable. The moisture and smegma conveyed to the nipple by the child's mouth and allowed to remain is a very prolific cause of trouble with the nipples. This, added to the traumatism sometimes caused by nursing, and we have the secret of sore nipples, and their manner of prevention indicated—cleanliness and protection from traumatism. Suppuration is usually due to damage done the nipples, use of the breast-pump and pressure on the milk ducts due to the dragging down of the breasts.

To prove this statement we have only to remember that the hardness, soreness and redness always begin about the nipples, or the outer and under side, or the lower and under side of the breasts, owing to the position the breasts are allowed to assume while the patient is in bed or while she is up and about. The preventive is a wide band about the body in such a manner as to support the breasts well up on the chest and prevent their dragging down to the sides while in bed, and more especially the first few days or week while the breasts are heavy. A support may be needed to prevent their dragging downward after the patient is up and about. The breast-pump should never be resorted to; it most often results in harm and can always be dispensed with.

To remove an excessive amount of secretion from the breasts, limit the amount of fluid taken by the patient, produce free catharsis and apply a firm bandage to the breasts; this will accomplish all that is desired. When the secretion is to be curtailed entirely, for any cause, a persistence in the above for a few days, limiting the catharsis somewhat, will be effective and complete; whereas the use of the breast-pump will only be transitory. I realize there is argument on the other side of this question; there is likewise on the old side of surgery.

QUID AVARUS? STULTUS ET INSANUS.

BY ALBERT S. ASHMEAD, M.D.

NEW YORK.

I lived for eighteen months with James Henry Paine, the miser. He occupied a garret room at 177 Bleecker Street, New York; the little house belonged

to the Oothout estate. He was apparently 70 or 75 years old, tall, slim-built, with pointed chin; had a sharp, beak-like, rather red nose, whose point turned in to the upper lip; his mouth firm set; his eyes keen, furtive; his forehead high, retreating; bald on the top of the head, and he bore his head carried forward, bent from his shoulders; his walk was a shuffling of one foot in front of the other, about six inches to a step. His face was bearded. He dressed shabbily, or worse; no stockings, shoes tied together with pieces of twine.

It was his habit to go out every morning, at 9 o'clock, and return about the same hour at night or later. When he returned he usually had a bundle of newspapers under his arm. His garret room was littered with dailies. The climbing the stairs at night, to reach his room, would take him a long time. He burned a lamp, or a candle. When he had reached his room, he used to strip stark naked, and go to bed. He washed himself every morning from head to foot; he was the cleanest man bodily that I ever saw, though his clothing was ragged and dirty. He was an educated man; he said that he had an annuity of \$375 to live on. If you offered him food, he would eat it ravenously and talk of the current topics of the day with sound sense. He had no infirmity of speech, sight or hearing.

This man, in crossing Broadway one day, was knocked down and received a fracture of the hip. He was carried to his room, where he died (Dec. 23, 1885). After his death, a lawyer presented a paper to the surrogate of New York for probate as the man's last will and testament. It was dated Aug. 15, 1885. It contained only a few lines, by which he gave all he died possessed of to the lawyer. When notice of probate had been published, Mr. Charles F. Chickering, the piano manufacturer, brought to court an old brown-paper parcel, with contents; Mr. Paine, said he, had left that in his trust, seventeen years before. He had put it in his safe, had never opened it and did not know its contents. It was opened in court and found to contain nearly \$400,000 of currency and securities, \$14,400 in State bank bills, which should have been redeemed in 1863, \$40,000 in certificates of deposit which had been lying dormant in the Metropolitan Bank for seven years, and \$342,000 in national bank bills. "At simple interest," said Attorney-General Russell, "these sums, so lying useless, would have swelled to \$800,000, while the owner went shirtless and stockingless, ate broken crusts and rotten vegetables and slept naked in a stifling garret."

A trial of the case resulted to test the validity of the will, three nephews and a niece appearing as heirs. I was the medical expert in the case. I testified that at the time I knew him, Mr. Paine was incompetent to make a will. Hon. Leslie W. Russell, ex-Attorney-General of the State of New York, appeared for the contestants; ex-Governor Chamberlain of South Carolina for the legatee.

On cross-examination I was asked whether, in my opinion, a miser was a sane or an insane man? I answered that any man who neglected his duty to himself, to relatives, neighbors and to his God, in the possession of great wealth, was insane. This man, if he remembered that he possessed this wealth, failed in these duties. If he did not remember that he possessed it, this might be an evidence of mental incapacity.

Mr. Paine was born on the 10th of April, 1805, in

Boston. He was a shrewd man of business, had received an inheritance of \$40,000, and in 1856, when he left Boston to come to New York, he had increased it to \$250,000. He had a strong will, and was very obstinate. Only after he came to New York, did he dress poorly and live meanly. While in Boston, he had had no eccentricities of habit or conduct. He left the latter city under a cloud, being suspected of misappropriating funds belonging to the Lobdell estate. In 1860, his brother came to New York, and after much difficulty found him. From this time forward, believing that his brother had lost his fortune, Robert Treat Paine sent him an allowance. In 1862, he was arrested and caused to disgorge the misappropriated funds, \$75,000. He declared, "pulling his hair out by the roots," that he was being robbed, blackmailed, victimized. That is the way the thing appeared to his mind. After that, his eccentricities grew on him; yet there is evidence to show that he was quite able to take care of his fortune, though he concealed it from his brother and his friends. In one transaction in 1868, he agreed to furnish \$20,000 to be doubled in Wall Street. He required of this partner, before advancing the money, a power of attorney not only to control the \$20,000, but to manage all the other's affairs. So closely did he follow his partner that after two or three weeks the latter preferred to forego the contemplated profits and to return Paine his money. The profits in this short time had amounted to \$8,000. Instead of giving the partner \$4,000, he gave him only \$400, under the plea that he had not fulfilled his contract.

From this time on, nothing is known of him, but a life of abject want and beggary. His friend, John H. Wardwell, the claimant, writes to his brother, Robert Treat Paine, Jan. 3, 1883, as follows: "He will not listen to reason, and has become so miserly in spirit, he is thoroughly devoted to a life of abstinence and penny. A gentleman from California has been with us for some time. He has noticed your brother. He says he is precisely in the condition of Mr. Lick of San Francisco, a rich old miser, who was starving himself to death. He was finally put under guardianship by the court (this gentleman being one of them) and was compelled to take care of himself, as a man ought to who was worth his millions." When he was injured on Broadway, Dec. 15, 1885, there were found on his rags \$125 in money. He was found dead in bed.

The following facts were distinctly shown by the evidence at the trial: This man allowed nearly \$400,000 to lie useless for nearly twenty years, and that he did not, like other misers, enjoy the presence and handling of his treasures, but apparently forgot all about it. He used to steal napkins, food, newspapers and other articles of little value. He would borrow small sums of money, when he had hundreds of dollars in his pocket. He bought sometimes bread, and paid only part of the price, saying that he had lost some money. He denied himself the necessities of life, thus showing an utter disregard or ignorance of every obligation not only to others, but to himself. He had delusions too, believing that he had a claim against the Chicago Land Company, there being not the slightest ground for such an opinion. He believed his brother to be unfriendly to him, while he was shamelessly living on his bounty. He required 10 per cent. interest on a loan of \$10,000 to Mr. Chickering while \$400,000 of his money was lying in the latter's safe without bearing interest.

The evidences of mental incapacity in the case of this miser, for he was a miser, whether he remembered the \$400,000 stowed away in another's safe, or not, are to be found in the following facts: partial paralysis of the limbs, evidently due to some degeneration of the spinal cord; progressive debility due to chronic diarrhea; lack of memory; filthy habits; disregard of his bodily wants; delusions; the hoarding of such a large sum of money, without specific aim; and the making of a will in vague terms, in a few words, giving it to a man who had no claim on him of any kind. It is possible that, had he not died from weakness of the heart consequent on the shock caused by his accident, he would have fallen within a few months into senile dementia.

The question is, are all misers insane? If so, Johns Hopkins of Baltimore, James Lick of California, were insane, and their wills should not stand, although their wealth did such good work after their death. All men have an element of insanity born with them—*un grain de folie*. In law there is one standard of sanity; in medicine there is another. From the medical standpoint all misers are insane, but the law discriminates. In medicine a man is declared insane on physical as well as mental pleas. The law recognizes in every individual an individual who, as long as he remains faithful to his once known nature, however whimsical, eccentric, absurd that may be, is a sane man. If a man has always been a fool, he is legally sane; he is insane only when the folly crops out suddenly, in sharp contrast with his previous manners and ways. Medicine recognizes alcoholic insanity; law does not. Should a man, while drunk, commit a murder, no expert could prove to the satisfaction of the law the irresponsibility of the patient. Yet medicine affirms that the drunkard is insane, consequently innocent. Drunkenness is the state of a diseased brain. Mr. Paine, up to the time when he left that money in Mr. Chickering's charge, was possibly sane. From that moment his keen desire for the acquisition of wealth began to deteriorate, although it revived in some degree from time to time, like a flickering flame about to be extinguished. As his paralysis increased, there must certainly have been some deterioration of his brain.

Inability to adapt oneself to a changed environment is evidence of insanity. But the opposite, that is, a change of nature without a preceding and corresponding change of environment justifies, perhaps, a similar deduction. There was no cause, no reason, why the life of this man should have been different in New York from what it was in Boston, yet it was utterly different, and had become suddenly so.

Leaving out of the question the moral responsibility of the possession of so much wealth, medicine finds sufficient grounds in this case for the definition of mental incapacity from the facts stated above.

Paine's will was set aside by the surrogate, so that law and medicine together affirmed the insanity of the man.

Definition of Insane Delusion.—The supreme court of errors of Connecticut holds, in the Appeal of Kimberly, Dec. 22, 1896, that the charge of a trial judge is as accurate as, in the nature of things and of language, could reasonably be expected or justly required, when he says that an insane delusion is a false belief, for which there is no reasonable foundation, and which would be incredible under the given circumstances to the same person if of sound mind, and concerning which his mind is not open to permanent correction, through evidence or arguments; and that it is only where false beliefs are such as a reasonable man would not entertain, that they become insane delusions.

SURGERY ONE HUNDRED YEARS AGO.

AN HISTORICAL STUDY

BY DR. GEORGE FISCHER.

DEDICATED TO THE GERMAN SURGICAL ASSOCIATION.

TRANSLATED FOR THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION
BY CARL H. VON KLEIN, A.M., M.D.

CHAPTER V.—SURGICAL INSTRUCTION AND LITERATURE.

(Continued from page 881.)

In the first half of the century the physicians wrote more in *Latin than in German*. At the expense of the substance, they sought with anxious care for classic purity and beauty of diction and guarded themselves, in their Latin, against errors. "*Donatschnitzer*," the usual expression at that time for grammatical errors. (From the writings of Donatus, a Roman grammarian of about 355 A.D., a system of Latin language was compiled, which served in the middle ages as a guide. Later, a Latin grammar was usually called a *Donat*.) The national self-consciousness was so weak that for a long time Germans contended as to which language they should write. The one party thought German books did more harm than good, bred quacks and incompetents, and increased the sufferings of nervous people, because every layman could understand the books; therefore it was not well to expound medicine in the mother tongue. They considered it too poor to express everything they desired. It made one ridiculous to use newly-coined words. They wished that all physicians would write in Latin, which would lighten study, since then one need not learn to use so many newer languages. "German is an affront," said the satirist Rabener, in 1751. "I know men who would gladly give half their faculties if they were not German, but might have been born in Rome under the consulate of Cicero. To them nothing is so amusing as the care necessary in the German language to avoid *Donatschnitzer*. Whoever took the pains to write elegant and grammatical German could not in their opinion feel greatly abused if they called him a German ignoramus (*deutscher Michel*)." The other party occupied the position held by the French, English and Italians, who wrote in their mother tongue and made merry over us because we learned so many foreign languages. It is safe to say we would be held in greater respect by other nations if we had written German; certainly the Latin writers were guilty of great error and folly. Only later in the second half of the century did it become the general custom to write in German, excepting for doctor's dissertations and academic programs, although in 1778 in Baldinger's new magazine for physicians, German and Latin articles alternated. In 1800, Bernstein appended to his practical handbook for physicians, a Greek, French and German index, and supplied the Latin words with long and short signs, that he might not offend a grammatical ear. The German of the second-class surgeons was thoroughly bad, and their descriptions of interesting cases so diffuse and tedious that today it is a punishment to read them. And also the style of the better surgeons left very much to be wished for, even the Surgeon-General Bilguer uses the word "*Arschbacken*." The first surgeon who wrote in choice German, and even in classic style, was A. G. Richter. He desired an elegant diction and correct expression in order to win the respect of the public. The French, as A. Paré, wrote almost everything in their mother tongue, for the simple reason that they seldom learned foreign

languages. Besides their many orthographical inaccuracies, they often stumbled over the names of foreigners in a very laughable way. It was not unusual for them to make authors' names out of the names of cities, and baptismal names were quoted instead of the family name. The surgeon David, in Paris (1757), in a dissertation on the extraction of cataracts, spoke often of the renowned Gottfried, who was no other than the German anatomist, Gottfried Zinn. In the translation of English they made frequent blunders. The words, "By an unknown," which stood on the title-page of an anonymous English work, were rendered, "Monsieur Unknown," and when Pott published his "*Farther Remarks upon a Method of Curing the Palsy of the Lower Extremities*," M. Duchanoy, in Paris, noticed this work with the following words: "*Monsieur Farther vient de publier en Anglaise*, etc.

German literature made a new departure in the second half of the century, when *translations* and extracts from the best works of the English and French were imported. There was an especial need in Germany of surgeons who could work independently, so that good original articles very seldom appeared. One of the evils of that time was the fact that our countrymen rarely made their unsuccessful cases public, and did not admit that the publishing of important unsuccessful cases was often far more instructive than collections of entirely successful cures. The praiseworthy undertaking to import foreign wares had also its reverse side; it lay in the blind esteem for everything foreign and the disregard of everything that did not come from London, Edinburgh or Paris. "People of good taste do not read German books," said Zimmermann. Whence developed a formal anglomania, which retarded the growth of national powers. It is not without interest to observe how belles lettres also suffered from this anglomania from 1750 to 1770. Young's "*Night Thoughts*," the romances of Richardson, and others, with their verbose, pathetic, sentimental elements have exercised through a long succession of years the greatest influence on the spirit of literary publications in Germany. They indiscriminately translated the most miserable, insignificant pamphlets, so that of the English medical literature appearing in the course of a year about three-fourths was good. The mania for translations was such that of about two hundred and eighty medical works appearing in Germany in 1784, seventy-seven were translations. Pott's work on injuries of the head was translated three times, by Murr, Rumpelt, and Spohr; likewise, his work on hydrocele. Each complained continually of the false rendering and bad German of the others. A few conducted the business *en gros*. Such was the principal product of Dr. Spohr, in Seesen, the father of our celebrated violinist, who within seven years (1786-1792) issued thirty-six translations of large works. Likewise, Dr. Michaelis, in Leipzig, who launched forty-eight translations in ten years, and probably more later. They both published, for the most part, English works, with a few French and Italian books, but, according to the fashion at that time, did not print their names on the title page. "Do not ask my name, since I do not think to make myself a great name through translations," he says in a preface. Regard for everything foreign was carried to such an extent by us that foreigners came to Germany, not only as physicians-in-ordinary, but even as teachers in the universities. In 1729 the French Astruc, Professor of Medicine in

Toulouse, went to Dresden as the Saxon physician-in-ordinary, but he soon returned to France. The Dane, Callisen, in 1787, after the death of Voitus, received a call to the Berlin Collegium Medicum Chirurgicum, but he declined it. When, after Baldinger's departure, the chair of medicine at Göttingen was vacant, they called Dr. Duncan from Edinburgh, offering a salary of £200 sterling. He declined this, as he earned very much more from his practice. At this time J. C. Rougemont became surgeon-in-ordinary to the Kurprince of Cologne, and soon after professor of anatomy and surgery in Bonn. He was born in St. Domingo, had studied in Dijon and Paris and had been, under Desault, demonstrator of anatomy and surgery. He knew no German, but he learned it in a very short time. Erfurt also enjoyed the honor of having a French surgeon, Dr. A. Alix, as professor of anatomy. Apparently convinced that surgery was nowhere in the world so advanced as in France he was proudly triumphant if he could discover an Erfurt village barber in some piece of stupidity. Dr. Alix was insolent enough to assert that in the largest cities of France there were not so many fools to be found as in the smallest villages in Germany; from which one can conclude how it was in German villages. French courtesy he certainly had never known, else he could not have become so inflamed over the ignorance of a surgeon who overlooked the venereal cause of phimos, that he called him a beast. He belonged to those men who throw dirt if one does not take off his hat to them. The worst consequences of this mania for translations and undue esteem for everything foreign, were that the worth of the national writers was entirely overlooked and that the works of our best surgeons in Germany was much less known than that of foreigners.

The growing interest in natural science early resulted in the introduction of periodicals and magazines. Among the first was the *Hamburgische Magazin*, or "Gesammelte Schriften zum Unterricht und Vergnügen aus der Naturforschung und den angenehmen Wissenschaften überhaupt." The first volume appeared (monthly) in 1747.

Of the magazines which had sprung up with the impetus of the times, many had fallen by the wayside, but those in Hanover survived; and to fill the gap occasioned by those which had suspended, a new journal was established in Berlin, in 1765, under the title, *Gesammelte Schriften und Nachrichten für die Liebhaber der Arzneiwissenschaft, Naturgeschichte und der angenehmen Wissenschaften überhaupt*. It contained, like the one in Hamburg, translations, extracts, news from new books and journals. The following were among the most important medical and surgical periodicals:

S. Schaarschmidt. Med. und chir. Berlinische wöchentl. Nachrichten. 6 Bde. 1739-48. Sammlung der Schriften vom Ursprunge der Wundarzneikunst. Erfurt 1757. Sammlung chirurgischer Bemerkungen, aus verschiedenen Sprachen übersetzt. Gotha. 5 Theile. 1758-70. A. G. Richter. Chirurgische Bibliothek. Göttingen. 15 Bde. 1771-97. Auserlesene Abh. prakt. und chir. Inhalts. Aus den Londoner philos. Transactions. 5 Bde. 1774-80. — J. C. Tode. Med. chir. Bibliothek. Kopenhagen. 19 Bde. 1775-86. Neue med. und chir. Wahrnehmungen, aus verschiedenen Sprachen übersetzt. Gotha 1778. (Sommer) Sammlungen der auserlesenen und neuesten Abhandlungen für Wundärzte. Leipzig 1778-94. Auszüge aus den besten französischen periodischen med. chir. und pharmac. Schriften. Leipzig. 5 Bde. 1780-84. Kleine auserlesene med. chir. Abhandl. aus verschiedenen Sprachen übersetzt. Leipzig 1781. — Wienerische Beiträge zur prakt. Arzneikunde, Wundarzneikunst und Geburtshilfe 1781. F. A. Weiz. Taschen-

buch für deutsche Wundärzte. Altenburg 1783-90. Forts. 1791-95. — Auswahl der besten Beobachtungen für Wundärzte. Leipzig 1783. Archiv der prakt. Arzneikunst für Wundärzte und Apotheker. Leipzig 1785. Sammlung med. und chir. Originalabhandlungen. Hannover. 3 Bde. 1785-87. — J. C. Tode. Arzneikundige Annalen. Kopenhagen. 13 Hefte. 1787-92. Dessen med. chir. Journal. ib. 5 Bde. 1793-1801. — Abhandl. der k. k. med. chir. Josephs-Akademie zu Wien. 2 Bde. 1787-1801. — Der Wundarzt, eine Wochenschrift. Leipzig 1788. 2 Bde. H. Rougemont. Bibliothèque de chirurgie du Nord. Bonn et Paris 1788. J. H. Rahn. Med. pract. Bibl. Zürich 1791. — Kortum und Schäfer. Med. prakt. Bibl. für Aerzte und Wundärzte. Münster. 3 Bde. 1789-92. — J. Arnemann. Bibliothek für Chirurgie und prakt. Medicin. Göttingen. 3 Bde. 1790-93. — Simmon. Sammlung der neuesten Beob. englischer Aerzte und Wundärzte für die Jahre 1787-90. A. d. Engl. Frankfurt 1790-94. Aesculap, eine med. chir. Zeitschrift. Leipzig 1790. — C. W. Hufeland. Neueste Annalen der franz. Arznei- und Wundarzneikunde. Leipzig. 3 Bde. 1791-1805. J. Hunczovsky und Schmidt. Bibliothek der neuesten med. und chir. Literatur. Wien. 3 Bde. 1791-93. — K. G. Kühn und G. Weigel. Italienische med. chir. Bibliothek. Leipzig. 4 Bde. 1793-97. — Hufeland. Journal der prakt. Arzneikunde und Wundarzneikunst. Jena 1795. Von ihm und Himly, später mit Harless. Osann fortgesetzt. — Merkwürdige Abh. der London'schen Gesellschaft zur Vermehrung der med. und chir. Wissen. A. d. Engl. Braunschweig 1797. — Arnemann. Magazin für Wundarzneiwissenschaft. Göttingen. 3 Bde. 1797-1803. — J. C. Loder. Journal der Chirurgie, Geburtshilfe und gerichtl. Arzneik. Jena. 4 Bde. 1797-1806. — Kausch. Geist und Kritik der med. und chir. Zeitschr. Deutschlands. Leipzig. 12 Bde. 1798 bis 1803. Breslau. 18 Bde. 1803-5. — Schreger und Harless. Annalen der neuesten engl. und franz. Chirurgie und Geburtshilfe. Erlangen. 3 Hefte. 1799 bis 1800.

It is seen that Germany in the second half of the century was rich in medical and surgical periodicals, one after another of which, indeed, suspended after the first volume. Among the first of the journals which appeared regularly was the *Berliner Nachrichten* of Prof. Samuel Schaarschmidt, which recited numerous cases and operations. It consisted of one sheet a week and was sold for a groschen. Those periodicals were very popular which appeared quarterly, four making a volume. They contained exhaustive reports of the current publications, and also of foreign works. In medicine, Professor R. A. Vogel made the beginning, in Göttingen, in 1751; he furnished only extracts from the best books, and used for foreign material, the *Gentleman's Magazine*, the *Monthly Review*, and the *Journal des Savans*, if they did not appear at the same time. Besides medicine, he discussed botany, chemistry, anatomy and zoology. In 1771, A. G. Richter founded a similar quarterly for surgery, the first, as well as the best in Germany, through which he rendered the highest service to German science. He gave faithful and complete extracts from the best surgical and obstetric writings at home and abroad. The royal library in Göttingen, which had a rich collection of English works, was of great service to him. He opened his quarterly for the study of cases, but retained the right to abridge them. With the thirteenth volume (1793), Richter took Professor Loder of Jena, who had just become his son-in-law, as a colleague, and announced that only an unexpected accident could deter him from continuing this work. Four years later the first volume of *Loder's Journal für Chirurgie* appeared, which was a continuation of Richter's quarterly, and Richter gave up his work with the fifteenth volume, after twenty-seven years labor. This quarterly combined the best from all countries of Europe and was indispensable to every surgeon. It served as a bridge over which our old, but yet living surgeons passed to English and French, and joined to the surgery of the foreigners the modern German surgery, when Langenbeck, in 1806, began to

publish a review for surgeons. He said he would deem himself happy if he could approach in some small measure to his great predecessor. After Richter, followed the Danish professor and dramatic poet Tode in 1775, with his medical and surgical review, taking as a model the Edinburgh Medical Commentaries. He wished among other things to show everything which appeared in Denmark. With the different personalities, the kind of *criticisms* also changed, which, if they were harsh, threw the authors into a passion. One feared, yes hated the people, of whom Goethe said, "der tausend Sackermant! schlagt ihn todt den Hund! Es is ein Recensent!" Vogel wrote decorously; on the contrary, the prolific Tode, whose name as author or translator is found on 127 different works, was sharp and abusive, and with his gay, trivial expressions was apt to be sarcastic. His bitterness was especially poured upon the works of Gruner and Baldinger, of whose magazine he said, that the master of a mountain-rat had never, at the opening of his curiosity basket, promised more and performed less. Theden could not bear the blame attached to him for his "Instruction for Under-Surgeons," and he wrote Tode an ironical letter thanking him most heartily for the criticism and promising to lay before him a later work, begging his judgment of it. The severely criticised surgeon Bruns also complained in a bitter letter. Tode exacted the highest standards of excellence of the leading surgeons, and he censured Schmucker for offering lack of time as an excuse for a negligent style. He held that it is no mark of respect to a stranger to receive him in a dressing gown, and no fault in a Schmucker can escape criticism, since whatever the first surgeon-general of the Prussian army allows himself to do will be counted a virtue by the great mass of lesser surgeons. Richter's criticisms were irreproachable. He possessed the enviable gift of hitting the nail exactly on the head, avoiding diffuseness, expressing himself clearly and definitely and clothing his thoughts in a pleasing garb. He rarely passed a judgment, but when necessary, "he observed the rule of frankly asserting the truth according to his own conviction, even against the opinions of those whom he honored, and he was equally frank in hating those cynics and cowards who were too craven to appear by day with uncovered faces, but like scholarly bandits, crouch in the darkness, and masked and mailed thrust a dagger into the back of the object of their hatred." Richter's sound judgment, his emphasis of the merits of others and his high appreciation of them, together with the admission of his own mistakes and his efforts to overcome them, qualities which were greatly admired in the surgical reviews, had a powerful influence upon the development of German surgeons. Laconic brevity alternated with pungent sarcasm. His critique of Henckel's "Chirurgische Operationen" consisted of these four words, "es bleibt beim Alten," and of a certain "Odontology," he says, "a treatise on toothache in which almost nothing is said about toothache."

Besides the reviews, there were collections containing treatises or translations and extracts from dissertations. There were also Latin programs and academic theses, often containing but a few pages and of only temporary interest. As many of these, in spite of their merit, were difficult to obtain, A. von Haller collected into five volumes (1755) the most important of the Latin surgical treatises. To make these more available, the Naumburg physician, F. A. Weiz, began

(1769) to publish in the German language full extracts from theses and treatises on surgery, and this work was swelled to twenty-six volumes. German surgical literature did not possess the abundance of essays, such as those brought out by the Edinburgh Medical Essays, the Medical Transactions and the Medical Observations and Inquiries; the German work lacked sufficient detail. In 1776 the Surgeon-General Schmucker began some notices of the Prussian army physicians, which were collected in the miscellaneous surgical essays published by him, but not until Arnemann's *Magazin für die Wundarzneiwissenschaft* appeared, in 1797, do we find the first periodical whose object was to report especial cases. It was to contain practical treatises and special notes on surgery, further descriptions of operations and their methods, unusual cases, new surgical remedies, sections reports, questions in surgery and surgical literature: criticisms were entirely excluded. Biographies of living physicians were at that time very well received in Germany. Börner issued the first one, in three volumes (1749); Baldinger followed him, and toward the end of the century, Elwert. In them all, as might be expected, the number of surgeons noticed was much less than that of physicians. A new kind of literature came into fashion in France, the lexicons, in which they expounded the whole science in little broken bits, without coherence (Sue, junior, 1773). Bernstein introduced this kind of literature into Germany.

The number of journals, magazines and collections increased so considerably that in the latter years of the century men began to complain of them, and at the same time good text-books appeared but seldom. The periodicals alone would fill a small library, and it gave the practitioners no little perplexity. For a large part of them the periodicals formed the only source of information and it became more and more impossible for them to collect all these publications and to follow the progress of science.

Most of the teachers of surgery felt obliged to bring out a special *handbook*, or *text-book*, for their lectures, and for that reason the number of such works was very large compared to those of our time. Within fifty years (1750-1800) there appeared in Germany some sixty handbooks, text-books, principles, guides, manuals and instructions. The most important of these were those by Heister, Platner, Ludwig, Theden, Plenck, Pallas, Eller, van Swieten, A. G. Richter, Bilguer, Bernstein, Loder, Arnemann, Metzger, Ackermann, and others. This number includes twelve translations of text-books, or works of a similar nature; among them the works of de Villars, Sue le jeune, de la Motte, Chopart, Desault, Portal, Lara, Aitkin, Benjamin Bell, White and Nessi. Instead of inserting here a catalogue of surgical books, such as we will have occasion to give from time to time in the course of this work, we will mention in passing only those works which were recommended to German surgeons by their teachers (Professor Plenck and Surgeon-General Theden). They were as follows:

For anatomy. A. Schaarschmidt, Anatomische Tabellen, 1759. Plenck, Anfangsgr. der Anatomie, Cassebohm, Anweisung zur anat. Betrachtung und Zergliederung 1769. Kulmus, Anat. Tabellen, 1711. Verdier's und Winslow's anat. Beschrieb.

For physiology. Haller Erster Umriss der Geschäfte des menschl. Lebens, 1770; Anfangsgr. der Physiologie, 8 Theile, 1762. Heusermann, Phys. 1 Th. 1751.

For pharmacology. Plenck, Select. mat. chirurgicae, 1775. Auswahl der chir. Arzneimittel, 1775. Gerhard, Mat. med. 1781. Gleditsch, Verzeichniss der gewöhl. Arzneigewächse, 1769. Löseke, Mat. med. 1755.

For medicine. Tissot's Schriften.—Zimmermann, Von der Erfahrung, 1763. Löseke, Therap. spec. int. 1 Th. 1767.—Home, Grundsätze der Arz. 1772. Zückert, Abh. über Nahrungsmittel, Speisen u. s. w.

For surgery. Heister, Grosse Chir. 1718, kleine Chir. 1747.—Z. Platner, Einleitung in die Wundarzneik. 1749. E. Platner, Zusätze, 1776.—Plenk, Anfangsgründe, 1783.—Ludwig, Anfangsgründe, 1766.—Pallas, Chirurgie, 1764.—Pott, Abh. über versch. Gegenstände der Wundarz. 2 Theile.—Abh. der Académie de Chirurgie.

For bandaging and the use of instruments.—Henckel, Anleitung zum chir. Verbands, 1750. Garengéot, Traité, 1720.

For operations.—Bertrandt, Abh. 1770. Heuermann, Abh. 1754. Henckel, Abh. 1770.

For diseases of the bones.—Petit, Kirkland, Pallas.

For cases in the field.—Works by Bilguer, Theden, Baldinger, van Swieten, Pringle.—Surgical notes by Bilguer, Schmucker, Pheden, Plenk, Leber, Hagen, Henckel, le Dran, Aersel, Bromfield, Goulard.—Bibliothek der Chirurgie by Richter, Weiz (Auszüge aus Disputat.), Sue (chir. Lexicon.)

The following figures may give an idea of *prices of books at that time*:

| | |
|--|----------------|
| Heister, Grosse Chirurgie. | 2 Thlr. 12 gr. |
| Heister, Kleine Chirurgie. | 1 " |
| Z. Platner, Einleit. 2 Bde. | 2 " 12 " |
| Haller, Physiologie, 8 Bde. | 17 " |
| A. G. Richter, Anfangsgründe der Chir. 7 Bde. 10 | " 16 " |
| A. G. Richter, Chir. Bibliothek, 15 Bde. 2 Reg. 22 | " 8 " |
| C. C. von Siebold, Chir. Tagebuch. | 16 " |
| Schmucker, Chir. Wahrn. 2 Bde. | 2 " 12 " |
| Schmucker, Sammlung verm. chir. Schr. 3 Bde 2 | " 12 " |
| Theden, Neue Bemerk. 3 Bde | 2 " 2 " |
| B. Bell, Lehrbegriff. 7 Bde. | 6 " 16 " |
| Zimmermann, Erfahrung | 1 " 8 " |

I do not know what the dealers paid for surgical works. In general the receipts of literary men in the middle of the century were not inconsiderable if they were university teachers and men of prominence. In Schiller's time, as is known, the book trade showed itself in a very honorable light, prostrating itself before our poet and begging for the privilege of publishing his writings. But in general the revenues were slender; for example, in 1737 a very honorable Herr Lesser received only sixteen good groschen per printed page of a Chronicle of Nordhausen.

(To be continued.)

SOCIETY PROCEEDINGS.

German Medical Society of the City of New York.

Stated Meeting, Feb. 1, 1897.

W. FREUDENTHAL, M.D., in the chair.

Dr. SIMON BARUCH read a paper on

FAULTY HYDROTHERAPY,

in which he opened with the statement that despite its antiquity water has not yet obtained a firm footing in therapeutics; despite its marked clinical results it still requires to be brought to the attention of practitioners; despite its espousal by the best authorities in ancient and modern medical practice and literature, the average medical man is not familiar with its history, action and merits.

Dr. Baruch regarded as the chief reason for this state of affairs, the absence of instruction in hydrotherapy in the curriculum of medical schools, to which is due the ignorance of the rationale of the action of water and the unfamiliarity with its correct application, which are found among the majority of public men. The consequent indifference to definite methods has rendered its application in the hands of many unsuccessful and discouraging. Failure is the sure result of inattention to details. As the physician must judge the value of a remedy by his experience, it followed that failure to achieve the results which the experience of others had led him to expect, has brought this remedy into disrepute, the fact unhappily remaining unrecognized that not the remedy, but its improper application, was at fault.

Although water is a simple remedy and appears to be so easily applied, Dr. Baruch believed that no remedy in the

entire materia medica demands a like judgment and care in its application. As an illustration, an incident was referred to showing how a brilliant young hospital physician shrank from the Brand bath in typhoid fever, because he had seen a case die under cold water treatment, which consisted in wrapping the patient in a sheet and sprinkling her with ice water. He insisted that the object of the Brand bath is to sustain the nerve centers first and to reduce the temperature afterward.

Although the latter was regarded as an index of gravity in most cases, the bath was not intended to combat it. A bath of 65 degrees F., with friction for twenty minutes every three hours, whenever the body temperature reached 102.5 degrees F., is calculated to arouse the nerve centers from their lethargy and give an impetus to all the dormant functions depending upon them. The low temperature of the bath irritates the peripheral sensory filaments, from which the irritation is conveyed to the central nervous system, to be reflected upon the heart, lungs and secreting organs. Friction adds to the irritation by multiplying it, the cold water being kept in motion; cold affusion over head and shoulders is added to promote the same object. To whip up the nervous system (as is done in poisoning by narcotics) is the object of the Brand bath. But day by day, with occasional disappointments, a fifth, or a quarter, or a half degree of temperature is gained; the heart maintains its vigor, the kidneys increase their work, the stomach receives more kindly the proffered nourishment; sleep is won.

By this method the enemy can not be routed, the disease can not be shortened, but we hold him in check surely and completely until his reinforcements fail. The bacterial life period reaches its end, the toxins cease to be evolved, and at last the physician stands conqueror of this deadly enemy. This is the true aim, the correct rationale of the Brand bath. Were temperature reduction the chief need, we would find the key to the situation in our splendid coal tar antipyretics; were pulse reduction the desideratum, veratrum viride would prove an open sesame; were nourishment the chief object, there is no lack of this in modern culinary and chemical art. But all these are as naught in the face of a toxemia which overwhelms the nerve centers of the most robust as well as the most feeble patient. To wrap the patient in a sheet and then sprinkle him with ice water, as was done in the case cited, was a deviation from the correct technique of the typhoid fever bath. Such a procedure does not fulfil the main object of arousing the nervous system. After the first shock has passed, no opportunity is given for reaction because the sprinkling of ice water continues, the cutaneous vessels and the elastic tissue of the true skin contract, as evidenced by cutis anserina; the extreme cold imparted by the wet sheet, without remission, benumbs the sensory nerves and thus impedes the transmission of the shock and subsequent stimulus, even if the latter has ensued in an exceptionally strong individual.

Wrapping the patient in a sheet and sprinkling him with ice water did not fulfill these conditions, because of the absence of friction in this faulty technique (which in the Brand bath stimulates to reaction, and by widening the blood area of the skin cools a large quantity of blood) frustrates completely the true aim of the cold bath.

The surface temperature is indeed reduced by this improper method, but the blood is driven to the interior, congestions are favored, the organs are overloaded and the patient emerges from such a bath a shivering, cyanosed weakling. The ideal results obtained by Brand and others in 1,200 cases, without mortality, can only be realized by following the exact technique of Brand.

Dr. Baruch claimed that physicians have failed to obtain ideal results, because they deviated from the ideal technique, each one modifying it to suit his own fancy. He insisted that to the free deviation from its correct technique may be ascribed the lack of appreciation of the therapeutic value of the Brand method. Those physicians who have mastered its technique will agree with Professor Delafield, who teaches that immersion in cold water is the only real treatment of typhoid fever, and the only way to practice this treatment is the exact method of Brand.

In the treatment of all diseases our teachers insist upon correct dosage of medicinal agents, the exact time and mode of their administration, frequency of repetition and even their exact preparation. Dr. Baruch desires to plead for similar care and attention to the prescription of water as a remedy.

In chronic diseases a correct application of water is quite as important as in the acute. A prescription for a bath, or other hydropathic procedure, without exact statement of temperature, duration, pressure and method is as absurd as a prescription for medicine without stating dose and method of administering. The import of pressure, temperature and duration of

every hydropathic procedure requires to be impressed with emphasis. Every physician realizes the difference of effect arising from different temperatures, and yet we commonly read directions for cold, hot and tepid baths.

Dr. Baruch illustrated the correct and contrasted it with the faulty water treatment. He claimed that by gradually accustoming patients to lower temperature and stronger pressure, he has obtained very favorable results in private and hospital practice. If low temperatures are used at once the patient is shocked and depreciated.

The same may be said of neurasthenia and other chronic cases, in which he cited Dr. Draper as claiming that the results of hydrotherapy are striking, but more effective than medicine.

He also referred to other faulty methods practiced by justly eminent teachers who seem to be quiet inexact in prescribing water, but extremely precise in prescribing phosphorus and strychnin. He especially inveighed against the gradually cooled bath, which is intended to avoid shock and be pleasant to the patient. Such a bath does not fulfill its object properly, because the surface vessels are relaxed by the warm water; reactive capacity is diminished by its calming and sedative effect. The vaso-constrictors are depressed. The subsequent cooling of the water finds the sensory nerves unprepared, and chilliness usually results unless the patient be more robust than is the average neurasthenic. It is unhappily a very prevalent error to regard the most agreeable bath as the most salutary. We do not so reason in the application of medicinal agents, of electricity or diet. And the application of water may be made agreeable by gradually accustoming the patient to lower temperatures, slowly reducing them every day or two, making the application brief at first and increasing the duration and pressure day by day. The prime essential, however, should always be borne in mind that reaction is our aim, that this can not be evoked without some shock, that the more intense the latter the more effective the reaction, but the more brief it is, the less unpleasant. If the physician bear in mind that his object in treating such a case is an increase of the quantity of blood circulating in the cutaneous vessels, an enhancement of the nutrition, a stimulus to the entire nervous system, he will endeavor to so order the technique, provided he has mastered its details, that day by day the reactive capacity may be tested and no harm ensue. As the shock and reaction increases day by day, the patient will emerge from the treatment with a ruddy hue. The increased circulation will endure more and more every day, languor and loss of appetite will cease, and if the patient does not fully recover under this domestic treatment, douches of the same temperature and with a pressure of twenty-five to thirty pounds, preceded or not by hot air baths, will bring about a final restoration of health.

In acute cases like typhoid fever, which are under constant observation of the physician, the latter may at once note the result of an improper use of water and modify it, or, as is more often the case, relinquish it altogether. But in chronic cases much damage may be done before the physician discovers it, if the treatment be not in the hands of trained and intelligent attendants who are under medical supervision. Too often the details are left to nurses, because physicians have not received instruction in the rationale and technique.

To enable him to administer water with precision Dr. Baruch has, without neglecting other hydropathic procedures, resorted chiefly to douches, with which he is capable of grading temperature, duration and pressure by means of an apparatus devised by him.

Dr. Baruch concluded by saying:

1. That the therapeutic application of water demands at least as much care as the use of medicinal agents.
2. That owing to the flexibility of water as a remedial agent, greater demands are made upon the practitioner than in the use of medicines.
3. That the best results may be obtained only by following an exact technique in each case.
4. That the reason that different results are obtained by different physicians from the application of water, may be found in the technical errors, committed on account of an erroneous conception of the rationale of hydrotherapy.

DISCUSSION.

Dr. I. ADLER said that in the most modern medical view hydrotherapy plays an important rôle, and that as Dr. Baruch has emphasized, the application of water is so lax, that clinically and diagnostically much less is accomplished than would otherwise be. But this is not alone the fault of physicians, but, perhaps, as much of those who specially cultivate hydrotherapy. The latter seems to be based more on personal impressions than scientific data. We can not accept water, there-

fore, on the same bases as our medicinal agents. As an example, the physiologic action of strychnin upon the spinal cord is exactly known, but of water we can not say this. There should be a knowledge of the physiologic action of water ere we are asked to accept it as scientific remedy.

Dr. Adler thought it is going too far to accept the baths as the only remedy of typhoid. To him the statistics cited by Dr. Baruch, to prove that the mortality has been reduced to almost nothing, are new. Dr. Adler has used the baths more in hospitals than in private practice, where it is more difficult to apply. One may have very good results without baths, although the latter are one of our very best agents where the heart is feeble, delirium is intense and somnolence occurs. But he can not accept Brand's rule, supported by Dr. Baruch, that 102 degrees F., should be the signal for baths. Some patients become delirious at 100.5 degrees; others may have 105 and not be delirious. He would also like to express confidence in small doses of antipyretics, which afford much relief, although he does not approve of their routine application for temperature reduction.

Dr. L. WEBER has always used cold baths in typhoid in the absence of kidney complications; he begins the treatment with a large dose of calomel to clean the intestinal tract and disinfect it. In private practice he has not often had an opportunity of applying the Brand method. There seems to be a silent but active opposition to it among the nurses. There is no doubt that Brand's method offers great advantages, and is especially adapted for enhancing the resisting capacity of the nervous system. Dr. Weber uses antipyretics in small doses for temperature reduction. In neurasthenia Dr. Weber has seen much of hydrotherapy. It seemed to him, however, that many of these cases recover under any treatment.

Dr. A. ROSE opposed Dr. Adler's views that hydrotherapy was not based upon sufficient scientific investigations and experiments. It would seem that the statements of quacks are more regarded than those scientific experiments. He referred to the plethysograph of Winternitz, by which the passage of blood, driven from one part of the body by cold baths, was demonstrated in other parts. Dr. Rose referred to his experience in erysipelas, and his observations with the permanent baths in obstinate rheumatism.

Dr. A. SEIBERT believed that the complaints made by hydrotherapists, that their doctrines have not been generally accepted by the profession, are to be charged to their own writings, in which they use many hyperboles. The Brand bath is not responsible for the reduction of mortality of typhoid fever during the past thirty years, but rather to the general improvement in the treatment of the disease. A large acquaintance with statistics enables him to say that many sins are committed with statistics. In his hospital practice Dr. Seibert uses the Brand method only on patients who are received in a somnolent condition. He prefers to reach the seat of the disease by cleaning and bathing the intestinal tract rather than to cool the skin and then excite the nervous system.

Dr. Seibert regards as novel the claim that the early adoption of the Brand method is capable of affording absolute protection against complications.

Dr. TALMEY believed that one reason for the non-acceptance of hydrotherapy lies in the objections of the public; another reason lies in the inistance of the hydrotherapist upon so many details, which no ordinary man is presumed as capable of executing as well as they.

Dr. BARUCH closed the discussion by regretting the brief time at his disposal. He insisted that the proof exists showing that the action of water is more rational and scientific than that of any other remedy. Very little is known of the action of strychnin in non toxic dose. It may be administered for days, weeks and months without any subjective or objective evidence of its presence, in the pulse, blood pressure, respiration, etc. Our knowledge of its effects in disease is learned almost entirely from non toxic doses. Of water we know much more. It may be dosed with precision afforded by a latitude of 70 degrees of temperature (35 to 110), a duration of a second to many minutes, a pressure of from one to forty pounds. We also have various methods of applying it: by applying packs, baths, douches, etc., by which its effects may be graded. A few days ago he subjected an attendant in the Hydropathic Institute to a tub bath of 80 degrees F., for ten minutes. The effect was at once pronounced upon the pulse, as ascertained by the finger and the sphygmograph: the blood count showed an increase of 700,000 red cells and 1,500 white cells in blood drawn from the lobe of the left ear. Is any analogous experiment with non-toxic doses of strychnin on record? So far from there being a lack of scientific experiment of the action of water, these abound within the past five years, having been made in Zuntz's and other laboratories by Breitenstein, Loewy, Knoepfelmacher and others.

Thayer, of Johns Hopkins Hospital, has confirmed the statements of Winternitz and Rovighi, that the red and white blood cells increase after cold water applications; the sphygmomanometer has demonstrated that the force of the heart is increased by them; Vinaj has shown with the ergograph of Mosso with exactness how the muscular power is enhanced by them. Roque and Weil have shown that the urotoxic coefficient of the urine in typhoid fever is increased manifold after the use of the cold bath.

That early cold baths prevent complications has been demonstrated as no fact in medicine has been demonstrated before. Dr. A. Vogl, medical director of the Bavarian army, has collected from the records of the Military Hospital of Munich all the cases of typhoid fever which were treated during a period of forty years in that hospital. He gives the type of the disease each year, the symptoms, the treatment, mortality and results of autopsy. Since the strict bath treatment was adopted he found the mortality ranged from 15 to 30 per cent. This proves that the result is not due to a change of the type in the disease, which the records show to have varied from year to year during this long period, but that it is entirely the result of the bath treatment which prevented lethal complications. Although the Brand method must be applied before the fifth day, every fever patient may be bathed with advantage. Dr. Baruch stated that he invariably uses it in private practice, that he declines to treat the patient otherwise, and that he has been dismissed from a case but once for this reason.

Contrary to Dr. Talmey's naïve accusation, modern hydrotherapists have taken pains to simplify hydrotherapy and make it the common property of physicians. But this can not be accomplished so long as the latter persists in their skeptical attitude. The most superficial study would demonstrate that water produces a thermic and mechanical excitation of the cutaneous nerve endings which operate upon motor and sensory tracts as a reflex upon the circulation, respiration and secretions. These demonstrations are so abundant in literature that Dr. Baruch would have regarded it as an insult to the intelligence of his audience to have reiterated them.

That a woman may be aroused from syncope by the simple sprinkling of cold water upon the face is known to almost every lay person, and the scientific explanation of this process is recognized by every tyro in medicine to be a powerful irritation by cold, which is conveyed from the cutaneous nerves to the central nervous system and thence by reflex to the vagus. This seems, perhaps, too simple; rabbits and guinea pigs are not required for the "scientific" explanation of the powerful effect. If such sacrifices are demanded, however, to establish water as a scientific remedy, the classical experiment of Maximilian Schuler upon trephined rabbits may be offered. Schuler exposed the vessels of the pia and, placing the rabbits in water at different temperatures, observed the effects of these applications on the animals, he demonstrated more clearly than has ever been done in the study of any medical effect the effect of these water applications. He showed conclusively that the latter called into action a hydrostatic effect, which makes water a powerful agent for influencing the circulation of blood in an animal. Besides, Winternitz and others have demonstrated in the most exact manner by laboratory experiments that the corpuscular elements of the blood are subjected to such decided changes by water applications that no medical agent is capable of approaching their effects.

A very fruitful but sadly neglected field lies before the practical physician who does not meet hydrotherapy with a shrug of the shoulders.

To Dr. Talmey's insinuations that hydrotherapists are so insistent upon details that it is difficult for ordinary mortals to follow their directions, Dr. Baruch replied by protesting against the tendency of physicians to leave the water treatment of chronic cases to bath attendants or other nurses who claim to know all about it, but really do not know anything but the mechanical part. Does not every physician who orders a cold bath in typhoid fever give the nurse directions regarding the temperature, friction, drying, duration, etc.? Why then should physicians leave such important details to a nurse when ordering a wet pack, douche, etc., for a chronic case. Would it not be far easier for physicians to consult some work on this subject and use their own judgment in ordering the necessary temperature, duration, etc. It is just as absurd to leave these important details to self important nurses as it is to leave the doses, etc., of a medicine to the druggist to prescribe and administer. Indeed the latter would be safer, because the druggist is, at least, an educated man. As Vogl has said, leaving the treatment entirely in the hands of lay people has brought hydrotherapy into disrepute.

With regard to clinical observations this discussion again makes evident the fact that many physicians have occupied

themselves with hydrotherapy insufficiently. In reply to Dr. Seibert's statement that the Brand method is not entitled to the credit of reducing the mortality of typhoid fever, Dr. Baruch referred to Dr. Vogl's statistics for positive evidence to the contrary. Moreover, Prof. G. Gerhardt of Berlin said in his recent opening lecture before his class at the University: "The mortality of typhoid fever has been reduced by the Brand cold water treatment to one-fourth."

That the hydrotherapists "resort to many hyperboles in their writings and lectures" may, as Dr. Seibert states, be true. But the most eminent physicians also resort to "hyperboles" when they have mastered hydrotherapy and applied it correctly. This will be demonstrated by the following excerpts:

Prof. F. A. Hoffman of Leipsic ("Lectures on General Therapeutics," 1892) says: "Herein lies the unexcelled value of cold water in therapeutics; we invigorate the nervous system and thereby enhance the cardiac capacity." (p. 88.) "I am convinced that in time all chronic organic diseases will come into the domain of the bath treatment." (p. 392.)

"Cold affusions have justly been elevated to become the chief remedy in the catarrhal pneumonia of children." (p. 130.)

Prof. Wilhelm Erb of Heidelberg writes in Ziemssen's Cyclopaedia: "Among the most effective and powerful agents in our branch are cold and cool baths and cold water treatment. Its results in all possible chronic nerve troubles are extraordinarily favorable. We have few remedies which exert a similar powerful influence upon the nervous system."

Professor Kussmaul of Strasburg writes: "There is no doubt that the belief in the prescription is waning among educated people, and the confidence in dietetic remedies and the remedial value of water is in the ascendant. Water especially has won for itself a constantly growing confidence as a remedy, because, unlike any other, it may be applied by reason of varied temperature and methods to the most varied curative purposes."

Semmola, the recently deceased professor of therapeutics at the Naples University, whose work has been translated into German and supplied with a laudatory preface by Nothnagel, writes: "Hydrotherapy excites cutaneous activity, and with it all functions affecting tissue changes and organic purification, so that frequently real marvels of restoration in severe and desperate cases have been obtained by it."

From Professor von Leyden's Berlin clinic Klemperer reports ("Publications of the Hufeland Society," 1896) "that in hydrotherapeutic effects we observe quite extraordinary and incompatible stimulation of the nervous system, which is exerted upon the various organs."

"In our clinic we regard hydrotherapy as quite an essential factor in bronchial asthma."

"Much greater is its rôle in nervous diseases of the heart—but it plays quite a powerful rôle also in organic heart diseases."

"As much more effective do I regard these hydrotherapeutic influences in stomach and intestinal diseases. Here hydrotherapy remains the most powerful factor. I may say briefly that we have treated the most varied pathologic conditions of the gastro-intestinal tract—chronic constipation, diarrhea, enteralgia, hydrotherapeutically with great benefit."

Dr. Baruch said that he might quote many "hyperboles" from the writings and lectures of the most eminent clinical teachers. These gentlemen have not been deterred by the "hyperboles of the hydrotherapists;" they have investigated the subject as have Delafield, Peabody, Osler and Draper in our own country, and have become consistent advocates.

One thing Dr. Baruch desired especially to emphasize, namely, that in his article, as in all his writings, he has never lauded water as a universal remedy. Dr. Baruch claimed that his observations in hydrotherapy were gathered in the capacity of family and hospital physician, in which respect he stands alone. As a practitioner of thirty-five years, Dr. Baruch did not feel prepared to throw aside calomel, salicylic acid, morphin, quinin and other approved remedies. Despite this fact, he felt compelled to acknowledge that water has served him well in the most desperate chronic cases after other most approved remedies had failed in his own hands as well as in the hands of colleagues. For this reason he would say with Pindar, *ἀριστον μὲν ὕδωρ*. And herein he felt himself sustained by the most eminent clinicians of the present time, whose opinions he desired to impress upon his colleagues.

Argentol as an Antiseptic.—On account of its extreme instability, argentol is superior to itrol and actol, so highly recommended by Credé, and gradually being endorsed by others, for the treatment of wounds. It is the quinaseptolate of silver and decomposes into the original oxyquinilin and silver, in contact with septic matters, each of which is a powerful antiseptic.—*Nouv. Remèdes*, April 8.

Kentucky State Medical Society.

Abstract of the Proceedings of the Forty-second Annual Meeting, held at Owensboro, May 5, 6 and 7, 1897.

FIRST DAY—MORNING SESSION.

The Society met in the County Court House and was called to order by the President, Dr. R. C. McCHORD of Lebanon.

An Address of Welcome was prepared by Dr. J. W. Ellis, but through his illness and absence, it was read by Hon. Thos. L. Petit, an eloquent response to which was made by Dr. Dudley S. Reynolds of Louisville.

The reports of the Treasurer and Secretary were read and adopted. About sixty applicants were elected to membership during the sessions. The Association then adjourned until the afternoon.

FIRST DAY—AFTERNOON SESSION.

Immediately upon reassembling, the reading of papers was proceeded with, and a series of contributions were presented on "The Fevers of Kentucky."

Dr. W. W. RICHMOND of Clinton read a paper on

REMITTENT FEVER.

He said remittent fever may be considered a secondary development of malaria, assuming intermittent fever to be the natural or primary offspring. Its different forms had been divided into the congestive, comatose and hemorrhagic, the former more properly belonging to intermittent fever in the form of a congestive chill; the two latter he assumes to be the chief irregularities of remittent fever, regarding the term typho-malarial as unscientific and one that should not be recognized, basing his judgment upon the fact that while germs of two distinct diseases may operate at the same time in the same person, and recognizing the fact that affiliation is a distinct characteristic of malaria, it was not the nature of germs to mix or to cooperate in the production of something contrary to the nature of their individual kind. It may be asked, Why in a malarious district, when intermittent fever prevails every year, do the different forms of remittent fever occur only in certain seasons and certain localities? The rational answer should be, close proximity to the place of development of the poison, its quantity or concentration, and its intensity of action.

Intermittent fever occurs to some extent every year in certain portions of Kentucky, and when there is an unusual amount of rainfall late in the spring and a late rise of the river, overflowing the bottom lands, followed by the necessary continued temperature, decayed vegetation being almost always present, remittent fever with the other forms of malaria makes its appearance.

The chief symptoms of remittent fever in its simplicity are high temperature, quick pulse, obstinate head and backache, epigastric tenderness with sick stomach, the latter often continuing throughout the entire course of the fever, which usually lasts from seven to ten days. In the case of complications the disease continues beyond that time. Cases of the disease were then reported and the treatment outlined.

Dr. B. W. SMOCK of Oakland followed with a paper on

EPIDEMIC CEREBRO-SPINAL FEVERS AS SEEN IN KENTUCKY.

The author defined this malady as a specific, infectious pandemic disease, slightly contagious, probably microbic in origin, occurring sporadically or in epidemics, characterized anatomically by inflammation of the membranes of the brain and cord, and clinically by irregular nervous phenomena pointing to profound disturbance of the cerebro-spinal functions, the most prominent of which are pain in the head and often in the extremities, hyperesthesia, contraction of the muscles of the back and neck, vomiting, irregular fever, delirium, and in several cases, coma.

As far as the author was able to ascertain, the first appearance of this dread disease in Kentucky, in anything like epidemic form, was in 1812 in the city of Louisville, and again in the same city in 1861. Since then occasional outbreaks had been noticed at different times in almost every section of the State. In Floyd County, where the author was able to make personal observations, there were in this outbreak twenty five cases with eighteen deaths. The disease spent its force in about three weeks and disappeared almost as suddenly as it appeared.

In an epidemic which occurred in Edmonson County, in February, 1896, contrary to the opinions previously held as to the non-contagious character of the disease, the author was able to trace an almost house to house infection. The disease appeared here first in a young married woman, 22 years of age, and from her seven cases developed in a few days, all of which terminated fatally.

The characteristic symptoms of the malady as they appeared

during the epidemics were dwelt upon. As to medicinal measures, opium was the only drug which seemed to combat the ugly symptoms of the disease.

Dr. T. B. GREENLEY of Meadow Lawn, followed with a paper on

TYPHOID FEVER.

the history of which he said was, comparatively speaking, of modern origin. As far as he had examined the literature, he has found no account of it previous to the commencement of the present century. It was not recognized as a distinct disease in Great Britain much before 1850, being known only by the cognomen of typhus.

In 1840 Dr. A. P. Stewart of the Middlesex Hospital, pointed out the characteristic differences between the two diseases; but little attention, however, was given his views until Dr. Jenner, Physician to her Majesty, published two papers on "The Identity or Non-Identity of Typhus and Typhoid Fever." In his papers Jenner agreed with Dr. Stewart and very plainly described the characteristic phenomena of the two diseases, as did also several subsequent observers.

Dr. Greenley then dwelt minutely and exhaustively upon the causes and symptomatology of the affection, and considered at some length its pathology. He thinks the main reason why writers on typhoid fever fifty or more years ago were impressed with the belief in the personal contagion of the disease was, in many instances, due to mistaken diagnoses. Many of the symptoms of this disease were so similar to those of typhus, that the latter was taken for the former. If the author is in doubt about the true character of typhoid, when it closely simulates remittent fever, he is in the habit of testing it for forty-eight hours with quinin, the latter giving way usually in that time. For a long time the speaker has been impressed with the opinion that in many cases of summer and fall typhoid, malaria plays an active part, and he has therefore given quinin as a perfect treatment.

Dr. HENRY E. TULEY of Louisville, contributed an interesting paper on

THE SERUM DIAGNOSIS OF TYPHOID FEVER.

He began by saying that the discussion of typhoid fever at this time would hardly be complete without a consideration of its diagnosis by means of an examination of the blood. Few discoveries in the field of bacteriology or serum therapy had caused such widespread interest as the serum diagnosis of typhoid fever. Reference was then made to contributions on the subject by Dr. Wyatt Johnston, Florence Brandeis, Pfeiffer, Widal, Appel and Thornbury, and others.

Dr. Tuley gave a description of the technique of the examination of the blood as advised by Biggs and Park in their investigations in the New York City Board of Health, and which the essayist himself follows in the main. He gave a brief report of fourteen cases examined by him, which we give herewith.

Case 1.—Woman, aged 24 years. First specimen obtained during the fourth week of a typical typhoid attack, and the second on the fortieth day. Reaction was immediate in both instances. The first specimen was examined on the day it was obtained and the second after two weeks. A sample obtained from this same patient a few days ago proved negative.

Case 2.—Male, age 8 years. Clinical diagnosis, typhoid fever, maximum temperature 105. Constipation throughout. Examination after blood drawn two weeks, the reaction being prompt. The subsequent clinical diagnosis was typhoid fever.

Case 3.—Male, aged 27. Blood obtained in the second week of his illness, the clinical diagnosis being obscure. Blood examined twenty-four hours after being drawn, the reaction being very marked. The subsequent clinical diagnosis was typhoid fever.

Case 4.—Male, aged 30. Clinical diagnosis, typhoid fever in relapse. Blood obtained on the fortieth day of the attack, the maximum temperature was 103.5. Blood examined five days after being drawn, the culture was fifty two hours old and very active. The reaction was obtained. First the immobilization, then the clumping followed later.

Case 5.—Female, aged 7 years. Headaches, nose bleed, fever, abdominal pain and diarrhea. Clinical diagnosis pointed to typhoid fever. Blood examined twenty four hours after being drawn and no reaction could be tried after several trials. Subsequent diagnosis was remittent fever.

Case 6.—Male, aged 27 years. Clinical diagnosis quotidian malaria, without verification by the microscope. Blood examined after second week of illness with a very active culture, but no reaction was obtained.

Case 7.—Female, adult. Reaction present and marked. Blood obtained during the second week.

Case 8.—Male, aged about 30. Clinical diagnosis not made,

but afterward proved to be malaria. Blood examined with negative results.

Case 9.—Male, adult, City Hospital. Admitted with all the symptoms of typhoid fever. Prodromal symptoms had lasted for several weeks. The prominent symptoms on admission were epistaxis, tenderness in the right iliac region with gurgling, spots on the abdomen very closely resembling the rose spots, and low muttering delirium soon developed. Provisional diagnosis of typhoid fever. Specimen of the blood was obtained two days before his death, and examination showed no reaction after repeated trials. The autopsy revealed a tubercular meningitis, with consolidation of the right apex of the lung, congestion of the intestines with absolutely no evidence of typhoid ulceration and a small spleen. There were no pupillary symptoms during life and none that would suggest meningitis save the delirium and stupor which developed later.

Case 10.—Male, aged 35 years. Sick three weeks with what was supposed to be septicemia from an abscess on the hand. Examination of the blood obtained on the twenty-third day showed a marked and immediate reaction. There is still a difference of opinion as to the diagnosis of this case among the physicians who saw him, but the preponderance of evidence is that he had typhoid.

Case 11.—Medical student, aged 26. Clinical diagnosis was made provisionally of typhoid fever, and a pseudo-reaction was obtained after a number of trials, the clumping never being marked. The reaction that was obtained was perhaps due to a too concentrated solution of blood being used. The patient afterward developed measles.

Case 12.—Male, aged 18 years. Clinical diagnosis was malaria, but as it did not respond to quinin, and delirium supervened, typhoid was suspected and the blood examined. Quite a prompt and a very marked reaction was obtained. If this case was one of typhoid fever it was an anomalous one, as the onset was rather sudden, ushered in with chilly sensations, though there had been prodromal symptoms for more than ten days before he went to bed. In fact, the symptoms were so acute and aggressive as to suggest its being cerebro-spinal meningitis. It may have been such a case as Tyson describes under the head of "nervous typhoid."

The fact, however, that there was no reaction in case 9, reported above, on whom an autopsy was performed and a meningitis was found, would lead us to believe that this was typhoid with meningeal complications.

Case 13.—Medical student, aged 25 years. Sick four days with influenza. Blood examination negative.

Case 14.—Male, aged 40. Fever developed some weeks after an operation for radical cure for hernia was done. Clinical diagnosis was typhoid fever, but it later proved to be rheumatism. Blood examination was negative.

THE MANAGEMENT OF TYPHOID FEVER.

This paper was read by Dr. JOHN G. CECIL of Louisville. He summarized the principles of management under the following heads: 1, control the fever within reasonable bounds; 2, maintain the strength by judicious feeding; 3, intestinal antiseptics; 4, meet special indications and complications by specific agents; 5, watchful care and scientific nursing prolonged through convalescence.

In keeping the fever within reasonable bounds, without expense to the heart, lies the secret of improved mortality. The measures in common use are the Brand treatment, the sponge bath, cold pack and antipyretic medicines. These were considered in the order mentioned. Medicinal antipyretics to control fever were condemned. In importance, not second to anything in the management of typhoid fever, was the maintenance of strength by judicious feeding. That intestinal antiseptics have a place in the management of typhoid fever was quite true, but that such agents could be so applied as to counteract and destroy the bacilli, was quite another question.

In meeting the special indications that ordinarily arise, it should be done in the most direct way and with the fewest possible drugs. Medicines so applied should be directed to the control of symptoms, and are in no sense specific agents for the disease itself, until the more important conditions or complications could be noticed.

Diarrhea was an important feature. Patients properly fed seldom suffered a serious diarrhea; hence by special attention in this direction and by the use of intestinal antiseptics, it might be prevented or relieved. Tympanites, as a complication, was better treated by preventives. Intestinal hemorrhage is best controlled by allaying the fears of the patient, by absolute quiet, cold applications to abdomen, and by narcotic doses of deodorized tincture of opium. Teaspoonful doses of turpentine sometimes act with striking effect.

Perforation of the bowel in cases of typhoid was amenable

to surgical interference. Recent statistics show that this is not only a feasible operation, but a successful one. For general asthenia and heart failure, nothing is superior to strychnia and good whisky.

Lastly, in no disease was the value of faithful and intelligent nursing more apparent, and if recent years had added nothing besides the trained nurse, her introduction would mark an epoch in the management of typhoid fever.

Dr. J. G. Brooks of Paducah read a paper on

BLOODLESS AMPUTATIONS.

The author said that amputation at the hip joint was not a difficult operation, yet it was one usually attended with a great deal of shock, and to control or prevent hemorrhage would in a great measure prevent or lighten the shock. By the use of the Wyeth pins together with the Esmarch bandage a bloodless operation can be done, but the same can be said of Senn's rubber tubing alone, which the author preferred. Indeed, he could see no necessity for the Wyeth pins. He believes it is only claimed that the pins prevent the Esmarch apparatus from slipping off when the soft parts have been divided. He had made several hip joint amputations, and all save one had been successful.

FIRST DAY—EVENING SESSION.

The President, Dr. R. C. McCHORD of Lebanon delivered his Annual Address. He selected for his subject

PREVENTIVE MEDICINE.

Those who were familiar with the history of medicine, and in memory reverted to the period when the barber's pole of today was the sign of the physician, would recall that the application of leeches gave him humble employment, and, in part, a title to his calling. He asked his hearers to observe the contrast today. He who was once scoffed at and repudiated, is now honored, trusted, and a leader in science, the recipient of national rewards and exalted honors. Medicine of today is but the outcome of the progressive spirit which dominated such active minds as Billroth, Lister, Virchow, Pasteur, Koch and many others, and a greater enthusiasm exists in its future development than the past has ever witnessed.

In his closing remarks, President McChord referred to the question of a National Department of Public Health, with an executive officer at its head, who shall be a member of the President's cabinet and have a voice in its deliberations. Let us, said he, as individuals and as a Society, join with the AMERICAN MEDICAL ASSOCIATION and other medical societies to the utmost of our capabilities, in their efforts and demand of the people outside of the medical profession and the rulers, a place of honor in their councils, which is ours by right of equity and justice. When this has been obtained and our nation has obtained the protection offered by an unselfish profession against preventable diseases, then will the demands of modern enlightenment be satisfied.

At the conclusion of the President's address, Dr. J. B. Marvin of Louisville, introduced the Hon. REUBEN A. MILLER, who delivered a popular address, in which he said that he could not unduly magnify the high and priestly office of the family physician; but in the sharp and perilous crises of life, especially in that dark hour when the home is hushed and when loving hearts are waiting to be blessed with hope or broken with despair, his very presence is an inspiration, and his words of encouragement come like a benediction. This tender relationship endears him to every hearthstone and virtually incorporates him into every family circle.

SECOND DAY—MORNING SESSION.

Dr. JOHN MASON WILLIAMS of Louisville reported cases in rectal surgery; and Dr. G. J. MONROE of the same city reported four cases of fissure of the anus.

Dr. C. C. LEWIS of Stamping Ground read a paper on "Rest versus Medicine."

The author advocated the administration of less medicine to patients. While he did not wish to be understood as conveying the idea that he had lost faith in remedies, at the same time he would urge physicians to avoid their use when other means will accomplish the end in view.

Dr. J. C. CARRICK of Lexington contributed a paper on

THE IMMEDIATE REPAIR OF INJURIES OF THE PELVIC FLOOR.

Practically there are three varieties of lacerations, which, however, vary greatly in degree and extent of the injury.

1. A clean cut median laceration, starting at the posterior commissure and passing back to a greater or less degree, directly through the middle of the perineal body, the simplest form of perineal laceration and such as produce but slight inconvenience to the woman, even when quite extensive.

2. Lacerations of the perineum involving the skin in the

median line, even as far back as the folds of the anus, associated with extensive injury of the posterior vaginal wall. This internal tear proceeds upward a little to one side of the median raphe, and often passes up on both sides of the vagina, in which event one branch of this jagged Y-shaped tear is shorter and extends more obliquely upward than does the other.

3. Lacerations of the posterior vaginal wall without any rupture through the skin. These tears are usually V-shaped, one arm being longer than the other, the point of the V being situated at the posterior commissure. The technique of the operation of repairing these lacerations was described at length.

It has been said that the only objection against the immediate operation is that the laity unjustly blame the accoucheur, holding him personally responsible for the laceration and attributing its occurrence to his inexperience and carelessness. This objection can be met only in part by an honest acknowledgment on part of every practicing obstetrician and by making the laity better acquainted with the facts in the matter. The author then quoted a few statistics from well-known obstetricians regarding this point.

Crédé, in 1,000 deliveries, had 392 lacerations, over 39 per cent. M. Liebman, 1,064 cases, 170 lacerations, about 15 per cent. Of these 471 were primipara, with 145 lacerations, 30 per cent.; 593 were multipara, with 45 lacerations, about 4 per cent. Schroeder found 34 per cent. of lacerations in primipara and 9 per cent. in multipara.

The frequency as to age was, from 15 to 20, lacerations 30 per cent.; from 24 to 25, 34 per cent.; from 26 to 30, 38 per cent.; over 30, 50 per cent.

The essayist then briefly reported one of his cases.

Dr. D. C. BOWEN of Nolin reported a case of double castration and double herniotomy for sarcoma of the testicles, and exhibited the specimens.

Dr. C. W. AITKIN of Flemingsburg read a paper entitled

THERAPY OF ACETANILID.

The author is fully persuaded that as good, if not better results are obtained from acetanilid as from any of the proprietary remedies with which he is acquainted. In reference to the action of this drug upon body temperature, unless there is a hyperpyrexia a medium dose will not exert any influence whatever upon the body heat. He observes, however, within half an hour after the administration of a dose of from five to ten grains to an adult, who has an elevated temperature, that the patient complains of excessive heat and occasionally a slight dyspnea. This in five or ten minutes is followed by free diaphoresis; the heat-producing element of the system is decreased; the dyspnea disappears, the temperature lowers, and the patient is decidedly more comfortable.

The comfort which this drug gives patients suffering from pulmonary tuberculosis is sufficient to commend it to every physician.

The antipyretic action of the drug is only one of its many valuable properties; it is also used as a sedative, analgesic, anodyne, antispasmodic, antirheumatic, and antiseptic. In combatting pain, we have in acetanilid a most potent remedy, in that "it quiets the sensory portion of the nerves and spinal cord."

Dr. DAVID BARROW of Lexington read a paper entitled

REMARKS ON THE SURGERY OF THE KIDNEY,

in which he said that if the physician will look for it, movable kidney would be frequently found. The gynecologist finds it in one out of six cases that consult him, some putting it as frequent as one in four. He makes it a rule to examine all gynecologic patients for movable kidney, and has been surprised at its frequency. In his experience the symptoms have been largely referable to the nervous system, but the digestive tract has nearly always been more or less involved.

That so many movable kidneys fail to produce symptoms, has caused some physicians to treat rather lightly all such cases. This, in the opinion of the author, is a mistake, for there is no doubt that many patients suffer from this condition of the kidney, who are not relieved until fixation is resorted to. The condition is often associated with pelvic disease in women, and some failures to cure after operations on the pelvic organs are due to the kidney displacement. In these cases, by fixing the kidney all symptoms will promptly disappear.

Stone in the kidney, although not common, is more frequent than is generally supposed. The symptoms are often indefinite, and the patient may suffer but little, and not infrequently the disease is never recognized. The operation for stone, if the kidney is healthy, is safe. The mortality is not more than 3 per cent. When the kidney is diseased, the mortality is much greater, probably 10 per cent. In some cases the kidney is practically destroyed, being nothing more than a large abscess sac, and a nephrectomy may be required to save the patient.

The operation, until the kidney is reached, is the same as for nephropexy.

Abscess of the kidney may be due to several conditions, such as a direct blow or wound, or stone irritation; tuberculosis is frequently responsible, and occasionally the contents of a cyst will become purulent. One or both kidneys may be involved. If only in one kidney, and the abscess is single, incision and drainage will usually be successful, but if both kidneys are diseased, surgery can do no good.

Solid growths of the kidney are nearly always malignant, the great majority being either sarcoma or carcinoma. No age is exempt, and proportionately children are more often affected. Nephrectomy is the only treatment to be considered. This operation is attended with large mortality for all the conditions that require it, about 40 per cent. For malignant growths, the primary mortality is 70 per cent., and of those that recover from the operation, the great majority die of recurrence within three years. Of sixty cases of nephrectomy for renal sarcoma in children, 28 per cent. died primarily, and of the rest, only three had passed the three year limit.

Nephrectomy may be performed by either the lumbar or abdominal incision. For the lumbar operation, the author prefers a vertical incision about three inches from the spine, curving the lower end forward above the crest of the ilium, when more space is necessary. When the tumor is small, this incision will answer all purposes, and should always be the one made when there is uncertainty as to whether a nephrotomy or a nephrectomy will be required.

Dr. CURRAN POPE of Louisville considered the subject of "What can we do for the Chronic Invalid?"

(To be continued.)

SELECTION.

Are Malarial Diseases Air-borne?—Malaria or "bad air" is not a disease but rather a cause of malarial diseases. This being admitted, not merely from the point of view of the purist, but from that of a fact-searcher, we are prepared to welcome any well conducted study that will throw light upon every avenue of ingress of the parasite of Laveran. Dr. Rupert Norton in a paper, before the Johns Hopkins Society, maintains that malarial infection is not water-borne. Our friends in the North Carolina State Board of Health, whose health-saving work in the advocacy of a purer water supply in rural communities, we have watched with interest, are controverted in a scientific manner along with many others, whose names are given by Dr. Norton in his paper, namely Drs. Smart, West, Zwisohn, Waggener, Hyland, Daly, Norbury, Jones, Cadwallader, Newton, Quine, Lewis, Hurley, Cowan, Ross, Hehir, Rogers, Manson and others; concerning some of whom, at least, the suggestion is made by Dr. Norton that: "Is not malarial disease your weak point in diagnosis?" This suggestion very logically and profitably opens the door not so much to polemics as to an availing of the methods of Laveran and Widal in all dubious cases, or better yet, in all miasmal cases. Dr. Norton quotes Sternberg as follows: "The facts which have been developed with reference to the transmission of cholera and typhoid fever, considered in connection with numerous recorded observations relating to the supposed development of malarial fevers as a result of drinking surface waters, have led some authors to the conclusion that malarial infection, also, commonly results from the introduction of the malarial parasite in this way. Without denying that this may occur, I am disposed to believe that much of the evidence which has been advanced in favor of this view is unreliable. In many cases the so-called malarial fevers which have been traced to the use of surface water from wells, streams, etc., have been of a 'continued type' and not controlled by quinin. In the absence of positive evidence of the presence of the malarial parasite in the blood, continued or remittent fevers which resist the specific action of quinin can not, in our opinion, be properly classed with the malarial fevers. If not due to infection by the typhoid bacillus, they are, at least, more nearly allied to typhoid than to the typical malarial fevers." With this as a kind of key-

stone, Dr. Norton builds an arch, in proof of a negation, that will bear a great deal of pressure from the "water-borne" partisans. He quotes Kelsch and Kiener, who hold that paludal infection is by the lungs, at least in the great majority of cases. They think the water-borne theory is not confirmed by facts, and that the cases on the *Argo* (a Sardinian ship, whose history is referred to in the classical narrative in Boudin's "Treatise on Periodic Fevers," 1834), do not support the theory. They say, however, that malaria may arise at sea, and relate one instance which furnishes no stronger proof than that of the *Argo*. Soldiers in Algeria, they note, who while marching drink foul water, are no more affected with fevers than when in camp using pure water. Towns on heights around the Roman Campagna are free of malaria, although their inhabitants drink water coming from malarious regions. This they bring forward as proof against the water-borne theory and say that foul water simply acts as a force to reduce the resistance of the body to morbid influences. The observations made by Italian physicians are among the most interesting we have. Celli, one of the best students of malarial fever, has written a paper of great value on this subject. It is a short article going to prove that water does not transmit malaria. He gives a chart showing that introduction of new water supply into a certain city did not diminish the number of cases of malaria. He says popular ideas on this matter are fallacious, and notes that persons may live in a malarious place and drink pure water and yet have malaria, while others in the same place drinking foul or "paludal" water do not have malaria. He himself gave water from the Pontine Marshes, which are acknowledged to be very malarious, in large quantities to a certain number of patients who had never had malaria, without its giving birth to this disease in them. Similar evidence is furnished by Salomone-Marino: "He experimented in the same manner as Celli, giving 5 to 24 liters daily of paludal water for from six to twenty-four days, and did not succeed in a single instance in producing malaria. He says that those cases of malaria which are suspected to have been caused by infection through the digestive tract are usually grave cases with short periods of incubation. He relates two such cases, which, as the blood was not examined in either case, do not furnish proof of his statement. One patient was very ill and took three weeks to recover (typhoid?). Stagnant water is likely, he thinks, to contain poisonous or noxious bodies which could produce gastrointestinal symptoms similar to those sometimes caused by malaria. Bonizzardi, without relating any cases, concludes one short article with a number of deductions, from which I take the two following: 'Intermittent fever may be contracted as well by drinking water as by air,' and 'infection by air is far more fatal than by water.' Moscato, who has also carefully studied the question of malarial fevers, states, without furnishing any proof, that drinking water as a source of infection has been noted daily by observers: 'l'acqua potabile, come sorgente del velino palustre fu riconosciuta anche da Ippocrate; quale verità è stata anche sanzionata dagli osservatori odierni.' The statement has been made that malaria may be transported from one infected district to another healthy one by a new water supply, but the proof here is not sufficient, since the turning up of the soil for the pipes may have been the real cause. Most of the Italian observers, it is seen, are opposed to the water-borne theory." Dr. Walter Reed, of the U. S. Army, has written well on the aerial side of the case, and his contribution to this year's volume of the Reports of the Surgeon-General is mentioned with special favor by Dr. Norton. Dr. Reed has paid special attention to the cases of fever at Washington Barracks and Fort Meyer, and has examined the blood of many patients. Dr. Reed does not believe in the water-borne theory. He states that "the water supply at Washington Barracks has not been changed; it has always been the same as that of the city. The supply at Fort Meyer was

changed in November, 1894, from well water to Potomac River water. The following year the men and officers drank, as a rule, filtered and boiled Potomac River water, with the result that there were more cases of malarial fever in 1895 at Fort Meyer than during any one of the previous twenty-three years. It was also higher at the Barracks in 1895 than during any of the previous twenty-three years." There is much malarial fever in the city of Washington, and it is really endemic along the river flats, but has no apparent connection with the drinking water of the city, since otherwise the people in the upper part of the city should naturally suffer as much, which they do not. The reports from the army posts are hard to analyze, since the officers in charge are frequently changed, and their personal views as to malaria and typhoid fever vary materially. But, as yet, all the evidence coming from the army posts is rather against than for the water-borne theory. The time is coming, we hope it is near at hand, when the laboratory for diagnostic and other medical work will be so well supported and utilized that the *ex cathedra* citation of authorities and classic cases will no longer be the order of the day. The busy practitioner can not hope to much longer "get along" with his thermometer and his library; he must have a laboratory, not too far distant, to help him out in all his doubtful zymotic cases. Therefore, say we, multiply the laboratories! And, furthermore, let us have a strong National Ministry of Health. That many profitable lives and much added happiness in health are hinged upon these propositions, the future is destined to make plain either to us or to those who follow us. How soon the improvement may come we do not know, but come it will and must.

PRACTICAL NOTES.

Storbeck's Depilatory.—Alcohol 12 grams; collodion 35; iodine 0.75; essence of turpentine 1.5; castor oil 2. Apply with a brush on the affected parts for three to four days in thick coats. When the collodion plaster thus formed is pulled off, the hairs adhere to its inner surface.—*Nouv. Rem.*, April 8.

Denzel's Hemostatic Tincture.—Bibring prepares this as follows: After mixing 10 grams pulverized ergot, 20 grams alcohol and 2 grams sulphuric acid, he pours over it 500 grams boiling water and reduces by boiling to 200 grams. Then he adds 2 grams of calcium carbonate, submits the liquid to pressure, evaporates to 70 grams and adds 30 grams alcohol and 3 drops of essence of ginger, and sets aside to settle, and filters.—*Pharm. Ztg.* No. 19, 1897.

Mercurial Ointment in the Treatment of Wounds.—Majewski has been using for three years a concentrated mercurial preparation in the form of a salve, as the grease prevents too rapid absorption of the mercury. The ointment is applied in a thin layer on a piece of gauze, and very carefully restricted to the wound itself and not allowed to encroach on the adjacent normal tissue. With these precautions all kinds of abscesses, phlegmons, and wounds, contusions, etc., healed with remarkable rapidity and completeness. He reports in the *Cbl. f. Chir.*, April 10, 626 cases thus treated in 1895 and 806 in 1896, and recommends the method in high terms, to army surgeons especially. His formula is: 25.0 hydrarg. oxydat. flav. to 100.0 vaselin, applied after careful evacuation of all the pus.

Bone Transplantation as a Substitute for Amputation.—Bardenhauer (*Revue de Chirurg.*, January, 1897) has lately resorted to division and transplantation of one-half of a healthy metatarsal bone for disease and death of an adjacent bone shaft. In cases of the partial or complete destruction of one of the metacarpal or metatarsal bones, by this method he has had in several instances the most gratifying results. Twice he applied this device to exterior destruction of the lower end of the radius. He has also executed a remarkably ingenious opera-

tion for the restitution of the upper end of the humerus, by detaching the spine of the scapula from its muscular attachments, cleaving through the ridge close to its base and freeing it on either end. He then transported this segment of live bone into the gap left by the removal of the destroyed shaft. The result, as in his other cases, was successful. In young subjects the scapular spine is reproduced, care being taken to always leave the periosteal investment behind.

Gastric Neurosis.—A physician at Kissingen has had occasion frequently to observe patients sent there for the waters, with the diagnosis of gastric catarrh, whose affection was merely a form of neurosis, with excess of hydrochloric acid, and was aggravated by the saline waters. He mentions the following points for differentiation: It is frequently the result of the abuse of alcohol, tobacco, coffee or tea, but in these cases the alcohol is always taken diluted. The hydrochloric acid is constantly in excess, more or less superior to the normal, all the time, without much variation, in which it differs from the gastric form of neurasthenia, as the chemic action in this case is extremely variable from day to day. There is not continuous excess of acidity. The little gastric juice that can be obtained from the stomach is always inactive. It can not be confounded either with acid gastritis, as there are none of the symptoms of inflammatory processes in the viscera, not even the production of an unusual amount of mucus.—*Berlin. klin. Woch.*, No. 7.

Constipation in the Insane.—Alessi finds that mental troubles are aggravated when there is constipation and improved when the functions are regular. He also finds that in the melancholic forms of insanity, the intestinal atony preceded the outbreak of the insanity, while in violent mania it follows and seems to be produced by it, as there is evidently some connection between the action of the intestines and the degree of excitability of the special cerebral nerve centers. He concludes his interesting study of 90 cases in the *Gaz. degli Osp. e delle Clin.*, of March 28, with an account of a woman brought to the clinic in violent mania, which had developed suddenly that day. Inquiry of her mother elicited the fact that she had not had an evacuation for fifteen days, and the administration of 80 centigrams of calomel and 60 of scammony, restored her promptly to sanity, as the intoxication had not lasted long enough to impair the integrity of the nerve cells.

Introduction of Hydrotherapeutics into Practical Medical Instruction.—Vierordt writes from Heidelberg to the *Deutsch. med. Woch.*, (March 11) to proclaim the satisfactory results attained by the "ambulatory" hydrotherapeutic establishment connected with his polyclinic and dispensary. It has been established over a year and a half, and has been found of the greatest benefit in instructing students and others who are eager to learn the technique of the successful application of hydrotherapeutics, in connection with their general medical training. Winternitz has an institution of the kind in Vienna, but he makes a specialty of it. Vierordt deprecates this, and merely urges the introduction of such an adjunct to the dispensary as a minor branch of the regular curriculum. It has been found a great boon to many patients who derive great benefit from this treatment while they are able to pursue their usual occupations. One of Vierordt's assistants has the supervision of the establishment and resides there.

Ovarian Tumors.—D'Urso concludes as follows a comprehensive study of twenty-one observations, most of them personal: 1. In the cortical substance of the normal ovary there are remains of germinal epithelium in the form of cystic formations, which sometimes present the appearance of modified sweat glands. 2. The Kobelt tubes of the mesosalpinx in the adult have sometimes irregular and papillary outlines. 3. The tubes of the epoöphoron penetrate into the hilus and the medullary substance, and produce cavernous papillary formations, besides

the isolated tubulons. 4. There are also found in the mesosalpinx, altogether at the abdominal end, small knobs of epithelial tubes, which proceed from the remains of the Wolffian body. 5. The cysts of the ovaries and broad ligaments can be classified into: a, cystic adenoma, glandular neoplasms formed from the epithelial remains of the cortex; b, simple Wolffian cysts; c, papillary Wolffian cysts, developing from the epithelial remains in the hilus and mesosalpinx, without glandular formations. 6. Malignant papillary cysts present a peculiar proliferation of the epithelium, contrary to malignant papillary Wolffian cysts. 7. Dermoid cysts show evidences of transformation from simple cysts to true teratomas. Some can be traced to fetal contents, others probably to embryonal development from the ovum cell. 8. Ovarian fibromas can develop in the connective tissue of the corticalis, independently of the corpora lutea and the regressive metamorphoses of the Graafian follicles. 9. Among the simple, connective tissue ovarian tumors, endotheliomas often occur, not infrequently malignant, which can not be explained by peculiarities in the histologic structure. He has nothing to say in regard to the histogenesis of alveolar sarcoma and endothelioma except the query whether the theca folliculi may not be the matrix. 10. There is a simple true epithelioma of the ovary: it develops very slowly and probably originates in the epithelium of the papillary embryonal remains of the hilus.—*Cbl. f. Chir.*, April 10.

Fatal Polyneuritis Following Mercurial Treatment of Syphilis.—Brauer (*Berliner klinische Wochenschrift*, March 29 and April 5, 1897) has reported the case of a man, 24 years old, with a good family and personal history, who was treated for five weeks with mercurial inunctions for syphilitic infection, beginning with forty-five grains daily, later increased to sixty grains. At the end of a month, in the absence of stomatitis or salivation the patient noticed numbness in the hands, which became partially flexed. There was also twitching of the small muscles of the hands and of those upon the flexor aspect of the forearms. The arms appeared weak, while the legs seemed normal. In a short while disturbance of vision manifested itself, with confusion and double sight. The gait became uncertain and staggering. In the course of the succeeding day numbness appeared in the legs, with twitching of the calf-muscles and inability to stand and to walk. When in bed the man was able to move the legs quite freely. On the third day articulatory disturbance of speech was noticed. The movements of the lips and tongue were interfered with, and deglutition was difficult, only liquids being swallowed. Twitching of the face was present, especially about the eyes and the mouth. In the course of eight days this ceased, although that in the hands and legs continued. The weakness also persisted. The ocular disturbance disappeared. At no time was there fever or pain. Later, weakness of the bladder manifested itself and there was an absence of erections. Pain in the sacral region appeared, but no girdle sensation, no palpitation of the heart, no dyspnea. After this improvement the patient gradually grew worse again and symptoms of secondary syphilis made their appearance. Mercurial treatment was resumed, intramuscular injections of gr. $\frac{1}{3}$ of a mercury salicylate being given twice weekly. Following this the syphilitic symptoms disappeared, but the others were aggravated. The urine presented no abnormality. The pupils were active in their reactions and there was no nystagmus and no ocular paralysis. The face was puffy and expressionless, but not edematous. The left naso-labial furrow was not as marked as the right and the left angle of the jaw drooped a little. There was no appreciable atrophy of the facial muscles and no fibrillary twitching. Sensibility was not obviously deranged. The tongue was not atrophic. The palatal reflex was preserved and speech now presented no defect. The larynx appeared to be normal. There was no disturbance of the special senses. The arms and legs pre-

sented symmetric marked paresis, most pronounced at the periphery. There was no rigidity. The atrophy was proportionate to the degree of weakness. There were no trophic disturbances. The movements were ataxic, but there was no tremor. In the affected portions sensibility was impaired in all its forms. The tendinous and the periosteal reflexes were wanting and the cutaneous reflexes diminished. The paretic muscles exhibited fibrillary contractions. Some of the larger nerve-trunks were tender on pressure, but the paretic muscles were rather more so, and they presented also partial reaction of degeneration. The action of the sphincters was weakened and constipation existed. Later a sense of stiffness appeared in the muscles of the face, together with reaction of degeneration. Finally dyspnea set in and became aggravated in attacks of asphyxia from paralysis of the diaphragm. Death took place four months after the appearance of the first symptoms, in consequence of bilateral pneumonia of the bases, which was confirmed at the postmortem examination. The brain, the cord, a number of spinal ganglia, a number of peripheral nerves and a number of muscles were carefully examined. The most marked changes were found in the nerves, which presented degeneration of their medullary sheaths with thickening of the perineurium. No changes were found in the blood-vessels. Only slight changes were found in a number of the ganglion-cells of the anterior horns of the cord. The muscles were but little changed. From a careful consideration of all of the elements of the case the conclusion is reached that the symptoms were not dependent upon demonstrable anatomic syphilitic lesions, though perhaps upon the toxic products of the syphilitic infection. It is not believed that the mercury had alone any influence in the development of the changes in the nerves, although it is not denied that the action of the mercury, by depressing the general bodily vigor, may have favored the activity of the syphilitic poison.

Anti-venomous Serum of Calmette.—Dr. Hazard, of the French Colonial Service, reports a case of recovery from snake bite after injection of Dr. Calmette's anti-venomous serum. In December last at Martinique a soldier, aged 23 years, was bitten in the left thumb by a vigorous trigonocephalus (bothrops lanceolatus), nearly five feet in length. When the accident occurred the man was in a squatting position, but although he instantly jumped to his feet the action failed to dislodge the reptile, which remained for some moments firmly fixed to his digit, and it was not until he struck it on the head with his fist that it relaxed its grip and fell to the ground. There were two punctured wounds about half an inch apart, one of which was bleeding slightly. With a penknife the soldier enlarged it superficially, and he sucked the place three or four times. An officer then bound a ligature tightly round the root of the thumb, and dispatched the man to the hospital, where he arrived breathless from running some ten or twelve minutes after receiving the bite. To save time he was attended in the office. Ten cubic centimeters of anti-venomous serum (which had been received from Lille in the course of the preceding month) were subcutaneously injected into the patient's left flank. The seat of injury was washed with hypochlorite of lime, and five cubic centimeters of the latter solution having been injected into and around the punctures, the constricting ligature was removed. Soon afterward the principal medical officer arrived at the hospital, and the case being in his opinion very grave, he ordered a second injection of ten cubic centimeters of serum, as well as a second local injection of four cubic centimeters of the hypochlorite. The patient was then put to bed under several blankets and given strong coffee to drink at frequent intervals. For forty-eight hours he complained of darting pains in his arm, loss of appetite and sleeplessness the last symptoms being no doubt due to the coffee but with these exceptions the indications were entirely favorable. There was

no local tumefaction, and the axillary glands remained unenlarged. On the fifth day the man had perfectly recovered and was discharged to duty. Immediately after he was bitten he says his forearm became heavy and numb, as though it were asleep, and neither the incision he made himself nor the hypochlorite injections caused him the least pain. This anesthesia only lasted a few hours, the sense of feeling being fully restored by the next morning. *Archives de Médecine Navale et Coloniale*, March.

Spontaneous Hemorrhage in the Vitreous Body, or "apoplectic eye," offers an unfavorable prognosis unless effective treatment is instituted at once to prevent the occurrence of the same hemorrhage in the other eye, when the patient becomes totally blind. Professor Panas remarks that it is usually consecutive to syphilis, gout, alcoholism or nasal affections, and therefore the blood should be disinfected, alcohol replaced by milk, the nasal passages rendered antiseptic, and he administers, even when there is no syphilis, biniodized oil as a general antiseptic, in 4 milligram injections, supplementing it later with hypodermic injections of arsenic, as he has witnessed a supposed double sarcoma of the orbit vanish completely with the administration of sodium arseniate alone. He concludes his study of the subject in the *Presse Méd.* of April 3, by calling attention to the infective nature of such troubles, which involve the highest questions in general pathology.

Resection of the Gasserian Ganglion for Rebellious Facial Neuralgia.—Marchant and Herbert (*Revue de Chirurgie*, April 10, 1897, p. 286) report two cases of extirpation of the Gasserian ganglion for the relief of rebellious facial neuralgia and they analyze ninety-three additional cases collected from the literature. Among the whole number there were seventeen deaths (17.8 per cent). In sixty-six the temporal course was followed, with eleven deaths (12.12 per cent.), three of which were open to doubt. In twenty-nine the pterygoid course was followed with six deaths (20.6 per cent). Among fifteen cases of complete extirpation of the ganglion there were five deaths, three of which were open to doubt (13.13 per cent). Among sixty cases of incomplete extirpation there were eight deaths (13.33 per cent.) Among fifteen cases of simple resection of the painful branches there was but a single death (a mortality of 6.66 per cent). From a study of the literature of the subject the conclusion is reached that certain rebellious facial neuralgias originate in the Gasserian ganglion, and the only treatment of these cases consists in destruction of the ganglion. When no appreciable lesion of the ganglion existed and its removal was none the less followed by a disappearance of the neuralgia, this result is to be explained by the destruction of a nervous center containing neurons or nervous cells whose prolongations only are affected by simple section of the nerve. The temporo sphenoidal course is the best to follow for the removal of the ganglion. The finding of one of its branches and especially the inferior maxillary in the oval foramen constitutes one of the most certain guides for the detection and seizure of the ganglion. The ganglion may be completely extirpated. Commonly the extirpation is incomplete and the ganglion is finally destroyed by curetting and crushing. Often only its branches have been resected. Hemorrhage, wounding the nerve and cerebral compression are the immediate operative accidents to be feared. Secondarily there may be infection, hemorrhage, iodoform intoxication, ocular disturbances and otitis. As an immediate result of the operation there is a cessation of pain and also an abolition of general sensibility in the distribution of the three branches of the nerve and especially in the second and third branches; but this does not persist long. Taste, smell, hearing and vision are variously affected. The movements of the jaw may remain impeded. From a therapeutic point of view recurrence is less to be feared after destruction of the ganglion than after simple resection of the branches. The evidence indicates that complete extirpation should be superior to simple destruction of the ganglion.

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INFORMATION WANTED.

It would greatly facilitate the prompt delivery of the JOURNAL to those members of the Association living in large cities, if they would kindly furnish this office with their street address in those cases where it is omitted from the wrapper of their JOURNAL, as we have been notified by the postmasters of the larger cities that second-class mail matter not having street address, would be placed in the general delivery to await call.

SATURDAY, MAY 15, 1897.

MEETING OF THE AMERICAN SURGICAL ASSOCIATION.

The last meeting of the American Surgical Association was notable for the large attendance, the number of scientific papers read and the interest manifested in their discussion. The president, Dr. J. COLLINS WARREN, selected as the subject of his address, "The Influence of Anesthesia on the Surgery of the Nineteenth Century," in which he gave a short history of anesthesia and showed its influence in broadening the field of operative surgery. In his paper on "The Indications for and the Technique of Hysterectomy," Dr. HOMANS laid down clear and reliable rules which should govern the surgeon in the selection of cases, and gave sound advice by what route and by what method the uterus should be removed for different pathologic conditions. The paper was ably discussed by Drs. VAN DER VEER, MUDD and LANGE.

Dr. J. W. WHITE's paper on "The X Ray in Surgery" was profusely illustrated by skiagraphs showing the value of this new and valuable diagnostic resource. Dr. DEFOREST WILLARD exhibited also a very valuable collection of X-ray pictures, most of them illustrating bone and joint affections, fractures and dislocations. One of the most valuable contributions was the one by Dr. BRADFORD on "Tendon Anastomosis." Tenoplasty was first suggested by NICOLADINI. There are now about sixty-seven recorded

cases in which this procedure has been resorted to with advantage in the treatment of paralysis following anterior poliomyelitis. The paper was made clear by numerous well-executed drawings. Dr. BRADFORD's experience in substituting a "living" for a "dead" muscle by tendon anastomosis has been encouraging. Dr. SOUCHON's paper on "The Operative Treatment of Irreducible Dislocations of the Shoulder, Recent or Old, Simple or Compound," evinced a painstaking search in gathering reliable statistics upon which to base a safe practice. It must, however, be remembered that statistics are often deceptive and misleading. Surgeons, as a rule, are more anxious to report their successful than their unsuccessful cases. There can be no question that in cases of irreducible dislocation of the shoulder joint, recent or old, when manipulation fails, reposition by operative measures is warranted. It appears that such operations are more prone to be followed by infection than operations for other pathologic conditions of the same joint, a fact which should induce the surgeon to resort to the minutest details in securing asepsis. Dr. J. B. ROBERTS' paper on "The Surgical Treatment of Suppurative Pericarditis" is a valuable contribution to surgical literature and a worthy addition to his monograph on "Paracentesis of the Pericardium," published a number of years ago.

The unveiling of the statue of the late Prof. SAMUEL D. GROSS was a solemn and impressive occasion. Dr. C. H. MASTIN, who conceived the idea of such a tribute to the memory of America's greatest surgeon, and who did more than any one else in securing the necessary funds, presented the statue to the United States Government in an eloquent speech. General STERNBERG was selected by the President to receive the statue for the United States. Surgeon-General STERNBERG's speech was a glowing tribute to the character and scientific work of Dr. GROSS. The address of Dr. W. W. KEEN, the successor of Dr. GROSS, was well worthy of the great occasion and was a beautiful eulogy commemorating the life, character and professional work of his illustrious predecessor. Thanks to the efforts of Dr. C. H. MASTIN and others, the beautiful grounds of the Smithsonian Institute in front of the Army Medical Museum are now graced by the noble bronze statue of one beloved by all, honored and respected by all of his pupils and professional colleagues.

The paper of Dr. TIFFANY on the "Technique of Cranial Surgery" was replete with practical details of the different intracranial operations and was fully discussed by Drs. KEEN, WEIR, PARMENTER and MIXTER. Dr. TIFFANY called the attention of the members of the Association to the advisability in serious cases of intracranial operations in doing the work in two instead of one operation. The first operation should have for its object the creation of the

cranial defect, and often the wound has healed in the course of two or three weeks, attack the intracranial lesion through the soft tissues covering the cranial defect. This suggestion received the warm support and endorsement of Dr. KEEN. Dr. McF. GASTON reported a case of inoperable sarcoma cured by electrolysis and cataphoresis, combined with the internal use of Donovan's solution. Although the diagnosis of sarcoma was confirmed by microscopic examination of the tumor tissue some doubt still must remain as to the nature of the affection owing to the muscular results following the treatment as described.

Dr. DUDLEY P. ALLEN read a paper on the "Origin of Appendicitis," profusely illustrated, in which he took the ground that the most frequent cause of appendicitis is obstruction of the organ from congenital flexion. He illustrated, by the drawings which he presented, the muscular hypertrophy which follows mechanical obstruction. The mass of the profession will hardly endorse such a mechanical condition as a prominent etiologic element in the causation of appendicitis, as flexion is probably more frequently caused by antecedent inflammatory affections than by a congenital defect.

Other interesting papers were read by Drs. FENGER, POWERS, FORBES, RANSOHOFF, HART, PARKHILL, JOHNSTON, BURREL, ELLIOT and RICHARDSON. The forthcoming volume of transactions will be one of unusual interest and one which will show the higher character of the work done by its members from year to year. The work of the Association in the Congress of American Physicians and Surgeons was represented by a discussion on the "Classification, Prognosis and Treatment of Acute Peritonitis." Dr. SENN discussed the classification, Dr. ABBE the prognosis and Drs. DEEVER, MCCOSH and FOWLER the treatment. The Association numbers now eighty-nine members, leaving but eleven vacancies. Dr. PREWITT of St. Louis was elected president for the ensuing year and New Orleans was selected as the place for holding the next meeting.

THE AFTER-CARE OF THE INSANE.

The American Neurological Association through a committee of which Dr. HENRY R. STEDMAN is chairman, is engaged in a movement that deserves the full support of not only the medical profession, but of all those who are at all philanthropically inclined. It is a preliminary inquiry as to the best means for providing for patients discharged from asylums for the insane, especially during the first weeks or months after their release. It is a well-known fact that the recovered lunatic, if dependent upon his own devices, suffers from special disadvantages and that the hard lines of life that may have been the direct cause of his mental breakdown are likely to be even more his lot on his release. A convict who has served his time

is better off in a purely temporal point of view, he has more resources and, unless he is what it is to be feared the most of them are not, a reformed man, he is simply replaced upon his old footing. The law, moreover, generally provides that he starts out with a small sum of money, not much it is true, but something to meet his immediate necessities. There are also organizations that look out for released criminals; he has the sympathy and help of good people if he is reformed, and the ready fellowship of his old associates if he is not. The recovered but friendless lunatic on the other hand is liable to be thrust on a cold world with nothing in his pocket and a certainty that a knowledge of his misfortune is almost an insurance of distrust and repulse of all his efforts of self-support. The consequence is too often a relapse to his former state or a worse one and the multiplication of chronic cases and charges upon the public.

It has been the custom in some of our asylums to provide some employment at such small wages as their resources would admit, for recovered patients, for a short period, so that they did not start out penniless, and could say that they had already had employment, thus modifying to some extent the stigma (in the popular estimation) of their insanity. It afforded them at least a chance for a sort of justifiable *suppressio veri* as to their antecedents in starting out again into the competition of active life. A large institution could thus provide for a limited number, but of necessity many more would fail of this provision. In France there have existed for some time what are called *sociétés de patronage* or aid societies for discharged patients from the asylums and they have worked so well that, while limited at first to a single department, they have lately been adopted by the government and generalized throughout the country. Similar organizations have been started and in operation for some time in other countries under private auspices, and the movement seems likely in time to become universal throughout Europe.

It is not particularly to the credit of this country that we are behind any other in this matter and the present action by the Neurological Association is a timely one. It is desirable that the system devised be one adapted to this country and, if possible, an improvement on any existing one. For this reason the committee have sent out circulars asking the views of superintendents and others as to what are in their opinion the best plans for the after-care of the insane. The answers to these inquiries are utilized in a report which will form a basis for future plans and it is to be hoped will be the starting point of a very useful charity.

The question whether this after-care of the insane should be provided for at the expense of the public funds or as a private charity, is an important one and is one of those in the circular sent out by the com-

mittee. There are some very good reasons why a separate establishment for the oversight and welfare of discharged lunatics would be better under private auspices; it would be free from political interference, and as residence there would be purely voluntary it would require no State inspection. It would or should be simply a home where discharged patients can stay under friendly oversight and if possible do something for their self-support, and from which, if desirable, some oversight can be exercised for their welfare even after they are no longer in residence. An absolute disconnection from the asylum will be, for some cases and in some respects, an advantage; a complete change of scene and associations is often as useful for perfecting a recovery as is the change from home surroundings to the hospital for primarily inducing it. A private charity of this kind ought, if properly conducted and controlled, to be better insured against certain disadvantages to which our public institutions under their present systems are liable, and its voluntary support by those who are able and willing to give it, will be a relief to the constantly increasing public expenses.

The State can, however, usefully aid in this matter, and at slight cost, by continuing and extending the practice, already mentioned as existing, of giving temporary employment at very moderate wages to impecunious patients who, while practically recovered, yet are better for a certain degree of care and observation before being sent out to depend upon their own resources. There are, in a large institution, numerous opportunities for utilizing advantageously the services temporarily of such patients, and many of them are very glad to avail themselves of the chance. When they finally leave the institution they are already in the way of earning their living and their insanity is sufficiently in the past to be no longer a stigma and an embarrassment, as it would be had they left it immediately as discharged patients. A very small additional appropriation would go a great way in providing for such cases and should perhaps be as judicious and advantageous an employment of public funds as any that can be devised. The hospital would thus care for certain special cases, leaving others to the aid societies outside, and by both methods combined a much better future is opened to the recovered lunatic. With one or both of these resources at his command, the often sorely puzzled head of a hospital for the insane will be greatly relieved and the extent of his therapeutic resources materially increased. There are also cases that can not be safely discharged under the conditions that exist too largely at the present, whose friends, if they have any, are afraid to receive them, and yet to whom further detention in an asylum is a positive detriment and may turn the scale in favor of their permanent insanity. If these aid societies can also meet the needs of this class,

who are often perfectly suited for their care, their usefulness will be largely augmented.

All these matters have undoubtedly been fully considered by the committee of the Neurological Association, and the publication of its report will be awaited with interest. It is to be hoped that it will be the direct inciting cause of a new and exceedingly useful application of public and private benevolence.

MEDICAL CONSIDERATION OF THE METHODS OF PUBLIC EDUCATION.

The popular idea of education seems to be a filling of the mind with a conglomerate collation of truths and untruths conveniently designated as knowledge, by a systematic process of cramming from text-books and lectures, mechanically pursued and methodically planned, regardless of individual capacity and mental and physical temperament. A natural sequence of such a procedure is a desire on the part of the student to further cram the burdened mind with a smattering of every possible subject not already thrust upon it, by the indiscriminate reading of books, newspapers and magazines. This corollary to modern "educational methods" is highly commended and apologetically called by its progenitive Solons "the modern thirst for knowledge."

Nothing could be more fallacious than such conception of education. The very etymology of the word disproves it. Anyone with the slightest knowledge of philology should know that education does not mean a putting in, but, the direct converse, a drawing out. Realizing the error of some of the so-called educationists, Dr. SHUTTLEWORTH, in an address before the British Medical Association sagely says, "Bearing in mind the physiologic interdependence of bodily and mental development, we may say that true education consists in processes of training which will produce in a given individual the most favorable evolution possible of all the faculties both of mind and body. A rational educational system will recognize the fact that all children are not cast in the same mold; that there are inherent, often inherited, differences in each pupil's powers, and that, to obtain the best results, instruction must be adapted to idiosyncrasies and proportioned to varying capacities. . . . From the medical standpoint we shall reply in the affirmative to the query of PLATO: 'Is not that the best education which gives to the mind and to the body all the force, all the beauty, and all the perfection of which they are capable?'"

What a sad contrast to these beautiful principles is the public system of education in vogue in this country at the present day! Rigid rules as to definite standards of acquirement, regulated chiefly by age and not by the varying capacities and different temperaments, make the backward and deficient children the martyrs to the baneful influence of excessive hours of study, or

failing in their requirements, render them indifferent to a righteous pride. Stimulated to active competition by praise at home and honors in school the more intelligent are slaves to their unfortunate ambition. The willing and anxious child is virtually worked to mental and physical dissolution by thoughtless teachers, aided by the fondest of parents to whom the physical conditions underlying mental evolution and critical epochs of development are unknown.

In this country particularly are these circumstances deleterious to the health of the growing race. The average American child is not only mentally precocious, but is of a peculiar neurotic temperament, which, while increasing its mental capacities beyond that of the child of other countries, at the same time renders it more susceptible to mental over-strain and nervous exhaustion. Again, the age of greatest strain is shortly after puberty, a period which, particularly in girls, has been justly considered of "profound nervous and neuro-physiologic import." The headaches, backaches and the rest of the common ills of our American girls, are often directly attributable to excess of study and misdirected efforts at education during critical periods of development.

In our public system of education the mental over-strain is required just at a time when minimum study and maximum outdoor exercise and recreation are demanded. We heartily endorse as applicable to the American system of public education the reforms which Dr. SHUTTLEWORTH advocates in the British high-school system, namely, 1, amendment of excessive hours of study, especially during spurts of growth and development; 2, correction of the deficiency of systematic outdoor exercise and recreation, and 3, more regard of physiologic functions differentiating the capacity for work at certain times of girls as compared with boys.

ACUTE LEUKEMIA IN CHILDHOOD.

Leukemia is usually a disease of insidious onset and slowly progressive course. Occasionally, however, it makes its appearance with the abruptness of an acute infection, being attended with febrile symptoms and other manifestations of constitutional disturbance. Of the etiologic influences we know little, if anything. The disease has been observed in connection with malaria, syphilis, other infectious diseases, traumatism, over-exertion and profuse hemorrhage. It has developed during pregnancy, and sometimes an hereditary predisposition has existed. The disease has also been observed in some of the lower animals. Males seem to suffer more commonly than females. No age appears to be exempt, though it is probable that the disease is most common during the middle period of life.

To the rather small list of cases of acute leukemia in childhood THEODOR (*Archiv für Kinderheilkunde*,

B. xxii, H. 1, 2, p. 47) adds the report of an additional instance, together with an analysis of all that he has been able to gather from the literature. The case occurred in a boy, four years old, previously healthy and well nourished, who fell from a horse that he was being taught to ride, striking his face and nose. Copious epistaxis followed, which failed to yield to the ordinary remedies at hand, and only ceased after ten hours, upon plugging of the nares by the medical attendant. It was at this time first observed that there were present on the extremities a number of large and small hemorrhagic extravasations, which were attributed by the parents to contusions received in various ways. Examination showed further the spleen to be slightly enlarged, and the blood exhibited the characteristic conditions of leukemia, with a preponderance of lymphocytes.

In the further course of the case the temperature became moderately elevated; hematuria appeared, with the presence of hyaline and granular tube-casts, and the cervical, axillary and inguinal glands became enlarged. There was at no time pain referred to the bones. Under treatment with abdominal compresses, inunctions of iodvasogen, arsenic and preparations of blood and bone-marrow, in conjunction with fresh air, distinct improvement set in for a time, but subsequently the symptoms returned and death took place in the sixth week of the disease from pulmonary edema. A postmortem examination could not be secured. Bacteriologic examination of the blood failed to disclose the presence of pathogenic organisms. The father of the child had been syphilitic.

Of the forty-five cases of acute leukemia only six occurred in children under the age of ten years. Only those are considered in which the disease did not last longer than nine weeks. Up to the age of fifteen years there were four additional cases. Of the whole number twenty-five were in males, thirteen in females, while in seven the sex is not specified. The patients varied in age from two and a half to fifty-nine years.

MALPRACTICE IN WEST VIRGINIA.

Dr. THOMAS R. EVANS of Charleston, West Virginia, states in a recent number of the *Medical Record* that the statutes of West Virginia are in a decidedly antique condition as regards malpractice suit. According to Dr. EVANS any physician or surgeon who "resorts to any expedient whatever," may be mulcted in heavy damages in case his patient dies; and he is not allowed to testify in his own behalf, nor can any other person testify for him. Finally, there is no stated time when such a suit can be outlawed. Dr. EVANS declares that one medical man was recently under this enactment condemned to pay a fine of \$10,000. The first part of Dr. EVANS' charge against the West Virginia statutes ignores completely the fact that this is a part of the common law principle of due diligence

which has protected so many practitioners in malpractice suits. The practitioner is only required to show that he had the ordinary skill of his profession and that he exercised this in the given case. If he adopts new procedure the burden of proof would rest on him to show that these were suited to the particular case and were merely an extension of the ordinary principles. As TRACY C. BECKER remarks (WITTHAUS' "Medical Jurisprudence"), experimentation, whether upon charity patients or pay patients, is equally prohibited by well settled rules of law. In other words, a departure from known methods of treatment for the purpose of, or by way of, trying unknown remedies or operations not usually adopted by the profession, if an unfortunate result occurs, renders the defendant liable (McNevin v. Lowe, 40 Ill., 209). What constitutes reasonable care and skill is, BECKER remarks, a mixed question of law and fact, like any other question of negligence. Where the evidence is undisputed and no conflicting influences can be drawn from the facts presented it is the duty of the court to determine whether or not there is sufficient proof of want of ordinary care and skill to be submitted to the jury. Where, however, the evidence is conflicting on that point or the inferences to be drawn from the facts established might be differently drawn by different men having the same opportunity for observation, and the same circumstance before them, it is for the jury to say whether or not the defendant has exercised reasonable care and skill guided by proper directions from the court as to the measure of skill required. These involve the question as to how far the practitioner is bound to be familiar with the methods, appliances, drugs and methods of treatment of his profession in general. The rules of evidence which, Dr. EVANS states, are part of the West Virginia statutes, are so destructive of the constitutional rights of citizens of the United States that there is no doubt but that the Supreme Court of the United States would declare all such statutes unconstitutional. While there has been a great deal of what has been called "freak" legislation lately, statutes of the type described are clearly relics of "old dominion" days when law was largely made for the purpose of enriching the king by forfeitures in case of felony.

THE JOURNAL SPECIAL TRAIN.

Medical gentlemen from Illinois and vicinity, the Pacific Coast and the Northwest, who intend to be present at the great jubilee meeting of the ASSOCIATION, are invited to take the JOURNAL SPECIAL, which will go by the Pennsylvania Railway without change from Chicago to Philadelphia. The time limit of ten days is as long as granted by any other route. See advertisement in another column, and make no mistake. The JOURNAL guarantees the most perfect of modern railway equipment.

CORRESPONDENCE.

What Is Wrong with This Prescription?

CHICAGO, April 27, 1897.

To the Editor:—I should be very much obliged if you could have the following questions answered in the columns of the JOURNAL.

Some time ago I was called to see a sick lady and prescribed the following ingredients in capsule. Each capsule contained:

| | |
|--------------------------------|--------------------|
| Sod. salicyl. | gr. $2\frac{1}{2}$ |
| Salol | gr. $2\frac{1}{2}$ |
| Codein | gr. $\frac{1}{8}$ |
| Hydrarg. chlor. mite | gr. $\frac{1}{8}$ |

The patient took only one and within half an hour became very sick, developing severe poisonous symptoms, and later becoming unconscious and extremely depressed, etc. Now I should like to know: 1. What ingredients, if any, were incompatible? 2. If incompatible, what product was formed? 3. If a poison were formed what dose would ordinarily prove fatal? 4. What would be the physiologic action on the various systems, as nervous, urinary, digestive, etc.? 5. What would the mental effect be? 6. What other effects, if any, would be produced on the individual?

I have withheld the symptoms in this case as observed, in order that the answers might not be influenced by a description of them.

Yours very respectfully.

M. D.

Syphilis and Drunkenness.

KANE, PA., May 8, 1897.

To the Editor:—In closing a recent editorial entitled "Legislation against Degeneracy," (April 17) our editor touches the key-note of the situation. Having clearly proven in the preceding paragraphs the futility as well as the injustice of all legal restriction imposed upon the marriage of epileptic and insane, he ends by saying: "The only real safeguards against the propagation of degenerates are to be looked for in the higher moral education of the public and the cultivation of practical moral standards."

How are we to attain these practical moral standards? As our editor remarks, immorality and illegitimate births will be greatly increased if we are to render it illegal for those of epileptic, insane or tubercular tendencies to marry. While, too, it can not be denied that their taints do often exist as an inheritance, it is equally true that, given a suitable environment and mental, moral and physical cultivation the children of just such alliances may grow up sound in body and mind, frequently proving themselves even the superiors of their more careless as well as more fortunate neighbors.

The practical moral standard should be raised and our nation properly educated to a realizing sense, not of the danger in alliances of the epileptic, insane and the tuberculous; for their condition, though the result of an inheritance is but an indication, a symptom, of a far reaching and more dreadful condition from which they usually result, and as I said they may live down their defective and diseased condition.

We should raise our standard of temperance and chastity and our legal enactments should be directed against the social evil, syphilis and drunkenness.

While few deny that tuberculous, epileptic, insane and neurotic parents tend to produce like conditions in their offspring none can deny a far more potent cause for all these conditions and a multitude of others. This is the drunkenness and debauchery which is adding to the number of dipsomaniacs and syphilitics and is so appallingly on the increase of late years.

These are met with everywhere and in all ranks of life. They fill our hospitals, insane asylums, almshouses and prisons. They create hordes of tramps and criminals to over-run our

country and propagate disease, while they teach immoral practices.

For every epileptic, tuberculous and insane person who inherits his condition from a parent similarly affected, at least ten bear their disease as the result of a parent's debauched life or inherited syphilis or of the drunkenness of the father at the time of conception, or the prolonged indulgence of one or both parents in alcoholic liquors, tobacco and other narcotics.

Yet despite the well known truth of my present assertion the medical profession advises a higher standard of education and rigid legislation chiefly against trivial matters, such as the expectoration of tubercular sputa, the communion cup and marriage in insane and tuberculous families. At the same time they would countenance the legalized saloon and brothel where a business is made of seducing and debauching our girls and boys, polluting their pure minds and contaminating their sound bodies.

One might wish as much reason regulate the method of conduct and improve the morals of a mad dog in order to prevent hydrophobia as to strain at the gnats of epilepsy and tuberculosis while he swallows such camels as syphilis and drunkenness.

Is it not high time that the profession becomes aware of the true source of the diseases which are devastating our country and taxing its resources to their utmost to find institutions large and numerous enough to hold the victims.

EVAN O'NEILL KANE, M.D.

Compact Portable Sterilizer.

NEW YORK, May 6, 1897.

To the Editor:—Dr. Wetherill's description of a "compact portable sterilizer for surgical instruments and dressings," (May 1, page 856) shows the need he experienced of demonstrating, in a feasible manner, the ease with which sterilization can be obtained anywhere and everywhere, thus taking from surgery the greatest impediment to success.

This is especially gratifying to me, particularly as Dr. Wetherill, to whom the thanks of the profession are due for his lucid description, publishes an exact counterpart of my nested sterilizer, which was shown at the forty-sixth annual meeting of the AMERICAN MEDICAL ASSOCIATION in Baltimore, May 7, 1895, at the Berlin exhibition last summer and which was described in the JOURNAL, July 27, 1895, and more fully in my little book on "Surgical Asepsis," page 119, published by Saunders of Philadelphia in March, 1895.

Those who know Dr. Wetherill will appreciate that this note is in no sense a stricture upon his above mentioned letter. I merely pen these lines to call his attention to the facts so that he may at his convenience, correct any misapprehension that may arise regarding the origin of this sterilizer. I know Dr. Wetherill will do this as readily as would yours very truly,

CARL BECK, M.D.

ASSOCIATION NEWS.

Executive or Business Committee.—The first meeting of this Committee will be held in Parlor C, Hotel Walton, cor. Broad and Locust Streets, Philadelphia, on Monday May 31, 1897, at 5:30 p.m. Subsequent meetings will be held at the same place and hour, unless otherwise ordered by the committee, for the consideration of matters referred to it by the ASSOCIATION, and for the transaction of business.

L. DUNCAN BULKLEY, M.D.,

Secretary of Committee.

Medical Aid Section. An effort will be made at the approaching Semi-Centennial of the ASSOCIATION in Philadelphia, to complete the organization of a Medical Aid Section for the benefit of disabled physicians and of the widows and orphans of physicians, members of the Section, with the coöperation and

endorsement of the several State and municipal medical societies; the friends of such Section of a Medical Aid Society hope to organize and have appointed all the officers required to make the Section a corporate body of the ASSOCIATION and to convince the profession, that those now throughout the country who are non-members will find it to be to their advantage to join our ranks.

Section on State Medicine. The annual dinner of this Section will be held at 8 o'clock, Tuesday evening, June 1, at the Aldine Hotel. Those who desire to join with the Section at this dinner in celebration of the twenty-fourth anniversary of its organization, are requested to notify the chairman, Elmer Lee of Chicago, or the secretary Louis F. Bishop of New York.

Section on Diseases of Children.—Dr. J. A. Larrabee, the chairman of the Section on Diseases of Children of the AMERICAN MEDICAL ASSOCIATION, extends a cordial invitation to the members of the Philadelphia Pediatric Society, and others to attend its sessions during the meeting of the ASSOCIATION June 1 to 4, and also to attend the dinner on the evening of June 1, the subscription to which is \$2.00.

Committee on Registration.—The Bureau of Registration will be opened in Horticultural Hall at 1 p.m., on Monday, May 31.

JOHN MARSHALL, M.D.

Chairman of Committee on Registration.

SOCIETY NEWS.

Association of American Physicians.—Twelfth annual meeting held at Washington, D. C., May 4, 5 and 6, 1897. Dr. J. M. Da Costa, president, in the chair. The president delivered the Annual Address (see p. 911).

Dr. George B. Shattuck of Boston then delivered an address on the "Serum Test for Typhoid Fever." Seventy-three patients were studied and the tests were made under the supervision of Dr. Leary of the pathologic department of the Boston City Hospital. The clinical statements are unnecessarily subject to the unavoidable peculiarities of hospital practice, but the effort was made to have them as accurate as possible. The date of the beginning of typhoid fever is counted from the first symptoms, but the examiners are not always correct even when they wish to be. A few cases have been thrown out; thus in some of these cases a large number of these tests might have been made had more time been at our disposal. Liquid blood was used and only incidentally could we make out the proportion of serum in the typhoid cultures. The diazo reaction has been used in a large number of these cases and in the laboratory a longer maximum of time, an hour, was allowed for the reaction than some would consider justifiable. Many of the reactions had occurred in less time and the room culture reacts more promptly than the thermostat culture. Of the 145 cases 125 were typhoid fever, 17 were not typhoid fever and one was doubtful, which is not much to go on. The method of bacteriologic testing was next taken up. But in this suffice it to say that the spleen of the patient was taken as a basic culture and from this daughter cultures were made. All the tests were made with cultures given at the room temperature, they seeming to be more satisfactory, for in the room culture the organisms were fewer in number and larger and more motile; the reactions, while perhaps slower, were absolute. In the thermostat cultures sediment of dead organisms interfered with the diagnosis. The technique was that commonly practiced, but an hour was made the limit of time for the test and a shorter limit would have made many tests doubtful. With 116 cases with a clinical diagnosis of typhoid the reaction occurred in 16 before the tenth day and in 1 as late as the 122d day. Eleven cases gave a doubtful clinical diagnosis, and of these 4 gave no reaction at any time. One was without doubt meningitis; another was an old endocarditis; the third and fourth were probably typhoid, although it is very uncertain. In five of these eleven doubtful cases a positive result was obtained. In the first of these there were almost no symptoms but the reaction took place on the twenty-second, twenty-third and twenty-fourth days. The second case was a professional man of 52, he was a steady drinker, he suddenly became mentally confused while in another city and later had another attack resembling vertigo with aphasia; the urine contained blood, albumin and casts, the serum test gave prompt reaction. The third case was probably meningitis but

reaction showed that typhoid was with it. The fourth case was evidently of an ambulatory typhoid; the fifth case was considered uremia, but as the history and symptoms were so vague no positive diagnosis could be made: the patient died and the autopsy showed a typhoid case. Two were doubtful cases of which positive and negative results were obtained on different days. In the eighteen cases with a clinical diagnosis other than typhoid fever there was no reaction in fifteen and there was a reaction in three. One of these three being pneumonia, one thought to be acute miliary tuberculosis and one only exophthalmic goitre. The pneumonia case died and no autopsy was obtained. The case of ophthalmic goitre also died and typhoid ulcers were seen at the autopsy. The case of acute miliary tuberculosis gave a positive result. Questions have been asked whether the blood serum from the negro was more prone to this reaction than the blood of the white. Tests were made with thirteen colored patients in eight of whom there was no reaction. In three there was reaction more or less satisfactory and in two the reactions were positive. Typhoid fever can not be excluded from the history of these two cases in the past six months. The diazo reaction was recorded in eighty nine cases, was found in forty-two and not found in forty-seven and its presence did not always coincide with the serum test.

The following conclusions were drawn:

1. The serum reaction may be obtained toward the end of the first week of typhoid fever, but is both more pronounced and more usual later in the course of the disease.
2. It may be present without relapse at the end of the fourth month.
3. It may be absent one day and present the next.
4. Of 125 cases of typhoid fever the reaction was absent in only one case. In three cases it failed, but there was in each only one test, in one case on the twelfth and in the other on the eighty-second day.
5. In nineteen cases of other diseases clearly uncomplicated by typhoid there was no reaction.
6. In one case, where the diagnosis must remain doubtful, although typhoid can not be positively excluded, there was a reaction.
7. In the number of difficult and perplexing cases the serum test was of distinct service in establishing or correcting the diagnosis.
8. This test will probably prove itself a useful aid to clinical diagnosis, and especially in hospital practice.

Dr. A. C. Abbott of Philadelphia said that the conditions which surrounded this work in the city were not the same as those in a hospital, nevertheless the results in Philadelphia had been fairly good. They had received 164 cases of dried blood and 115 of these had histories. Sixty-eight were clinically diagnosed typhoid fever and 66 gave the Vidal reaction; that is to say 2.9 failures. This reaction takes place as late as the thirty-second day and in many cases less than a week. In two cases in which the primary reaction was negative the secondary was positive and in seven cases where the doubtful primary reaction had showed a positive one later: two cases came in with very meagre histories; he had been much pleased with the results of the work in the municipal laboratory in Philadelphia.

Dr. J. H. Musser of Philadelphia said that there was one period when this reaction was confusing, and that is in the latest stages of the illness when typhoid was a terminal infection. He mentioned several cases in which the reaction failed to show until very late in the course of the disease, which made him think the disease was not originally typhoid.

Dr. Wm. Osler, Baltimore, said that in forty-four cases which had been examined before him by Dr. Bloch at the Johns Hopkins Hospital, reaction had proved satisfactory in all, and quite a number of these patients were admitted later on in the course of the disease. In one there was slight recrudescence of the disease; again in another meningitis. In most cases it was rare to get this reaction before the sixth day.

Dr. Herman M. Biggs, New York, said that it was very difficult to obtain the reaction from the blood, but in quite a number of cases he had applied a cantharidal blister and had obtained the reaction with the serous fluid which was raised by the blister.

Dr. James Tyson, Philadelphia, said that many cases of typhoid fever aborted spontaneously. He mentioned the cases of two young girls who went skating on the Schuylkill and becoming thirsty, they drank some of the water through a hole in the ice; they both had the fever and very early in the course of the disease they gave characteristic reaction; one got well in a week and the other one in three weeks. He mentioned another case which was supposed to be typhoid fever, but the blood was examined and the reaction was not obtained;

he thought it must be miliary tuberculosis, but could get no signs of the disease, but the clinical picture was so much like typhoid that he held to his opinion. At the autopsy there were no signs of typhoid fever except an enlarged spleen, and the case was one of tuberculosis.

Dr. Frank Billings, Denver, said that mistakes were often due to faulty technique. In his article Dr. Wyatt Johnston stated that an old culture should be used, which was an error, and what he meant to say, and what he did say afterward, was that an old culture should be used as a basic culture and daughter cultures from this should be used. It was very important that the technique of this method should be understood before attempts of diagnosis are made; for there is the age of the culture and the proportion of serum to the test, and the influence of the serum of the typhoid organisms; all have to be considered. In one case in which the typhoid fever occurred three years ago the blood reacted to the test. Vidal says seven years is the longest time he knows. It is important, therefore, to understand the method of reaction and to be acquainted with the exceptions to this diagnostic means.

Dr. Jas. T. Whittaker, Cincinnati, then related a case of a patient who he at first thought had Bright's disease, and then he thought it was miliary tuberculosis. He examined the blood and got the typical reaction during convalescence, and he concluded that the case was one which had recovered from typhoid fever.

Dr. F. C. Shattuck, Boston, then related a case in which the diagnosis at first was rather obscure. The patient felt badly, had chills, later fever and then albuminuria, which was supposed to be Bright's disease; the fever went up as high as 106 degrees, the blood gave the characteristic test, and he concluded that it was what the Germans call "nephrotrophus."

Dr. E. G. Janeway, New York, said he had seen the danger of trusting to the negative side of this test too early in the course of the disease. He had been called in quite a number of times when the test was negative and when the case was supposed to be typhoid fever but no certain diagnosis had been made. In one case it was not until the twenty eighth day that the typhoid reaction was obtained, and there had already been collapse and perforation of the intestines. The negative test does not deprive typhoid fever of its dangers, but rather tends to throw one off guard. The great danger is in regarding this test as pathognomonic, thus we are misled by the negative results and treat the case as if it were something other than typhoid, when in reality it is typhoid. He mentioned a case in which the reaction was not obtained until the convalescence; he thought we ought to be very careful in negative tests.

Dr. A. Lawrence Mason, Boston, then read a paper entitled "Gall-bladder Infection in Typhoid Fever." This was a case of inflammation of the gall bladder with perforation and intestinal rupture following a complication of typhoid. It is not a common disease and he had found about forty cases in literature, and most of them were postmortem discoveries. His case was a woman 30 years old who in the second week of typhoid fever began to suffer from anorexia, vomiting and constipation. The blood was tested and the reaction was positive. She had pain in right hypochondriac region with swelling; great tenderness at times; the liver dulness was normal. A cyst was discovered and it was aspirated, a thick yellow fluid being withdrawn; there were no gallstones found. The relief from pain was immediate and the pulse fell to normal; the gall bladder was resected: defervescence promptly ensued. The specimen of fluid which was passed around showed that it was very much unlike bile. Typhoid organisms were found in this fluid, tests were made with it and animals were inoculated. Not many cases of this kind are recorded. Rokitsky and Frerichs have written the best studies on this trouble. It is only in the last ten years that bacteriologists have made it possible to investigate these cases thoroughly. The biliary ducts contain the typhoid organisms, and also some gallstones were found, but not many. Infections might have taken place from the gall bladder. The prognosis was unfavorable. If the gall bladder is much distended, the treatment should be toward relieving pain and for preventing absorption, or else surgery should be called in. He related a case in which laparotomy had been performed in this trouble.

His conclusions were, 1. That the gall bladder is often affected in typhoid fever. 2. Cholecystitis may result. 3. Gallstones predispose to this complication. 4. Gall bladder may be the means of infecting the body.

Dr. Wm. Osler, Baltimore, then read a paper on "Hepatic Complications of Typhoid Fever." He considered the subject under the following headings: 1. Focal necroses. 2. Jaundice in the course of the disease. 3. Abscesses which might be in the form of a suppurative pylophlebitis or a solitary abscess.

4. Affections of the bile passages which were due to typhoid bacilli of the gall bladder and typhoid fever, or as cholecystitis and cholangitis as a complication or sequela of the disease, or else of the form of typhoid fever and gallstones. He spoke of the rarity of jaundice in these cases. He had not been able to find it in 500 cases in the Johns Hopkins Hospital except in two instances. Blochstein showed that the bacillus lived fifteen and a half weeks in the biliary passages and the colon bacillus was always there. In fourteen cases in which the gall bladder had been examined of those who died, typhoid bacilli were found in seven cases and other organisms in the disease and in these seven fatal cases there had been no hepatic symptoms. There is a great possibility of infection through the gall bladder. The production of an acute cholecystitis without typhoid in any individual is possible, as the record of the present day will show. He had seen a case; the subject of the case was a man who had suffered from gravel. After a hearty meal of beefsteak and potatoes he was seized the next day with violent vomiting and vomited his two previous meals; he had a tumefaction over the gall bladder region. Dr. Halsted operated and found no bile, but stones and a yellow liquid. He also found the colon bacillus. The studies of Chiari on this subject show very great care. It is exceedingly rare, for in an analysis of 2,000 cases in Munich only five were found. The number of recent cases is greater than is usually reported. He spoke of one case in which there was laparotomy and recovery and then related the following cases:

Case 1.—Typhoid fever. Fever lasted twenty-seven days, colon bacillus was found during convalescence; the patient subsequently recovered; then three months later he grew worse and was operated on for cholecystitis; a laparotomy was first performed for appendicitis and nothing being found wrong with the appendix the gall bladder was found adherent with a perforation in it, from which oozed a yellow fluid; this fluid was removed and the stone was also removed and the gall bladder was packed with iodoform gauze and the case recovered.

Case 2.—In the third week of typhoid fever; got better later; had a relapse and became violently jaundiced. On admission a large gall bladder was found and the fluid extracted; the colon bacillus was found; the patient died.

Case 3.—The patient had been sick eighty-two days; had a slight remission; typhoid fever was diagnosed, but Vidal's reaction was dubious. On the thirty-fifth day of the fever, had extreme pain in the hypochondriac region; a laparotomy was performed and the patient recovered.

Case 4.—Typhoid fever; pain in the side; got better, but later was re-admitted; he then complained of headache, weakness, and then had a chill which lasted half an hour; the blood gave marked Vidal reaction; he was jaundiced. The cultures from the fluid were sterile; later he had parotitis.

American Pediatric Society.—Ninth Annual Meeting, Washington, May 4, 5 and 6, 1897. The meeting was opened by the president, Dr. Samuel S. Adams, of Washington, who delivered an address entitled "The Evolution of Pediatric Literature in the United States." In this address he reviewed in chronological order the various works on the diseases of children which have been written in this country during the past one hundred years. Every author writing upon this subject before 1870 was mentioned. Since that date the contributions have been too numerous to receive individual mention. The first definite contribution to pediatric literature was made by Dr. Rush in 1789, in a description of influenza. Following this were mentioned the names of Caldwell in 1796, Stuart in 1806, The American Matron in 1810, Jackson in 1812, Miller in 1814 and Logan in 1825. There were numerous contributions between that date and 1848 when J. Foreyth Meigs published his important work on the diseases of children, the last two editions of which appeared under the authorship of Meigs and Pepper. The next important name in pediatrics appeared ten years later when Jacobi in 1858 wrote his first paper on children. It is also notable that J. Lewis Smith wrote his first paper on children in the same year. The first edition of his well known work on diseases of children appeared in 1869.

The most important names which have since appeared as the authors of systematic works are those of Keating in 1889, Starr in 1894, Sachs in 1895, Rotch in 1895 and Holt in 1896.

Dr. James C. Wilson read a paper upon "Tic Convulsif" and reported a case which belonged to the class of nervous diseases which includes the "jumpers" described by Beard. Dr. B. Scharlau presented a synopsis of fifty-six cases of empyema operated upon during 1896 with very favorable results. Dr. W. D. Booker reported a case of congenital diaphragmatic hernia associated with recurrent attacks simulating asthma dyspepticum. During one of these attacks the child died and the true pathologic conditions were revealed by the autopsy.

Dr. J. P. Crozer Griffith reported two cases of "Unilateral Tremor" in children. Dr. J. Henry Fruitnight read a paper on a "Frequent Significance of Epistaxis in Children." He believed that this symptom was frequently the result of cardiac disease and should always receive full attention. Dr. George N. Acker reported two cases of meningitis apparently tuberculous in nature, with recovery.

Dr. Joseph O'Dwyer reported a case of congenital stenosis of the larynx in which relief was obtained by gradual dilatation with steel sounds. Dr. William Osler read an extended paper on "Adherent Pericardium in Children," and reported cases. Dr. A. Jacobi reported a case of sarcoma of the skin in a newly born infant and read a paper upon the origin of such growths.

Dr. F. Gordon Morrill reported an analysis of "One Hundred Cases of Broncho-pneumonia," that term being used rather than lobar pneumonia because of the confusion produced by the use of the latter term when applied to the pneumonias of children. Dr. Floyd M. Crandall read a paper on "Hereditary Tendency in Pediatric Practice," and called particular attention to certain misapprehensions which sometimes arise regarding that subject. Dr. B. K. Rachford read a paper on the "Symptoms of Lithemia" as they appear in children and considered the special symptoms in detail.

In a paper on "Retro-esophageal Abscess," Dr. J. P. Crozer Griffith called particular attention to the great difficulties experienced in making a diagnosis of that condition. Dr. C. G. Kerley reported a case of exophthalmic goitre apparently cured by the use of thyroid extract. The case was an undoubted one and the beneficial effects of the extract seemed to be equally clear. Dr. Henry Koplik reported the extensive use of thyroid extract for the purpose of testing its value in different diseases of the blood and bones, and his conclusions suggested its more general use in those diseases. Dr. Francis Huber also presented a paper reporting a cure of goitre by thyroid extract. The report of the committee on the collective investigation of the antitoxin treatment of laryngeal diphtheria in private practice was read by the chairman, Dr. W. P. Northrup, the conclusions being as follows:

Dr. Joseph O'Dwyer read an important paper on retained intubation tubes, this term being used to mean the necessity of continuing intubation long after the disappearance of the original disease. Dr. T. M. Rotch reported cases of diphtheria of the eye and discussed the subject of antitoxin in diphtheria. Dr. Henry Koplik exhibited an apparatus by which the bacteriologic diagnosis of diphtheria could be made within three or four hours.

Dr. Edward P. Davis presented an important contribution on pre-natal infection in infancy causing diseases which develop during the first month of life. Dr. Irving M. Snow reported a case in which poisoning by acetanilid had resulted from the absorption of that drug in the umbilical wound. Dr. T. M. Rotch presented a specimen of ileocolitis and Dr. R. G. Freeman presented an improved nursing bottle.

Papers were read by title by Drs. J. Lewis Smith, W. F. Lockwood, W. P. Northrup, R. G. Freeman, H. D. Chapin, Francis Huber, C. G. Jennings, C. P. Putnam.

The following officers were elected for the ensuing year: President, Dr. L. Emmett Holt; first vice-president, Dr. Henry Koplik; second vice-president, Dr. Charles G. Jennings; secretary, Dr. Samuel S. Adams; recorder, Dr. Floyd M. Crandall; treasurer, Dr. F. A. Packard; member of council, Dr. Charles P. Putnam.

The following were elected members: Dr. J. H. McCollom, Boston; Dr. J. P. West, Bellaire; Dr. Churchill, Chicago; Dr. E. E. Graham, Philadelphia; Dr. Harold Williams, Boston.

The subject of infantile scorbutus was selected for collective investigation, the report to be made at the next meeting. The following committee was appointed: W. D. Booker, J. P. Crozer Griffith, C. G. Jennings, A. Caillé, J. Lovett Moree.

Cincinnati was named as the next place of meeting, the exact date of the meeting not being decided.

PUBLIC HEALTH.

Reports of Contagious and Infectious Disease.—Commissioner George B. Fowler, M.D., of the Health Department, New York City, as against the charge of tyrannical authority over the profession, states that criticisms of the Greater New York charter are unjust, inasmuch as the sections involved are not new. "They constitute Sections 608-610 of the Consolidated Act of 1882, under which the city has been governed for fifteen

years and were originally passed forty-seven years ago. Sections 1247 and 1249 being in Chapter 275, Laws of 1850, and Sections 1248 in Chapter 384, Laws of 1851."

A Sewage Lawsuit in Ohio.—An interesting trial will occur shortly at Fremont. The village of Clyde turns its sewage into Green Creek, and Mr. J. N. Winter, a farmer, raises hogs on a farm lower down the stream. Recently hog cholera greatly reduced his assets and he lays the blame to the pollution of the stream and has sued the village for \$3,140 damages. Once the principle of securing indemnity for this sort of damage is established, we will hear much less of insanitary towns and villages. The pleadings of the medical profession for good sewerage systems will be listened to with more respect in the future.—*Cleveland Journal of Medicine*, April.

Sanitary Economics in Michigan.—A Michigan journal states that the statistics of the State Board of Health show through compliance with the recommendations of that Board during the five years, 1890-94, there were probably saved to the people of Michigan 112,843 cases of sickness and about 5,261 deaths, from the four diseases—diphtheria, scarlet fever, typhoid fever and measles. At a very low estimate the money value thereby saved the State during these five years is \$5,097,800, or over one million dollars per year, from these four diseases. The basis on which this estimate is made is as follows: For medical attendance and other necessary expenses in each case of sickness, \$20; for each funeral prevented, \$10; value of each life saved, \$500. (Before the late war a slave was worth about \$800, for what it would earn over and above its cost of maintenance, and now the courts count an average person's life worth about \$5,000—ten times the amount used in this estimate). If all the dangerous diseases were considered, the saving would undoubtedly be much more.

"The State Board of Health exists for the purpose of guarding the highest interests of every man, woman and child in Michigan; and, if it had the coöperation of all, and its advice was fully complied with, the results of the work would be still more effective. As it is, the money values saved to the people of the State greatly exceed the cost of the public health work, being, in fact, nearly half as much as the entire amounts required to sustain the State government and all the State institutions. From an unhealthful State, Michigan is fast becoming one of the most healthful."

NECROLOGY.

B. F. KITTRELL, M.D., died at his residence in Black Hawk, Miss., April 22. Dr. Kittrell was born at Greensboro, Ala., Dec. 24, 1836. He graduated from Irving College, Tenn., in 1855, and from the New Orleans School of Medicine in 1861. He entered the Confederate service as a private in 1861, but in the following year he was appointed assistant surgeon of the 22d Mississippi Regiment, which position he retained until the close of the war. In 1866 he located at Black Hawk, Miss., where he continued in the practice of his profession until his death. Dr. Kittrell was an active member of the State Medical Association, and did much to elevate the standard of medical attainments in the State and also in shaping medical legislation. In 1889, he read an article before the Association on Medical Legislation, in which he suggested that, instead of having a board of examination for each congressional district in the State, it would be better to have one board for the State at the capital, to examine all applicants for a license to practice medicine. The Association concurred in his views, and immediately appointed a committee to memorialize the State legislation on the subject, which action resulted in the change being effected. Dr. Kittrell was at different times vice-president, orator and president of the State Medical Association. He was a member of the State Board of Health for seventeen years, and was president of that body in 1884.

J. A. NOEL, M.D., of Redfield, Iowa, died in Des Moines,

Iowa, April 23, aged about 40 years. His death followed a few hours after an operation for intestinal obstruction. Dr. Noel was a graduate of Missouri Medical College, 1886. He was a permanent member of the Iowa State Medical Society, and was a charter member of the Dallas County Medical Society, of which society he was president in the year 1895-96.

ERNST KRAMER, M.D., Berlin, 1856, died April 18, in Milwaukee, Wis., in which city he settled in 1865. He was 64 years old and a surgeon on the first steamer to New York of the North German Lloyd Company. In 1859 he resigned and went to Madison, Wis. During the war he had a varied experience as assistant surgeon of the 7th Wisconsin Infantry, from which he was promoted surgeon of 1st Wisconsin Cavalry, June 13, 1862, and from this he resigned Feb. 27, 1863. He was finally mustered out of service as surgeon of the 45th Wisconsin Infantry Dec. 8, 1864. For nearly twenty years he was a pension examining surgeon.

CHARLES M. SHIELDS, M.D., of Richmond, Va., died April 16, aged 41 years. He was a member of the AMERICAN MEDICAL ASSOCIATION and Medical Society of Virginia as well as an ex-president of the Richmond Academy of Medicine and Surgery. Four years ago he became Lecturer on Diseases of the Eye, Ear and Throat in the Medical College of Virginia, from which he was graduated in 1879.

GRAFFINS MILLER COUCH, M.D., Maryland School of Medicine, Baltimore, 1883, died at his residence in Altoona, Pa., April 25, aged 47 years. He was a member of the Altoona Academy of Medicine and Surgery.

EDWARD H. FOSTER, M.D., of Concord, N. H., died April 5. He was a graduate of the Medical School of Maine, Brunswick, class of 1866, and was widely known in his section of the State.

JEFFERSON J. O'CONNELL, died in Honesdale, Pa., April 12, from gastric ulcer. He was born in 1859 and was graduated in 1887 from the College of Physicians and Surgeons, Chicago.

HUGH McDONALD STRUBLE, M.D., University of Pennsylvania, 1875, and of Middletown, N. Y., died April 30. He was born in Newton, N. J., in 1852.

BOOK NOTICES.

Surgery of the Head and Neck. By LEVI COOPER LANE, A.M., D.D., M.R.C.S., W.L.D. Professor of surgery, Cooper Medical College, San Francisco. Published by the author.

If the reader of this little volume will leave bacteriology out of the case he will find a very instructive and entertaining volume. The long experience of the author, his powers of close observance, the excellence of his English and the purity of his diction will commend the work and arrest the attention of the reader, and as a record of the experience of a surgeon during a long and active life, the work will find an appropriate place in the library of every surgical scholar and practitioner.

We hope to see other volumes of regional surgery following in due course. In the description and treatment of the various surgical diseases of the head and neck few surgeons can speak from a longer experience, and few have better set forth the result of that experience. The literature of the subject discussed has been exhaustively quoted wherever applicable. The proofreading has been done with great care and the author has apparently spared no pains to insure accuracy.

The Twenty-second Annual Report of the Secretary of the Michigan State Board of Health, for the year ending June 30, 1894, pp. 526. Lansing: Robt. Smith & Co., 1896.

This report is somewhat belated, but it is none the less valuable in containing a detailed statement of the efficient services of an excellent Board of Health under an accomplished executive officer. Few can arise from a perusal of this report without having an increased respect for the intelligence, skill and zeal which have characterized the operations of which it gives an account.

Syringomyelia. The 1895 Alvarenga prize essay of the Philadelphia College of Physicians. By GUY HINSDALE, A.M., M.D. pp. 74. \$1.00. Philadelphia: International Medical Magazine Co. [P. Blakiston, Son & Co.] 1897.

This little essay is dedicated to S. Weir Mitchell. It places in evidence the most complete bibliography on the subject that has thus far been collected, amounting to 514 references. Of these says the author, 230 are from Germany and Austria, 136 from France and 85 that appear in English.

The author has gone to the original sources of analysis, 180 cases since 1890. The essay is based on the study of these and two unpublished cases which have been added to the list. The essay has been revised and re-published from the *International Medical Magazine* of November, 1896, and November, 1897. It is a very complete statement of the subject. It is well illustrated and will be found very useful for the general practitioner and likewise the specialist in nervous diseases.

The International Medical Annual and Practitioners' Index. Forty-one contributors, English and American, pp. 629. \$2.75. New York and Chicago: E. B. Treat.

This is the fifteenth year of this book and it preserves the same general characters it did in the beginning, viz., very comprehensive scope of great compactness and judicious selections. The book has few superiors in its special line, and among the many excellent year-books it occupies a very high rank.

MISCELLANY.

Not Natural Results of Injuries.—Loss of memory or impaired mental constitution, the supreme court of Kansas holds, in *Atchison, T. & S. F. R. Co. v. Willey*, March 6, 1897, are not the natural or probable results of mere bodily injuries negligently inflicted by one person upon another, and, in consequence, before recovery therefor, as items of damage resulting from such injuries, can be had, they must be specifically pleaded.

Surgical Scissors are Scissors.—In the matter of the protest against the decision of the collector of customs at New York as to the rate and amount of duties chargeable on certain surgical scissors, the United States general appraisers at New York find, under date of January 20, 1897, "that the said surgical scissors are scissors," and affirm the assessment of duty at 45 per cent. under paragraph 140, act of August 28, 1894.

Extirpation of Cancer of the Cecum.—The neoplasm weighed 400 grams and was attached to the rear wall of the cecum, of which 20 cm. were resected with it. The operation was extraperitoneal, and concluded with the union of the end of the ileum to the end of the ascending colon. Normal intestinal functions were resumed in four days and the patient was dismissed completely cured in three weeks.—*Gaz. d. Osp. e delle Clin.*, 7, April 11.

Societies.

THE PRACTITIONERS' CLUB of Newark, N. J., gave their ninth annual dinner on May 4. The election previous to the festivities, resulted as follows: A. K. Baldwin, president; R. G. P. Duffenbach, vice president; H. C. Herold, secretary and treasurer.

THE WESTCHESTER COUNTY MEDICAL SOCIETY of New York State, after the Medical Society of New Jersey (incorporated in 1790), said to be the oldest in the United States, celebrated its centennial May 8, in the county court house, White Plains, N. Y. The occasion was made memorable by bunting, speeches, an historical address, a poem and a banquet. About one hundred out of the one hundred and fifty members were present.

Hospitals.

There are 21 hospitals in France that dispose of over 500,000 francs: 116 over 100,000 francs, and 1,389 less than 30,000

francs—a total of 1,773 hospitals in all.—St. Vincent's Hospital, New York city, is to have an addition of a new wing, the erection of which the advisory board hope to begin with the proper support of their friends. This hospital in 1896 received 4,307 patients, an increase of nearly 300 over the previous year. In the out-door department 10,611 patients received treatment and 5,702 prescriptions were filled. The death rate was 8.43 per cent.

New York.

AN INSANITY LAW AMENDMENT.—A bill providing for the immediate disposition of lunatics of the dangerous class, received some informal consideration in the New York State Legislature before its adjournment. The proposition was for the temporary commitment of dangerous or violent lunatics for five days upon the sworn certificate of two authorized medical examiners in lunacy, pending the outcome of the legal proceedings for the final disposition of the cases. This period to carry a three days' option at the discretion of a judge of a court of records. It was also proposed that the alleged lunatic, his family, relatives or friends be notified as soon as he is temporarily committed that he is entitled to counsel. If no counsel appears within two days, it shall be the duty of the district attorney of the county in which the alleged lunatic resides to appear at the hearing for the purpose of protecting his interests, so far as consistent with public safety. The present insanity law, which perhaps aimed to be too comprehensive, has been in operation since July 1, 1896, a period too short, in the opinion of the chairman of the lunacy commission, to require a change. The present status of the measure, so far as can be learned, is that it did not reach a vote, but may come up in some form at a future session. The law, whether to its credit or not, generally inclines to liberty of the person.

Washington.

THE FOURTH TRIENNIAL CONGRESS OF PHYSICIANS AND SURGEONS.—This meeting of the Congress has been most successful and the arrangements completed by the Committee in charge were perfect, owing to the able management of the chairman, Dr. Samuel S. Adams. Valuable and instructive papers were read in each component society and the meetings were well attended. Relaxation and the "social" was provided through luncheon by Drs. A. F. A. King, Jos. T. Johnson, S. S. Adams and T. M. Murray. A smoker at the Cosmos Club, and a reception at the Arlington Hotel in honor of Dr. Welsh. A commendable feature at the Club of the Congress was the unveiling of the statue of the late Dr. Samuel D. Gross. After prayer by Rev. B. L. Whitman, D.D., president of Columbian University, Dr. Claudius H. Mastin of Mobile, Ala., made an address, at the close of which he, on behalf of those who had raised the money to erect the monument, presented it to the government. Dr. Mastin's speech was a masterly effort, and comprised an interesting history of the life of Dr. Gross, in which mention was made of the most noted achievements of the latter for the cause of medicine and surgery. The life and work of Dr. Gross were reviewed at length by Dr. W. W. Keen, the successor of Dr. Gross in the chair of surgery at Jefferson Medical College. Dr. George M. Sternberg, Surgeon-General U. S. A., in accepting the monument for the government, followed with a very eloquent and interesting speech. The Gross statue stands in the lawn directly north of the Army Medical Museum and Library. The following officers were elected for the ensuing year:

Pediatric—President, L. Emmet Holt, New York; first vice-president, Henry Koplik, New York; second vice president, C. G. Jennings, Detroit, Mich.; secretary, S. S. Adams, Washington, and treasurer, F. A. Packard, Philadelphia.

Association American Physicians—President, F. C. Shattuck, Boston; vice-president, G. M. Baumgarten, St. Louis; recorder, I. Minnis Hays, Philadelphia; secretary, Henry Hun, Albany, and treasurer, W. W. Johnston, Washington.

Physiological—President, Prof. Russell H. Chittenden, New Haven, Conn.; secretary and treasurer, F. S. Lee, New York. Council—H. P. Bowditch, Roston; Prof. R. H. Chittenden, New Haven; W. H. Howell, Baltimore; F. S. Lee, New York, and W. P. Lombard, Ann Arbor, Mich.

Surgical—President, Dr. T. F. Prewitt, St. Louis; vice-presidents, Dr. J. McF. Gaston, Atlanta; Dr. M. H. Richardson, Boston; secretary, Dr. Herbert L. Burrell, Boston; treasurer, Dr. George R. Fowler, Brooklyn; recorder, Dr. De Forest Willard, Philadelphia.

Neurological—President, Dr. G. M. Hammond, New York; vice-presidents, Drs. Philip Zenner, Cincinnati, and J. J. Put-

nam, Boston; secretary and treasurer, Dr. F. L. Durenn, Philadelphia; members of the council, Drs. H. T. Patrick, Chicago, and C. K. Mills, Philadelphia.

Laryngological—President, Dr. Thomas R. French, Brooklyn; vice-presidents, Dr. T. Morris Murray, Washington, and Dr. H. S. Birkett, Montreal; secretary and treasurer, Dr. Henry L. Swain, New Haven; librarian, Dr. J. H. Bryan, Washington, D. C.; Council, Drs. D. Bryson Delavan, New York, John O. Roe, Rochester, W. H. Daly, Pittsburg, and Charles H. Knight, New York.

Dermatological—President, Dr. J. Nevis Hyde, Chicago; vice-president, Dr. E. B. Brown, New York; secretary and treasurer, Dr. J. T. Bowen, Boston; member of council, Dr. G. T. Jackson, New York.

Ophthalmological—President, Dr. Geo. C. Harlan, Philadelphia; vice-president, Dr. O. F. Wadsworth, Boston; corresponding secretary, Dr. J. S. Prout, Brooklyn; recording secretary, Dr. S. B. St. John, Hartford; delegate to the executive committee of the congress, Dr. John D. Rushmore, Brooklyn.

Genito-urinary surgeons—President, J. W. White, Philadelphia; vice-president, Dr. J. C. Bell, Montreal; secretary, Dr. W. K. Otis, New York; member of the council, Dr. R. W. Taylor, New York.

Otological—President, Dr. Arthur Mathewson, Brooklyn; vice-president, Dr. H. G. Miller, Providence, R. I.; secretary and treasurer, Dr. J. B. Vermyne, New Bedford, Mass.; delegate to the executive committee of the congress, Dr. William H. Carwalt, New Haven, Conn.

Climatological—President, Dr. E. Fletcher Ingals, Chicago; vice-presidents, Drs. Samuel A. Fish, Denver, and John C. Munro, Boston; secretary and treasurer, Dr. Guy Hinsdale, Philadelphia; council, Drs. Willis E. Ford, Utica, N. Y., Roland G. Curtin, Philadelphia, Isaac Hull Platt, Lakewood, N. J., S. E. Solly, Colorado Springs, Colo., James B. Walker, Philadelphia; member of the executive committee of the congress, Dr. Frederick I. Knight, Boston.

WASHINGTON GYNECOLOGICAL AND OBSTETRICAL SOCIETY.—The 263d meeting of the society was held on the 7th instant. Dr. Fry read the paper of the evening entitled the "Treatment of Asphyxia Neonatorum by the Hypodermatic Injection of Strychnin." Dr. J. T. Johnson presented a uterus which he successfully removed per vaginam. Dr. H. L. E. Johnson presented a calculus which he removed from the urethra of a woman.

The American Pediatric Society's Report on the Collective Investigation of the Antitoxin Treatment of Laryngeal Diphtheria in Private Practice. 1896 1897.—In this second and supplementary investigation, the aim has been to ascertain: 1, what percentage of cases of laryngeal diphtheria recover without operation under antitoxin treatment; 2, what percentage of operated cases recover. The report now submitted may properly be limited to answering these two inquiries.

Since the beginning of the use of general intubation, no disease has been more thoroughly observed and more fully reported than laryngeal diphtheria. Operative cases, especially, without hesitation, whether ending fatally or favorably, have been fully and promptly put on record. The result has been a collection and tabulation of cases available for control, such as few diseases offer. There are thousands of intubation cases before the days of antitoxin, and thousands since, available for comparison. It is, then, to cases of laryngeal diphtheria, especially those requiring operative interference, that we may apply the crucial test of the value of the antitoxin treatment.

Sixty thousand circulars containing the following questions have been distributed:

Age of patient? Diagnosis confirmed by: 1. Presence of other cases in the family? 2. Appearance of membrane elsewhere? 3. Bacteriologic cultures? How many days and parts of a day after the first appearance of the disease was antitoxin first administered? How many doses of antitoxin were administered? Dose of each injection in antitoxin units? Whose antitoxin used?

Non operative cases—evidence of disease: Hoarseness? Aphonia? Stenosis?

Operative cases: 1. Intubation? On what day? 2. Tracheotomy? On what day? How long, in days and fraction of a day, was tube in the larynx or trachea?

Sequelæ (in recoveries): 1. Broncho pneumonia? 2. Paralysis? 3. Nephritis?

Death, cause of, and on what day? 1. Broncho pneumonia? 2. Extension of membrane to the bronchi? 3. Sudden heart paralysis? 4. Nephritis? 5. Sepsis? 6. Accidents of operation? Recovery? Remarks, especially on fatal cases?

These circulars were distributed throughout the United

States and Canada, the following means being employed: Contributors to first report, members of the Society acting as agents for their respective localities, boards of health, local medical societies and antitoxin manufacturers. At the outset, in this connection, it is a pleasure to acknowledge that the labors of the Committee have been much lightened by the uniform good will of all addressed, more aid coming spontaneously than in the previous investigation. It is also a pleasure to especially acknowledge the Society's indebtedness for efficient aid in distributing circulars and securing returns to H. K. Mulford Co., Parke, Davis & Co., Lehn & Fink (Gibier's), the Health Departments of Chicago, St. Louis, New Orleans, Denver, San Francisco, Boston, Washington, Buffalo, Providence, Ann Arbor, Newark, Montreal, Toronto and others.

To the New York Health Department is due the thanks of the Society for every possible courtesy in distributing blanks and, through their inspectors, of securing returns of operative cases.

In order to reduce sources of error it was desirable to bring together a large number of cases, from widely distributed localities, from many different observers and operators, and from a period of time including all seasons of the year. All returns have been examined by the Committee and only such cases accepted as bore satisfactory evidence that they were first of all, diphtheria, and secondly that the lesion had invaded the larynx.

A total of 1,704 cases of laryngeal diphtheria are ours for present study. A few cases (228) had not satisfactory evidence that there was laryngeal involvement; indeed, some were reported through misunderstanding the fact that only laryngeal cases were wanted, and a few were reported in which there was no mention that antitoxin was used. These cases are not included in the number referred to above. Of the 228 cases, 218 recovered, and 10 died.

In a total of 1,704 antitoxin-treated cases of laryngeal diphtheria, there was a mortality of 21.12 per cent. (360 deaths).

TABLE OF ALL CASES SHOWING AGE AND RESULT OF TREATMENT.

| | Fatal cases. | Recoveries. | Totals. | Mortality. Per cent. |
|----------------------------|--------------|-------------|---------|----------------------|
| 1 year and under | 25 | 35 | 60 | 41.66 |
| 1 to 2 years | 77 | 219 | 296 | 26.01 |
| 2 to 3 years | 81 | 260 | 341 | 23.75 |
| 3 to 4 years | 42 | 216 | 258 | 16.27 |
| 4 to 5 years | 47 | 160 | 207 | 22.70 |
| 5 to 10 years | 72 | 345 | 417 | 17.26 |
| 10 to 15 years | 9 | 64 | 73 | 12.32 |
| 15 to 20 years | 2 | 24 | 26 | 7.65 |
| Over 20 years | 5 | 17 | 22 | 22.72 |
| Unknown | 0 | 4 | 4 | |
| | 360 | 1344 | 1704 | 21.12 |

Cases not operated on.—The first inquiry of the circular was what percentage of cases of laryngeal diphtheria recover without operation under antitoxin treatment.

Of 1,704 total cases, 1,036 were not operated upon (60.79 per cent.). Of these, most did not require operative interference, a few cases were thought to require it but operation was refused. All cases are included, and it will be noted, there are no eliminations.

Among the 1,036 cases not operated on, there was a mortality of 17.18 per cent. deaths (178), or, to answer the inquiry of the circular exactly, of 1,036 cases not operated on, 82.82 per cent. recovered (or 858 cases).

As good as is this percentage of recovery in so large a number of diphtheria of the severest type, it is believed it is not as good as it ought to be. Cases of laryngeal diphtheria not requiring operation, according to the testimony of consulting intubationists, are seldom heard from a second time, and less often find their way into reports. It was formerly estimated that about 10 per cent. of cases of laryngeal diphtheria recovered without operation. The present report shows that in 1,036 cases 82.82 per cent. recovered.

Cases operated upon. In analyzing this class of cases, it is believed a more exact conclusion as to the value of the antitoxin treatment can be arrived at than in the non-operative.

There will be entire harmony of opinion as to the severity of laryngeal diphtheria which requires operative interference. In the early days of intubation it was customary to speak of the percentage of recoveries, and 25 per cent. and 27 per cent. were considered good results. In the last report the recoveries had crept up so high in the one hundred cases that it seemed more natural to speak of the percentage of mortality.

In this connection it is interesting to inquire what were the best reliable statistics of intubation, taking cases as they occurred, without selection, in pre antitoxin days. In 5,546 intubation cases collected by McNaughton and Maddren in 1892, the mortality was 69.5 per cent., or, to bring the facts into line, 30.5 per cent. recovered.

O'Dwyer's personal experience, in private consultation, brings us more nearly face to face with the old time experience with diphtheria. Note that the following 500 cases came under the observation and care of one practitioner, a skilled operator, extended over a dozen years of time, and therefore included all types of the disease.

Exclusive of the first 100 cases of intubation, which O'Dwyer regards as experimental, the results stand as follows:

| | | |
|--------------------|------------------------------|--------------|
| 2d | 100 intubations, recoveries, | 27 per cent. |
| 3d | 100 " " " | 30 " |
| 4th | 100 " " " | 26 " |
| 5th, 70 on the 100 | " " " | 27 " |

Total percentage of recoveries, 27.56. When he had reached 70 on the fifth hundred something occurred which carried the phraseology up over the divide so that it was appropriate to speak of mortality percentages. At this point in history, antitoxin arrived and interrupted forever the old series. In O'Dwyer's next 59 cases the mortality was 14 deaths, or 23.7 per cent.

In a total of 1,704 laryngeal cases there were 668 cases operated upon. In the 668, there were 182 deaths, or a mortality of 27.24 per cent. In the former report, in 553 intubated cases the mortality was 25.9 per cent. In approximate figures there is a difference between 27.1 per cent, and 26 per cent.

Summary. Sixty thousand circulars were distributed throughout the United States and Canada.

Time allowance, the eleven months ending April 1, 1897.

Whole number of cases in this report, 1,704; mortality, 21.12 per cent. (360 deaths).

The cases occurred in the practice of 422 physicians in the United States and Canada.

Operations employed: 1. Intubation in 637 cases; mortality 26.05 per cent. (166 deaths). 2. Tracheotomy in twenty cases; mortality, 45 per cent. (nine deaths). 3. Intubation and tracheotomy in eleven cases; mortality, 63.63 per cent. (seven deaths).

Number of States represented, twenty-two, the District of Columbia and Canada.

Non-operated cases, 1,036, 60.79 per cent, of all cases; mortality, 17.18 per cent. (178 deaths).

Operated cases, 668 or 39.2 per cent, of all cases; mortality, 27.24 per cent. (182 deaths). Two facts may be recalled in connection with this paragraph. First, that before the use of antitoxin it was estimated that 90 per cent. of laryngeal diphtheria cases required operation, whereas, now, with the use of antitoxin, 39.2 per cent. require it. Second, that the percentage figures have been reversed, formerly 27 per cent. approximately representing the recoveries, whereas, now, under antitoxin treatment, 27 represents the mortality. To put it in other words, before the use of antitoxin, 27 per cent. recovered, now 73 per cent. recover, and this in the severest type of diphtheria.

[The present report will strike many members of the society as revealing a mortality a little too large in each of the two classes. The mortality is large, larger than the personal experience in private practice of many would expect.

The reasons for this are: 1, that antitoxin is still used too late, either from procrastination on the part of the physician, or objection on the part of the friends, or 2, in a half-hearted way which shows itself in doses from one-tenth to one-fourth as large as they should be. In truth, both the physicians and the friends of the patient are timid.

This report it must be admitted, shows too large a mortality. In the opinion of the committee it is a larger mortality than will ever be shown again. Antitoxin is gradually being used earlier in the disease, and it will soon be used in sufficient doses.

To the society, the committee desire to say that they have sought to carry out their wishes in putting antitoxin on trial, to accept no testimony that did not bear the stamp of reliability, that they have employed the methods approved in the case of the first investigation and report, and that they have confined their work to definitely answering the main questions which the society and profession now have in mind. Points that were settled in the first report and have since been corroborated by general medical literature, are not again taken up.

If the committee are asked to put forth the three most valuable points established in this eleven months work, they are:

1. The mortality of laryngeal diphtheria at present rests at 21.12 per cent.
2. That 60 per cent. approximately have not required intubation.
3. That the mortality of operated cases is at present 27.24 per cent.

[Signed] W. P. Northrup, M.D., Joseph O'Dwyer, M.D., L. Emmett Holt, M.D., Samuel S. Adams, M.D., Committee.

The committee recommend: *Antitoxin* should be given at the earliest possible moment in all cases of suspected diphtheria.

Quality. Of the products on the market some have, by test, been found to contain one-half to one-third the antitoxin units stated on the label. Select the most concentrated strength of an absolutely reliable preparation.

Dosage. All cases of laryngeal diphtheria, the patient being two years of age or over, should receive as follows: First dose—2,000 units at the earliest possible moment. Second dose—2,000 units, twelve to eighteen hours after the first dose if there is no improvement in symptoms. Third dose—2,000 units, twenty-four hours after the second dose, if there is still no improvement in symptoms.

Patients under two years of age should receive 1,000 to 1,500 units, the doses to be repeated as above.

THE PUBLIC SERVICES.

Army Changes. Official List of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from May 1 to 7, 1897.

First Lieut. George A. Skinner, Asst. Surgeon, will proceed to Ft. Spokane, Washington, and report for temporary duty during the absence of Capt. Edward R. Morris, Asst. Surgeon, on leave for six months, to take effect on or about May 18, 1897.

The following named officers are detailed to represent the Medical Department of the Army at the seventh annual meeting of the Association of Military Surgeons of the United States, to meet at Columbus, Ohio, May 25 to 27, 1897: Lieut.-Col. William E. Waters, Deputy Surgeon-General; Major Henry Lippincott, Surgeon; Capt. Robert J. Gibson, Asst. Surgeon.

RETIREMENT.

Col. Charles T. Alexander, Asst. Surgeon-General U. S. A., retirement from active service this date, May 3, 1897, by operation of law, is announced. By direction of the President.

Change of Address.

Allen F. M., from 260 Bowen Avenue to 333 E. 41st Street, Chicago, Ill.; Abt. I. S., from 3505 Indiana Avenue to 4006 Grand Boul., Chicago, Ill.; Andrews, E., from 2520 Prairie Avenue to 3912 Lake Avenue, Chicago, Ill.; Belknap, L. J., from Portland, Ore., to San Jose Sanitarium, Jan Jose, Cal.; Bonnar, Wm., from 235 State Street to 240 Wabash Avenue, Chicago, Ill.; Betz, F. S., Kelley & Co., from 261 Dearborn Street to 80 State Street, Chicago, Ill.; Butterworth, Alice, from 638 Jackson Boul., to Chicago View Hotel, Chicago, Ill.

Cochran, C. C., from Keokuk, Iowa, to Curran, Ill.; Cullen, F. C., from 561 W. 12th Street to cor. Loomis and Taylor Streets, Chicago, Ill.; Converse, T. E., from 721 2nd Street to 405 W. Chestnut Street, Louisville, Ky.; Curry, Wm., from Chicago, Ill., to Nebraska City, Neb.; Clayton, C. F., from 4145 Central Street to 345 South Paulina Street, Chicago, Ill.; Edwards, J. A., from Centerville to Columbia, Tenn.

Fales, L. H., from Chicago, Ill., to 1109 University Avenue, Madison, Wis.

Greene, D. M., from 147 Monroe Street, to The Gilbert Block, Grand Rapids, Mich.; Gaff, John V., from Benson to Tucson, Ariz.

Hartley, J. D., from 6324 to 6132 Stony Island Avenue, Chicago, Ill.

Hawes, E. E., from Hyannis to 818 Broadway, Chelsea, Mass.; Hummel, A. L., Advertising Agency, New York, N. Y.

Jones, P. M., from Crocker Bldg., to 803 Sutler Street, San Francisco, Cal.

Lawrence, G. H., from Denver, Colo., to Creston, Ill.

Peterson, W. A. C., from 775 Polk Street to 3129 Wentworth Avenue, Chicago, Ill.

Roming, S. V., from N. Clark Street to 727 Morse Avenue, Chicago, Ill.

Rhodes, J. E., from 506 W. Adams Street to 1669 W. Monroe Street, Chicago, Ill.

Sinclair, J. G., from 4101 to 4045 Grand Boul., Chicago, Ill.; Sixta, L. H., from Chicago, Ill., to Schuyler, Neb.; Stribling, J. S., from Seneca, S. C., to Sherman, Texas; Sheldon, M. B., from Low Moor, Va., to 138 N. State Street, Belvidere, Ill.

Ward, A. O., from 149 to 339 Virginia Avenue, Indianapolis, Ind.

Waters, L. C., from 439 W. Monroe Street to 966 Warren Avenue, Chicago.

LETTERS RECEIVED.

Bausch & Lomb Optical Co., Rochester, N. Y.; Bldg, U. S., Tampa, Fla.; Bulkeley, L. Duncan, (2) New York, N. Y.

Current, O. E., Farmland, Ind.; Cochran, C. C., Curran, Ill.; Cockburn, J. C., Minneapolis, Minn.; Cokenower, J. W., Des Moines, Iowa.

Daly, J. N., Orangeville, Ill.; Daggett, B. H., Buffalo, N. Y.

Floyd, Mrs. Thos., Little Rock, Ark.; Fairbairn, H. A., Brooklyn, N. Y.

Harrison, W. K., Chicago, Ill.; Hahn, Willis O., Wilkes-Barre, Pa.

Hammond, Wm. A., Washington, D. C.

Journal Advertising Agency, New York, N. Y.

Kindred, J. Jos., Astoria, N. Y.; Kelley, A. D., Chicago, Ill.; Klie, G. H. Chas., St. Louis, Mo.

Longmans, Green & Co., New York, N. Y.

Medical and Surgical Reporter, The, Philadelphia, Pa.; Merriam, G. & Co., Springfield, Mass.; Merrick, M. B., Passaic, N. J.; May, W. L., Guin, Ala.

Parke, Davis & Co., Detroit, Mich.; Pole, Henry S., Hot Springs, Va.

Pilcher, James E., Columbus, Ohio; Procter & Collier Co., The, Cincinnati, Ohio.

Schering & Glatz, New York, N. Y.; Shelton, John B., New Decatur, Ala.; Smith, P. H., Soldier's Grove, Wis.; Stephens, Wm. A., Cleveland, Ohio; Savage, G. C., Nashville, Tenn.

Thompson, John A., Cincinnati, Ohio.

University Medical College, Kansas City, Mo.

Wright, A. L., Carroll, Iowa; Walnwright, J. W., New York, N. Y.

Woodbury, Frank, Philadelphia, Pa.

The Journal of the American Medical Association

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CHICAGO, ILL., MAY 22, 1897.

No. 21.

LECTURE.

NERVOUS DYSPEPSIA.

A clinical lecture delivered in Rush Medical College.

BY HENRY M. LYMAN, A.M., M.D.

PROFESSOR OF THE PRINCIPLES AND PRACTICE OF MEDICINE.

Gentlemen:—You have recently had opportunities for witnessing the effects of inflammation of the mucous coat of the stomach in several patients who have exhibited, with varying degrees of severity, the symptoms of acute and chronic gastritis. This morning I wish to call your attention to a case that illustrates another form of gastric disturbance—nervous muscular dyspepsia. It has been taught by the dominant school of pathologists that such disturbances of digestion are always due to catarrhal gastroenteritis. But the opinion has long been held, and is gaining ground, that in certain cases the disorder of digestion is dependent upon alterations in the nervous system, and that inflammation takes little or no part in its causation. This is apparently true of the gastric crises of tabes dorsalis; though, in default of an autopsy, it is always possible to imagine the existence of a latent inflammation that is only prominent during a paroxysm of gastric disturbance. But, on the whole, it seems more likely that the relation in such, and in similar cases, is analogous to what is sometimes observed in the laryngeal cavity when its muscular apparatus is attacked by muscular rheumatism, producing hoarseness or complete aphonia without actual inflammation of the overlying mucous membrane until a day or two after the beginning of recovery from the muscular disorder. In like manner severe pain and disordered secretion may occur in the gastrointestinal canal without manifestation of the ordinary symptoms of inflammation until after the beginning of digestive disturbance.

Nervous muscular dyspepsia may therefore be defined as a complex of symptoms, dependent chiefly upon a disordered condition of the nervous system. The history of the patient before you will amply illustrate this proposition. He is a thin and angular person, about 45 years of age, who from boyhood has been engaged in sedentary and intellectual pursuits. He was an unusually good scholar while a student in the public schools. He was subsequently employed as a general utility man in connection with a country newspaper, to which he occasionally contributed an effusion of his own. Then he studied law in a night-school, and tried to get practice in a large city, but broke down in the attempt. After this experience he was for a number of years employed as a copyist in a government office. He could never afford to take a wife, but admits occasional excursions on the street, and probably rather frequent masturbatory excesses. He, however, has thus far escaped syphilitic infection, and denies having had gonorrhea. He is almost

totally abstinent from alcohol, but is an almost constant smoker, latterly using a pipe instead of cigars, which he can no longer afford to purchase. For three or four years he has been "down on his luck"—out of employment part of the time, and continually harassed by debt and its accompanying trials. Naturally gifted with good health, his elastic temperament has long preserved him from serious disease, but during the past year he has lost vigor, is depressed in spirits and suffers with frequent pain in the epigastric region. This pain, however, is not aggravated by taking food. On the contrary, it is for a time quite abolished after each meal, and recurs about three hours after eating, when the stomach is nearly or quite empty. A glass of milk and one or two crackers will then restore comfort again. Sometimes he is awakened in the night with similar sensations of distress, so that he has learned to carry a crust of bread to bed with him, for use before morning. On examination of the gastric juice, free hydrochloric acid is found to be present in more than the ordinary proportion. Other acids are insignificant in quantity, and cause no considerable difficulty. The gastric contents that are obtained with the aid of the syphon after a test meal are simply the remains of that meal alone, showing that the stomach is capable of emptying itself into the duodenum within four or five hours. Muscular atrophy of the stomach can be therefore excluded.

But here is another patient who, if subjected to this test, furnishes the debris of one or two previous repasts in addition to the substances derived from the test meal. He presents the usual symptoms of chronic catarrhal gastritis, and on rising in the morning splashing sounds can be heard in his stomach if he be vigorously shaken. Inflation of his stomach places its greater curvature a little below the umbilicus. His bowels are constipated, and he suffers frequently with intestinal flatulence. In his gastric juice there is deficiency, but not complete absence, of free hydrochloric acid. In short, without going farther into particulars, we may say that he is a victim of gastric dilatation not dependent upon malignant disease, but accompanied by frequent attacks of pain and gastrointestinal uneasiness, which are only less severe than the paroxysms of gastralgia that frequently occur as a consequence of chronic gastritis.

Between these types of nervous muscular distress many shades of disorder may be discovered, but they can be all grouped into a few classes. An attempt has been made to form a classification based upon the chemic qualities of the gastric juice with reference to the relative quantity of hydrochloric acid that may be present. But the amount of acid thus present in the juice is quite variable, while the nervous phenomena are always predominant, and should be principally considered both in the diagnosis and in the treatment of nervous dyspepsia. The relative acidity and

catarrhal condition of the gastric contents are subordinate factors that must receive due consideration, but may not be made preëminent. It is, accordingly, advisable to regard nervous dyspepsia as comprising those digestive disturbances that are chiefly dependent upon disorder of the nervous system, and are characterized by symptoms of nervous derangement. Like all other nervous phenomena, therefore, there may be either exaltation, depressions or incoördination of function, giving rise to increase, or reduction, or perversion of sensation, muscular movement, circulation and secretion in the stomach. Indigestion may be, therefore, either painful or painless; it may be hurried beyond measure, or it may be retarded by atonic conditions of the muscular fibers in the gastro-intestinal wall; there may be excessive hyperemia and inordinate secretion in the mucous membrane, or the contrary condition may obtain; and finally, as a result of incoördination of nervous functions, the quality of the gastric juice, in the matter of digestive ferments and hydrochloric acid, may exhibit considerable variation from the normal standard.

Obviously, a chemic examination of the gastric juice is needful for the determination of these different qualities of the digestive fluids. Dyspepsias have been, therefore, subjected to a chemic classification based upon the relative quantities of hydrochloric acid that can be demonstrated by analysis. In certain cases the acid is present in excess (hyperchlorhydria), while in others it is deficient (hypochlorhydria), or entirely absent. But in a considerable number of instances clinical observation discovers evidence of disordered digestion without any notable deviation from the normal acidity of the gastric juice. So complicated is the web of symptoms that it is impossible to arrange all cases under a few simple species, like animals in a menagerie. Each patient exhibits individual symptomatic peculiarities, like the numerous varieties presented by certain plants whose species shade into each other after a fashion that renders exact classification almost impossible. But, for the sake of convenience, we may recognize three principal groups into which nervous dyspepsias may be divided—always, however, remembering their susceptibility to variation, and their consequent liability to pass from one group into another, or even to merge themselves among the host of inflammatory disorders in which nervous phenomena occupy a comparatively subordinate position. These three groups may be conveniently considered in succession.

SIMPLE NERVOUS DYSPEPSIA.

This form of digestive disorder is most frequently encountered among neuropathic subjects with rickety antecedents, or among members of the arthritic family. Retarded dentition, profuse sweating during sleep, local spasms, laryngismus stridulus, and intellectual precocity are of common occurrence in the early life of these patients. As the years advance, many of them become victims of eczema, dandruff, early whitening of the hair, premature baldness, bronchitis, asthma, palpitation and irregularity of the heart, neuralgia, gallstones, renal calculi, varicose veins, hemorrhoids, diabetes, polyuria, obesity, rheumatism and gout. Catarrhal conditions of the alimentary canal are often experienced, especially in the childhood and old age of such persons. Dyspepsia thus inaugurated frequently is associated with or replaces the phenomena of muscular and nervous rheumatism. It is easily

induced by fatigue of mind and body and is one of the most common causes of persistent neurasthenia.

The general health and appearance of the patient exhibit little alteration in this form of dyspepsia, unless the function of the small intestine be seriously hindered. There is frequent complaint of epigastric uneasiness after eating, and this is accompanied by a feeling of distension in the stomach, and by eructations of tasteless and odorless gas. Sometimes there is a sensation of impediment in the act of respiration "as if the breath would not go down to the bottom of the lungs." The head aches; the countenance is flushed; the bowels are constipated, and hemorrhoids often exist. Shortly after eating, considerable pain may be experienced; it is a dull, vague sensation of distress that is not definitely located, but is felt with varying severity throughout an ill-defined region beneath the diaphragm. Sometimes the patient experiences vertigo, or feels as if a band compressed the cranium above the eyebrows; occasionally the temporal arteries beat violently, and the corresponding veins are distended with blood. In certain cases it is impossible to lean forward without exciting severe pain in one or both sides of the head. There may be a feeling of weight or pressure in the occipital region, and it is not an uncommon event for the patient to hear a cracking sound in the back of the neck when the head is rotated upon the axis, especially on turning from side to side in bed. Usually there is great depression of spirits, and a tormenting fear of impending evil. The feelings exhibit great instability, passing rapidly from an extreme of vivacity to the profoundest depths of despair.

If the abdomen be examined an hour or two after a meal, considerable gaseous distension of the stomach and intestines will be discovered. Sometimes a succussion sound is audible in the stomach if the body be violently shaken. The differential diagnosis between simple distension of the stomach caused by nervous dyspepsia and permanent dilatation of the organ can be established by examination before breakfast, at which time succussion sounds can not be evoked in cases of temporary distension; whereas they can be always demonstrated when there is persistent dilatation of the stomach.

Palpation of the abdominal wall, in nervous dyspepsia, seldom indicates any extensive tenderness or special uneasiness under pressure. Frequently, however, a moderate degree of tenderness can be detected just below the tip of the ensiform cartilage, and in rheumatic subjects the upper portion of the recti muscles is often sensitive under manipulation.

Provided that intestinal digestion be not seriously hindered, the amount of free hydrochloric acid in the gastric juice may vary considerably without materially affecting the nutrition of the patient. Mere chemic examination of the gastric juice, therefore, affords little information regarding the totality of the digestive process. Of far greater importance is the condition of the nervous system. So long as actual dilatation of the stomach does not exist there will be no extraordinary delay in the passage of food into the intestine, there will be little if any fermentation, and no remarkable failure of health, even though the amount of free hydrochloric acid in the gastric juice should fall below the normal standard.

Such disturbances of digestion as are present are not confined to the stomach alone; they also involve the intestinal canal. In many instances there is some

distension of the colon; constipation and hemorrhoids afford evidence of intestinal and hepatic disorder. Occasionally the phenomena of pseudo-membranous enteritis make their appearance.

NERVOUS DYSPEPSIA WITH EXCESSIVE SECRETION OF HYDROCHLORIC ACID.

In certain cases of nervous dyspepsia accompanying neurasthenia the secretory nerves that should regulate the formation of gastric juice do not exert their normal coördinative influence, and there is an excessive production of hydrochloric acid. Sometimes the acid thus furnished is sufficient to be a veritable cause of inflammation. Such excessive secretion is not unusual during the paroxysms of vomiting that constitute the gastric crises of *tabes dorsalis*.

In typical cases of this variety of dyspepsia great pain, beginning two or three hours after a meal, is experienced in the epigastric region. Considerable relief may be procured by swallowing milk, or an aqueous solution of an alkaline salt. It is completely removed by the ordinary meals, which, virtually, are equivalent to the administration of a full dose of alkaline salts; but the cessation of pain is only temporary, and suffering is renewed as soon as the stomach is empty again. In this way sleep is often disturbed after midnight by a burning sensation, or by vague feelings of uneasiness in the epigastrium, sometimes radiating into the interscapular region. Vomiting may occur, and it is sometimes voluntarily excited by the patient, who has learned how much relief may be obtained through evacuation of the stomach. Similar relief is afforded by irrigation of the gastric cavity. In many cases, however, there is absence of nausea, but the acid contents of the stomach are eructated, causing an intensely burning sensation in the esophagus and fauces. Such patients are thirsty; they often have a craving appetite that impels them to its frequent gratification; and they instinctively prefer animal food, because it is digested more easily than vegetable food. Usually, there is considerable emaciation; the skin assumes an earthy hue; nervous exhaustion is indicated by irritability, fatigue, restlessness and inability to sleep. Many of the sufferers are despondent and hypochondriacal to the last degree.

Milder forms of the disease are less painful. There is merely a sensation of epigastric uneasiness beginning within several hours of eating and arrested by the following repast. These patients desire food at short intervals, and if the usual mealtime is passed without taking nourishment they experience a feeling of exhaustion with distress at the pit of the stomach, often accompanied by a throbbing headache and vertigo. They are generally nervous, irritable, neuralgic and predisposed to arthritic disorders. The bowels are constipated, though occasionally there is obstinate diarrhea—especially in the night or early in the morning—that does not yield to astringents and opiates. Sometimes tenderness on pressure is felt over the pyloric region, and percussion indicates distension of the stomach. Actual dilatation is not to be presumed unless a succussion sound can be obtained in the morning before food has been taken. Catheterization of the stomach yields a liquid that is strongly acid, ropy and of a yellowish color. By washing out the stomach at bedtime, and on the following morning removing the liquid contents of the organ before food has been taken, it is easy to deter-

mine the fact of hypersecretion and gastric dilatation if hydrochloric acid be present.

In a certain proportion of these cases the patient is tormented by repeated attacks of vomiting, which may continue for several days together. Such attacks are frequently induced by intellectual fatigue, and are an expression of nervous disorder accompanied by headache, pain in the stomach and nausea; all of which may be relieved by vomiting the excessively acid contents of the stomach or by their neutralization with an alkaline solution.

NERVOUS DYSPEPSIA WITH DIMINISHED SECRETION OF HYDROCHLORIC ACID.

In the third variety of nervous dyspepsia the symptoms do not materially differ from those which are experienced in the previous form: but the amount of hydrochloric acid, both free and combined, is considerably reduced, or may be temporarily absent. Fermentation consequently occurs in the contents of the stomach, liberating various organic acids and acrid substances. In such cases there is loss of appetite, pain in the epigastric region, distressing eructation and frequent vomiting. The stomach is distended with gas, and succussion sounds are distinctly audible; pain is felt soon after eating, but it is usually less severe than the suffering that is caused by an excess of hydrochloric acid. In many cases there is regurgitation of bile into the stomach, hindering gastric digestion and adding to the discomfort of the patient who loses flesh and acquires a cachectic hue suggestive of cancer of the stomach.

Evidently, these forms of dyspepsia can be differentiated only by the aid of chemical analysis. The mere presence or absence of free hydrochloric acid can be readily determined by the ordinary color tests; but for an accurate diagnosis a quantitative analysis is required. The prognosis depends upon the duration of the disease and its severity. Mild and recent cases occurring in young subjects, usually recover, but dilatation of the stomach, and excessive secretion of hydrochloric acid are unfavorable symptoms. In the severer forms there is reason to fear the passage from simple nervous excitement to actual inflammation, ulceration, or malignant disease.

The indications for treatment are three-fold: 1, to relieve pain; 2, to correct nervo-muscular disorder, and 3, to rectify the secretions.

1. Uneasy sensations occurring when the stomach is empty, or when it contains an excessive quantity of hydrochloric acid, may be temporarily relieved by the administration of milk, or water containing bicarbonate of sodium. But when there is intense gastralgia nothing less than hypodermic injections of morphia and atropin will give relief. Moderate pain may be suppressed by the use of Hoffmann's anodyne, cannabis indica, cocaine, hyoscyamus, or a saturated aqueous solution of chloroform. This last remedy is the most prompt and efficient of all, except morphia. In every case of severe pain the stomach should be thoroughly evacuated by an hypodermic injection of one-tenth of a grain of apomorphia. A large poultice, into which have been stirred a drachm each of chloroform and tincture of opium, should be laid over the whole abdomen and lower half of the thorax. A cathartic should be administered as early as possible; it may consist of ten grains of calomel with five grains of bicarbonate of sodium, to be followed four hours later by an ounce of castor oil. Sometimes considerable relief

may be derived from copious draughts of hot water. Solid food should not be taken until the acute symptoms have yielded to treatment and rest.

2. Inefficient muscular contraction in the walls of the stomach and intestines demands the use of nux vomica, ipecac, massage, electricity, injections of hot water into the colon, and stimulant laxatives. Nux vomica is a better tonic than strychnin; it may be given in doses of five to ten drops of the tincture, a quarter of a grain of the extract, or half a grain of the powdered nut, after each meal. Ipecac stimulates the secretion of bile, and is especially useful when there is gastro-intestinal flatulence after eating; it should be given in doses of one-tenth of a grain, associated with nux vomica, piperin, ginger, and other aromatic stimulants, as in the well-known pill of Fothergill, which may be thus modified:

R. Pulv. ipecac. gr. 1-10
Ext. nuc. vom. gr. $\frac{1}{4}$
Pulv. piper. nig.
Ext. gentian āā gr. i
Fiat pil. No. 1. Sig. One such pill after each meal.

Aloin in appropriate quantity may be added when there is constipation; and an occasional dose of blue mass and colocynth is often useful.

3. For the chemic rectification of the secretions, when there is excessive production of hydrochloric acid, the patient must abstain from alcoholic beverages and highly seasoned food. Mastication must be slowly and thoroughly performed. Starchy and saccharine substances should not be eaten; milk, eggs, peptonized meat powders, minced meat, tender steak, and other nitrogenous articles of diet should constitute the bulk of the food. When the excess of acid is present during the period of digestion alone, causing pain as the stomach becomes empty, sodium bicarbonate may be given in doses of five to twenty grains about three hours after each meal. If the bowels be constipated an equal quantity of Husband's magnesia may be added to each dose. When the stomach is continually charged with hydrochloric acid it will be necessary to increase the dose of sodium bicarbonate to four or six drachms a day. Vichy water, lime water, lithia water, and Murray's fluid magnesia may also be used as antacids. When there is evident dilatation of the stomach with stagnation of its contents, the syphon should be employed, in order to remove the irritating liquids. In default of such apparatus, the older physicians gave emetics of lobelia with good results.

When, without dilatation of the stomach or stagnation of its contents, there is a deficiency of hydrochloric acid in the gastric juice, ten or fifteen drops of the dilute acid may be given in a teacup of hot water after each meal. An equally good result follows the similar use of the other mineral acids; hence the extensive popularity of Horsford's Acid Phosphate, and kindred acid preparations. But it must be noted that acids and pepsin and other digestives so often administered are not curative of dyspepsia. They are merely palliative, and give only partial and temporary relief. The disease can be overcome only by the removal of its cause, whatever that may be. In the vast majority of cases it is an exhausted state of the nervous system that underlies the disorder, and the patient must reform his whole course of life before he can be cured.

Dilatation of the stomach, and an excessive acidity due to fermentation and the production of the organic

acids in its contents require daily irrigation of the stomach, and the administration of salol, salicylic acid or beta-naphthol, before meals. In mild cases much benefit is derived from the long continued administration of small doses of the alkaline salts. Potassium citrate or acetate or carbonate, with sodium bicarbonate, associated with a bitter tonic like nux vomica, compound tincture of gentian, or the elixir of calisaya bark, electricity, massage and hydrotherapy are indispensable in this class of cases. Change of occupation, change of habits, the attainment of prosperity, long vacations, mountain climbing, sea-voyaging, and cool baths are far more effectual than the most elaborate medication.

ORIGINAL ARTICLES.

PRIMARY PAPILLOMA AND PRIMARY CARCINOMA OF THE FALLOPIAN TUBE.

Read at the Meeting of the Chicago Pathological Society, April 12, 1897.

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The two cases which I present here were operated on by Dr. T. J. Watkins, who kindly offered them to me for pathologic examination. They are of great clinical as well as pathologic interest, one case indeed being unique in its kind. Only six cases of primary papilloma of the tube are contained in the literature, the present being the seventh case. Of primary carcinoma of the tube the tables of Doran¹ and of Saenger² contain nineteen cases, the present being the twentieth.

I. Primary papilloma of the tube. Secondary papilloma of both ovaries. Repeated vaginal drainage for purulent salpingitis, at last salpingo-oöphorectomy by laparotomy. Recovery. Good health fifteen months after the operation.

Clinical history.—Patient, 34 years old, gives a history of inflammatory disease of the pelvic organs after a miscarriage in her twenty-ninth year, from which she recovered perfectly. In her thirtieth year she suffered some violent injury to her left inguinal region. This was followed by "inflammation of the ovary," which remained painful until operation. The diagnosis was pyosalpinx and in June, 1894, the swelling in the pelvis was opened through the vagina. The tumor evacuated a quantity of pus. In November, 1894, the tumor had to be opened again and patient wore a drainage tube for eight months. In August, 1895, third operation. Patient wore the drainage tube for two months after she left the hospital. At last in January, 1896, laparotomy was performed and the appendages were removed. The patient recovered uneventfully. She was seen a few days ago by Dr. Watkins and was found to be in perfect health. She does not menstruate and has no leucorrhea. The uterus is atrophied and freely movable.

Macroscopic description of specimens.—Left side: Ovary not enlarged (35 x 26 x 20 mm.). Its surface is covered in several places by wart-like excrescences, which in some places sit on the ovary with a broad base, while in others they are distinctly pedunculated. The tube is normal externally with the exception of a slight thickening of its isthmus part. The fimbriated end is open. Cross sections through the tube show nothing abnormal. The ovary contains on sec-

tions small cysts, most of which have smooth walls, while some contain small papillary growths. (Fig. 1.)

Right side: Ovary not enlarged (40 x 25 x 30 mm.). The portion of the tube removed is 6 cm. long; the fimbriae are not visible; the abdominal end is dilated, while the uterine end is of normal size. A part of the surface of the ovary is covered with wart-like excrescences, a few of which are also found on the surface of the tube. An opening in the ovary, which was probably made in the course of the treatment, leads into a small cavity the size of a hazel-nut, which is invested with an abscess-membrane and contains some pus. This cavity also contains numerous papillomatous growths. The dilated tube, which contains a small quantity of hemorrhagic fluid, communicates with the cavity in the ovary through a narrow opening, toward which the folds of the tube converge and which represents the abdominal orifice of the tube. The cavity of the tube is studded with papillomatous growths, which extend throughout the external half of the tube. (Fig. 2.)

Both ovaries and tubes are covered with many adhesion-membranes, but there are no papillomas in or on these membranes.

Microscopic structure.—The microscopic structure of the papillomas is alike in ovaries and tube. One layer of long slender columnar epithelium covers the connective-tissue framework of the papillae, which

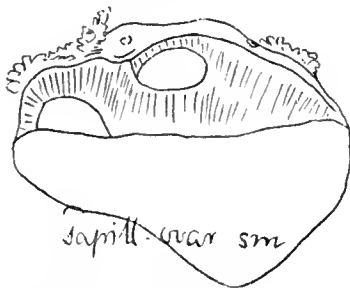


FIG. 1.—Papilloma of left ovary (Case 1). Piece of ovary removed to show cysts in ovary.

arise from the mucous membrane and branch out into more and more delicate ramifications. The papillae of both ovaries and tubes contain numerous small gritty bodies with concentric striation, calcareous concretions, which are almost normal in all sorts of papillomatous growths.

The wall of the tube with papillomas is thin and shows a few small areas of round-cell infiltration. Toward the mucous membrane there are a few cyst-like epithelial formations, which are even found outside the circular muscular layer. These cysts, however, do not contain papillomatous masses nor solid epithelial growths. They are lined by one single layer of low columnar epithelium. The cysts are round or roundish, sometimes with slight constrictions. I have not been able to discover an endothelial lining around them, but will not lay much stress on this fact, as the state of preservation of the specimen was very bad when I examined it.

The uterine end of each tube contains adenomyomatous structures. These are more pronounced and extensive on the side of the papillomatous tube than in the healthy tube. The papilloma has not affected the adenomyoma, the epithelium of which is more or less columnar with well-pronounced cilia, while the epithelium of the papilloma presents no cilia. There is no communication to be found between the adenomyomatous tubules and the tubal cavity.

The little cysts of the left ovary which do not contain papillomas are lined with a simple low cuboidal epithelium and look like simple hydropic follicles. No corpus luteum cysts are found. The little cysts which contain papilloma prove to be of a different structure. They are invested with a columnar epithelium, which is in direct continuity with the epithelium of the papillomas filling the cysts. In several places the communication of the cysts with the surface can be observed consisting in a narrow cleft lined with the same epithelium as the papilloma itself. It appears unlikely that the growth started in the substance of the ovary. I believe rather that it penetrated from the surface as the development of the neoplasm on the surface is much more extensive and much more pronounced.

Review.—We are now confronted with the question whether the tumor originated in the tube or in the ovary. The same question arose in one of the six cases of papilloma of the tube contained in the literature. This case was observed by Doran,¹ who des-

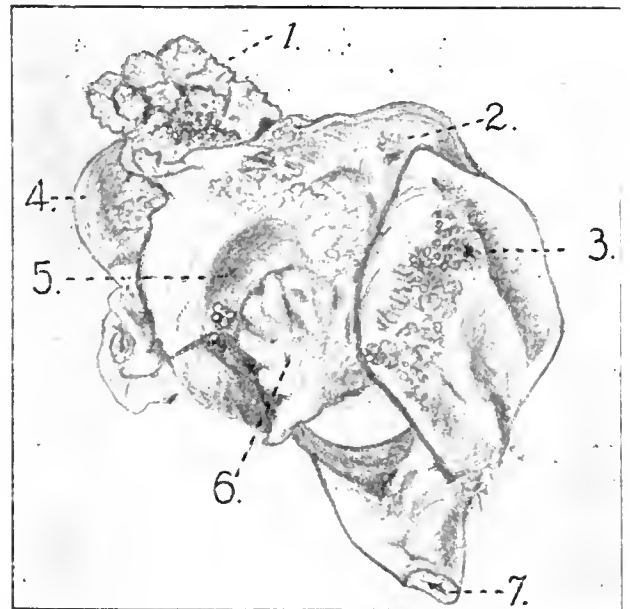


FIG. 2.—Papilloma of right tube and ovary (Case 1). Tube and ovary cut open. 1, papilloma on surface of ovary; 2, papilloma in cavity of tube; 3, papilloma on surface of tube; 4, ovary; 5, abscess cavity in ovary; 6, abscess-membrane; 7, uterine end.

ignates it as a case of papilloma of the tube. Where ovary and tube present papilloma the primary seat of the tumor must be assumed to be in the tube if the ovary has as in our case remained small in size, as our experience leads us to believe that ovarian papillomas belong among the most rapidly growing tumors of the ovary. This reason makes it at least likely that the papilloma in our case originated in the tube and spread on to the ovaries. This event was facilitated by the therapeutic efforts which gave the papilloma of the tubal cavity the opportunity of reaching the surface of the pelvic organs. The absence of ascites in this case also tends to exclude the ovaries as primary seat of the tumor, as ovarian papilloma is almost invariably accompanied by ascites.

The history of inflammatory symptoms is usual in cases of papilloma, so that Doran,¹ and Saenger and Barth² attribute direct etiologic importance to the inflammation. The papilloma of the tube was observed in five out of the six cases published and was so

in our case. Four of the reported cases survived the removal of the tumor and are reported well three, four, four and sixteen years after the operations. To this I can add the present case, which Dr. Watkins saw a few days ago in perfect health, that is to say, fifteen months after the operation.

II. Primary carcinoma of both Fallopian tubes. Adenomyoma of both Fallopian tubes. Myofibroma of the body of the uterus. Numerous metastases of the carcinoma. Abdominal salpingo-oöphorohysterectomy. Speedy recurrence and death.

Clinical history.—Patient, 45 years old, has always enjoyed good health; had one child twenty-three years ago; no miscarriages. She came to the hospi-

88 mm. long in all, the removed part of the cervix 12 mm. long. Wall of the fundus 10 mm. thick. Middle of anterior wall 26 mm. thick. Posterior wall contains a fibroid with well marked capsule. Posterior wall 88 mm. thick, 16 mm. being the thickness of the uterine muscular tissue, the rest fibroid.

The fibroid (F. Fig. 3) is submucous covered by a very thin layer of mucous membrane. The latter is thin throughout the cavity with the exception of one flat elevation (E. Fig. 3) on the left anterior side of the cavity. The fibroid presents the usual arrangement of bundles and resembles in shape a ball compressed in the longitudinal diameter of the uterus. The uterine cavity (C C Fig. 3) is narrow, cleft-like;

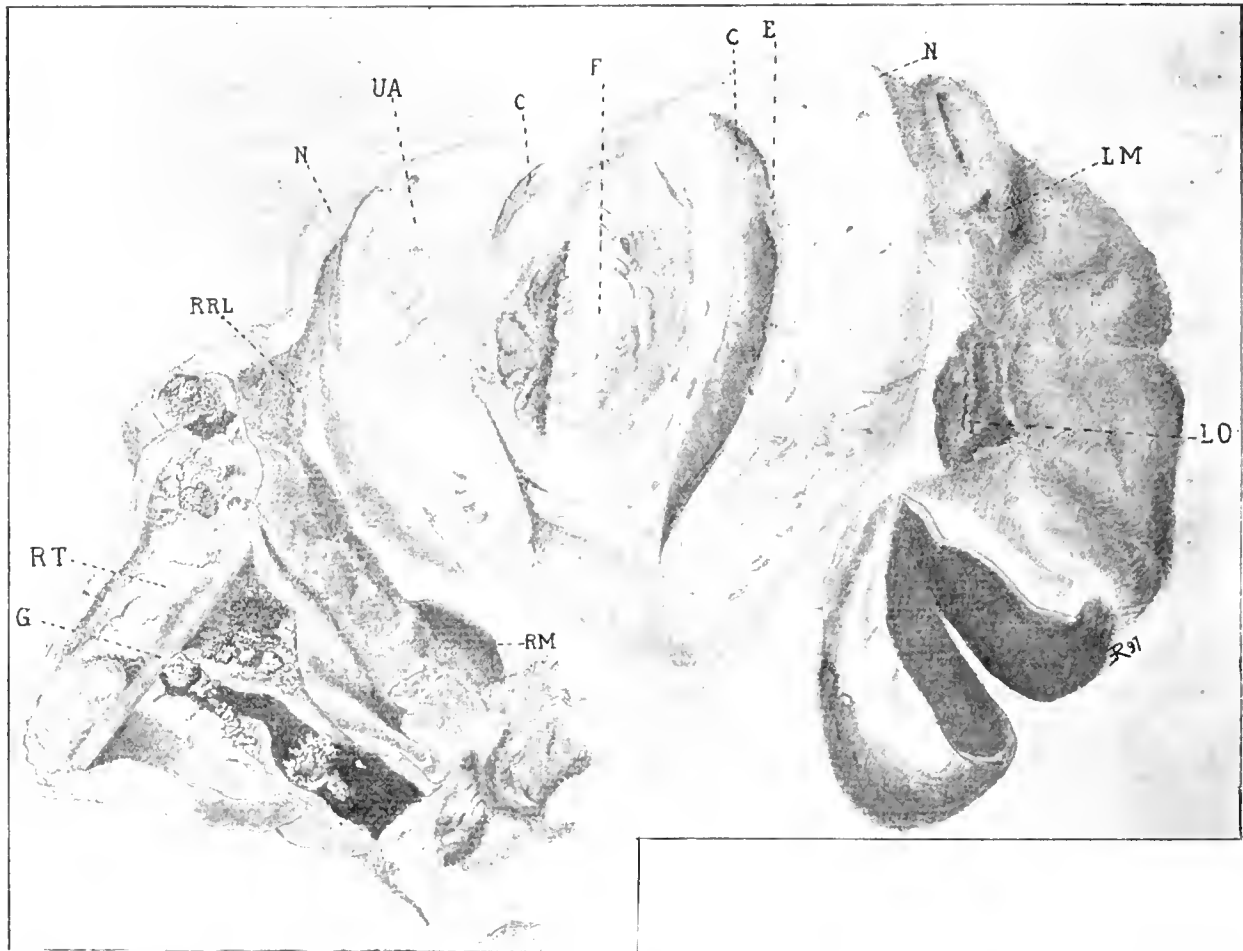


FIG. 3.—Specimen of double papillo-carcinoma of the tubes (Case 2). Anterior view. Uterus cut open through anterior wall. Right tube held open by glass rod, G. Incision in abdominal part of left tube. F, fibroid; C C, uterine cavity; E, elevation of uterine mucosa; UA, anterior wall of uterus; N N, nodule on uterine horn of each side; RRL, right round ligament; RT, right tube; RM, metastatic tumor in adhesions on right side; LO, left ovary; LM, tortuous elevation (carcinomatous lymphatics, see text).

tal on account of difficult urination and pain in the pelvis. These symptoms had begun about ten days before patient entered the hospital. The operation was performed on Sept. 1, 1896. Uterus, tubes and ovaries were removed; the operation was made difficult by numerous and strong adhesions. Patient recovered and was discharged on October 6. She returned to the hospital on Dec. 13, 1896, with a large tumor extending from Douglas' pouch to the umbilicus. An effort to remove this proved the tumor to consist of a soft mass resembling granulation tissue, which could not be entirely removed. Discharged from the hospital Jan. 3, 1897, died a few weeks later.

Microscopic description.—(See Fig. 3.) Uterus

measured over the fibroid it is 84 mm. long. Right and left broad ligaments are easily recognizable. Each uterine horn is formed by a nodule (N. Fig. 3), which has 15 mm. antero-posterior diameter on the left and 17 mm. diameter on the right side. An incision into the right nodule shows three small cavities filled with colloid masses. Nothing similar on left side. On the left half of the fundus are two subserous nodules the size of lentils, slightly lobated; a larger one (17 x 10 x 5 mm.) is found on the posterior surface which presents numerous and firm masses of adhesions. A nodule of the same size as the last mentioned is situated on the fundus close behind the nodule of the left uterine horn.

The length of the right tube measured along its upper border is 260 mm., its largest circumference 180 mm. Just outside the nodule on the uterine horn the tube becomes narrower, then it swells considerably and presents four large convolutions. The anterior side of the tube is with the exception of some adhesion-membranes smooth; the posterior side presents on the lateral four-fifths of its length more or less bulky papillomatous growths. The abdominal end of the tube, which has the large circumference mentioned above, is sharply bent to below and behind so that it touches the isthmus part. The ovary (40 x 30 x 15 mm.) is located between the abdominal and uterine portion of the tube. There is almost no trace of an ovarian ligament, the ovary being almost contiguous with the uterus. The ovary presents a few adhesion-membranes, but no papillomatous masses. On a cross section several corpora lutea and follicles are seen. The cavity of the tube (RT. Fig. 3) con-

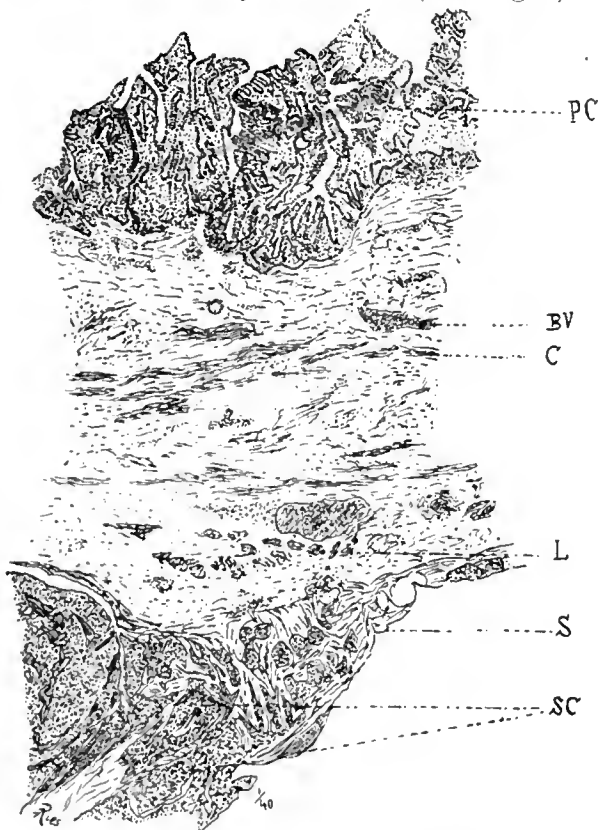


FIG. 4.—Microscopic section of L.M. Fig. 3 (Case 2). PC, primary carcinoma of tubal mucosa, the wall of the tube with C circular and L longitudinal muscular layers, and BV blood vessels. S, serous coat of tube with SC solid carcinomatous masses in it.

tains flat and prominent papillomatous masses, which fill the narrow isthmus part completely while they cause only a thickening of the wall of the abdominal end. The tube is so tortuous that on cross sections of the isthmus part the cavity appears double. The wall of the abdominal end is one to three mm. thick, the wall of the isthmus part is double this size. Near the broad ligament the tubal wall of the isthmus portion forms a white mass 5 mm. thick and is covered outside by a stratum of papillomatous masses about 4 mm. thick. Several thick masses of adhesions connect the abdominal portion of the tube with a tumor mass (40 x 40 x 5 mm.) (RM. Fig. 3). On cross section this mass consists of a white substance which contains a central cavity. The cavity presents several wart-like excrescences.

The left tube, measured along its external border, is 315 mm. long, the largest circumference (165 mm.) being at the abdominal end. Distinct furrows divide the tube outwardly into four convolutions. Near the first furrow, counting from the uterus, the anterior surface of the tube presents a tortuous elevation (L.M. Fig. 3) about 30 mm. long and one to two mm. thick, a cross section of which contains a white mass. The anterior and posterior surfaces of the tube are covered with pseudo-membranes. The ovary of this side (LO. Fig. 3) has an ovarian ligament 22 mm. long. The ovary (54x20x18 mm.) contains numerous corpora candidantia and follicles. Cross sections through the nodule on the isthmus part present a thick wall and a cleft-like cavity. Further on the wall of the tube is a pretty homogeneous white mass. It is stained brownish near the cavity. The cavity itself is filled with a blood clot which reaches from the isthmus to the abdominal end. If the blood clot is lifted away from the wall low papillomatous masses are seen everywhere. The wall of the abdominal portion is two mm. thick, near the uterus the wall is five to seven mm. thick.

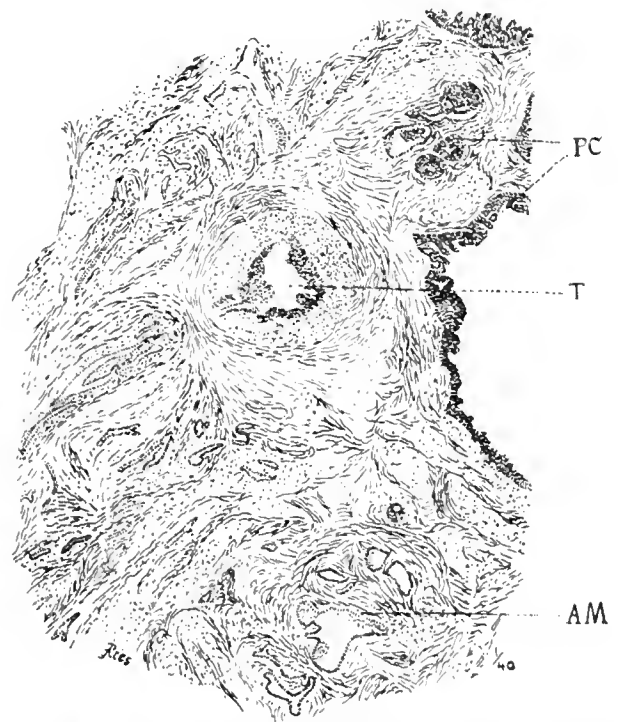


FIG. 5.—Microscopic appearance of nodule N of left side, Fig 3 (Case 2). Section of uterine horn of left side showing tubal cavity T, with its circular muscular layer, the adenomyoma AM, with its muscular tissue, and the carcinomatous masses PC, with papillae and cyst-like formations.

The abdominal ends of both tubes are closed. The right tube contained sero-purulent fluid which escaped during the operation, as the tube burst.

Microscopic description; right tube.—The wall of the tube does not show any remarkable changes, with the exception of some round-cell infiltration along capillary vessels. The mucous membrane presents a multitude of smaller and larger papillary elevations. The elevations consist in the largest part of epithelial masses, while the connective tissue skeleton of the papillae is scarce, and frequently so crowded with round cells that very few connective tissue cells are visible. The epithelial masses form labyrinthian coils winding in and out, often so close together that no connective tissue whatever remains between them.

The epithelium is arranged in single or multiple layers, mostly in the latter. The individual cells are columnar epithelial cells, some very long and thin, some shorter, almost cuboidal. The larger papillae contain blood vessels. Small hemorrhagic areas occur in many of the papillae. The surface is covered with many detached and degenerated cells and cell detritus.

The arrangement of the epithelial cells is not always distinctly papillary. In many places sections contain apparently glandular or cystic formations which, however, are only produced by the knife cutting away recesses between papillae. The epithelium does not grow downward into the wall of this tube.

The peritoneal coat of this tube shows no pathologic changes in the macroscopically normal portion of the serosa.

Left tube.—The mucous membrane of the narrower part presents the same appearance as the right tube, the papillary growths and the inextricable coils of epithelial formations existing here in the same manner as on the right side. The cavity contains considerable detritus consisting of white blood corpuscles, detached and degenerated epithelial cells and more or less distinct red blood corpuscles. The epithelium does not penetrate the mucous membrane in this part of the tube. The muscular coat contains a few areas of round-cell infiltration of no large extent. In the place mentioned in the macroscopic description where the tortuous elevation resembling a dilated vessel is seen on the tube, the peritoneal surface presents a very striking appearance (see Fig. 4). Between the external muscular layer and the surface there is an accumulation of solid epithelial masses divided by smaller or larger strings of connective tissue which form a network, the meshes of which are filled by the tumor cells. The tumor cells are many-shaped, mostly roundish with large nuclei (some presenting unmistakable karyokinetic figures), others are very large cells with one large nucleus, while still others are real giant cells. The epithelial cells form rounded masses, or appear as rosary-shaped strings with more or less pronounced constrictions. The large epithelial masses are in some places arranged in strings along and around capillaries which have preserved their endothelium. The latter is seen as a single line of flattened cells dividing the blood corpuscles from the tumor cells. In other places the endothelial lining has disappeared, so that the blood space, as it is to be called then, is limited by the tumor cells themselves. Smaller epithelial masses, sometimes containing one or several vacuoles, do not contain blood vessels. They are separated from the surrounding connective tissue by a line of flat endothelial cells; in other places this endothelium is rather cuboidal or even gives rise to small epithelioid buds. Taking all this together, I conclude that these tumor masses are located in lymph spaces, especially those sheathing blood vessels. The importance of this observation with regard to the dissemination of carcinoma by the lymph and blood currents is evident.

A section of this left tube, comprising the insertion of the isthmic part on the broad ligament, shows the papillo-carcinomatous condition of the tube very much like the right tube: hemorrhages, however, being more numerous and covering larger areas than in the other tube. The explanation of these hemorrhages may be found in an obstruction of the venous current, indicated in the sections by the many vessels choked with red blood corpuscles. The peritoneal surface shows

some solid carcinomatous nodules resembling those described above, but on a smaller scale. The parovarian tubules in the broad ligament are very distinct. They are without any pathologic change. The wall of this part of the tube contains carcinomatous nests in several places. These nests show the path which the carcinoma has followed from the mucosa to the serous coat. The nests are either solid or they have still preserved the papillomatous or coiled arrangement peculiar to the primary growth of the mucosa. Some of these nests are distinctly located in lymph vessels, as is demonstrated by the layer of endothelial cells which is still visible in some places, while in other places there is no such lining of the carcinomatous nests, which are imbedded in the tissue itself.

The nodular enlargements of the isthmic part of the right and left tubes present an extremely interesting combination of neoplasms (see Fig. 5), which is described here for the first time, and has not been mentioned in any other case of carcinoma of the tube. The enlargement of the tube here is not caused by a dilatation of the tubal cavity but by a thickening of the tubal wall. This thickened portion contains a normal tubal cavity, a slit of stellated or more or less straight shape with the cuboidal or low columnar epithelium normally found in this part of the tube. Around the mucous membrane there is the normal circular muscular layer. Between the latter and the serous surface the cause of the thickening is found. The wall of the tube contains: First, the elements of an adenomyoma, and secondly, papillo-carcinomatous masses. The adenomyoma presents the usual appearance as first described by von Recklinghausen.⁴ There are epithelial tubes, straight or curved or ramified, surrounded by more or less cytogenic tissue and a well-pronounced muscular coat. I need not further dwell on this adenomyoma as I have discussed it fully in a paper on "Nodular Forms of Tubal Disease." I must add that in each of these nodules a process of the mucous membrane of the tube was seen penetrating the circular muscular coat of the tube so that here as well as in the cases described in my paper mentioned above, it was hard to decide whether the epithelium of the adenomyoma had originated in Mueller's or in Wolff's duct. Beside this adenomyoma the thickened wall contained beautiful papillo-carcinomatous growths, which in some places were simply papillomatous while in others they were more or less solid nests. In several instances the little cavities which contained the neoplasm were partly lined with a single layer of low columnar epithelium while the rest was lined with multiple epithelial layers or was the seat of papillary growths. This leads me to the conclusion that some at least of the carcinomatous nests developed in cavities primarily belonging to the adenomyoma, supplanting or as it has been called, "infecting," the original epithelium. Under the serous coat there are numerous solid carcinomatous nests filling lymphatics. Some of these nests are so large that they form carcinomatous nodules visible with the naked eye. The small cavities mentioned in the macroscopic description are partly simple cysts of adenomyoma partly filled with papillomatous masses.

Uterus.—On the left side I followed up the extension of the neoplasm into the body of the uterus and found that solid and papillomatous masses were spread a short distance into the muscular coat of the uterus, but did not penetrate deeply into it. Along the

serous coat, however, the neoplasm had spread extensively, so that small subserous fibroids of the posterior wall and fundus of the uterus as well as the adhesion membranes on the uterus everywhere contained carcinomatous masses. The fact that the progress of the malignant neoplasm largely took place along the subserous lymphatics is also proven by the observations made on the body of the uterus, the round ligament, the myoma contained in the uterus and on the endometrium. The endometrium presented nothing but a very slight glandular hyperplasia. The muscular coat of the uterus (with the exception of the external layers mentioned above) and the myoma contained absolutely no epithelial formations. The myoma or rather myofibroma had a well-pronounced capsule and had none of the characteristics of an adenomyoma. The round ligament showed small carcinomatous nodules in and under its serous coat, but its substance was free from epithelial elements.

The carcinomatous infection of the adhesion-membranes around the uterus and its ligaments has produced quite bulky tumors, especially on the right side of the broad ligament where the tumor which is mentioned in the macroscopic description (RM. Fig. 3) and which has almost attained the size of an ovary, is a pure carcinomatous growth. The formation of adhesions with the *ovaries* has also given rise

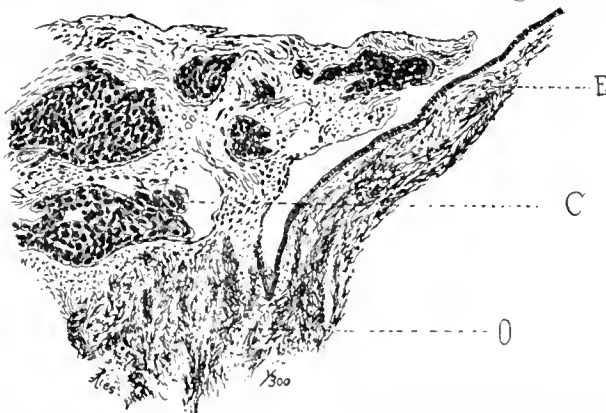


FIG. 6.—Microscopic section of ovary (Case 2). E, germinative epithelium of ovary interrupted where carcinomatous masses C adhere to the surface of the ovary. The substance of the ovary, O, is normal.

to the growth of metastatic carcinoma on the ovaries (Fig. 6). The substance of the ovaries is without a trace of carcinoma, but the surface of the ovaries is studded with carcinomatous nodules. Their metastatic nature is proven by the fact that in many instances the carcinomatous nodule and the ovarian substance are separated by a well-preserved line of germinative epithelium which is interrupted at the places where the adhesion membrane has grown to the ovary. The carcinoma is arranged in the same way as in the subserous nodules on the surface of the tubes and uterus, that is to say, in solid strings of cells following the lymphatics. Where we see a tumor originating in the germinative epithelium of the ovary the structure of the tumor is entirely different, the epithelial neoplasm developing on the surface primarily and essentially in marked contrast to the condition prevailing in this case.

To recapitulate briefly, we have a primary papillo-carcinomatous tumor of both tubes with metastatic growths in the uterus and in the serous coats of the surrounding organs.

Conclusions.—It seems to me that there can be no doubt as to the tumor's origin in the tubes. The only

other organ which produces such tumors and would have to be considered is the ovary, the origin in the uterus being excluded by the observation of the neither considerable nor malignant changes in the endometrium. The tumors can not have originated in the ovaries, as according to the histologic description given above the substance of the ovaries is unchanged and the nodules on the surface of the ovaries are of a purely metastatic character.

The origin of the tumors in the tubes is therefore indisputable. The description given above tallies perfectly with the descriptions of the nineteen cases contained in the literature. One observation, however, which marks this as a unique case is worthy of some further discussion, namely, the observation of two neoplasms in each tube: adenomyoma and papillo-carcinoma. Is it possible that the carcinoma originated in the epithelium of the adenomyoma and grew secondarily on the tubal mucous membrane? Or was the adenomyoma the secondary seat of the neoplasm which had originated in the tubal mucous membrane? It is interesting that thickening of the isthmus part of the tubes is mentioned in several cases of tubal carcinoma which perhaps on closer examination might reveal the presence of adenomyomas. It is furthermore noteworthy that von Recklinghausen⁴ describes cases where uterine adenomyoma coexisted with malignant adenoma of the uterus. Von Recklinghausen arrived at the conclusion that the presence of adenomyoma in the cancerous uterus was accidental and that the adenomyoma was attacked secondarily by the malignant neoplasm. I believe that we must arrive at the same conclusion with regard to the coexistence of the adenomyoma and the papillo-carcinoma of the tube. The adenomyomas of the tubes are decidedly frequent tumors even though they escaped discovery until very recently. I have in the course of the last year met with six cases of adenomyoma of the tube and the more tubes I examine carefully the more frequently I find those neoplasms. If the present case is the only case of adenomyoma in a carcinomatous tube the proportion would be one in twenty, a proportion which according my experience is much smaller than the proportion of adenomyomas in tubes generally. This latter proportion appears to be nearer the rate of one in five or ten.

There is another reason which causes me to regard the seat of the malignant tumor in the adenomyoma as secondary. The papilloma has left many of the adenomatous tubules intact and it is not likely that a malignant neoplasm which has spread over both tubes and a large peritoneal surface should have shunned reverently the rest of a small nodule from part of which it had originated. This is the more unlikely as communications of these adenomatous tubules exist which would have offered a ready path to the progress of the neoplasm before it ever spread into the cavity of the tube. On the other hand the small slit-like communication between the cavity of the tube and the adenomatous tubules gave the carcinomatous infection, if I may use this term, ready access to the tubules. The progress of the bearer of the carcinomatous infection must have been facilitated by the fact that the occlusion of the abdominal end of the tube and the narrowness of the uterine end of the tubal cavity produced considerable pressure of the contents of the tube.

We arrive therefore at the ultimate conclusion that the carcinoma originated in the epithelium of the

tubal mucosa. If now we compare the papillomatous formations in the tubes with those described above in the case of simple papilloma of the tube we can not fail to recognize the very great similarity between the two. It has been generally assumed that a benign papilloma of the tube can undergo malignant degeneration and on the other hand that papillo-carcinoma of the tube frequently springs from a non-malignant papilloma. This appears to be quite likely, in fact the tumors are so much alike that a differential diagnosis has been found a matter of great difficulty. We encounter the same doubts here as in the cases of papilloma of the ovary, where clinical experience has led some authors to consider every papilloma malignant, at least to suspect it of malignancy. In our case of papillo-carcinoma the pathologic examination revealing the numerous solid metastases and the clinical history recording recurrence of the disease and death of the patient agree very well. But in our case of "benign papilloma" I am by no means sure that I may not have overlooked some true carcinomatous nest or that the operator has not failed to remove the neoplasm completely so that in spite of our present diagnosis and the patient's apparent good health there is just the shadow of the possibility of a recurrence.

There is, however, a clinical aspect of this question which is well worth consideration. If there is papilloma of the tube it is impossible without microscopic examination to differentiate between a benign and a malignant neoplasm. If we have a malignant neoplasm of the tubes the probability of metastatic growths in the organs connected with the tubes is very great. Therefore these organs must be removed with the tubes. To recognize this it is absolutely necessary to cut the tubes open while the operation is proceeding and not to throw them aside for an examination to be made after the abdomen is closed or, as occurs too frequently, never to be made. The advice to open every tube removed was first given by Saenger² and I think it is very good advice.

I wish to add a little advice of my own which is suggested by a careful investigation of the post-mortem reports of cases of papillo-carcinoma of the tubes which had succumbed to recurrence of the disease. Metastases were found in these cases not only in the uterus but in the retroperitoneal glands. It is perfectly feasible to remove these glands as I first proposed⁶ and recently demonstrated in an operation for cancer of the cervix uteri which I performed at the Post-Graduate Hospital in the presence of my class and which the patient has stood very well. (She was discharged cured two weeks after the operation.) These glands as well as the uterus should be removed in every case of papilloma of the tubes. The danger of recurrence can thereby be avoided in a higher degree than by the mere removal of the tubes. Let us look for instance at our case of carcinoma of the tubes. If the uterus had not contained a fibroid it would have appeared unnecessary to many operators to remove it. The consequence of leaving it would have been that all carcinomatous masses contained in the uterus as described above would have remained in the patient. It is true that the recurrence was not avoided by the removal of the uterus. But we do not always meet with such far-gone cases as this and in the cases of limited extent of the neoplasm we have to remember the old rule concerning operations for carcinoma, to remove the tissues to as large an extent

around the apparent limits of the neoplasm as possible.

It remains to consider the relations of our case of papillo-carcinoma of the tubes to the other cases recorded of which Doran¹ enumerates nineteen, our case bringing the number up to twenty.

The age of the patients varies between 36 and 60, most of the patients (among them the case presented here) were about 45 years old. The patients were either sterile or had given birth to one child many years (twenty-three years in our case) before the tubal disease was noticed. According to Saenger² and Doran¹ the disease was on one side only in twelve cases, on both in the rest of the cases among which ours is to be rubricated. In twelve cases the tubes alone were the seat of the disease. Chronic inflammatory conditions with pus accumulation are very frequently observed.

The prognosis of the operation according to the most recent reports as given by Doran¹ is expressed in the following numbers: Death occurred shortly after operation in three cases, death from recurrence in five cases (10 months, 10 months, 18 months, 5 months, 1 year after operation). Alive with recurrence were three cases, without recurrence, five cases (7 years, 7 months, 19 months, 1 year, 3 months after operation).

The diagnosis has never been made correctly before the operation, but after once the attention of the profession has been directed to this possibility it will probably not take long before the clinical side is so well worked out that we are enabled to make a clinical diagnosis. I refrain from further discussion of the clinical side of this question as I have only made a pathologic examination of the cases reported here.

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THE MANAGEMENT OF LABOR BY EXTERNAL EXAMINATION.

Read at the Meeting of the Obstetric Staff of the Chicago Health Department, Jan. 16, 1897.

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The greatest danger that threatens an obstetric case is septic infection. In comparison with this one other dangers fall into insignificance. The main channel of entrance for the septic material is the vaginal canal. It may attack any laceration or abrasion in any part of this, or simply pass through it into the uterus.

The most common carriers of infection in obstetric cases are foreign bodies introduced into the vaginal canal, such as douche points, fingers or hands, instruments, lubricants, etc. Air and auto-infection are generally admitted to be rare, and the principal factors of contact infection are those mentioned.

The principal aim of the Obstetric Staff of the Health Department should be to avoid puerperal infection in the practice of its members and to aid and assist the midwives, and perhaps other practitioners, in the avoidance of the same. While the anti-

septic and aseptic eras have witnessed a most gratifying decrease of the mortality from puerperal infection in the lying-in institutions, no such decrease, in fact no very perceptible difference has been noticeable in the home cases. How to enable also these to share the full benefits of asepticism, and how to still further decrease the mortality in the institutions, is at present the main questions claiming the attention of the obstetricians in all countries, and should especially interest any obstetrician associated with a department whose function is to combat all avoidable diseases. From what has been said before, it would seem that this can most easily as well as most surely be accomplished by avoiding introduction of any foreign body into the parturient canal. The next question would then be, how far can we avoid this?

The different kinds of obstetric instruments have their certain well-defined fields, and their uses do not concern this paper, which only deals with normal or apparently normal cases. In such cases vaginal douches can be dispensed with. This is proved by a series of experiments made at the Koenigliche Frauenklinik in Dresden under supervision of Professor Leopold. I quote from his report: In 1885, 1886 and 1887 a vaginal douche of weak sublimate solution (1-4000) was given to every patient before and after internal examination, as well as after finished labor. At that time, as the midwives in the Kingdom of Saxony, according to the royal instructions, were not permitted to use vaginal douches in their public practice, it was decided to dispense with vagina douches in normal labor cases. But now suddenly bacteriologic researches discovered the most different pathogenic microbes in the vaginal secretions of the pregnant, and strong advices were given, not only to continue the douches in all cases, but also to try and remove the suspicious secretions by gentle washing. From May 1, 1888, the method adopted was, therefore, to douche and wash gently the vagina of every labor case with a solution of bichlorid of mercury of 1 to 4000. Of 1,136 cases treated by this method 80 per cent. had no temperature over 38 degrees C. (100.4 F.), but 20 per cent. had fever. In 1887, with only ordinary douches, there were 82.8 per cent. of cases with no temperature over 38 degrees C.—almost 3 per cent. more. The result showed at least no improvement. "Is it surprising," Leopold remarks, "that after the unnecessary removal of the vaginal mucus, perineal and vaginal tears, small hemorrhages, numerous sutures and febrile puerperia gathered together." From April 25, 1889, to the middle of March, 1890, 1,123 deliveries were made in normal labors without any douche or washing of the vagina, otherwise with the ordinary precautions. Of these 90.29 per cent. were without fever; temperature never over 38 degrees C. This seems convincing evidence; and in addition to this, the latest bacteriologic investigations inform us that the normal vaginal secretions are free from pathogenic microbes.

The next question then is, Can we dispense with vaginal examinations? Before arguing the question, I shall briefly report the results of some other series of experiments made by Professor Leopold. From Jan. 1, 1892, to June 30, 1894, 1,768 labor cases out of a total number of 4,035 patients, were not examined internally. This number does not, however, comprise the number of labors that might have been managed without internal examination, as a great number were examined internally to give students and midwife

pupils instruction. To find the number we must from the total number of cases deduct, in the first place, all those that already were delivered before entering the hospital, or that entered the same with deep standing or already visible fetal head, or in which delivery followed so rapidly that an accurate external examination was impossible; also all cases of abortion and miscarriage before the eighth month. Then all cases requiring operative interference must be excluded, and by operative interference is meant introduction of instruments, eolpeurynter or hand to facilitate the course of labor. Then must be deducted all cases in which there was any indication for internal examination, and as such is considered any irregularity in the normal course of labor, for instance, irregular labor pains, premature discharge of the amniotic fluid, etc., or graver diseases as eclampsia, heart disease, etc.

In the last series of 1,693 cases, June 30, 1893, to June 30, 1894, the total number of cases coming under these classifications was 489, leaving 1,204 cases in which internal examinations could have been dispensed with. This would make 71.11 per cent. of the total number, 76.20 per cent. of the number, leaving out the two first classes (those already delivered and the cases of abortion and miscarriage) and 90.25 per cent. if we also leave out the cases calling for operative interference. The percentage could be still further increased by excluding a certain number of pathologic cases, cases suffering from general or local diseases. Of this number 436 cases were examined internally with no other object than instruction of the students and midwife pupils.

The results as to mortality and morbidity in these series are unfortunately not stated. As to the value of the external examination to ascertain the presentation and position of the fetus, the following figures will give some idea: In the first series of 1,000 cases diagnostic mistakes were made 65 times (6.5 per cent.). There are 971 cases of occiput presentations with 54 mistakes, 6 cases of forehead presentation with 2 mistakes, 12 breech presentation with 2 mistakes, 6 face presentations with 6 mistakes and 4 twin pregnancies with 1 mistake. In the second series all 1,580 cases were externally examined and the diagnosis made, even in those cases where later an internal examination was made. The number of mistakes was here reduced to 28 (1.77 per cent.) as follows; 25 cases of forehead presentation with 3 mistakes, 80 cases of breech presentation with 8 mistakes, 14 cases of face presentation with 8 mistakes, 13 cases of twin pregnancies with 4 mistakes and 5 mistakes in cases offering special difficulties. These figures would seem to prove that the principal objection to the limitations of internal examination, viz., that the external examination often gives too uncertain results to replace the internal one, is unjustified.

Another objection is, that the exact diagnosis and prognosis of the labor would be impossible, as the condition of the pelvis and the soft parts would not be known, and that presentation or prolapse of extremities or the cord could not be recognized. To this objection can be answered, that obstructions to labor caused by pathologic conditions of the soft parts or of the bony pelvis not recognizable by external measurements, and in which there have not been symptoms to raise even a suspicion of their existence, would be very rare. In cases where the presentation or prolapse of extremities cause a misproportion between the pre-

senting head and the pelvis, the difficulty can be recognized externally by the persistent high standing of the head. And prolapse of the cord is undoubtedly, in very many cases, caused just by the internal examination, the head being pushed up or the membranes ruptured. The progress of labor can probably, with some practice, be judged almost as well by external as by internal examination. The many advantages of avoiding internal examinations are too well recognized to require more than a passing mentioning.

Let us at last consider how the examination should be made, and by what signs we ascertain the presentation and position of the child as well as the progress of labor. Having decided that external examination, as much as possible, shall take the place of the internal, it is our duty to perfect the first one as much as possible, and by constant practice make ourselves as accomplished as possible. Inspection, mensuration, percussion and auscultation, and the results to be obtained from them, are too well known to be gone into here, and it is only necessary to impress the necessity of making use of them in all cases.

Palpation is the part of the examination that gives us the most important information and that enables us to follow the progress of labor, and Professor Leopold has divided this into four steps. The examiner is seated at the side of the patient, facing the same. Patient is in horizontal position and must be examined between the pains. Abdomen is uncovered.

1. Both hands are placed transversely on the abdomen, with the tips of the fingers of one hand touching those of the other. They are then moved lightly over the abdomen to the fundus and the position of the same in relation to the umbilicus and epigastrium ascertained. One can easily ascertain: 1, the period of gestation; 2, size of the child; 3, the position of the child, longitudinal, oblique or transverse; 4, the presentation of the child, head or breech in fundus.

2. The hands are moved from the epigastrium, one to each side of the abdomen, and placed flat on the sides of the uterus. Under the one the extremities are usually felt, under the other a long smooth surface, the back of the child. One of the hands can also be placed on the abdomen in the median line and a light pressure be made, whereby the amniotic fluid will be pressed to one side and the back of the child to the other, nearer the abdominal wall, where it can be palpated more easily.

3. Either hand may be used, and the fingers should be spread as much as possible. The thumb and the second finger grasp the presenting part of the child over the pelvic inlet. In case this is hard and round, it can only be the head. If it is much softer and uneven it is likely to be the breech. In case the presenting part can only be made out indistinctly, and it seems softer than usual or covered, one would think of a low insertion of the placenta. In case no presenting part can be felt over the pelvic inlet, the examiner should look for the head (or breech) at the sides of the abdomen.

4. The following procedure is used when the presenting part already is in the middle, or at the outlet, of the pelvis. In this the back is turned toward the patient's face. Starting above the inguinal region both hands, with the insides turned toward the uterus, are slowly and gently pressed down along the pelvic walls. If the presenting part is deeply located, one hand may be used at a time. By deep-seated head one can plainly feel that a hard round part of the child occu-

pies the space of the pelvis, and the chin may be felt by the right hand in O. L. A. and by the left hand in O. D. A. position. The prominent and rounded forehead in the one side can be distinguished from the flatter neck in the opposite side. Or one can feel that the hard prominence of the occiput gradually loses its hardness, as the hand is moved upward, but that still a distinct resistance remains (the neck). The frontal prominence is in the first place located higher up, and in the second place an abrupt depression is felt above the same; no resistance is felt any more (over the face). The face slants, as the chin rests on the chest obliquely, inward and can not be felt. Above the forehead the extremities may be felt. This examination should always be performed systematically, and one should always know what place on the presenting part the fingers are touching, and how its position is changed in the course of labor.

As to the possibility of teaching students and midwives the external examination, Leopold states it as his experience that physicians generally after two to three weeks make quite certain diagnoses externally, and that midwives, even the less gifted ones, after three months only exceptionally make mistakes; not oftener, or perhaps not as often, as by internal examination. The external examination, being much more harmless, can be made much oftener than the internal one, and gives the students more opportunity to learn. And how is it about the certainty of the internal examination made by midwives, and also by many physicians? Is it not, as Hegar says, often done only for a show, and nothing is ascertained?

When one can feel on the one side the forehead, on the other side and somewhat lower the occiput, the head is clearly in the ordinary position with the occiput presenting. In a vertex presentation (*Vorderhauptlage*), forehead and occiput stand in the same plane, the occiput sometimes even higher. The more the chin is removed from the chest, the greater the changes from what is usually found; this is most pronounced in face presentations. In these an unusually large hard part, the occiput, can be felt on the one side, but on the other side one can press deeper into the pelvis, without encountering any prominence resembling the forehead. If one only thinks of the possibility of a face presentation the diagnosis is not difficult. The other results of the examination are also characteristic. The back can generally be felt only very indistinctly and far back. On account of the extreme extension of the head the back is strongly lordotic and turns during the course of labor more and more backward. The extremities can be felt so much the plainer, apparently directly under the abdominal wall, and the fetal heart tones can also here be heard the plainest.

Of other abnormal presentations, the one of the posterior parietal bone can easily be recognized externally. The head is felt surprisingly close under the abdominal walls; it presents as a prominent hard ball over the symphysis pubis, in appearance resembling the distended bladder. Above this comes a depression, caused by the flexion of the neck. The anterior wall of the womb is not, as usual, convex, but shows generally a visible concavity. Lateral deviations of the head toward one iliac region can also be recognized externally.

It can furthermore be ascertained by external examination in what pelvic plane the head is. The head that is free over the pelvic inlet is easily recognized,

but it is still advisable always in such cases by the fourth step to ascertain if the pelvis really is empty, and that it is not the shoulders one has felt, while the head is deep in the pelvis.

If we have a case of occiput presentation with the head in the pelvic inlet, and only a small segment has entered the same, the occiput can by the third step be felt equally as well as the forehead, and stands above the pubic bone. In this position the head may still be somewhat movable. This can be ascertained if one using the third step makes a pressure with the thumb or second finger, and with the other fingers feel if the head yields to the pressure. If the head is right in the pelvic inlet, the forehead only can be felt by the third step as ordinarily made. To reach the occiput we must palpate lower down in the pelvis. This position of the head is usually found in primiparae already during the last three or four weeks, providing the pelvis is normal, and is also generally the position found in labor cases at the time we are called in. On further progress the head gradually disappears for the third step. But on changing the position of the hand somewhat by directing the fingers more downward in the pelvis, the prominence of the forehead can still be felt. The head is now deep in the inlet very near the middle of the pelvis. When the head can not be felt any more by the third step, but still is palpable with the fourth one, it stands exactly in the middle of the pelvis. One can reach the forehead on the one side, but not the occiput on the other; here the neck only can be felt, and this can easily be distinguished from the occiput and still easier from the forehead, by its lesser degree of hardness and its perfectly flat form. Finally, when the head can not be reached either by the third or the fourth step, it is below the middle of the pelvis. Here the external examination has its limitation, but it is also no longer necessary, having fulfilled its mission. The head can now be felt by pressing on the perineum externally, or is already visible on separation of the labia, and the perineum generally bulges out during the pains.

The rotation of the head can be followed externally in the same way as the descent; the marking point is the forehead and one must notice the position of this from the beginning. The farther the head descends in normal occiput presentation, the more posteriorly must the examination be made to feel the forehead, and the more anteriorly the occiput is to be looked for. External examination of any other head presentation are made in a similar manner.

In cases of narrow pelvis the diagnosis can almost in all cases be made by the external examination and this is especially valuable for midwives. Suspicion is always aroused, if in the case of a primipara in the last weeks of pregnancy the head is found free over the pelvic inlet or when in a case of a multipara the head does not descend in spite of strong pains. If the quantity of amniotic fluid is great, it may also with a normal pelvis take a long time before the head engages. If in cases of narrow pelvis the membranes are ruptured prematurely the head will apparently engage, but the high position of the forehead and the occiput will signify that it is not engaged in but only on the pelvic inlet. As to the form of the narrow pelvis, exaggerated flexion of the head and deep location of the occiput are characteristic in cases of generally contracted pelvis, while in cases, in which the forehead and the occiput stand in about the same plane the pelvis is a flat one.

If we (with Michaelis) call all pelvises with a conjugata externa under 18.5 cm., narrow, providing the weight of the child is at least 3000 grams, we have in the first series of 1,000 cases managed by external examination 168 cases of narrow pelvises. In 45 of these the child weighed 3500 grams and there were pelvises with a conjugata vera as short as $9\frac{3}{4}$ cm. In cases of generally contracted pelvis one is liable to be deceived as well by the external as by the internal examination. On account of the pressure from all sides the head is stretched to such a length that it may happen, that the most prominent part of the head, generally the caput succedaneum, may be visible during the pains, while the forehead still can be felt from above. By external palpation it is difficult to realize how far the occiput may have advanced and by internal examination it is equally difficult to realize how high the forehead still may be standing when the occiput is right at the outlet.

Pawlik has drawn attention to the possibility of palpating the furrow of the neck and the chin, and Veit has suggested to palpate the presenting part through the incisurae ischiadicæ majores, when it already is deep in the pelvis.

The fontanelles can only in exceptional cases be felt. The superior orbital margin can frequently be felt; also the angle between the frontal and the temporal bone and these points serve to distinguish between the occiput and the forehead. The temporo-frontal angle can plainly be felt, for example in the O.D.A. position, and the third step of the examination by placing the third phalanx of the second finger of the right hand on the frontal surface, the second and first phalanges on the temporal surface, or in the fourth step of the examination by spreading the fingers so the index rests on the temporal bone, the three other fingers on the frontal.

Breech presentations can generally be easily told from head presentation. If the breech should already be engaged and the crista ilii be mistaken for the forehead, one will fail to find the characteristic signs of the forehead and also the furrow of the neck; the most audible point of the heart tones is higher and the head can generally be palpated in the fundus. In case it should be difficult to feel this on account of overlying placenta or lack of amniotic fluid it may be necessary to press the fingers in from one side or the other, even under the right lobe of the liver. When the breech descends deeper, it can be palpated from the perineum.

In closing this paper I desire to impress upon this organization, in our official capacity, of the necessity of emphasizing as much as possible the great importance of the external examination and the desirability of limiting the internal examination.

DISCUSSION.

Dr. A. H. BURR said that he relied on the vaginal touch to determine the progress of labor. That dangers of sepsis were exaggerated, that there were many other causes of puerperal fever beside the doctor, *e.g.*, old roller bandage tampon, infected before labor, pus tubes, etc. There is little danger if asepsis is practiced.

Dr. SIEMENOVICZ said the midwives are filthy and will not obey instructions; they will treat four or five sepsis cases a week and care for labor cases at the same time. He detailed some amusing experiences.

Dr. NILES said he approved of external examinations but that we can not do without internal exploration. We can sterilize the hands but can not be sure of the vulva and surroundings.

Dr. ETTA V. DAVIS approved of making external examinations popular, but needs internal examinations, which are without danger, since we can sterilize the hands. Different methods of

doing this, vary in efficiency. Dr. Davis had 150 cases, including operative cases, without fever.

Dr. C. S. BACON suggested that a temperature of 100 degrees might be due to infection.

Dr. J. M. SLOANE emphasized external examination, but said he could not tell the progress of labor by it.

Dr. WYLLIS said it was rare to see a doctor boil his syringe. He seldom gives douches, believing they do more harm than good. He never has trouble if the hands, the vulva, the towels, etc., are clean.

Dr. J. B. DELEE said the external examination should always precede the internal, and if the heart tones are good, and the position determined, the internal is not needed, unless to see if one is safe in leaving the case. On an average two examinations should suffice for a normal case.

Dr. C. S. BACON said that internal examinations are in the line of an operation, and are needed to tell the size of the cervix and pathologic conditions.

Dr. SANDBERG in closing the discussion said the principal idea in the paper was in relation to the midwives. One should set them a good example, and recommend the external method of diagnosis.

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THE SOURCE OF SUGAR IN DIABETES MELLITUS WITH A THEORY AS TO ITS EXCRETION UNCHANGED IN THE URINE.

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The proteid molecule is not to be considered as a perfect chemie body, but is to be looked on as a complex, composite mixture, that is, composed of several organic radicals. To quote from the elaborate article of Krukenberg ("Separat-Abdruck" a. d. Sitzungsberichte d. Jena'sch. Gesellschaft f. Med. u. Naturwissensch. 1885): "The molecule of albumin is to be considered as a composite of different chemie atom groups. Many of these atom groups can be lacking or split off in crystalline form without the reactions of the remaining body being affected." He believes that albumin contains groups which yield leucin, tyrosin, indol, etc., together with others which give the biuret or xanthroproteic reactions or the coagulation tests. He also found a group which had the power of reducing copper oxid on heating in alkaline solution, thus demonstrating the presence of the carbohydrate group. There is also a fatty group.

It was shown by Pavy in 1894 ("Physiology of the Carbohydrates," p. 27) that proteid matter generally, whether derived from the animal or vegetable kingdom, was in constitution a glucosid. In one experiment he took purified egg albumin and treated the same with a solution of potash. By the action of the potash he obtained an amylose carbohydrate corresponding to Landwehr's "animal gum," which on treatment with sulphuric acid yielded a body which gave the characteristic reactions of sugar. It was found, further, that sugar is yielded by the direct action of sulphuric acid on egg albumin and that the same occurs as a result of pepsin digestion. It was subsequently shown by Ling ("Epicriticism," 1895) that the osazone derived from the cleavage product

was a sugar osazone. These results reached by Pavy had also been arrived at by Schuetzenberger (*Bull. de la Soc. Chimique de Paris*, Vol. xxiii, p. 161. 1875), who found that the action of strong sulphuric acid on egg albumin caused the appearance of a non-nitrogenous body which reduced Fehling's solution energetically, was precipitated by ammoniated acetate of lead solution and appeared to be glucose or an analogous body. He also found that on exposing egg albumin to baryta water at 100 for a period of 120 hours he obtained a non-nitrogenous body, insoluble in alcohol, precipitable by ammoniated acetate of lead, not reducing Fehling's solution but transformable on boiling with sulphuric acid into a body which did. Its elementary composition was found to agree very closely with dextrin, with which, as Schuetzenberger remarks, it presents the greatest analogy. That proteid can be produced from carbohydrates alone has been shown by Pasteur who found that yeast cells multiplied freely in a medium composed of sugar, ammonium nitrate, the ash of yeast and water. In this experiment the only source of the carbon of the proteid is found in the sugar. According to Pavy (*London Lancet*, Oct. 17, 1896) carbohydrate matter incorporated in the proteid molecule during its construction can again be split off from it by chemie or ferment action and in the tissues this is probably the source of the free carbohydrates found to a certain extent in various parts of the body. There could be no doubt that in the grave form of diabetes the sugar eliminated is largely derived from the tissue albumin.

An albumin, then, is a mixture of proteid, carbohydrate and fat radicals and it is believed that the carbohydrate group enters directly into its production rather than that it is formed within it. It is believed that upon the decomposition of the proteid molecule two primary divisions will be obtained, the nitrogenous and the non-nitrogenous. How large the proportion of the non-nitrogenous part really is can be seen by comparing the proportions of carbon and nitrogen in a proteid with urea, its chief decomposition product. The following table is taken from Foster ("Textbook of Physiology").

| | C. | H. | O. | N. | S. |
|-------------|-------|------|-------|-------|------|
| Urea . . | 20.00 | 6.66 | 26.67 | 46.67 | — |
| Proteid . . | 53.00 | 7.30 | 23.04 | 15.53 | 1.13 |

It is readily seen that the proteid contains far more carbon than is necessary to unite with the nitrogen present to form urea. The non-nitrogenous group probably splits up in the formation of glucose and the fatty acids. According to Cohnheim ("Vorlesungen über allgemeine Pathologie") there are two kinds of oxidation which go on in the healthy organism. One is the decomposition of albuminoid bodies, resulting in the sugar, fats, fatty acids and nitrogenous decomposition products. In this oxidation it is probable that a certain amount of heat is evolved. The second kind of oxidation is that by which the sugars, both ingested and that produced from albumin, are oxidized to their end-products of CO₂ and H₂O in the production of heat and energy. It is believed by the writer that in health these two processes run parallel and vary directly with each other. In diabetes, on the contrary, this equilibrium is lost, the decomposition of albumin is increased while the capacity of the system to burn the sugar produced in this albumin decomposition is greatly diminished.

The writer has come to the conclusion, as the only possible explanation of certain of the phenomena in

diabetes, that the sugar so produced from proteids through cell activity is an isomer of ordinary glucose, distinguished from this by being less readily oxidized in the system and, by not being readily dehydrated by the liver cells into glycogen. It is well known that many bodies created by cell activity differ in various respects from the same substances which may have been chemically prepared. As an instance, beta hydroxybutyric acid, so frequently present in the saccharine urine of diabetes, is optically inactive when manufactured synthetically although the same substance, when a product of systemic metabolism, shows a left rotation by the polariscope. Many facts favor the above theory.

1. An increase, in moderation, of carbohydrate food leads to an accumulation of glycogen in the liver but does not affect the quantity of blood sugar.

2. An increase in the decomposition of proteids does not materially affect the quantity of liver glycogen but does cause an increase in the blood sugar. Bödeker (*Landois' "Physiologie,"* p. 458) was able to produce an artificial glycosuria in healthy men by giving a diet composed exclusively of meat and chondrin.

3. The blood sugar remains constant in hunger, the sugar then coming almost wholly from the systemic albumin with possibly a small portion derived from the liver. Prolonged nitrogenous diet greatly decreases the amount of the liver glycogen. Whatever glycogen is found in such cases is believed to be manufactured by the liver cells themselves, since it has been demonstrated that they have the power of directly producing a small amount of glycogen.

4. Large amounts of carbohydrates taken in a short time may temporarily increase the proportion of blood sugar simply because the liver is capable of dehydrating into glycogen a definite amount of glucose in a fixed time.

It has been shown in a previous article that the diabetic suffers from an especial predisposition toward albumin decomposition and tissue waste, and that this abnormal metabolism must consequently result in an increase of the nitrogenous and non-nitrogenous decomposition products. In diabetes, however, these products do not bear the same relationship to each other that they do in health. It has already been advanced that the non-nitrogenous part of the proteid molecule yields sugar and fat, the latter more especially during health, when there is a limited oxidation going on, since it is well-known that a limited supply of oxygen furnishes a most favorable condition for the production of fat from proteids. Adipocere, for instance, is produced under these conditions. In diabetes, however, an entirely different state of affairs exists. In this disease an excessive oxidation and metabolism is going on which is extremely unfavorable for the production of fats but in which the greater part of the carbon radical in the proteid molecule is converted into a sugar which is thought by the writer to be an isomeric form of that obtained from a vegetable source. This existing tendency toward metabolism is increased if all carbohydrate sources of sugar are cut off, since such a dietetic condition imposes the necessity on the system of creating from proteids such sugar as is essential for the well being of the economy. Such a process must necessarily increase the severity of the disease in mild cases, and, sooner or later, in true diabetes as distinguished from simple glycosuria, this excessive metabolism results in the production of more isomeric sugar than the

system is able to completely oxidize. Since the sugar derived from an albuminoid source does not appear to be readily dehydrated into glycogen and stored up in the liver the excess of such sugar is excreted unburned in the urine.

Although it has already been shown that in diabetes there is an increase of the first kind of oxidation resulting in an excessive decomposition of albumin, an entirely different condition prevails in the second class, by which sugar is burned in the production of heat and energy. This power of oxidizing sugar is so much impaired that the isomeric sugar, produced in an albumin decomposition, being less readily oxidized or converted into glycogen than is sugar derived from a carbohydrate source, is excreted unchanged if a free ingestion of carbohydrates be allowed and thus a sufficient supply of a readily assimilable sugar is at hand to meet the needs of the system. If carbohydrates are taken in moderation no sugar derived from them appears in the urine, the sugar excreted being only the less easily burned isomer.

It is well known that mannite, inosite and levulose are entirely oxidized in the diabetic organism. Experiments made by Voit (*Zeitschrift für Biologie*, Vol. xxviii. Sec. 3) show that milk sugar also is very much more readily burned in the diabetic organism than is dextrose. As the conversion of lactose into dextrose in the diabetic organism is impossible, as no trace of milk sugar can be found in the urine and since the excretion of dextrose under the ingestion of lactose is very much increased, he believes that the more readily oxidized milk sugar takes the place of a certain quantity of glucose which would otherwise have been burned in the organism but which, under these conditions, is excreted unchanged. His work also shows that sugar derived from albumin is not readily dehydrated into glycogen. He takes a diabetic who excretes sugar even on a proteid diet, examines his urine for grape sugar, finds the amount and on the following day, under exactly the same conditions, gives 100 gm. of milk sugar.

| | Sugar in urine. | After fermentation. |
|-------------------------------|-----------------|---------------------|
| Exp. 1, 1st day, Proteid diet | 17.461 gm. | none |
| 2d day, 100 gm. lactose | 66.818 gm. | none |
| Exp. 2, 1st day, Proteid diet | 57.633 gm. | none |
| 2d day, 150 gm. lactose | 165.715 gm. | trace |

Both lactose and glucose respond to Fehling's test but the former is not affected by fermentative action. In the last experiment the glucose excreted after the administration of 150 gm. of lactose minus the previous excretion on a known proteid diet, represents the total amount of sugar produced from albumin which the patient had been able to oxidize. Beyond this point, then, there would be no relation between the excretion of glucose and the ingestion of lactose.

Furthermore, if a diabetic be placed upon a proteid diet until the excretion of sugar has entirely ceased, the ingestion of sugar bears no relation to its excretion as may be seen by the following tables of Külz (*Marburg Elwert*, S. S. 222, 1871). The patient was excreting no sugar on a mixed diet. One hundred gm. of dextrose was given in solution every twenty-four hours.

| | 24 hours urine, c. c. | Sugar excretion, gm. |
|------------|-----------------------|----------------------|
| 1. | 1273 | 0.946 |
| 2. | 1527 | 2.994 |
| 3. | 2144 | 1.526 |
| 4. | 1622 | 1.950 |
| 5. | 1653 | 1.710 |
| 6. | 1353 | 3.996 |

| | 24 hours urine, c. c. | Sugar excretion, gm. |
|--------------|-----------------------|----------------------|
| 7 | 1278 | 3.510 |
| 8 | 1344 | 5.898 |
| 9 | 968 | 4.536 |
| 10 | 1226 | 4.914 |
| 11 | 1299 | 5.220 |
| 12 | 1454 | 3.319 |

The same investigator reports (*loc. cit.*) a series of experiments made upon a diabetic excreting an average of 47 gm. of sugar upon an exclusive proteid diet. The patient received 100 gm. of glucose in the twenty-four hours.

| | 24 hours urine, c. c. | Sugar excretion, gm. |
|-------------|-----------------------|----------------------|
| 1 | 2496 | 79.8 |
| 2 | 2763 | 90.0 |
| 3 | 2444 | 71.6 |
| 4 | 1905 | 85.1 |

From the above results the usual daily excretion of 47 gm. must be subtracted, thus showing an actual increase of only about 33 gm. But how is it possible that a patient apparently manufacturing more sugar than he can burn will excrete only a slightly increased amount when ingesting large quantities of carbohydrates? It must be explained like the conclusions of Voit with regard to milk sugar. The diabetic organism does not oxidize all sugars with equal facility and sugar produced from carbohydrates is more readily oxidized or stored up in the liver than is sugar derived from an albumin source.

If now the quantity of sugar be estimated which a diabetic on starvation is able to excrete, and then known amounts of albumin be given, it is found that the amount of the sugar excreted in the urine varies directly with the quantity of albumin ingested. This point has also been demonstrated by Külz (*Arch. f. Exp. Path. u. Pharm.*, vi. 140) in the following experiments. The food used was casein, free from fat and sugar.

| | Amount casein, gm. | 24 hours urine, c. c. | 24 hours sugar exc., gm. |
|--------------|--------------------|-----------------------|--------------------------|
| Exp. 1 . . . | 200 | 4180 | 79 |
| | 240 | 4100 | 70.1 |
| | 300 | 4950 | 87.1 |
| | 500 | 6420 | 137.1 |
| Exp. 2 . . . | 200 | 4460 | 66 |
| | 240 | 6140 | 65.7 |
| | 300 | 6620 | 96.7 |
| | 500 | 7210 | 126.9 |
| | 240 | 5250 | 86.6 |

The above tables show that sugar is produced from ingested proteid, that the production of such sugar varies directly with the amount of proteid ingested, that the sugar so produced from proteid is burned to some extent in the diabetic organism, it may be in mild cases to the extent of its production if no carbohydrates are given but that, if carbohydrates are allowed, such sugar is excreted unburned. These tables also show that a diabetic is able to utilize sugar given by the mouth gram for gram, but that the sugar produced by the diabetic from ingested proteid is largely eliminated as an excrementitious body. They also show that while sugar produced from proteid is burned with reluctance by the diabetic organism the liver is apparently wholly unable to convert it into, and store it up as, glycogen, with the result that what can not be utilized in any given time is excreted unburned.

Ordinary glucose and diabetic sugar have the same chemie formula and the same gross characteristics, but this does not prove them identical in all their qualities. There are at present at least three isomers of ordinary glucose, differing from each other in being dextro-rotatory, levo-rotatory and optically inactive. A new sac-

charin body has also been lately discovered by Low (*Berichte d. deutsch. chem. Gesellsch.*, xxii, S. 471), which has the properties of dextrose and levulose and is intermediate between them. From the above facts it is evident that the occurrence of an isomeric form of ordinary glucose in diabetic sugar is more than probable and apparently furnishes the only key to the unsolved problem of the oxidation of sugar in diabetes. The writer hopes to continue work on this subject with the idea of definitely settling this question. To sum up:

1. Sugar appears in the urine in health after inordinate ingestion of carbohydrates simply because the capacity of the liver cells to convert a definite amount of sugar into glycogen, in a given time, is exceeded.

2. Sugar appears in the urine in diabetes because the system produces more sugar by the decomposition of albumin than it can completely oxidize, this sugar not being stored up by the liver as glycogen and being less readily oxidized by the diabetic organism than sugar produced from carbohydrates.

3. It disappears from the urine, if mild cases of diabetes are placed upon a proteid diet, because a withdrawal of all carbohydrates from the diet forces the system to burn the isomeric albumin-sugar in the maintenance of the necessary heat and energy.

4. It subsequently appears in the urine under such treatment because, with the progress of the affection, sugar is produced in quantities too large to be completely oxidized and the diabetic does not appear able to store up this sugar as glycogen.

5. The excretion of sugar by a diabetic, upon a proteid diet, may rise to a certain point upon the ingestion of carbohydrates, since the more readily utilized carbohydrate sugar saves the isomeric albumin-sugar from oxidation and the latter is excreted as a waste product.

It will be observed from the above that it is the belief of the writer that ordinary sugar, ingested in moderation, no more appears in the urine in diabetes than it does in health and that the excreted sugar is wholly a product of proteid decomposition.

ANTIPATHY TO BINOCULAR SINGLE VISION; AND THE LINE SEPARATING THE RETINA INTO ITS TWO HALVES.

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That there are cases of strabismus in which it is impossible to establish binocular single vision, most oculists who have had a few years of practical experience will attest. Graefe saw a few of these cases and, on at least two occasions, wrote about them, always confessing that he could do nothing for them. In studying these cases he reached the conclusion that the cause was either faulty projection depending on injured nerve centers, or on the impossibility of obtaining associated action of muscles when these had been long unaccustomed to association. In his cases the visual power of each eye was quite good, for the strabismus had been of the alternating type. By operations and by prisms he could make the images approach but he could never cause them to fuse. "The images would pass from side to side, above and below, or one behind the other, always on the point of uniting, but never united."

Stevens has seen and studied these cases. Having

been more fortunate than Graefe, in that he has occasionally succeeded in establishing binocular single vision, he offers, as an explanation, unequal tension of corresponding ocular muscles, under the influence of corresponding nerve-impulses directed to them. He teaches that this unequal tension may be in the lateral muscles as the result of wrong operations in attempting to correct the squint; but he specially emphasizes the idea of unequal tension of the vertically acting muscles as a cause of the antipathy. In some of his cases he has brought about equality of tension by operative means, and binocular single vision has resulted. In other cases he has failed. To the mind of the writer this shows that there are two classes of cases, the one curable, the other incurable. Unequal tension may cause double vision when the head is erect and the eyes attempt to look straight ahead; but in these cases prisms ought always to fuse the images, as does a posing of the head, or moving the object in a definite direction.

In a typical case of antipathy to binocular single vision, fusion can not be had either by posing the head, by moving the object up, down, in or out, or by means of prisms; and fusion by operative means would, consequently, be impossible. We have had two such cases. In each there was good acuteness of vision in both eyes; and there had always been alternating squint. Others had operated on these cases and had failed. Ignorant of what we now believe to be the true cause, we, too, operated and—failed. In each case we added to the confusion by bringing the images close together—we could not fuse them. Our study of the last case was earnest and, for some time, most confusing. By prisms we could make the images “kiss” and then they would recede or change sides; again as the false image approached the true it would rise above or go below the true and thus get on the other side. They would not fuse.

We believe the true cause of a typical case of antipathy to binocular single vision to be: The macula in one eye is connected with the right side of the brain, while the macula in the other eye is connected with the left side of the brain.

We are taught in the books that the temporal half of the right retina and the nasal half of the left retina are connected by optic nerve fibers with the cuneus in the right occipital lobe; and that the temporal half of the left retina and the nasal half of the right retina are connected, in the same manner, with the cuneus in the left occipital lobe. That the line of separation does not always divide the retina into two equal parts has been clearly shown by intra-cranial disease. Nettleship has reported a case in which disease of one side of the brain caused total blindness in the temporal half of one retina and in the nasal half of the other, the line separating the blind and seeing parts of each retina being vertical and passing through the macula. We have had two cases in which meningitis destroyed the right optic tract. The line separating the blind from the seeing part of each retina was not vertical, but passed to the right of the macula, in one case missing it 10 degrees and in the other about 5 degrees. In each eye both of these cases had perfect central vision, peripheral vision being normal in the right field, but limited, as indicated above, in the left field. We have had one other case in which, after a puerperal convulsion, there was central and left-field total blindness, the right field being normal except that it failed to reach the vertical plane of each

eye by about 5 degrees. In this case the line separating the blind from the seeing part of each retina was not quite vertical, and passed about 5 degrees to the left of the macula. Here are four cases: In one the lines of separation passed through the macula; in another, 10 degrees to the right of the macula; in another about 5 degrees to the right of the macula; and in the fourth about 5 degrees to the left of the macula. If these lines can vary in the same direction in the two eyes, may they not vary in opposite directions? and would not such a condition account for some cases of squint in which there is incurable antipathy to binocular single vision?

Nettleship does not so state, but it is reasonable to suppose that his case was ambidextrous; our two cases first noted are right-handed; the last case was not interrogated on this point, but a reasonable conclusion is that she is left-handed. May it not be that the connection of the macula with the left brain determines right-handedness; with the right brain, left-handedness?

There are some patients, especially those subject to sick-headache, who complain of temporary loss of a lateral half of the central field. If looking at a face the right or left half disappears. This must be due to a temporary suspension of functional activity on the part of a portion of the cuneus in one side of the brain while the corresponding part of the other side of the brain continues to do its work. This symptom would occur only in those cases in whom the line dividing the one-half of the retina from the other passes through the macula. Such cases are not numerous, therefore it is reasonable to conclude that this retinal line does not often pass vertically through the macula.

FATAL LEPTO-MENINGITIS DUE TO ENDO-METRITIS ORIGINATING FROM THE DIPLOCOCCUS PNEUMONIE.

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A few days since I had an opportunity to perform an autopsy especially interesting through its unexpected outcome. Autopsies are difficult to obtain in this region, and this one was obtained because of the well-known suspiciousness and ignorance of the negroes. Several weeks since I was permitted to hold one on the body of a woman simply because she was supposed to have been “hoodooed” to death.

In this case I was informed by the decedent's roommate that “the lady next door had sold them five cents worth of dumplin's an' I aint sayin' she was poisoned but she said ‘Oh Sallie, I'm poisoned, I knows I is,’ an' I ate the dumplin's too but they didn't hurt me an' I wants you to fin' out all about it, I does.” Though, under the circumstances, it was impossible to get any consecutive and clear history of the case, this is what I obtained. The dead woman, a washer-woman, had worked on Thursday all day. That evening she complained of toothache, and in the morning said the toothache was still worse. She stayed in bed a portion of Friday, yet walked about some, complaining during the afternoon that the toothache was the worst that she had ever had, and finally said that her head hurt also. About 7 o'clock Friday evening she went into a convulsion of pain, though not unconscious, they said, and rolled over the floor through the agony

in the teeth and the head. At 8 o'clock she died. The necropsy was performed the next morning at 9. My findings were as follows: Body of a large, well nourished colored woman of about 20 (said to be 17). No rigor mortis, no external scars or marks of note. Abdominal cavity normal in appearance and omentum down over intestines. Appendix very long, free and pointing upward, backward and to the right; diaphragm to the fifth interspace on both sides; liver just below the border of the ribs. Pleuræ entirely free, no fluid in pleural cavities, lungs on section rather pale and markedly edematous. Pericardium free and contains one ounce of clear serous fluid, ventricles contracted, left empty, right contains a little fluid blood; auricles distended with fluid blood, a mixed clot extending into the pulmonary artery; heart musculature normal in appearance; valves also normal. Spleen slightly enlarged, malpighian bodies very prominent; no perisplenitis. Kidneys normal with exception of marked congestion. Liver somewhat congested. Intestinal mucosa and serosa normal. Ovaries about three times normal size, cystic and fibroid; uterus congested and with purulent endometritis. Though there were no abdominal markings the uterus and breasts looked as if she had either had a child or a miscarriage at some time. The calvaria was slightly adherent along the longitudinal fissure; the pial veins widely distended with blood, and a small amount of fibro-purulent exudate was found both above and below the pia, especially over the convexity of the right hemisphere; and a small amount of more fluid pus was discovered at the base, the pineal gland especially being bathed with it. The petrous portion of the temporal bones was removed to expose the middle and the internal ears, but these were found free from pus.

The brain was taken to the laboratory for further examination, as well as a piece of the lung and the kidney and the entire uterus. Thinking the pus in the latter probably of gonorrheal origin I wished to look for the gonococcus. Cover glasses spread with pus from the brain disclosed no other organism than the diplococcus lanceolatus and very few of them. There was no pneumonia and no middle ear abscess and I was at a loss to account for their entrance to the brain. Some blood slides from the pial vessels were carefully gone over but revealed nothing except the leucocytosis usually so marked in purulent meningitis. Upon staining the pus from the uterus, what was my surprise to observe nothing but the same diplococcus I had just gotten from the brain, and as in the brain few in number. The pus in the uterine fundus had scarcely any, that in the cervical portion more. The reaction of the pus was neutral or at most faintly alkaline. Believing that I was now certainly on the track of the method of infection, I stained a number of slides prepared with blood from the kidney and was rewarded by finding a few diplococci in them, but now with capsules, whereas those from the brain and uterine pus were without. A more thorough search also disclosed a few organisms in the slides prepared from the blood of the pial vessels. I did not succeed in finding any, however, in the exudate squeezed out from cut pieces of the lung.

A small piece of the fibrinous pus from the brain was inserted under the skin of a very heavy full-grown rabbit, and a little of the pus from the uterus put under the skin of a common house mouse. In twenty-four hours both animals were plainly sick, and a slide made of blood from the rabbit showed the encapsulated

diplococcus. In thirty-six hours the mouse died, and in forty-eight the rabbit succumbed. Slides made from the blood of each animal yielded nothing but the encapsulated diplococcus, and in such numbers as to show a marked virulence and profound infection. Cultures made in agar from the heart's blood of each animal gave pure growths of the diplococcus lanceolatus, developing in the manner usually characteristic of this organism.

It would seem from this presentation that there can be no doubt the brain infection was due to the absorption of virulent diplococci from the inflamed uterine mucosa into the blood and their transference to the meninges. As I am not aware that any one has as yet suggested the possibility of such an infection as a cause of endometritis, the case is also interesting in that connection, and it might be well for those who have such conditions to treat to make thorough bacteriologic examinations of the pus in order to establish the fact whether or not this is a very exceptional instance. If not, then to the already long train of ills accompanying this condition, there is added another danger which up to this time no one has feared.

IMPROVED METHOD OF COCAIN ANESTHESIA FOR NASAL MUCOUS MEMBRANES.

BY P. L. ANDERSON, M.D.

CHICAGO.

Many of the unpleasant effects of cocain may be averted and much of the dread of operations may be dispelled by using the following method of local anesthesia.

As a preliminary step (preparatory for the application of a stronger solution) a spray of one-tenth per cent. cocain solution is used. In about half a minute, the same spray may be repeated and the thirty seconds between these two sprays may be utilized in arranging a very small amount of cotton on the probe for immediate use. Although this requires but a minute of time, the membranes are sufficiently anesthetized to allow the introduction of the probe without giving the patient any annoyance from the contact of the cotton with sensitive parts. The cotton on the probe has been moistened in a 25 per cent. solution of cocain. Anesthesia will take place in from three to five minutes, by rubbing the probe back and forth gently, but continuously, allowing the cocainized cotton to reach every desired part of the membrane. This simple process fully prepares the membranes for either acid cautery, galvano-cautery, snaring of polypi, or for any operation for ledge, spur or deflexion of the septum.

Formula for the stronger solution:

| | | |
|----------------------|--------|-------|
| R. Cocain. | 3ij | 8.00 |
| Resorcin. | grs. x | 65 |
| Aquæ distil. | 3j | 32.00 |

Five drops of this solution added to 3j aquæ distil. makes the spray solution. This solution will keep indefinitely and does not crystallize around the stopper of the bottle, while the resorcin is antiseptic and adds to the anesthetic effect. The advantages of this method of cocain anesthesia are:

1. Saving of time, not requiring more than from three to five minutes, while the tampon method requires fifteen to thirty minutes.

2. The very small amount of cocain used, thereby lessening the toxic effect upon the patient.

3. The equal distribution of anesthesia produced by the gentle rubbing of the entire surface desired, as compared with the tampon which causes only the part touched by the tampon to be anesthetized, whereas the probe may reach and conform to every part of the membrane and produce a complete anesthesia. The cotton on the probe need not be renewed or replenished with cocain, for the admixture with mucous does not dilute or lessen the anesthetic effect, as may be supposed. It will also be found that this continuous friction is a much quicker process than by introducing the probe again and again at intervals of from one to three minutes. This not only requires more time, but causes more irritation and produces a toxic effect upon the patient, and a suspense or dread of cautery or operation often occurs from the unnecessary delay. The use of the spray, alone, for the complete anesthesia should be condemned, for the reason that too much unnecessary surface is anesthetized and too much cocain is absorbed. Should alarming symptoms from cocain occur while the patient is in an upright position, as for cautery, snaring, etc., lower the head as in fainting, loosen the clothing if tight, and usually a breath of cool air revives the patient. The use of stimulants or antidotes is quite unnecessary.

For operations, arrange the patient as for general anesthesia, using either operating chair or table. The prone position insures perfect safety against fainting, dizziness, nausea, etc., and is just as necessary in cocain anesthesia, as it is in general anesthesia when chloroform or ether is used. Special attention is invited to this point, for the writer has never observed, from any physician, the mention of this prone position in cocain anesthesia for operations upon the nose.

A CASE OF INFANTILE ATRESIA OF THE NASAL FOSSÆ, WITH UNUSUALLY RAPID RESPIRATION.

GEO. C. STOUT, M.D.

INSTRUCTOR IN DEPARTMENT OF DISEASES OF THE EAR PHILADELPHIA POLYCLINIC, PHILADELPHIA, PA.

Paul B., aged three months, was referred to me on Feb. 28, 1897. When born he was covered with eczematous scales, which at the time of his first visit had cleared up, with the exception of a few scaly areas on the scalp. He had been given bichlorid of mercury and iodid of potassium for the above condition by the mouth. He was apparently healthy and well nourished, but for the scales spoken of and his remarkably rapid breathing. His respirations were short and shallow, and numbered about 105 to the minute. His physician told me that he had had continuous rapid and noisy breathing since birth and occasionally had attacks simulating laryngismus stridulus. During these attacks his breathing became very labored; he became cyanotic, struggled for breath, and his condition became so alarming as to make recovery seem impossible. These attacks he had weekly, and at times oftener. It had always been necessary to feed him by a teaspoon on account of the difficulty of respiration. Examination showed the nasal fossæ to be almost absolutely closed. There was no discharge from them, but upon forcing a small cotton-tipped probe gently into the fossæ each was found to contain a thin isinglass-like scab, which extended posteriorly to just behind the vestibule. In spite of the almost total atresia of the nose, most of his breathing was

through that organ. The smallness of the apertures being made up for by the rapidity of breathing.

Only the smallest probe could be introduced at first. On manipulating for a time with a cotton-tipped probe, it was forced back until it reached the rhino-pharynx, and by gentle but persistent pressure the passages were enlarged to (or even beyond) their normal size. At this visit a generous application of the official ointment of yellow oxid of mercury was applied through the fossæ, and upon all parts of the mucous membrane which could be reached. An ointment was ordered consisting of: Menthol (crys.), gr. iii; acid boric, gr. v; ung. petrolei, 3i, with directions that a piece the size of a small pea be inserted into each nostril morning and evening of each day and allowed to melt and run into the nose. The bichlorid and iodid of potash were continued as well as the method of feeding by spoon. The child returned March 7 much improved; had not had its weekly attack of strangling since the first visit.

At two succeeding treatments, a week apart, the forcible dilating or bougieing was repeated and the result was a practical cure of the condition, the respiration at the last visit being very easy and about 45 or 50 to the minute.

An interesting feature of this case was the persistent effort to breathe through the nose, even though the respiration had to be increased to such a remarkable degree, in order to compensate for the narrowness of the fossæ, the case thus confirming the fact (long since pointed out by Kussmaul¹) that children are essentially nose breathers, even when the nasal obstruction is extreme. In this case the tongue was drawn upward and backward, its base resting upon the hard palate and thus oral respiration was prevented, even though the lips were parted and the mouth open almost continuously. Although the relative size of the meatus of infants is very small² and but little swelling of the pituitary membrane would close the normal infant's fossæ entirely, still cases of such marked difficulty in breathing are rarely seen and more rarely reported.

SURGERY ONE HUNDRED YEARS AGO.

AN HISTORICAL STUDY

BY DR. GEORGE FISCHER.

DEDICATED TO THE GERMAN SURGICAL ASSOCIATION.

TRANSLATED FOR THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION
BY CARL H. VON KLEIN, A.M., M.D.

(Continued from page 938.)

VI.—LORENZ HEISTER AND CONTEMPORARIES.

Heister; Z. Platner; Günz; Ludwig; Mauchard; Kaltschmidt; Bass; Haller; Schulze; Eschenbach; Vater; Detlef; Holtzendorff; Eller; Senff; S. and A. Schaarschmidt; Muzell; S. Pallas; Z. Vogel; J. E. and O. J. Wreden; Schwarz; Walther.

Whilst in the seventeenth century the main supporters of German surgery were legitimate surgeons, the professors of surgery occupied the foreground in the first half of the following century. We will review them in order, beginning with *Lorenz Heister*, the first on the list of trained scientific surgeons in Germany. The great influence he exerted over the Germans was astonishing and he was considered so good an authority, that many believed themselves incapable of performing an operation better than he could, and thought it a crime to find fault with him.

¹ Zeitschrift f. rationale Medizin, 1865, p. 107.

² Kohts and Lorent, Handbuch d. Kinderkrankheiten von Professor Gerhardt, 1878.

Heister, who was the son of an innkeeper, was born Sept. 19, 1683, in Frankfurt-on-the-Main. At the age of nineteen he entered the University of Giessen. Afterward he accompanied Dr. Möller to Wetzlar, where under his guidance he studied chemistry for four years but gave most of his attention to the study of botany. The great reputation which the Dutch school enjoyed induced him to go to Amsterdam in 1706, where at the time, Ruysch was the anatomist, Rau the city operative surgeon, both of the Verduyns and Couerding, instructors. Rau cheated the students; for instance, when Heister and two others desired to hear a course of his lectures, he charged them 100 specie thalers, half of which had to be paid in advance, but did not, as he had promised, produce the bodies. A number of these Ruysch then placed at the disposal of young Heister, who was thus enabled to continue his preparations and practice (operative) surgery. In the following year he went to Brabant, where he enlisted as a volunteer of the Allied Armies, and visited the hospitals of the English and Dutch armies in Brussels. While in Ghent he met Palfyn. In 1708 he heard Albin lecture in Leyden, and studied chemistry and ophthalmology with Boerhaave. He graduated the next year in Hardewyk and in his dissertation (*de tunica choroidea oculi*) he refuted the idea that the choroidea was a continuation of the meninges. Ruysch loved Heister like his own son and resigned his position as anatomist in his favor. The latter, hereupon, began delivering a course of lectures on anatomy and surgery, in the German, Latin and French languages. But, on account of his great fondness for surgery, he returned to military services among the Dutch, joining them in the siege of Tournay and Mons, in 1709. Here he had operations to perform and after the battle at Malplaquet was very busy attending to 5,000 wounded in Brussels. He remained five years in Holland, and then accepted a position as Professor of Anatomy, Surgery and Botany at Altdorf, entering upon his new duties after a sojourn of four months in Cambridge, Oxford and London. Heister taught in all the different branches of medicine and was so successful in his practice, that he soon rose to be one of the most famous physicians and the most sought-after instructor of surgery in Germany. His correspondence extended over many foreign countries and during his lifetime he found several biographers. In 1719 he was appointed Professor of Anatomy and Surgery at Helmstädt, but soon resigned this position and taught scientific medicine, botany and surgery. Here he founded a botanical garden and conservatory, which were classed among the rarities of that time. Several offers which he received from parts outside of Germany met with a refusal. Peter the Great tried to tempt Heister to accept a professorship in Russia with a salary of 2,000 rubles (\$1,600); the archbishop of Würzburg was very liberal in his offer: \$1,000 remuneration, "with an adequate supply of fruit and wine," and promised him, a Protestant, an undisturbed worship of his own religion; and Göttingen had striven to capture him as head professor of medicine, when her university was established; but all was in vain. An offer from the Duke of Holstein to come to Kiel, as well as a Professorship in Rostock, Heister also declined. He retained his position as the Most Illustrious Court Councillor of Braunschweig-Lüneburg and became a member of scientific societies at home and abroad. Heister was a good Christian, very

amiable in his intercourse with mankind, and of a most obliging disposition. His lectures were very deep, thoroughly prepared and explicit. April 18, 1758, while on his way to Bornum, whither he had been bidden for a consultation, he died, in his 75th year, a most renowned man. "He was an adult in sagacity, experience, piety and worth, but a youth in society and in his intercourse with human nature." This is a quotation from the funeral sermon delivered at his grave in Stephani Cemetery in Helmstädt. Although a famous anatomist and botanist who did not share Linné's revolutionary ideas, he merited the greatest honors as a surgeon. With great fervor he fought for the combining of surgery and medicine, and in 1718, when he was thirty-five years old, wrote the most complete and most famous book then existing. Its title was, "Surgery, in which everything that pertains to the same is thoroughly discussed according to the latest and best methods and which contains thirty-eight copper-plate illustrations of the newest and most useful instruments, besides the most convenient positions of the hand in surgical operations and in applying bandages." (The 5th edition comprises 1078 pages.) How great Heister's literary influence was, may be inferred from the fact that this book, which Benjamin Bell termed the "First complete systematic work on the science of surgery," was still used as a text-book in Vienna as late as 1838. One hundred and twenty years it had served as a means of education for the young! That surgery was so superficially carried on in Germany and that the most important operations were performed by quacks and vagabonds, Heister considered mainly due to the want of a complete manual. Furthermore most of the text-books on surgery had been written by physicians who had never learned the art of operating or by uneducated surgeons. At first Heister had his work copied by his listeners, but yielding to their urgent requests had it printed later on; he wrote it in German on account of the German surgeons, but afterward caused a Latin edition to be printed for the sake of foreigners. Translated into many tongues his production was prepared according to the best home and foreign authorities and fraught with his own experiences. In the same, Heister divided surgery into three parts: The first, treating of wounds, fractures, dislocations, swellings and ulcers; the second, of operations, including ocular and obstetric operations, and the third, of bandages, thus making a distinction between medical surgery and practical surgery. The former was: The theory, that is, the science of how to cure and perform operations without making any; the latter was the actual practice, that is, the art of how to operate." A true surgeon ought to know both, a physician, at least, the theory. Heister neglected no opportunity to call the attention of the young people to the great extent and the difficulty of surgery, to spur them on and to recommend to them the study in large hospitals and on the battle field. He also very warmly urged them to study anatomy and, in a special dissertation, pointed out that the sad conditions of German surgery principally resulted from the neglect of that science, of which a surgeon has so much more need than a physician. He did not cling to principles, for he knew that "the general doctrines of surgery are often harmful, unless one has recourse to those of special cases and eminent exceptions." His love for truth he proved by publishing his failures as well as his successes; he did not hesitate to

openly confess that, in connection with a difficult birth under the impression that the child was dead, he had placed a grapple into its head and drawn it out alive, whereupon it died within three days. The most unfavorable side of Heister's accomplishments was that he was no critic. In his "Surgery" he simply placed the different opinions and methods side by side without passing judgment on them, leaving the young people without any guide in the matter. He also did harm by describing and illustrating instruments and bandages that were valueless; he once for all considered a knowledge of instruments a "general necessity" for every surgeon. It also appears that Heister was more of a scholar than a teacher, there being nothing known of any famous pupils, except Mauchard; partly due, perhaps to the smallness of his sphere of activity in Altdorf and Helmstädt. As an abstract of his great work on surgery, a small one was published in 1747. Also his work on anatomy created a great stir in 1717. This, translated into several different languages, was one of the principal text-books of the times. Heister wrote 200 different works. Even when seventy-one years old he noted medical, surgical and anatomic observations, and compiled a work in which he related all the strange things that came to pass during his "fifty years' experience," 680, mostly common occurrences succeeding each other chronologically from the time of his college life up to his settlement in Helmstädt. While this was being translated, Heister died, so Professor Cappel of Helmstädt published the same, which was not much of a credit to the departed one, for most of his experiences from 1721 to 1758 had been somewhat hastily and incompletely recorded. We will here insert his services to ophthalmology and obstetrics, because these sciences will not be taken into consideration later on. In dissecting an eye infected with a cataract, Heister found that the disease was not, as had been generally accepted, caused by an abnormal skin in the eye, but by a darkening of the lens, which had become cloudy by a preceding inflammation. This observation, which he published in 1713 and afterward defended in dissertations, involved him in a quarrel with Woolhouse for many years. While Mauchard shared the opinion of the latter, St. Yves, Platner and Morgagni sided with Heister, whose idea was soon received as correct. He admitted the existence of cataracta capsularis and held the opinion that glaucoma was a darkening of the vitreous humor. In case of a fistula in the aqueous humor, he advised the use of Anel's method in 1716, hitherto unknown in Germany. In obstetrics he deserves great praise for insisting upon Cæsarean section when a woman died in childbirth, as the infant might live if removed. To obtain this end he demanded of the state to pass a law as the prejudices among the laity were still very great; for, did not one peasant in Helmstädt threaten to shoot Heister if he dared to open the body of his deceased sister?

Less famous than Heister was *Zacharias Platner* (1694-1747), although we can not deny that he merited praise for his efforts in trying to free German surgery from its chaos of empiricism and arrange it in a scientific way, as well as to systematize the same. Educated in Paris, he was appointed professor of anatomy and surgery in Leipzig in 1721. His "Institutiones Chirurgiæ" (1745), written in classic Latin was, along with Heister's "Surgery," the most valuable text-book in Germany, which had been intro-

duced in most of the universities and was used by nearly all surgeons. Clearness of expression, good judgment and the special use made of the French literature were distinguishing features of the same; on the other hand though, it was deficient in experiences, unquestionably Platner's weakest side. It is characteristic of the times, that in the German edition, many theoretic and literary examinations, which are found in the Latin books, are omitted, because German surgeons were too ignorant to comprehend them or to manifest any interest in them. Platner divided surgery into six parts: 1. Synthesis, including the fractures and dislocations, bandaging, the healing of wounds, etc. 5. Dieresis, the section, sawing, trephining, cauterizing, etc. 3. Exeresis, with the extirpations. 4. Apheresis, with the amputations. 5. Prothesis, to which belonged the application of artificial feet, the setting in of teeth and eyes and the filling of cavities. 6. Diarthrosis, straightening of the deformed members of the body. Platner urged the combination of medicine and surgery. He was one of the most learned and popular physicians of the time. When he died he bequeathed the professorship of anatomy and surgery to his favorite pupil, *J. Gottfried Günz* (1714-1754). A Saxon by birth and educated in Leipzig, he began here as an unsalaried professor, then spent a year in Strassburg and Paris, attending, principally, the lectures of le Dran, Guerin and St. Yves. In 1747, he was appointed professor of physiology in Leipzig, but soon thereafter taught anatomy and surgery. He then went to Dresden, 1751, where he accepted a call as private physician. Having an excellent knowledge of the ancient classics, he was entitled to a most promising future, but, unfortunately, he died young. Among other works, he published one on hernias ("Obs. Anat. Chir. de Herniis, 1744"), the first and best of its kind written, and scarcely surpassed by any today. The third learned professor of therapeutics from Leipzig worthy of mention was *Gottlieb Ludwig* (1709-1773). He followed in the footsteps of his two colleagues, taking charge of the anatomy and physiology and was a true ingenious representative of the times, inasmuch as he wrote a Latin compendium, comprising all the various branches of the medical sciences (physiology, pathology, general therapeutics, medical jurisprudence and surgery). He instructed the barbers of Leipzig in the fundamental principles of surgery, in consequence of which he published his "Institutiones Chirurgiæ" in German. This book, which contains many citations from Heister and Platner, was exclusively used at that time, not only by Germans but also by foreigners.

In Tübingen *David Mauchard* (1696-1751) taught anatomy and surgery. He was a pupil of Heister, with whom he lived and whose day of death was his birthday. He continued his studies in Strassburg, then attended the lectures of Duverney, Winslow and Petit in Paris. Here he lived with Girard, the surgeon of the Charité, where he had a chance to practice operating. For nine months he and Platner visited the lectures given by Woolhouse on ophthalmology in Paris. The latter had invented an eye-brush for the lids, but which he kept secret. Now Platner, who was originally wealthy, possessed himself of the same by paying a high price for it, while Mauchard, who was poor, learned it by stratagem. Woolhouse was very fond of wine, and one day when Mauchard had treated him several times, gave away

the secret while under the influence of liquor. Mauchard settled in Tübingen and obtained a salaried professorship in 1726. Having made a specialty of ophthalmology, he wrote mostly ophthalmologic works, which can be found in Haller's collection; he also wrote a treatise on hernias in 1748. The University of Jena had a most estimable teacher of surgery in *K. Friedrich Kaltschmidt* (1706-1769). After pursuing the study of jurisprudence for two years, he took up medicine. He became the physician of the Duke of Weimar. He then was an unsalaried professor, and after eight years advanced to the position of salaried professor, at first receiving no salary and having no authority. He taught practical medicine, jurisprudence and surgery, always having a good attendance. A great number of Latin works, which are very verbose, bear his name and are found in Haller's compilation. In order to obtain certain solutions he experimented on rabbits, inflicting similar liver wounds to one he had successfully treated. Kaltschmidt was a very fearless operator, as shown by his extirpation of a large tumor of the neck (goiter), but in removing the same he had the misfortune to cut the carotid and not being able to stop the bleeding, the patient died.

Heinrich Bass (1690-1754) born in Bremen and educated in Halle, Strassburg and Basel, was made professor of surgery in Halle in 1718. He published the first German work on bandages, illustrated by twenty copper plates in 1720, which was received with great approbation. Although written according to the ideas of Verduc, the distinguishing features were the concise and intelligent language used and the perfection of its illustrations, beside containing much that was new. Bass and Heister were the first men in Germany who laid particular stress upon good bandages. Of less value are his "Illustrated Bric-a-Brac" (1728) and his "Obstetric and Anatomic Surgery" (1731). In Göttingen, the famous *A. von Haller* occupied the professorial chair of surgery for seventeen years, but never dared to perform a single operation on a living person, a remarkable circumstance for one engaged in surgical work so long (*etsi chirurgicæ cathedra per septemdecim annos mihi concredita fuit, etsi in cadaveribus difficillimas administrationes chirurgicas frequenter ostendi, non tamen unquam vivum hominem incidere sustinui, nimis ne nocerem veritus*. "Bibl. Chir." II, p. 171). People did not hesitate to take heroic medical treatment, but shrank from the simplest surgical operation. Haller contended that not a single great man had distinguished himself so that a period of surgical history might be named after him; besides surgery had ever been dependent upon medicine and without it could make no progress. Haller's principal works were five volumes of "Disput. chir. selectæ" (1755-1760) for which he had collected 163 surgical treatises, partly complete descriptions of diseases and partly of rare cases and new instruments. The first volume contains twenty-nine dissertations on injuries of the head; the second, twenty-eight on diseases of the head, throat, chest, etc. These dissertations by Haller as well as the surgical works of the Richter collection, which appeared later on, probably most fully utilized the least valuable parts of surgical productions in Germany during the past century. Another valuable work by Haller is his history of surgical achievements, in two volumes (*Bibliotheca chirurgica*, 1774), in which he passes criticism on all surgical journals published up to his time and

comments on the editors of the same. Professor von Creutzenfeld of Vienna compiled a similar work in 1781. Of the rest of the German university professors belonging to the first half of the 18th century scarcely one deserves mention. But there was Heister's successor in Altdorf, *J. H. Schulze* (1687-1744), a poly-historian, who taught also Greek and Arabic, then went to Halle to teach medicine and eloquence and among his great literary works also produced a compendium (*Chir.* 1747). Prof. *C. E. Eschenbach* of Rostock in 1754, so sharply separated medicine from surgery that he did not wish internal remedies mentioned in surgical journals, contending that they were of no concern to a surgeon. The physician alone was to care for the remedies of external diseases and in disputed cases, his idea was to prevail as had been decreed by the state. He was also greatly in favor of specialties in surgery and thought it by far better for a surgeon to pursue but one branch of operative surgery, as daily observations had proven that the most uneducated oculists and dentists often performed operations in their line faster, more fearlessly and successfully in consequence of their great amount of practice than the others. *A. Vater*, professor in Helmstädt, wrote a "Museum Anat." in which he narrates several strange surgical cases (1750). Haller's pupil and demonstrator in Göttingen, *P. Dellef*, was one of the first to attempt the production of callus from bone humor and the vessels of the callus (*ossium calli generatio*, 1753).

One might expect Berlin, so rich in material on account of the great preference given the Charité over many universities, to have good surgeons, but there was nothing more supplied here than barber surgery. A progress in the sciences could not be looked for from King Frederick I., who appointed his executioner as body physician. His successor, Frederick William I., who declared himself to be very German in his ideas, did not wish to have anything to do with those roguish and flitting French. This may have been a very brusque remark on the part of his royal highness, who was rather indifferent to science, so that he considered Leibnitz of no account; nevertheless, he did much toward furthering the development of medicine and surgery by founding the Charité and by establishing the collegium med. chir. in Berlin, as well as by his famous edict regarding the medical system. Having a great fancy for tall people, such as were found among his grenadier guards at Potsdam, he attempted to raise a tribe of giants, by procuring very tall mates for them. The experiment, however, proved a failure. The surgeons also were measured, but it has been especially noted that Henczel, although not very tall, received the appointment of field surgeon of the regiment at Potsdam. There was great danger of their being put into a strait waistcoat. When Theden was made field surgeon of the Holstein regiment, his commander wanted him to be a fusilier on account of his height, but he narrowly escaped through the interference of the surgeon of the regiment, who furnished him with a pass to leave the city. Several physicians and surgeons of the Charité were highly esteemed by Frederick William I. The surgeon of the staff, *Holtzendorf*, had founded the anatomic theater in Berlin, as well as furnished the plans for the Charité and the Collegium Med. Chirurgicæ. Frederick's body physician, *J. Theod. Eller*, also had a part in the erection of the Charité, wrote out reports on the operations performed there

in his "Med. Chir. Remarks" (1730), and besides this compiled a "Complete Surgery" (1763), which, although of no great value, was published three years after his death. One of his co-surgeons at the Charité, *G. Senff*, did not write anything, but invented a knife for the operation of the seat fistula and a compress for aneurysms. Eller's successor as physician, *Samuel Schaarschmidt* (1709-1748), at first studied theology in Halle, then medicine, and in 1736 became professor of physiology and pathology at the Colleg. Med. Chir. In all the various branches he was a prolific writer; besides his "Accounts of Berlin," we have a short sketch and view of the human body (1736), a treatise on diseases of the bones (1749), on venereal diseases (1750), a book on obstetrics (1751), a physiology (1751), a dissertation on military diseases (1758), prescriptions (1768), and on wounds (1763). In general, he represented good surgical principles. His brother, *August Schaarschmidt*, professor at the University Bützow of Mecklenburg, compiled anatomic tables or synopses, which were extensively used. Samuel's successor at the Charité was the body physician *Muzell* (1715-1784), who, in the absence of the head surgeon, also attended to his duties. A few of his remarks ("Med.-Surgical Observations," 1754, 72) show very plainly how ignorant the Prussian army surgeons were, but more of this hereafter. Muzell's surgical colleague, Professor *Simon Pallas* (1694-1770), noted as a good operator, wrote a "Guidance for the Science of Practical Surgery" (1763), in order that the students need not spend any of their valuable time in copying. In this he described clearly and concisely the principal operations in twenty-two chapters. As a hint on operations, he made the rule not to operate, when certain that thereby the disease could neither be cured nor mitigated; on the other hand, if a cure could only be effected by a dangerous and doubtful operation, it would be better to undertake the same than to keep one's hands in his pockets. Besides, he published practical directions for treating diseases of the bones, advising gentleness when handling fractures and luxations.

Not one of the surgeons of that time became especially noted. The surgeon at Lubeck was *Zacharias Vogel* (1708-1772), who wrote a work on hernias ("Dissertation on all Kinds of Fractures," 1738) which was considered valuable then, but today is worthless, and in which, among other things, he fought against castration by surgeons. Furthermore, there exist from his pen, "Strange Tales of Patients" (1756), and an "Anatomical Surgery and Medical Observations" (1759). The following is an example characteristic of his surgical maxims: In a case of hydropter scroti, he made a puncture and set the patient's dog to lick the wound, looking on as a highly amused spectator. The swelling went down, but the dog had a terrible vomiting spell, whereupon Vogel gave him milk to lap, then the sucking was continued until the swelling disappeared the following day. Sound surgical opinions were expounded by *J. Ernst Wreden*, private and the general-staff's surgeon at Hanover, of whom we will again speak in connection with vaccination. In his "Collectanea Chirurgica" (1722-23) he imparted his observations on a thrust wound made in the heart, on gangrene caused by a cut in a corn, gangrene of the penis after gonorrhea, on the extirpation of an eye, on the successful excision of a ganglion, the healing of aneurysms of an arm by means of the split and double ligatures, and

on others; for a broken lower jaw he had a tin box made. He also wrote a very unimportant work bearing the title, "Surgical Military Chest" (1722), comprising forty years of his experience as army physician, and detailing medicaments, instruments, etc. His son, *Otto Just Wreden*, the above mentioned publisher of the first German topographic anatomy, as well as other anatomic and physiologic works, wrote some very superficial directions for the practice of surgery and caused a new edition of his father's "Military Chest" to be illustrated. Of no consequence were the surgical remarks by the Schleswig-Holstein surgeon *J. C. Schwartz* (1713), nor the "Medical and Surgical Treasure," by *C. L. Walther* of Halle (1715).

It must be confessed that among the best German surgeons of that day, there was no special genius, who might have opened a new career for surgery, or by means of prominent discoveries, or the establishment of new views promoted it as a science. Rich in learning, but poor in ideas, they followed the trail delineated by the French and English, which they often lost. This censure in no wise diminishes the credit due the few, to whom German surgery owes her first scientific and methodical cultivation. Heister did much to advance and promote surgery in Germany, but comparatively little toward its progress as a science. This period, in which the learned mass of physicians was prepossessed by prejudice, superstition and credulity, when many a writer gathered only such observations as confirmed his pet ideas (hobbies) and omitted everything that did not agree therewith, and when they even invented stories of patients for base purposes, such a time must retard the growth of surgery. What little culture some of our best forefathers possessed is proven by several publications of self-operations, to which an artless child would hardly pay any attention, did they not throw some light on the easy belief, or rather the falsity of the authors. Thus *Holtzendorf*, surgeon of the general staff, related to Professor Schaarschmidt a case of self-amputation which, according to the patient's testimony, was legally authenticated. A man, 76 years old, said that forty-five years ago, he cut off his own leg. Sphacelus set in and the flesh of the foot began to decay. A physician promised to amputate it, if he would support him with three servants and four horses. This was impossible. The patient now fastened a bandage as tight as possible above his knee and began to saw off his leg below the same with an old saw. Not succeeding, he tried a sickle, and finally the files of a locksmith, his wife holding his leg, and so he filed it off. Having recovered from a swoon immediately after the operation, he washed the wound with urine and bandaged it with sugar, alum and wintergreen. Nine months later the wound had healed. Schaarschmidt published this story in his "Accounts of Berlin" (1740, p. 6) and defended the authenticity of the same. Another case of "Table Surgery" was a self-made cut into one of the testicles, which can be found in *C. L. Walther's* "Medical and Surgical Treasure" (1715, p. 196). A surgeon in Koenigsberg related that a cooper's apprentice, 21 years of age, had himself made a cross incision between the testicle and the penis and after passing off the urine had felt the stone with his finger. He enlarged the cut and removed two hundred stones, then felt a still larger one and increased the size of the fissure. Deeming death inevitable, he wished to see the stone that

had so long tortured him. After the third cut he procured a sprinkling can with which he rinsed out the remaining pebble, then hunted a needle in his mother's sewing basket, but found none, to sew up the wound. After two days he summoned the surgeon of Koenigsberg, who cured him, and at the end of six weeks he was able to resume his work. Another one of these farcical cases of self-operation is mentioned at the end of the century. This time the hero was the English Colonel Martin of India, who used a file to extract the stone in his bladder. Into this the daring officer, it is said, inserted a thick steel wire, which was in an elastic catheter and to the convex end of which was fastened a file as thick as a straw, and so filed through the stone. During this procedure he squatted down in order to move the stone nearer the neck of the bladder and injected lukewarm water. This operation he performed three times within twenty-four hours, until the stone was pulverized (Arnemann's Magazine Wound Medicines; ii, p. 413, 1799).

SOCIETY PROCEEDINGS.

Association of American Physicians.

*Twelfth annual meeting held at Washington, D. C.,
May 3, 5 and 6, 1897.*

(Continued from page 954.)

Dr. J. M. DA COSTA, President, in the Chair.

Dr. W. T. Gounceiman of Boston spoke of the frequency of finding the typhoid bacillus in the gall bladder. Indeed he said it was almost always present. The bacillus entered the gall bladder from the blood. They are always in the liver, that is practically always and there are very few organisms in the blood which can escape the liver; they can easily pass into the bile vessels. He then showed some beautiful specimens of typhoid ulcers.

Dr. James Tyson of Philadelphia, then read a paper on "Urea Estimations in Cases of Typhoid Fever Treated by the Brand Bath Method." He spoke of a case of typhoid fever which came into the hospital and on the third day after admission he found albumin and hyaline casts; he gave milk and liquid diet and then on the fourth day he began the use of the Brand treatment, at the same time he collected the urine which he found contained 2.9 per cent. of urea; during the bath treatment the secretion was markedly increased. For instance the patient was tubbed five times and found the urine and urea were increased; again on the twenty-eighth day there were 2100 c.c. of urine and 29.8 per cent. of urea; on the twenty-ninth day there were 2100 c.c. of urine and 24.7 urea; on the thirtieth there was 2280 c.c. urine and 32 of urea; the albumin fell to one-twelfth of the bulk and then disappeared, as did also the casts. At first expectoration was copious but later the cough grew less and there were no tubercle bacilli, but otitis media developed in both ears but there was no defect in the hearing. The nephritis became much milder and was what Stockton calls an upper renal complication: such a condition would not prevent him from using the Brand method. There is no stagnation of the blood in the body during the bath treatment but the blood flows rapidly through the kidney and thus can do no harm in the congestion of the kidney. Many other persons also use the Brand treatment in nephritis; of 138 soldiers in hospital suffering from typhoid fever 69 were treated with the Brand method, 5 having nephritis and none died and 69 without the Brand treatment; 9 had nephritis and 5 died. The urea can come from two sources; from the amount of nitrogen ingested through the food taken or it can come from changes in the tissues.

Dr. George Dock of Ann Arbor, Mich., then read a paper on "Cancer of the Stomach in Early Life; and the Value of Cells in Effusions in the Diagnosis of Cancer of the Serous Membranes." The report was of a cancer of the stomach (scirrhus) in a man of 19 years. There was extensive filtration of the stomach with early obstruction of the cardiac orifice. Metastasis in the peritoneum and pleura with fatty ascites; later, effusion in the pleural cavities, first left, then right. In the various effusions were cells which besides containing fatty granules and vacuoles, showed, in a large proportion karyo-

kinetic figures, both typical and atypical. After a reference to the literature a comparison was made with the findings in other effusions in serous cavities, tending to give to such cells a certain diagnostic value. The paper was read in abstract, giving the salient points in the history and histologic examinations, with demonstration of specimens and drawings.

The case which he presented was one of typhoid in which there was a swelling in the abdominal region and a hard mass was felt. After drawing off about five liters of liquid, the mass seemed to have disappeared and at the postmortem a very small stomach was found and a tumor in the serous membrane; the patient was young and the fluid was of a thin watery consistency; this disease runs a slower course and remains longer in the stomach in younger persons than it does in older, so that an operation gives more chance for success. The diagnosis by the cells alone is not an easy one and it is much better if considerable portions of tissue can be obtained. The intracellular figures and the nuclei were very well shown in the drawing that he passed around.

Dr. Simon Flexner of Baltimore spoke of a case which he had examined in the autopsy room in the Johns Hopkins Hospital which was a large tumor extending into the intestines. There was some fluid which contained cells. The case was supposed to be cancer, but a very careful examination microscopically showed that it was tuberculosis of the peritoneum.

Dr. Francis Delafield of New York, then read a paper on the "Inflammation of the Colon," and in this paper he spoke of the various forms of colitis which ordinarily occur in New York and gave results in his experience as to the prognosis and treatment. He exhibited a large number of beautiful photographs. He divided the dysentery into acute, the climatic, ordinary and amebic. In the acute ordinary form there was no change in the intestinal wall, but there were two varieties in this; one was the mucous and the other was a serous condition.

1. The mucous variety is so rarely fatal that specimens can not be easily obtained. There is sometimes bleeding and the cells are covered with mucus, the lymphatic glands being swollen and inflamed; the cause is not known. A variety of organisms had been found and they were characteristic of impure drinking water and impure milk. High temperature of the air and overcrowding are the principal causes. The symptoms are local, little fecal matter passes but there is great rise of temperature. Some patients do not go to bed at all and others even continue their work. When the colon is affected then the condition is worse still. Adults usually recover, but children often die. The main treatment is rest in bed, careful diet, emptying the colon, relieving the pain with opium, weak injections of flaxseed in the rectum are the best means known. The disease may be chronic. There is usually no change in the mucous membrane but there is some thickening of the glandular coat.

2. The serous variety is characterized by large exudations of serum; these are not to be confused with functional disturbances of the colon. The disease is not fatal and he has never seen a specimen postmortem. This disease is very common in New York, especially before the heated weather, but it occasionally occurs in winter. Some are predisposed to it and have it summer after summer. There is a feeling of necessity to empty the bowels and the quantity discharged is considerable, sometimes as much as two quarts. A large number get well by a variety of treatment while others recover with no treatment at all and some continue in spite of every thing. He placed great reliance on castor oil, salol and opium. In this variety there is more or less infiltration in the connective tissues of the coat of the intestines. This tissue is much thickened, there is an inflammation in the upper rather than the lower part of the intestinal canal and the disease may last anywhere from a few days to a year. The treatment is not satisfactory.

3. In this there is an increased production of mucus and of serum and also a number of blood cells. There is a growth of the connective tissue with a certain change in the glandular coat. The inflammation is somewhat extended and there are many small superficial ulcers of microscopic size with overhanging edges. The cause is very obscure, the invasion may be sudden or gradual. Many of the symptoms appear on the first days and some may last for a few days, while others may continue their course for weeks and months. He has seen a case die in seven days; the prognosis is serious, the treatment should be begun at once, milk diet is necessary, good food, dry climate, rest in bed, irrigation of the rectum in the early stages and opium, salol and castor oil.

4. In the croupous or diphtheritic dysentery the treatment is much different; he had caused an artificial membranous dysentery in dogs by administering to them large doses of corrosive sublimate.

5. Amebic colitis; of this there are two varieties. One is lymph inflammation and in one there are deep ulcers formed,

but the treatment is weak irrigations of the colon with quinin solutions.

Dr. D. W. Prentiss of Washington then exhibited "Two Cases of Erythromelalgia." 1. Female neurasthenic, aged 58 years. Left hand only affected. Has continued in intermittent attacks since August 1895, presenting, in a characteristic form, the train of symptoms described by Dr. Weir Mitchell as peculiar to this disease. 2. Widow, aged 37 years. Neurasthenic and hysteric. Pain in the heels extending to the soles of the feet and, when more than usually severe, up the calf of the legs. No history of previous disease, except the neurotic tendency, in either case, to throw light on the cause. Diagnosis, pathology and treatment will be discussed with special reference to relation to other diseases, classed as vasomotor. The treatment especially is worthy of note, since heretofore it has proved almost unavailing. While the reporter does not anticipate adding much in this direction, it is hoped other members with more extended experience will be able to do so, especially with reference to surgical interference, that having been contemplated in first case by cutting or stretching nerve in forearm.

WEDNESDAY, MAY 5.—SECOND DAY.

Dr. A. McPhedran of Toronto related "A Case of Pancreatitis Followed by the Formation of a Cyst." He spoke of a case which came to the hospital; he suffered from colic, jaundice, and had repeated attacks. During the next five years the attacks grew more frequent; he left the city for the summer and on coming back in the autumn gallstones were discovered and an operation was advised. On September 6 he suffered from pain, prostration and vomiting; the pain lasted three days; fever was 101 degrees. He began to improve later but was still uncomfortable; he was given Carlsbad salts and his diet was regulated. October 5 he had a pain over the pancreas; October 8 a large cyst was found over the epigastrium extending over the right of the pancreas; his temperature was 99.5 degrees; an operation was done and a clear serous fluid was evacuated. At the bottom of the wound the pancreas was found enlarged; the liver was healthy and the gall bladder was not reached. The opening was closed without drainage, with a pulse of 130 and temperature 101.5 degrees. Later he suffered from cyanosis and dyspnea. Ten days later a collection of purulent fluid was found in the lower part of the incision, probably due to fat necrosis. The pancreas seemed to have increased in size. In June he seemed to be much improved and went to his office, but his digestion was still disturbed and he had flatulence; the tumor had grown and was found pressing upward and forward; the urine was free from sugar. In March another operation was done and a cyst with walls 2 mm. thick was evacuated and a flocculent fluid containing albumin and leucocytes and being alkaline was found. There was no digestive ferment present. He made a good recovery, but the fistula persisted; the discharge was free and the skin was excoriated; the fluid was pancreatic in character and had some digestive powers. The general health of the patient continued good; the sinus continued and the discharge persists. The first attack and the subsequent ones were undoubtedly due to the beginning troubles of the pancreas. He then spoke of three kinds of pancreatitis, simple, hemorrhagic and suppurative.

Dr. J. H. Musser of Philadelphia then read a paper entitled "Angina Pectoris; Its Relation to Dilatation of the Heart." The paper was entirely clinical. The contention of the paper was to the effect that patients who have had an attack or attacks of angina pectoris are relieved of the paroxysms if dilatation of the heart supervenes. Often, if dilatation persists, the patient may live for years and no other paroxysm occur. It seems the pain, as long ago pointed out, is due in large part to the stretching of a tense ventricle from intra cardiac pressure. Such stretching is not so likely to occur in dilatation because of "safety valve action" in the heart. The idea appears to explain the infrequency of angina in the young; in mitral valvulitis with regurgitation; in women possibly, and in the occupants of infirmaries and hospitals. In the latter class the vigor of the heart muscle is lessened from lack of food, etc., which obtains in the better class. Certainly it is not because of the absence of atheroma of the coronary arteries, for endarteritis is very prevalent among senile, usually alcoholic, perhaps syphilitic inmates of the hospitals and almshouses.

If the contention is true, the diagnosis, prognosis and the treatment, tentatively admitted, is influenced thereby. The diagnosis, in that angina like paroxysms in dilatation of the heart are probably not due to true angina pectoris. The prognosis, in that, if, as rarely happens, an undoubted attack of angina occur in a case of valvulitis with dilatation, and even failing compensation, the patient on the one hand is not likely to perish from the angina, because of the safety valve, while on the other hand, it indicates that there is sufficient strong

muscle fibre to insure cardiac recuperation. Further, if a patient subject to attacks of angina presents signs and symptoms of dilatation, the angina will disappear, or at least never be so severe as to terminate fatally.

That the pain is due to intra-cardiac pressure is more possible because of the presence of dilatation of the heart in angina sine dolore. Attention is called to a similar association of pain with increased tension of the globe, in acute glaucoma.

In connection with the above the writer showed the influence of "safety-valve action" in the relief of some peripheral symptoms of high arterial tension.

Dr. Wharton Sinklar of Philadelphia said that the question as to the cause of the pain in this trouble was of great interest; and Dr. Musser's explanation did not seem to be entirely satisfactory. We have also a pseudo angina with pain and a great discomfort and he related a case of the kind in which one grain of morphia was given and failed to relieve and there was no evidence of disease of the heart at any time.

Dr. J. C. Wood of Philadelphia asked what was the cause of the increased intra-ventricular pressure. The pressure in these cases can not come from any condition of the heart itself. If the pain of the angina pectoris is due to increased intra-ventricular pressure, then one would expect the arterial symptoms to play the chief role and not the heart. Nitrite of amyl is interesting in this connection; it relieves the aortic pressure and takes away the resistance of the heart. In digitalis it is noticed that the action is not good in this disease. If Dr. Musser's theory is correct then angina could be stopped by hypodermic injections of tincture of aconite, or if we gave enough aconite we could do away with the ventricular pressure altogether, but this is only theory.

Dr. E. G. Janeway of New York mentioned several cases. One was a man who was much frightened in an accident on the railroad; he went home and complained of a pain in the right side and not in the left; he was ashy pale and had pericarditis. The diagnosis was made of thrombosis of the coronary artery with rupture of the heart. One day as he was feeling better he suddenly sat up in bed and died. At the autopsy the coronary arteries were found diseased and the septum of the left ventricle was ruptured and there was a thrombosis in the right coronary artery. Dr. Musser's theory does not explain this. In the second case a man walking across a field was suddenly taken with a sharp pain in the side; he died in three weeks, alone, and at night under rather suspicious circumstances, and poisoning was suspected. At the autopsy both of the coronary arteries were found thrombosed and the left lesion was found to be older than the right, showing that one attack had antedated the other. He also referred to other cases and to the effect of nitroglycerin on persons with low arterial tension.

Dr. Charles Carey of Buffalo spoke of this increased tension of the heart as parallel with the increased tension of glaucoma. He thought that Dr. Musser's theory was open to question and did not fit every case.

Dr. F. R. Kinnicutt of New York said that his theory might explain some cases, but he said there was often great pain in which the heart walls were stretched.

Dr. Musser said in conclusion that he did not mean to refer all cases of angina pectoris to this cause, but he wished to lay stress on the fact of the safety valve action of the mitral valve; the pain was certainly decreased.

Dr. F. C. Shattuck of Boston then read a paper entitled "Pericarditis; Some Points in the Diagnosis and Treatment." He said that pericarditis was frequently overlooked and was often not sought for. The disease was one that was well known and rheumatism was often the cause, as endocarditis and pericarditis may co-exist. So often in the beginning of the disease the doctor does not see the patient. It often follows pneumonia. In fact the two are often associated. The diagnosis must rest on the physical signs, but the friction sound is very much circumscribed and may come and go between each examination; it may be present one day and absent the next and *vice versa*. He had seen several cases in which pericardial effusion had been suspected after pneumonia and had been carefully looked for but not found until after the autopsy. Dry pericarditis without friction sound is also hard to make out. The shape of the dulness in his experience was not pyriform or triangular but similar to that of enlargement of the heart. He had been able to map out the shape of the heart itself in many cases in the cadaver in carefully percussing the chest wall and then sticking pins at the edge of dulness and thus he mapped out the exact shape of the heart. The changes in the percussion sound are of great importance; the pericardium sound is not often prominent and is easy to make out when the lungs are retracted away from the heart. If the treatment is other than rest it is of little use. The effu-

sion will increase without the resort to remedies. He used opium for rest, alcohol for stimulant, but did not advise blisters. Ice pack was very well for the comfort of the patient. He tapped seven cases and six successfully and in two was sure he saved life. Removing a small amount of the fluid will often cause absorption of the rest. There is no strict rule when to tap. Each case must be studied itself, but the point of election for tapping is in the fifth space, one to two inches to the left of the left nipple. In one case he withdrew 16 ounces and in another 36.

Dr. James T. Whittaker of Cincinnati, spoke of the latency of the disease, and said it is often not recognized until the postmortem. He thinks that the clear fluid often indicates a tuberculosis. He lets the stethoscope hang in his ear allowing the top just to touch the chest of the recumbent patient. He punctured in every case he suspected; he preferred the second or sixth left interspace as he had gotten fluid there when he could not get it anywhere else. He always feels the heart with a trochar.

Dr. G. L. Peabody of New York, spoke of the importance of selecting the right place for tapping and mentioned one case of his in which he passed the trochar in the sternal cartilage.

Dr. H. A. Hare of Philadelphia, said that the danger of hurting the heart muscle was not very great and spoke of his experience on dogs in which he stabbed a number of dogs in the heart and on examination after death found the wounds healed and little blood in the pericardium. He thought the result would not be fatal unless the heart centers were stuck and this was not likely. He mentioned a case in which tapping a man the trochar had pierced the heart, and later when the man died the wound was found almost healed. He asked the members if they thought digitalis was the best heart stimulant to give in this trouble.

Dr. Rotch of Boston, said that Dr. Hare's work agreed with his own. He said that it was hard to make a diagnosis in these troubles but as the effusion flooded the heart upward the tapping would naturally have to be done below. It is always better to avoid the heart if possible. He said that the space just below the scapula was a good place to tap.

Dr. James Tyson of Philadelphia, thought it was very easy to outline the pericardial effusion and he felt sure that we got the triangular pericardial shape in most cases. He thought that Dr. Shattuck was too literal. He wanted to refer to the utility of the phonendoscope in making the diagnosis. He thought as a means of mapping out internal organs it would prove very useful. We ought not to let the blister go; it will often save tapping. He had never tapped a pericardium but when Dr. Shattuck finished his paper he felt as bold as a lion and ready to tap the first case, but since the others had spoken he had lost his courage.

Dr. A. McPhedran of Toronto said that the myocardial infection should be considered; it was often the chief disease.

Dr. E. G. Janeway thought that we could always make out the pyramidal shape and referred to a case of puncture of the heart in which the patient died.

Dr. Shattuck said in conclusion that there was only one case in which the fluid was not obtained. There were some dry taps but they all afterward proved productive except one.

Dr. M. H. Fussell of Philadelphia, then read a paper on "Pneumonia in Private Practice." The paper embraced a series of cases treated privately in which accurate notes have been kept. They were analyzed and deductions as to mortality, symptoms, physical signs and treatment made.

Dr. J. E. Graham of Toronto, then related "Two Cases of Broncho-Biliary Fistula." The further history of a case of broncho-biliary fistula which was reported at the first meeting of the association. A second attack occurred after an interval of ten years. The patient coughed up large quantities of bile, almost daily for a period of eight months. Great loss of flesh and strength. A cholecystenterostomy. Gall-stones were found. Death from cholemia and hemorrhage. Short notes of some similar cases. Some remarks on the pathologic anatomy of such cases. Notes of a second case of broncho-biliary fistula in which the lesion followed a traumatism.

Dr. Beverly Robinson of New York, then read a paper on "Diagnostic and Therapeutic Considerations with Respect to Certain Diseases of the Upper Air Tract." He spoke of the utility of the laryngoscope and rhinoscope in throat trouble and said that throat surgeons had been largely led away by fads, one of which was that a deviated septum must always be either cut through or perforated. Another one was that the turbinated bodies must be cauterized, cut, etc. In spite of all these fashions these troubles still continued. But the specialist should remember that the nose and throat alone should not be treated but the general health should need attention. Many general practitioners can just as well treat the simple throat

and nose disorders as the specialist, but it is only in special operations and the more delicate manipulations that the specialist should be called in. It should be remembered for instance in an affection of the pharyngeal tonsil rheumatism plays a part so that the salicylates and colchicum are indicated. Thus the specialist and the general practitioner must work together in the treatment of these cases.

Dr. J. C. Wilson of Philadelphia, then read a paper entitled "Nervous Deafness in Diphtheria; a Case." The abstract is:—Follicular tonsillitis in an adult: Moderate fever, occipital headache, tinnitus aurium et cerebri; fourth day, dense pelli-cular exudate upon right tonsil, conjunctivitis, increasing tinnitus and deafness, injection of diphtheritic antitoxin serum; a few hours later, total deafness with slight vertigo, great chemosis; gradual defervescence completed by the thirteenth day, at which date there was partial paralysis of accommodation together with paresis of the extensor muscles of the head, persistent tinnitus, slight vertigo and absolute persistent loss of hearing. The following topics were considered: The rarity of the case, its importance, the antitoxin injection, the general subject of sudden nervous deafness in the infections, theoretical considerations, diagnosis, prognosis, treatment.

Dr. Beverly Robinson of New York said it was an interesting and unique case and very fully reported. It is also interesting from the standpoint of certain cases which he had seen; cases in which the Board of Health diagnosis had rather led him astray. While it is very gratifying to know from the Board of Health that a certain case is not diphtheria, still in a number of cases he had told the parents of the patient that it was diphtheria, and treated it as such. We must pay more attention to the clinical diagnosis than to the pathologic report of one who has never seen the case. Too much importance is paid to the personal investigation of certain individuals who are skilled in technique, but who never see the patient.

Dr. I. E. Atkinson of Baltimore said that in reporting cases it was well to look at them carefully and see that no link in the chain of the history was wanting. In this case the bacillus was not found. Could we account for these symptoms in another way? It might have been some form of septic meningitis, and which looked like deafness of cerebro-spinal meningitis. He had been called in to see a child 14 months old who had a slight rash over the body, and later had a patch on the tonsil. The staphylococcus was found; the temperature was up to 105 and 106. This was reduced by baths. The child finally recovered, but was deaf in both ears.

Dr. M. H. Fussell of Philadelphia also reported a case of deafness with obscure symptoms.

Dr. W. W. Johnston of Washington said this was an era of anomalous cases, and he thought many of them were all due to epidemic influenza, which took on so many different shapes. He thought that Dr. Atkinson's case was certainly influenza, and probably Dr. Wilson's, but this was merely a suggestion. We know how profoundly the nervous system is affected by this disease.

Dr. J. C. Wilson said in conclusion that there was certainly a link missing in the demonstration of this case, but it does not seem worth while to go out of the way to make a diagnosis, although the diphtheritic organisms had not been found. Germicides had been used and the patient had been carefully isolated. He had also seen a great many anomalous cases of influenza, but he had not seen a case like this.

Dr. J. P. Crozer Griffith of Philadelphia then read a paper on "Types of Edema in Infancy and Early Childhood." The author discussed the obscurity which attends many cases of edema occurring at this time of life. He referred first to the possibility of nephritis being present in earliest infancy, and then took up the question of the production of nephritis by congenital syphilis. He reported two cases seeming to be proof of the occurrence of this form of renal disease, and referred to some instances from medical literature. The existence of nephritis in an infant as one manifestation of general septic infection was instanced by the report of a case. Edema consecutive to heart disease and to marantic conditions was then touched upon, and then that going by the name of edema neonatorum. The relation of this condition to sclerema neonatorum was next considered and an instance of the latter reported. He then reviewed the cases of sclerema occurring in America. Next angioneurotic edema as seen in infants and children was reviewed, and the various reported cases abstracted. He reported two cases occurring in his own experience. Finally, instances of edema of entirely doubtful origin were taken up and two unusual cases detailed. He also exhibited some beautiful normal and pathologic specimens in which the colors had been preserved.

Dr. D. D. Stewart of Philadelphia then read a paper on "A Further Communication on the Occurrence of a Hitherto

Undescribed Form of Chronic Nephritis, Unassociated with Albuminuria." This paper was a continuation of those on this subject which appeared in the *American Journal of the Medical Sciences*, December, 1893, and the *Medical News*, April 14, 1894. It dealt with an unrecognized form of chronic nephritis with distinctive symptoms, in which albumin, even in traces, by the commonly employed tests, was persistently absent from the urine, and yet uremic symptoms were common. Although unable to present the result of a necropsy on a personally observed case of this sort, a portion of a kidney removed from one of them in life threw some light on the pathologic condition present.

Dr. H. A. Hare of Philadelphia then read a paper entitled "A Study Concerning the Cumulative Action of Digitalis." He stated that the experiments were intended to test the effects of digitalis on the thickening of the heart muscles. He took twelve young pigs of about the same weight and put six in one pen and six in another. They were fed in exactly the same way. To the first six he gave digitalis in increasing doses until they were taking 15 minims three times a day, the other pigs taking no medicine. The digitalis pigs grew very much larger, were very lively, tried to jump out of their pen and gained about twenty-nine pounds apiece, so that the country farmers noticed their increase in size, while the other pigs continued as before. The postmortem examination showed that the heart muscles were considerably thickened and strengthened. He defined the cumulative action of digitalis as a more or less sudden development of the regular action of the heart with gastric distress. The effect was cumulative, not the drug. He quoted many authorities to sustain his point. He does not believe that the cumulative effect is of an uncanny kind. There are no premonitory symptoms, but it occurs suddenly. He had addressed a large number of questions to physicians asking them if they had noticed this cumulative action, and what form of digitalis they had used and what were the doses. He thought that the action was due to the fact that the drug was more slowly eliminated than it was administered, and believed its effects were stored up, and his belief was that it should not be given more frequently than twice a day.

Dr. William Osler of Baltimore thought that this action was extremely rare and felt very badly to hear one of his few friends in the materia medica brought to trial. He gives it largely and with a free hand, and has never seen the cumulative action, but we all know the dangerous pulse with 40 at the wrist and 80 at the heart. In certain chronic valvular diseases of the heart he had given it for a long time, and thought that the cumulative action was so rare that it might be disregarded.

Dr. E. G. Janeway of New York asked if we attributed the sudden deaths in hospitals to the right cause. He had looked up the records of sudden death, and found in many cases that the patients had been taking digitalis and they had low heart beats and slow pulse beats. The sudden deaths he thought are due to the drug and not to the disease. He thinks that many sudden deaths in pneumonia are caused by digitalis, and he is sure he knows of deaths which have been attributed to Bright's disease.

Dr. Wilkins of Montreal said he had used it and had observed the cumulative action, and mentioned several cases.

Dr. J. C. Wilson of Philadelphia said that sudden death can come from other causes as well as digitalis; he had never seen the cumulative effect and had never given it in pneumonia as a routine measure. He does not give it in fever; it does no good and often does harm. It interferes with digestion. He gave 15 minims three times a day for three or four weeks and observed no effects. He always followed two rules in giving digitalis; one was he stopped it after a few weeks and then began again after a few weeks rest; he also gave it in moderate doses.

Dr. J. T. Whittaker of Cincinnati has seen cases of the cumulative effect, and he has stopped it on account of nausea and vomiting occasionally. In his city it was quite common to give it in the crisis of pneumonia.

Dr. Charles Carey of Buffalo has never seen any poisonous effects from it, and he mentioned several cases which had been taking doses continuing for longer periods with no bad effects.

Dr. A. McPhedran of Toronto asked if these effects were due to the retention of digitalis in the system, or to over stimulation of the heart, and he felt very sure that in cases which were affected by the drug there was also a decreased secretion of urine, which would account for the bad effects.

Dr. H. A. Hare said in conclusion that Dr. Osler had proved just what he did not intend to prove; he wished to state clearly that it was the effect that was cumulative, and not the drug. He thought that the various opinions expressed at this meeting were due to the difficulty in obtaining a uniform preparation of digitalis, for he had examined a number of prepara-

tions and had found that the proportion of active principles, such as digitonin and digitoxin, varied greatly.

THURSDAY, MAY 6—THIRD DAY.

Dr. J. T. Edes of Jamaica Plains then read a paper entitled "The Relation of Neurasthenic Conditions to the General Nutrition," of which the following is an abstract: Gain in body weight and improvement in neurasthenic symptoms usually go together, but there are enough exceptions to the rule to show that the nervous nutrition is something more than a mere sample of the general. The more symptoms approach in character the "fixed idea" of the insane the less amenable are they to the beneficial effect of mere somatic therapeutics. The blood color (Fleischl) of a considerable number of neurasthenic patients corresponded quite closely with that of the employees in the same institution. It was not possible to establish any correspondence between the degrees of anemia and the intensity of nervous symptoms. Measurements of the excretion of uric acid afford no sufficient ground for supposing that neurasthenic symptoms depend in any way upon this substance. There may be such a thing as a chronic uric acid headache, but the ordinary continued neurasthenic headache is not of this character. Indian determinations have not been numerous enough to be decisive, but do not seem to indicate that the poison consists in this substance or in those which may be transformed into it. If neurasthenia is a toxic condition, the poison has not yet been satisfactorily identified.

Dr. James J. Putnam of Boston corroborated his statement and said the neurasthenic patients often looked pale and bloodless when they would have a normal amount of blood and hemoglobin. He thought that Haig's writings were attractive but they were devoid of that critical spirit which one would look for in dealing with such an important subject; there were loopholes for error in every step of his theory. Changes in metabolism are affected by the nervous system and normal and pathologic activities are immediately connected with changes in metabolism. When two subjects are so closely connected it is difficult to say which is the cause or which is the effect or if it is merely a coincidence.

Dr. Norman Bridge of Los Angeles, Cal., read a paper on "Reflex Neuroses of the Abdomen." His object was to set forth from a clinical standpoint a large number of those reflex neuroses or symptoms, some of which are frequently overlooked and some confusing in diagnosis. These reflexes are hard to understand. They give the patient great annoyance and cause suffering and some simulate grave diseases and continue for months and years. A common one is increased peristalsis of the intestines, causing diarrhea. This form is very frequent; it is the diarrhea of the colon and it is hard to understand why the attacks follow so closely each meal when it is probably from the previous meal. He said that emotion and excitement and even diffidence and fear would bring on this attack and these exciting causes were extra abdominal. He referred to several cases in which surgeons were taken with these nervous attacks before performing an operation or clergymen were overcome with diffidence and were not able to fulfil their pastoral duties. This trouble was characterized by a form of gas in the intestines after a meal and there is also some indigestion and flatulence and escape of gas with borborygmi. There was often pain in the head especially in women, which was relieved by a cathartic. Mental excitement will also cause these attacks. Another reflex is a slight sciatic pain on both sides which was relieved after a passage. Another reflex which is commonly called "growing pains" is often caused by an overcrowded condition of the stomach and bowels; a free evacuation will stop it. Prurigo of the legs is another reflex from the same cause and is cured in the same way. He then referred to certain rashes of the skin or urticaria from eating crabs, fish, strawberries, etc. Some attacks, such as asthma, are also reflex in character and are caused by a muscular spasm of the lung. He said that some cases of insomnia were successfully treated by an enema at bedtime.

Dr. William H. Welch of Baltimore referred to urticaria as a reflex phenomenon and spoke of Dr. Gilchrist's work in his laboratory. Dr. Gilchrist has studied the class of cases in which there was a redness of the skin after a slight scratch; he cut out some pieces of skin and found on a microscopic examination that five minutes after the irritation there was a certain amount of serum and emigrated leucocytes present and in fifteen minutes there was a large collection of leucocytes. There must be something outside that attracts the leucocytes and it is not clear what it is. The expression "reflex phenomenon" does not explain it altogether but there must be something in this chemotactic action.

Dr. Charles G. Stockton of Buffalo was interested in two points mentioned. One was post prandial diarrhea which

occurred with sufficient frequency and in a sufficiently regular physiologic course to deserve a name. There was not only hurried evacuation of the intestinal canal after a meal, but later there is gastric anacidity; that is the stomach seems to lose all of its acidity. He has recorded a number of cases in which there was also this reflex, a striking error of refraction of the eye. He does not say that this reflex depends on the the ocular error but he thinks the two must be connected. Another point is painful neuroses in the abdomen and parts below which are caused by a descent of abdominal organs, such as a misplaced kidney. He had seen cures result from fixation of the kidney.

Dr. Francis H. Williams of Boston read a paper on the "Roentgen Rays in Thoracic Diseases." He first spoke of the general principles involved in this X-ray apparatus and described its physical, chemic and physiologic properties. He had found the apparatus especially useful in detecting disease of the lung and he had examined about four hundred cases of lung trouble and had never had any harmful results from the X-rays. He had the patient brought in on a stretcher from the ward and laid upon a table and with the Crooke's tube below and the fluoroscope above he carefully studied the condition of the lungs and heart. He referred to the different powers of resistance of air, water or other media and said that air was more permeable than water. In order to obtain any results from these examinations one must be familiar with the use of the fluoroscope and be acquainted with the appearance of the internal organs in a healthy condition. He showed some beautiful radiographs, clearly indicating some lesions in the lungs and changes in the heart. He had examined principally cases of pneumonia and tuberculosis. He had watched over forty cases of pneumonia and in some the lungs had been normal in appearance for months after an apparent recovery from pneumonia. He showed also carefully the pulsations of the heart and observed that the movement of the heart in beating was more marked at the left side on the base than at the apex.

Dr. R. H. Fitz of Boston then showed some beautiful radiographs of disease of the heart and aneurysm.

Dr. Osborne of the New Haven Medical School reported an acromegaly. A man had come to the New Haven Hospital with an edema of the lower extremities; he grew better and went home. Later he returned and grew rapidly worse and died. He was a man 47 years old and had the disease twenty-three years. He first noticed a ringing in the ears and then there was a gradual hypertrophy of the fingers, toes and of various bones throughout the body. Dr. Osborne exhibited photographs of various parts of the body and of the man as a whole and of the skeleton. He also exhibited some of the bones which showed the changes of the disease. He found that the heart weighed two pounds and nine ounces, which is probably the heaviest heart on record. The thyroid gland was much enlarged and in nineteen cases which he had collected of this disease he found large thyroid glands, and so he thinks that myxedema is closely connected with acromegaly. At the conclusion of his paper the thanks of the Association were extended to him for the exhibition of this case.

Dr. John J. Abel of Baltimore then read a paper on "The Chemical Properties of the Blood-Pressure Raising Constituent of the Suprarenal Capsule." He said that the suprarenal capsule was an organ of vital importance which furnished the blood and vascular system a muscular stimulant. He quoted many authors showing how this gland had been studied and stated that while he had obtained a powder which he exhibited he had not been able to isolate the active principles of the fluid and we do not know exactly what it is.

Dr. William Osler of Baltimore asked if he had examined the commercial products of the market to see if this blood-raising property was present in some of them. He had had several cases of Addison's disease and had had no good effects from remedies so far offered.

Dr. Abel replied that he had not looked into the subject from this point of view but he had no doubt that these commercial products did contain some such substance, as they were very simply made, by drying the gland and pulverizing it.

Dr. Simon Flexner read a paper "On the Occurrence of the Fat splitting Ferment in Peritoneal Fat Necroses." Upon the etiology of peritoneal fat necrosis much light has recently been shed, partly through the findings in cases occurring in human beings and partly through animal experimentation. A study of the cases in the literature would make it appear that the occurrence of fat necrosis was not always due to the same cause. Although infection seems in certain cases to play a part, it is probable that it is not by any means the most important factor. The view has gained ground that the disseminated forms of necrosis met with in the peritoneal cavity, as well as the more circumscribed lesions in the pancreas itself, may

result from a perversion of the pancreatic secretion. Again, since it has been shown that trypsin, when injected into the peritoneal cavity, does not set up this condition, the suggestion that the fat-splitting constituent of the secretion, steapsin, might possibly prove to be the chief cause, has been ventured. In the literature no record occurs of any attempt to demonstrate the presence of this body in the areas of necrosis, and it is possible that investigators were deterred by the belief in its extreme sensitiveness. A suitable human case having presented itself, I undertook to prove the presence of this body in the fat necrosis and its absence from the normal fat. A satisfactory demonstration of this point having been arrived at, I next instituted a series of experiments in order to study more particularly the conditions under which the necroses make their appearance and the length of time the ferment is demonstrable in them. He drew the following conclusions: 1. In peritoneal fat necroses the fat is demonstrable. 2. It is present in the early stages and may disappear later. 3. The ferment is the direct cause, but this can not be proved. 4. The escape of pancreatic secretions is the origin of the necrosis.

Dr. William H. Welch of Baltimore said that several years ago he had brought before the Association a case in which the organisms were present, and it was the first demonstration of the colon bacillus. At that time he made the remark that the organisms had nothing to do with necrosis, and since that this has proved to be true. It is very satisfactory to have these observations so fully confirmed by Dr. Flexner's work.

Dr. A. C. Abbott of Philadelphia then read a paper on "Further Studies upon the Pathogenic Spirilla of the Schuylkill River at Philadelphia," which was the conjoint work of himself and Dr. D. H. Bergey. This was a continuation of the work begun about a year ago, in which he attempted to study some of the organisms of the Schuylkill river. He found that some spirilla were present in the Schuylkill all the year around, also in the Delaware. He had not examined the water of the other rivers, but felt sure that this organism was due to some sewage contamination. He had found 110 varieties of organisms in this water, and he had attempted to classify them, but without any satisfactory results. Some pathogenic organisms were so weak as to be almost non-pathogenic, and some non-pathogenic organisms answered in every other way to the best of the pathogenic tests.

Surgeon General George M. Sternberg, U. S. A., said that these observations at this time, when there was no cholera in the country, were especially valuable. If they had been found at the time of cholera, they would have been thought to be cholera spirilla.

The next papers were "The Effects of Various Metals and Metallic Salts on the Growth of Certain Bacteria," a continuation of a similar paper read before the Association of American Physicians May 30, 1894, by Drs. B. Meade Bolton and W. G. Brown of Columbia, Mo. The zones that are formed by the bacteria around bits of metal laid on plate cultures are due to the fact that the solution of the metal tends to concentrate in one or more zones. Where the concentrated zone of the metal is formed the bacteria fail to grow. Metallic salts act in the same manner as the metals. The more soluble the salt, the more pronounced the action. In the zones where the growth is more pronounced than on other parts of the plate the colonies are usually fewer, but larger in size.

"On the Appearance of Certain Amebic-like Bodies in the Blood of Vaccinated Monkeys (rhesus) and Children and in the Blood of Variola. An Experimental Study," by Dr. Walter Reed, Washington, D. C. Following the introduction of Koch's improved methods, the search for the specific causative agent of vaccinia has been made especially along the line of bacteriologic research. Notwithstanding many claims of positive results, these have in the end proven groundless. During the past ten years, and more especially during the last half decade, the attention of investigators has been turned toward the possibility of the animal nature of the parasite. Van der Loeff, L. Pfeiffer, Rieck, and more recently Ogata, have described minute bodies always present in vaccine and variolous lymph, which they assign to the sporozoa. The first attempt to cultivate the supposed parasite of vaccine lymph was made in 1892 by Guarnieri, who used the cornea of guinea pigs and rabbits for this purpose. After forty-eight hours, epithelial scrapings from the inoculated cornea, suspended in a hanging drop of aqueous humor, showed little shining, slowly ameboid bodies, often with irregular margins, within the epithelial cells. Guarnieri considers these bodies to belong to protozoa, and calls the parasite *citoryctes vaccinae*. These observations have been confirmed by L. Pfeiffer, von Sicherer, Clark and E. Pfeiffer. Ferroni and Massari have failed to confirm Guarnieri's observations. In 1894, L. Pfeiffer reported the finding in the blood of vaccinated children (seventh day), and

calves (fourth day), and in the blood of variola, ameboid cells (provided with pseudopodia) one-half the size (in the calf), of a red cell, and (in the child), one-fourth the size of a red cell. These bodies are not intracellular, but swim free in the blood. They have a nucleus, and sometimes flagella—which can be stained—appear during the stage of fever and disappear with this. My own experiments confirm in some respects Pfeiffer's observations. Bodies of a corresponding size, and ameboid in character, appear in the blood of vaccinated monkeys about the seventh and disappear about the twelfth day. The same bodies are found in the blood of vaccinated negro children, but were much more difficult to find in the blood of white children, and in several cases of the latter could not be discovered. Bodies of a like nature, though differing somewhat, were found in the blood of three smallpox patients during the height of fever, disappearing later.

Dr. F. H. Williams of Boston, read a paper on "An Epidemic of Cerebro spinal Meningitis caused by Diplococcus Intracellulularis Meningitidis" (Jaeger). This was a study of a slight epidemic of this disease in Boston City Hospital. He had attempted treatment by tapping the spinal sac at the second lumbar vertebra and the fluid which he had obtained had been examined by Dr. Councilman. He would report.

Dr. W. T. Councilman of Boston said that he had studied the fluid from these cases and had found the organisms which Weichselbaum had first described in Vienna. Some of these cases came from the extension of the disease from an acute otitis media. He had found staphylococci, diplococci and streptococci. He had examined seventy-seven cases in which the organisms had been found and he had found it in nine out of twenty cases in the City Hospital and in sixteen out of thirty in the Children's Hospital. He had also examined the other organisms; he had found the spleen enlarged in some cases; he had also examined the organisms in the nasal sinuses and in one case in an abscess of the tonsil. The organisms grow best on blood serum.

Dr. Guit  ras had seen two cases which he will record later. One case was a nurse at the hospital and one was a newborn child. The organism was found in the blood and there were no other lesions.

Dr. Williams said in regard to the lumbar puncture that it was very valuable in the diagnosis, but the relief was only temporary and about 70 per cent. of the cases died. The fluid was withdrawn gradually.

Dr. W. T. Councilman said that the exudation in quite a number of cases had a tendency to extend along the course of the cranial nerve and in one case it was visible to the naked eye along the optic nerve extending almost to the eye. In some cases that recovered there was loss of both sight and hearing, and the eye affection was found to be due to an infection from the meninges.

Dr. F. C. Shattuck of Boston said he had seen about fifteen cases and his experience had been that not a child died and not an adult recovered.

Dr. A. A. Smith of New York then reported a case of "Levant Fever." He said this disease has a great many names but this was the one most generally used at the east end of the Mediterranean Sea, where the disease was prevalent. His patient was a woman who lived at Beyrout and her husband was a physician and had seen many cases. She was taken sick on July 4, 1896 and he saw her first in January, 1897. He said the fever would continue for three or four weeks and then there was freedom from fever, and then there was a relapse which was more severe than the previous attack and so on with intervals of freedom; the temperature sometimes being normal, but the fever still continuing in this case. It was resistant to quinin. He exhibited some beautiful drawings of the blood and of the organisms which he said caused this disease and it was characterized by an obscure pigment. He said the parasite was much like Laveran's organism but was not the same thing. In reply to Dr. Shattuck, who asked if he had used arsenic, he said he had used everything except phenic acid, and in reply to Dr. Dock, who asked if there were many organisms in proportion to the blood, he said there were a few now but there had been more formerly.

Dr. Dock said that one would think this was a form of malarial parasite as described by some of the Italian writers. The absence in pigmentation and segmentation would do away with the resemblance to the malarial parasite. We do find it in some fever bodies which looked like the malarial parasite and when Laveran published his observations some German writers said that they could find these bodies in other diseases. They looked too much like the protozoa and the appearance of the colored drawings made him very skeptical. We should be slow in believing that the parasite of Levant fever has been described.

Dr. A. Jacobi then read a paper on "A Case of Adenoma of the Liver with Complications."

Dr. B. K. Rachford of Cincinnati then read a paper on "Lithemia," in which he proposed the following prescription: Sodium sulphate 120 grs. wet salts; sodium phosphate 30 grs. wet salts; sodium salicylate from oil wintergreen 10 grs.; tr. nux vomica gtt. 3; aqua q. s. $\frac{3}{4}$ iv. CO₂ q. s. Take before breakfast. Sodium sulphate 30 grs. dry salt; sodium salicylate from oil wintergreen, 10 grs.; magnesia sulphate, 50 grs. wet salt; benz. lithia, 5 grs.; tr. nux vom. gtt. 3; aqua q. s. $\frac{3}{4}$ iv. CO₂ q. s. Take before breakfast.

Dr. James T. Whittaker of Cincinnati then spoke of the "Earliest Possible Recognition of Tuberculosis." He said it was very important to recognize the disease before the first physical signs appeared. He then reviewed the history of the disease, the prominent symptoms and the treatment which had been used heretofore. He said the use of tuberculin was not sufficiently appreciated and in fact many persons objected to it because they said that a reaction was obtained when tuberculosis was not present. Klemperer said that we had no right to diagnose tuberculosis just because we found bacilli in the body, but this is a poor argument. The use of tuberculin will show the presence of bacilli in the body. In giving this he first administers 5 milligrams, then 10, and as much as 2 centigrams. Virchow's objection was that tuberculin aroused latent tuberculosis and caused the bacilli to spread over the whole body and to disseminate the disease, and it was said to appear more frequently in cases treated with tuberculin. We must not use it in too large doses or too late in the course of the disease. There is a prejudice against it, but it is a valuable remedy. Trudeau, Denison and Klebs all use it in a modified form, and he had had success with it. He had used it in 1,000 cases and had never seen a bad result from its use and regarded it as a safe means of diagnosis. He reported quite a number of cases and said that Klebs, Jr., stated that he got a reaction in cases of chlorosis.

Dr. Shattuck said that it had been used in the City Hospital and he had seen no harm come from it. One difficulty was that persons reacted in which there was no evidence of tuberculosis and in whom no reason for reaction could be found. He knew a patient who had a tumor in the epigastrium and reacted typically; later she died; the autopsy showed a cancer of the stomach and other organs and also at the top of the right lung was a small cheesy nodule which had healed up and had given no signs or symptoms of the disease. If tuberculin is regularly used the number of cases would increase and also the number of recoveries from the disease.

Dr. A. L. Mason of Boston had used it to a considerable extent in the Boston City Hospital and had found it especially valuable in determining whether to operate or not in cases of doubtful tuberculous peritonitis in which a laparotomy was indicated.

Dr. E. A. de Schweinitz of Washington read a paper on "Some Products of the Tuberculosis Bacillus and the Treatment of Experimental Tuberculosis by Antitoxic Serum." A description was first given of two of the products obtained from tuberculosis cultures, one of these a crystallizable acid and its probable bearing upon the progress of the disease. A brief sketch came next of some experiments showing the relationship of the attenuated tuberculosis bacillus to immunity followed by a description of some methods for the production of antitoxic serum and its experimental application. He had tried also injections on the live culture but had found that the serum was the best. Horses are the most favorable animals to use. At no time has his remedy produced toxic effects, as it has been very carefully made.

Dr. D. D. Stewart of Philadelphia read a paper on "The Occurrence of Primary Renal Tuberculosis." The diagnosis, frequency of occurrence, and source of infection, of tuberculosis of the kidney as a primary affection, was discussed, and an unreported case of Dr. Stewart's, in which a limited primary tuberculosis of the pelvis of the left kidney occurred, in a case of chronic nephritis.

Dr. H. A. Hare of Philadelphia read a paper on "A Further Study of some of the Untoward Effects of the Bromids." He referred to Weir Mitchell's paper read about a year ago before the Association and said that at that time he thought that Mitchell's work was original; but since then had found that the subject was an old story to all medical superintendents of insane asylums. He addressed a number of letters to physicians in charge of insane asylums asking if they had noticed bad effects from the use of the bromids and to give their experience. He received a number of replies in which many said that acute maniacal delirium was quite common after the use of the bromids, especially in cases of epilepsy, and these nerve storms are often accompanied by homicidal and suicidal mania.

He thought that the sodium salts was better than potassium salts and said that the poisonous effects are often due to the potassium and not to the bromin.

Dr. H. C. Wood of Philadelphia thought that much of the belief of these statements of medical superintendents of insane asylums rested on insufficient basis. For instance a man has epilepsy and bromid is given him. The bromid does not cause the mania but throws the attack into another channel. He preferred ammonium bromid and said that a quack in New York had succeeded in relieving a case which Dr. Weir Mitchell had failed to benefit and he found in analyzing the medicine, that this quack used the ammonium bromid.

Dr. I. E. Atkinson of Baltimore thought that the bromid of potassium was too much used, that many of these bad attacks would have been observed before and would have occurred more frequently. He could hardly believe that this was the cause of what Dr. Hare says it was. It must be in part an idiosyncrasy.

Dr. Hare said in conclusion that almost every asylum physician had asked him to impress upon the general profession the dangers of giving too much bromid and said that when a case entered their asylum the first thing to be done was to rid the patient of the bromid.

(To be continued.)

Kentucky State Medical Society.

Abstract of the Proceedings of the Forty second Annual Meeting, held at Owensboro, May 5, 6 and 7, 1897.

(Concluded from page 913.)

SECOND DAY—AFTERNOON SESSION.

Dr. W. L. RODMAN of Louisville contributed an excellent paper on lithotomy for stone in the bladder.

Dr. JAMES B. BUDLITT of Louisville made some remarks on hospital beds and demonstrated a new method.

Dr. A. M. CARTLEDGE of Louisville reported a case of Caesarian section.

Dr. R. B. GILBERT of Louisville read a paper on

SUMMER DIARRHEA IN INFANTS.

Under the name of summer diarrhea, he discussed that form of diarrhea which is so prevalent in hot weather, and which carries off so many infants every summer. A revision of the nomenclature of enteric diseases of infancy was needed at this time, especially on account of our constantly increasing knowledge of the etiology of these diseases. The nomenclature should be simplified in order that physicians in different parts of the country would, by using identical names, be the better able to aid one another in their investigations.

The typical summer diarrhea begins with the first spell of hot weather, when the temperature rises to 70 degrees daily for a week or ten days consecutively. The summer season, in a general way, is a prime factor in the causation of this annually recurring diarrheal epidemic. The solar temperature does not of itself cause the diarrhea, as is evident from the fact that hot weather prevails in the rural districts as well as in the cities, and yet the disease is very rare in the country. Doubtless the poison generated by the growth of bacteria in milk is the direct cause of a majority of the cases of diarrhea in infants. It is not surprising therefore that Dr. Starr has given the disease the significant name of "sub acute milk infection." It may be briefly stated that the annually recurring epidemics of summer diarrhea are mainly due to the action of poisons generated by the growth and multiplication of bacteria which are taken in by the air and food, chiefly milk. Acid fruits and vegetables, and milk containing an excess of casein fed to infants, will occasionally cause diarrhea. The symptoms of this form of diarrhea are easily recognized. The prognosis will be influenced by the surroundings of the patient and family history.

From what we know of the causation of this disease, proper preventive treatment would save many lives. Fresh air and wholesome food are essential as preventive measures, and indispensable as curative measures. The question of infant feeding is perplexing. An infant sick of an inflammatory diarrhea should, for the time being, be taken off milk diet entirely. The intestinal bacterial flora multiply and thrive best in milk. If milk be excluded from the food the character of the germs rapidly and radically change. Milk should be excluded for, at least, three days, in which time the diet should consist of fresh egg albumin with a small portion of common salt. The white of a fresh egg beaten up with crushed ice and "a pinch of salt" is most acceptable to the stomach and is sufficient nourishment. Pure sterilized water may be given freely. Soups, meat broths and starchy mixtures should be rigidly excluded. An old fashioned, and yet excellent and palatable, food is fat country bacon. Bacon

broiled half done will be eaten by an emaciated infant with a hearty relish, and the author has seen it work wonderful changes both as a diet and as a remedy in protracted summer diarrhea.

SECOND DAY—AFTERNOON SESSION.

Dr. W. R. BLUE of Louisville read a paper entitled

SPECIFIC URETHRITIS, ITS POSSIBILITIES AND PREVENTION.

The author said that this disease was first described by the Chinese emperor, Hoang-Ty, 2637 B. C., and from that time until the present this misnamed disease, its complications and sequelae, had been written and talked about more than any affection known to the profession. The researches of such men as Tait, Martin and Olshausen had confirmed the correctness of Noeggerath's views, who considered specific urethritis incurable. Early in life the essayist heard an eminent surgeon, one of his teachers, say that if he were doomed to have a venereal disease, he would rather have syphilis than specific urethritis. The speaker marveled and disbelieved, but said that he now knows that if his teacher included women in his thoughts of the subject, he spoke truly. Syphilis was a relatively harmless disease. It might cause discomfort and distress, and even pain, but he doubts if it ever kills women.

The author quoted from the contributions to the literature of specific urethritis by Lawson Tait, Olshausen, Martin, Neisser, Finger, Lydston and several others.

Dr. FRANK C. WILSON of Louisville considered

SERUM THERAPY IN TUBERCULOSIS.

The author's experience with the use of antitubercular serum and the favorable reports of a large number of physicians who have been using it, leads him to the following conclusions:

1. That we have in antitubercular serum a remedy potent for good when used in suitable cases and with proper antiseptic precautions in its administration.

2. In the earlier manifestations of tubercular infection the results are uniformly good.

3. Even in the more advanced cases, where the microscope fails to disclose the presence of other microorganisms, we may expect marked improvement.

4. Even in cases of mixed infection we may note the disappearance of the tubercle bacilli, although the other microorganisms may continue to multiply unless combatted by appropriate means.

5. In glandular and lymphatic tuberculosis the reduction in size of the enlarged glands may be noticed, but intestinal secondary infection is very apt to occur, and this is influenced very little by the serum.

6. The use of anti-tubercular serum must not preclude other and valuable methods of treatment, and the use of other forms of antitoxins appropriate to the individual cases.

Dr. FRANK BOYD of Paducah read a paper on direct illumination of the pleural cavity for the location of foreign bodies, and reported an interesting case.

Dr. T. C. EVANS of Louisville contributed a paper on

ACUTE SUPPURATIVE INFLAMMATION OF THE MIDDLE EAR.

Before speaking of acute inflammation of the middle ear, he briefly mentioned a few points in regard to its anatomy. Acute inflammations of the tympanic cavity are usually divided into acute catarrhal otitis media, and acute suppurative otitis media; yet the distinction between the two is often so small as to make the differential diagnosis difficult or even impossible. In acute catarrhal otitis media there is hyperemia and swelling of the mucous membrane lining the tympanic cavity and covering the ossicles. This is followed in a certain proportion of cases by an exudation of serum and mucus into the middle ear, and is then spoken of as an exudative catarrh. The disease is common to all ages, but it is much more frequent in childhood. It is caused by diseased conditions of the mucous membranes of the nose, naso pharynx and pharynx. Adenoid growths probably head the list, and then follow the exanthematous diseases, as scarlet fever, measles and diphtheria.

The indications are to relieve pain, to remove the exudation by paracentesis or by absorption, to restore the proper tension of the membrana tympani and ossicular chain, to prevent, if possible, a recurrence of the trouble by the removal of the cause. Unless pain is unusually great, it can be controlled by the application of heat, either irrigation with hot water, or the application of hot water bags or hot salt bags. Poultices are unsatisfactory, uncleanly, and possess no virtue aside from the heat. Every precaution should be taken both before and after the paracentesis to prevent infection, otherwise we will have a purulent instead of a catarrhal otitis media.

The proper tension of the membrane is restored by inflation through the Eustachian tube, preferably by the Politzer method.

The inflation relieves the feeling of discomfort, if not the actual pain, increasing the hearing, lessens the intra-tympanic congestion, as well as the tinnitus. Inflation should be practiced every day in the beginning of the attack, as the trouble begins to subside, two or three times a week until recovery is complete. As the acute otitis subsides, the attention of the physician should be directed to the condition of the nares, nasopharynx and pharynx, and any obstruction to free nasal respiration should be removed.

The essayist then dwelt upon the surgical treatment of suppurative inflammation of the middle ear, saying that the location, extent and direction of the incision had not received the attention its importance demands. Too much had been left to luck, too much to a wild stab in the dark, without reference to either anatomy or physiology. Such reckless incisions made without regard to location, extent or direction, not only failed to relieve pain or afford drainage, but might permanently impair the integrity of the ear by fracture of the ossicular chain.

Dr. J. A. STUCKY of Lexington followed with a paper on

CHRONIC SUPPURATION OF THE MIDDLE EAR,

in which he said that this disease had long been a "thorn in the flesh" of both the general practitioner and specialist, and the old idea still prevailed among some that "a discharge from the ear should not be interfered with, that nature will effect a cure," etc. Acute suppurative otitis media, if not carefully and intelligently treated, as a rule results in chronic suppuration, and the larger per cent. of these cases are undoubtedly the result of lack of proper attention to the first "earache and abscess in the ear" in childhood.

The author believes the causes of chronic otitis media to be: 1, retention of pus; 2, chronic disease of the naso-pharynx; and infection primarily takes place through the Eustachian tube. He thinks the middle ear is rarely infected through the external auditory canal, except as a result of traumatism or extension of an external otitis to the drumhead.

Why we should tolerate the presence of dead bone in the tympanic cavity, he could not understand, and from the results obtained in thirty-six cases in which he had removed one or both ossicles and curetted the attic, he is convinced that ossiculotomy, if caries exists, is not only the most conservative, but the most rational treatment for the majority of cases of chronic suppuration of the middle ear. The object to be attained is the thorough removal of necrotic and carious matter, and to obtain perfect drainage, and I believe this can be successfully done through the auditory canal. Ossiculotomy, when thoroughly done, affords efficient drainage, and renders thorough cleansing easy. As a result, material improvement is noted in the hearing by exposing the stapes to sound vibrations, unless the latter is immovable on account of adhesions. In every case we should be prepared to do the Stache-Swartz operation, if we find that necrosis has extended into the mastoid cells, or if on account of a narrow meatus and canal we find it impossible to obtain thorough and complete drainage and render cleansing and topical applications easy. The operation is done under general anesthesia, and the patient is up and out attending to his duties, usually in from two to four days.

The after-treatment consists of cleansing and facilitation of drainage by use of narrow strips of gauze introduced well into the cavity. This is to be kept up until the parts are thoroughly healed. The results obtained in the thirty-six cases operated upon by the essayist were: Cessation of the discharge; relief of fulness, dizziness and general uneasiness, especially in the diseased ear; slight to marked improvement in the hearing, and improvement in general health.

THE INTRACRANIAL COMPLICATIONS OF SUPPURATIVE DISEASES OF THE MIDDLE EAR.

This was the title of a paper by Dr. J. MORRISON RAY of Louisville, which was read by Dr. Wm. Bailey in the absence of the author. Intracranial complications of ear diseases were divided into: 1, those affecting the membranes surrounding the brain, as meningitis, or subdural abscess; 2, those affecting the substance of the brain, either the temporal lobe of the cerebrum or the cerebellum, producing pus accumulation; 3, those in which pyemic symptoms result from the pyogenic process perforating the walls of the lateral sinus in the sigmoid groove.

Abscess of the brain tissue resulting from the ear is generally found to involve the temporal lobe of the cerebrum by extension from the middle ear through the roof of the attic or antrum, opening directly into the middle cranial fossa; or the cerebellum by necrosis occurring through the back wall of the mastoid, or through the internal auditory meatus, into the posterior cranial fossa. The frequency with which the abscess is situated in the cerebrum indicates the proneness for the suppuration to extend

through the tympanic roof. Barr, in 76 cases found abscess 55 times in the temporal lobe, 13 times in the cerebellum. Keorner, of 100 cases, found 62 in the middle cerebral lobe, 32 in the cerebellum, and in 6 cases both the temporal lobe and the cerebellum were involved. The investigations of Gowers and others further show that nearly three-fourths of all brain abscesses are of otic origin.

In considering an operation, the primary seat of the suppurative process should not be overlooked; therefore the first step should always be to open the mastoid antrum and cells, and thence the middle ear, getting directly at the source of pus formation. If a sinus is found leading through the roof of the antrum or attic, this may be enlarged and the brain cavity opened, or an opening can be made with the trephine. This is best made one and one-half inches above and an inch behind the external canal. In this way we are able to explore the temporal lobe, the most frequent seat of abscess. If, after entering the mastoid, an opening is found leading toward the sigmoid fossa, it is better to enlarge this and lay bare the lateral sinus, as it lies in the sigmoid depression. If evidences of pus surrounding it are apparent, and if pulsation of the blood column is absent, the sinus should be opened and the thrombus thoroughly removed.

Pritchard advises the following in all cases: 1, thoroughly open the antrum and explore the mastoid cells; 2, failing to find sufficient evidence to account for the symptoms, the wound in the skull should be enlarged backward, expose the middle and posterior fossae above and below the lateral sinus, which should be explored by means of a hypodermic syringe, and subdural abscess looked for; 3, if a clot is found in the sinus, the internal jugular should be tied, the sinus opened and thoroughly cleared of its contents; 4, if suspicion of cerebral or cerebellar abscess exists, exploratory puncture should be made, and, if pus is found, it should be evacuated.

Dr. S. LAMBERT of Owensboro read a paper entitled
ENDOCARDITIS, A SECONDARY CAUSE IN THE PRODUCTION OF VALVULAR DISEASES OF THE HEART.

Endocarditis is always a secondary disease, the result of the action of some infectious process, for it is now an established fact that it results from the colonization of microorganisms of infectious diseases upon or beneath its surface. To have an endocarditis, we must have a preceding diseased condition or cause. This cause may be the organisms themselves or their toxins. It is the character and location of the morbid process that the author wishes to impress more than the primary or secondary effect. Endocarditis on special places of the valves is often encountered, but the author doubts if ever a general endocarditis occurs by reason of traumatism. Special diseases more often produce it than others, and what is more peculiar, the mitral and aortic valves are almost exclusively the ones to suffer. Furthermore, it affects the mitral valve on its auricular side and the aortic valve on the ventricular side.

Dr. JAMES T. RINEHART of Springfield followed with a paper entitled

TREATMENT OF PUERPERAL INFECTION

and reported cases. He first considered prevention as the most important part of the treatment. Secondly, he dwelt upon the curative treatment of puerperal infection. The preventive treatment, said the author, sums itself up in one word, asepsis, no matter how it may be attained. The physician should never undertake a case of labor without having himself free from all germs of infection. If he has been attending such a disease as erysipelas, he should thoroughly disinfect himself and make an entire change of clothing.

In closing, the author referred to the administration of hypophosphite of sodium. He believes he has received benefit from it in two and a half grain doses in these cases, repeated at intervals of three to four hours. It seems to act as a blood antiseptic, and as an eliminative as well. It is used by physicians in the South to prevent malarial intoxication. In like manner, the essayist believes it exerts an antiseptic action against blood infection in cases of puerperal sepsis. He believes it is especially useful in phlegmasia alba dolens.

Dr. LEON L. SOLOMON of Louisville read a paper on "Proprietary Medicines—Evils of the Profession."

Dr. J. T. DUNN of Louisville read a paper on "X Rays in Surgery," and reported several interesting cases. He also exhibited several skiagraphs of cases showing the location of foreign bodies imbedded in the tissues. These cases were operated upon and the foreign bodies removed with excellent results.

The following officers were elected for the ensuing year:

President—Dr. Joseph M. Mathews, Louisville.
First Vice-president—Dr. W. W. Richmond, Clinton.
Second Vice-president—Dr. B. M. Smock, Oakland.

Treasurer—Dr. J. B. Kinnard, Lancaster.
 Permanent Secretary—Dr. Steele Bailey, Stanford.
 Librarian—Dr. Frank Boyd, Paducah.

After resolutions of thanks to the president, secretary and treasurer for their efficient services had been adopted, the Association adjourned to meet in Maysville in May, 1898.

Medical and Chirurgical Faculty of the State of Maryland.

Ninety-ninth Annual Session, held April 27 to 30, 1897.

FIRST DAY DAY SESSION, 12 M.

Dr. Osler delivered the president's address entitled, "The Functions of the State Faculty." This Society, which was incorporated in 1798 and called a Faculty, has only one other counterpart in the English-speaking land, that is the Faculty of Physicians and Surgeons at Glasgow. The Medical and Chirurgical Faculty was formerly a licensing body; the Glasgow Society is also a licensing body, but the word "faculty" at the present day is more exclusively applied to indicate men engaged in teaching. Physicians have less appreciation of the value of the organizations than the members of other bodies, and in large cities weakness results from the breaking up of cliques and coteries, the interest of which takes precedence over others of wider and more politic character. Jealousies and misunderstandings are not unknown and there is a every-man-for-himself influence against which this Faculty is protesting. No class of men needs friction so much as physicians; no class gets less, as the daily round of the busy practitioner tends to develop egoism of the most intense kind, to which there is no antidote. A few set-backs are forgotten, all mistakes are often buried and ten years of successful work tends to make a man too dogmatic and intolerant of correction and abominably self-centered. To this mental attitude a medical society is the best corrective and a man misses a great part of his education who does not get knocked about a bit by his colleagues in discussion.

The Faculty has given us today a program which is varied and interesting and which should arouse in you a desire to participate in the discussion. These are days of unification and consolidation and the question has been raised by several members whether the usefulness of the Faculty could not be enormously increased by uniting as sections of the Faculty of various medical societies at present in existence in this city. It would add strength and dignity, and it would make the State Faculty much like the New York Academy of Medicine, or the Philadelphia College of Physicians. The county members could often take part in this extended meeting and in that way the relationship with the Faculty would be closer than it is at present. Unlike many other State organizations this Faculty has an important library, which was founded early in 1830. These books are valuable. A physician who does not use books and journals, who does not need a library, who does not read one or two of the best weeklies or monthlies soon sinks to the level of the cross-counter dispenser. To maintain a library costs money and the members in many ways can help by bringing in new members and by joining the Book and Journal Club of the Faculty. Charles Frick was a benefactor to the library, the men who honored his name have been most liberal in contributing. The Faculty will soon celebrate its centennial and in two years, when that event takes place, not only should the small debt for our building be wiped out, but a large amount should be subscribed from physicians and from friends of physicians to enable us to put up a larger building and strengthen our society. Many of us earn a modest competence and can afford to contribute in a way to the State Society's support.

Dr. E. N. Brush, Superintendent of Sheppard Asylum, then made some remarks on the "Condition of the Dependent Insane in Maryland and Suggestions Concerning their Better Care." He said that the insane were the children of the State and as such should be taken care of by the State. The number of the insane in Maryland is hard to say, but probably about two thousand. A great many of them are in jails and almshouses and are under such mechanical restraint, but if in a hospital it would be considered a reflection on the institution. The State lunacy laws are bad. No sane person should be sent to a lunatic ward. Commitments should be made under very strong and plain laws and the State should exercise full supervision over the dependent insane. The proportion of attendants to the insane was entirely too small.

Dr. Henry M. Hurd of the Johns Hopkins Hospital made some remarks on the "State Supervision of the Care of the Insane and the Inspection and Regulation of Institutions." The Lunacy Commission is suffering from defective laws; the State should see that care is taken of their insane for the protection of society at large as well as for the

persons insane. A large sum of money has been appropriated for the insane and it is due the tax-payers to see that it is properly expended and during a person's insanity his property should be well managed. If the State undertakes to care for the insane the work should be done well. The executive officer of the Lunacy Commission should give his whole time to his work and carefully examine all institutions and almshouses. Then there are no reliable statistics. The Commission report says the insane are clean and comfortable, but nothing is said about the treatment. They require the best medical attention and professional nursing. The nursing of the insane in Bay View Asylum is commended by the Commission, yet every one knows that there is a large number of insane and few attendants and the nursing is very faulty. No State is so lacking in its laws relative to the care of the insane as Maryland. At least none of the Northern States. The almshouse is no place to keep insane persons. The physicians to these almshouses are usually appointed by politicians and take very little interest in their work. As these cases are often curable there should be something more done than simply giving them food and clothing and letting them roam around.

Dr. William Lee, Secretary of the Lunacy Board, then read a paper on the "History of the Steps taken for the Amelioration of the Condition of the Insane by the Lunacy Commission since its Organization." He referred to the amount of time which was given to the discussion of this subject before the Faculty four years ago, and then gave a brief history of what had been done. The Lunacy Commission was organized in June, 1886, and immediately sent out to every public institution for the insane in Maryland, including almshouses, notifying them of the formation of this Commission and the proposed visit to each institution in the State. In October of the same year the first quarterly meeting was held and the reports read showing what was demanded of county almshouses for the care of the insane. Blank forms were furnished each almshouse to be used in making reports of the mental insane or idiotic. Since this time institutions where insane were kept have been changed, new asylums having been erected and altogether great improvements have been made. In the second year a resolution was passed that hereafter all plans for new asylums should be submitted to the Lunacy Commission. Feeling that the institutions of the State were not large enough to accommodate a great number of the insane, the Commission obtained more money and made an addition to the Maryland Hospital for the Insane. The inmates were also allowed the use of the mails. Night attendants were also provided to prevent suicide, and in 1888 the asylum and training school for the feeble-minded was erected at Owings Mills. After five years of existence the Commission was able to say that no one was unduly restrained or secluded in any institution in the State. Separate buildings were then erected for the criminal insane and suggestions for building a hospital for the epileptic insane were also made. The need of a detention hospital was especially recommended and precaution was taken against outbreaks of fire. The Commission called attention to the need of a reformatory for the need of the inebriates.

Dr. George H. Rohé then submitted a paper on the "Economics of State Care."

In the discussion which followed Dr. George J. Preston said that the subject was of far too much importance to let pass by. He remembered ten or twelve years ago Dr. Savage of London, the well-known alienist, told him that the classification of the insane in Maryland was most remarkable, being divided into white and black. He had reference to Bay View Asylum, which in its early days was large enough, but the insane department of which has grown out of date. There is much to be done for the insane. The State of Maryland is very far behind in their treatment. The number of insane is a matter of doubt; we should be able to say exactly how many there are, especially if we are to have a hospital for acute and chronic cases. This all means a great deal of work for some one. These papers will be productive of some good. If the profession does not take an interest in the insane no one else will, and if the profession does, then the result will be felt.

Dr. Charles G. Hill does not think the aspersions against the Lunacy Board are warranted. We have much to do yet to help the insane in Maryland, but that this State is behind all others we very much doubt. Some of the northern and wealthier States may treat their insane better, but on the whole we take better care of ours than many others. Again, reflection upon the law he thinks is all wrong, for he thinks the laws have been well kept and no sane person has ever been detained as insane. But there are plenty of persons who are supposed to be sane who should be confined. He knows of quite a number of paranoiacs in this city.

Dr. J. C. Clarke said that he thought the insane were very

well cared for in Maryland and that the laws were well kept.

Dr. I. E. Atkinson thinks the discussion is not taking the course it was intended: it is not a charge against any one; he knew that the care of the insane was not perfect, but he was surprised to hear Dr. Hurd say that things were as bad as he stated and can hardly believe that the condition of affairs were so bad.

Dr. Mary Sherwood said there was great need for a better care of the insane at Bay View Asylum. She said there was sometimes only one, two or three attendants to sixty patients. There were 400 in the insane department and also 100 more harmless imbeciles who were scattered throughout the building.

Dr. Smart considered the commitments faulty and thought the laws ought to be changed.

Dr. Lee—Some said it was very difficult to get the statistics, as if the Board was at fault. It is very hard to get statistics anywhere. The blanks are distributed and sent to the superintendents of each asylum, or to the physician of each almshouse, and if he would attend to his business and promptly return these blanks filled, the statistics would be very complete. It is only the Board's duty to inspect the statistics which they receive from the heads of the different institutions. Most physicians to the almshouses take no interest because they are politically appointed and from these he is to get statistics.

Dr. Brush said that in order to make any progress we would first have to educate the profession and then the profession would have to educate the public. He referred to a visit he had paid Bay View Asylum several years ago at the request of the Mayor of Baltimore and spoke of the crowded condition there and lack of attendants.

Dr. Osler said that if the Committee from the Faculty and from the Neurological Society would go down to Annapolis and confer with the politicians their results would be better.

Dr. S. J. Fort then related a case of habit spasm in a boy 13 years old, who about a year before had been treated brutally by a teacher who took him by the heels and shook him with his head down until he had a "crick" in his neck, at the same time giving him severe fright. He was a strong well looking boy who from this treatment had developed a general jerking of almost every muscle in the body particularly of the legs, neck and shoulders. He laughed at anything and often at nothing, he talked incessantly and was rarely still. His sleep was unbroken. He was taken to Dr. Fort's Asylum for the Feeble-Minded and was given perfect freedom and allowed to run around the place so that he gradually improved and is now almost well. He was given no medicine. His mother was said to be very nervous, but there was nothing very strong in his family history.

Dr. A. L. Hodgdon then read a paper on "Alcoholic Insanity and Excess." It was discussed by Dr. Charles G. Hill.

EVENING SESSION, 8 P.M.

The special subject for evening, "Peritonitis," was opened by Dr. Simon Flexner, who said that the subject was an extensive one and the manner of approaching it was difficult. He spoke of the pathology and etiology. The peritoneum is able to resist a great deal; it can dispose of foreign substances up to a certain limit. Not all parts of it carry on absorption but only a limited part, that near the central tendon of the diaphragm. Stomata between the endothelial cells do not exist, but fluids may pass through and even solids sometimes escape; they are carried through by cells. Some substances interfere with this power of absorption but quite an amount can be absorbed and even bacteriologic organisms can be destroyed as long as the peritoneum is intact. At the Johns Hopkins Hospital he had a careful record of 110 cases of acute peritonitis in man with the bacteriologic examination and these cases were divided into certain groups. We must admit first of all an idiopathic or primary peritonitis: twelve idiopathic cases were in this number. In all these cases there were preëxisting conditions predisposing to this peritonitis such as chronic heart disease, chronic kidney disease, etc. Persons subject to chronic diseases are more liable to bacteriologic infection. In several cases the peritoneum was one of several serous surfaces involved in the body. There were thirty-three cases of exogenous peritonitis in which the invasion was from without and in those cases laparotomy had been performed and certain operations had been done. Finally there is an endogenous form in which the infection is from within, it is an intestinal form. Fifty out of 110 cases which he found recorded were in the intestinal tract, from a perforated appendix or some such cause. In studying the bacteriology of these cases it was interesting to note that in the first group the staphylococcus aureus and the streptococcus were present as mono-infections. In the second group there are some mono-infection and many poly-infec-

tions, such as the staphylococcus and the streptococcus and the colon bacillus, etc. In the third group it usually comes from some injury to the intestines, there is a poly-infection such the streptococcus and the colon bacillus together. Septic and suppurative peritonitis are terms used as if they were distinct conditions. Peritonitis in the absence of the microorganism is very rare, but it may occur. The fibrino-purulent form is the one more usually met with. The mycotic form is one in which the symptoms run such a rapid course that there is little time for the formation of bacteria and there is very little reaction on the part of the peritoneum. This division, however, is not necessary.

Dr. S. C. Chew then spoke of the "Diagnosis of Peritonitis." The diagnosis of peritonitis is in some cases one of the simplest problems which as physicians we can encounter and in others one of the most difficult that can confront us and between these extremes there are very many degrees of comparative difficulty. In general when the typical and clinical symptoms are present a diagnosis is easy. The decubitus, the flexion of the knees on the abdominal walls, the anxious and somewhat drawn physiognomy with acute abdominal pain and great tenderness, tympanites, elevation of temperature, quick, small and wiry pulse, all point very clearly to the diagnosis of peritonitis. They are not always this clear; there may be many symptoms lacking. In arriving at a correct diagnosis the history of the patient is very important. The principal affections which might be confused with peritonitis are: 1. An extreme degree of tympanites which occurs in typhoid fever; 2. A condition of acute enteritis or entero-colitis; 3. Hysteric abdominal pains; 4. Intestinal obstruction in which there is more or less pain.

Dr. Charles M. Ellis of Elkton then spoke of the "Medical Treatment of Peritonitis." It is not easy to say when a case of peritonitis belongs to the physician and when one belongs to the surgeon. The tendency is to believe that all inflammations are suppurative and therefore of bacteriologic origin, but not when the bacteria can gain access to the peritoneum. Most cases are traumatic from simple ulcers of the stomach, typhoid ulcers, appendical rupture, ulceration of solid organs, the breaking down of pus sacs near the intestines. In all cases the cause is not so clear, therefore the line of demarcation between medical and surgical peritonitis is not easy to be drawn. Peritonitis that has gone for ten days is more apt to get well than to die, therefore operations after this time are very apt to be successful and recoveries more frequent than is commonly supposed. The first indication of the medical treatment of peritonitis is to give rest to the parts and nature promptly undertakes this by an exudation which keeps every part at perfect rest, a recumbent position with flexed limbs, the head and shoulder being elevated, gives the best rest. A mild saline cathartic should be given at the outset, little food should be given by the stomach and opium is used for the relief of pain. Blood-letting is rarely ever practiced.

Dr. Randolph Winslow then spoke of the "Surgeon's Treatment of Peritonitis." The surgical treatment of peritonitis ought to antedate the disease. If delayed until acute peritonitis is actually in progress the time for successful interference in the vast majority of cases is passed. We ought therefore to be zealous in the early interpretation of those phenomena which point to the onset of this disease and should promptly use efforts to prevent its spread or to forestall its development. All cases of appendicitis ought not to be allowed to go beyond twenty-four or thirty-six hours without operation. When the characteristic symptoms of appendicitis are evident operation should not be delayed. When an inflammatory mass is felt through the abdominal walls there is no time for delay.

Dr. J. M. T. Finney reported several cases from the Johns Hopkins Hospital and also related the results from his experiments on dogs showing how peritonitis artificially produced could be cured if operation were undertaken before a certain time in the dog. This was six and one-half days.

Dr. T. A. Latimer agreed in part with Dr. Ellis and said he did not believe that an operation should be done at the very beginning.

Dr. A. K. Bond said that we should not neglect purgation. This paper was further discussed by Drs. Tiffany, Uhler, J. T. Smith and Winslow.

(To be continued.)

Unsuspected Causes of Rebellious Neuralgias. When sciatica or neuralgia persists for a long while, uninfluenced by treatment, some osseous lesion of the skeleton may prove the cause. Moutard-Martin describes a case of this kind which lasted two years before it was traced to an iliac osteo-sarcoma. Siredey and Grognot have likewise observed Pott's disease develop after months of a persistent and rebellious neuralgia, or more or less complete paraplegia.—*Presse Méd.*, February 27.

SELECTIONS.

Smallpox Among the Unprotected Aborigines of Canada. Mr. Pugin Thornton, in an article in the *Lancet*, writes concerning the effects of smallpox on a nation or tribe unprotected by vaccination. He quotes Sir William Butler's statements in his book "The Great Lone Land," as to the Indians of the Saskatchewan district. "Smallpox, in its most aggravated type, had passed from tribe to tribe, leaving in its track depopulated wigwams and vacant council lodges; thousands (and there are not many thousands all told) had perished on the great sandy plains that lie between the Saskatchewan and the Missouri. They knew nothing of this terrible disease; it had come from the white man and the trader. For eighty years these vast regions had known at intervals the deadly presence of this disease, and through that lapse of time its history had been ever the same. The camp moved away, but the dread disease clung to it—dogged it with a perseverance more deadly than hostile tribe or prowling war party; and far over the plains the track was marked with the unburied bodies and bleaching bones of the wild warriors of the West. The summer which has just passed had witnessed one of the deadliest attacks of this disease. Fort Pitt, one of the Hudson Bay Company forts, about 1,000 miles from Lake Superior toward the Rocky Mountains, was free from smallpox, but it had gone through a fearful ordeal; more than 100 Crees had perished close around its stockades. From a spot many marches to the south the Indians had come to the fort in midsummer, leaving behind them a long track of dead and dying men over the waste of distance. 'Give us help,' they cried, 'give us help, our medicine men can do nothing against this plague; from the white men we got it, and it is only the white man who can take it away from us.' But there was no help to be given, and day by day the wretched band grew less. Then came another idea into the red man's brain: 'If we can only give this disease to the white man and the trader in the fort,' thought they, 'we will cease to suffer from it ourselves.' So they came into the houses dying and disfigured as they were, horrible beyond description to look at, and sat down in the entrances of the wooden houses, and stretched themselves on the floors, and spat upon the door handles. It was no use, the fell disease held them in a grasp from which there was no escape, and just six weeks before my arrival the living remnant fled away in despair. I now enter upon that portion of the Governor's instructions which had reference to this epidemic of smallpox. In the immediate neighborhood of Fort Pitt two camps of Crees had established themselves, at first in the hope of obtaining medical assistance, and failing in that for the officer in charge soon exhausted his slender store—they appear to have endeavored to convey the infection into the fort. It is singular that only three persons within the fort should have been infected with the disease, and I can only attribute this to the fact that Mr. John Sinclair had taken the precaution early in the previous summer to vaccinate all the persons residing there," having obtained the vaccine matter from a Salteaux Indian who had been vaccinated at the mission of Prince Albert, presided over by the Rev. Mr. Nesbit, some time during the spring, and yet there are anti-vaccinationists who are willing and ready to go on the stand and testify that variola is a mild disease, and one that is not necessarily fatal in the unprotected.

Chinese Medicine. According to Dr. Paul d'Enjoy the Chinese doctors both prescribe and sell their remedies. They have a variety of tricks of trade to make their products attractive. They have luxurious shops, and mollify with licorice and other excipients their badly made and vilely tasting pills. These pills are enclosed in capsules of wax as large as pigeon's eggs, which preserve the compound from contact with the air, and are broken when the remedy is taken. Special preparations are

sent out from the large shops of the principal commercial centers. Among the most popular of the specialties are the little brick-red cholera pills, composed of mangosteen bark and various tropical essences, such as santal, eaglewood and calumba. The *Dau-nhu-y* is a medicinal oil which produces excellent effects in headaches, and generally in cases of brain weariness of every kind. It is rubbed on the temples, and is inhaled by strong breathing, after having been rubbed upon the nostrils. Relief is obtained through the cold which its evaporation quickly produces. The basis of the preparation is camphor, and, as a whole, its effect may be compared to that of the headache pencils familiar in our drug stores. Chinese medicine is chiefly based on plants, and is taught in books which are often very ancient. In his practice the doctor strictly follows the methods of the master by whom he has been taught. With a very grave face, his eyes protected by large spectacles of thick glass, the old physician feels the pulse of his patient, and never fails to make him show his tongue. Next he examines his eyes, and asks a series of questions, the answers to which will help him out in his diagnosis. Then he writes his prescription on a piece of rice paper and hands it to his pupil, who proceeds to compound it. Generally the prescription is made from the directions in some book, which are simply referred to by name or number. The pupil goes to the book for directions. The seeds, herbs, leaves and stems, the essences of which are to be combined to form the remedy, are generally weighed out or measured, and given to the patients with directions to boil them at home with a prescribed quantity of drinking water to a measure which is exactly indicated: "Put all these plants into an earthenware pot with a large glass of water and boil them over a bright fire down to a teacupful; then strain carefully and drink hot." The remedies are all taken in bed, and rest or sleep, if possible, is recommended. The potions as administered have very powerful effects.

A Young Medical Explorer.—Arthur Donaldson Smith, M.D., of Philadelphia, is the author of a book of travel in Eastern Africa that has been described as the most important since that in which Stanley narrated the doings of the Emin Pasha Relief Expedition. Dr. Smith is not yet 35 years old, having been born in the city above named in 1864, the son of Jesse Evans Smith and Martha J. Knight. The current number of *Book News* says he entered the University of Pennsylvania in 1881, and was graduated in the class of 1885. He studied at Johns Hopkins University from 1885 to 1886; the Harvard Medical School, 1886 to 1888, and the University of Heidelberg from 1888 to 1890. This general training bred in him an interest in science rather than in his profession, and after a brief period of practice, he addressed himself to the work of exploration. With the wisdom beyond that of most men who enter the same task he put himself in communication with the authorities of the British Museum and his expedition was provided with a thoroughly trained scientific staff. Dr. Smith organized his party with care, but on a scale modest compared with that of large African expeditions, started from Berbera, moved a little to the north of west until he was stopped at the Abyssinian frontier, and then succeeded, by tact, persistence and great courage, in passing along westward until he reached Lake Rudolf and Stephanie. From this lake he returned to the coast. Where other men have been forced into conflicts with the natives, Dr. Smith peaceably provided himself with provisions. Where previous explorers had lost heavily, he saved all his men and returned to the coast with a loss of six—little short of marvelous. The difficulty of maintaining steady and continuous collection in a strange region was skilfully surmounted and with care taken in packing, brought specimens to London in extraordinarily good condition. The geographical results proved of the very highest value, a large part of four thousand miles never having been previously covered. Smith displayed, as so many Americans have,

all the qualities which make the English explorer successful, with the tact and discrimination and a consideration for others, which adds to mere success something more and better. A man of liberal, but not of large fortune, whose income could be easily overmatched by scores of idlers in any one of our great cities, Dr. Smith has dedicated himself to the work of exploration, and has just started for a trip to Corea where he expects to continue his prowess as a shooter of big game in Africa. In these days of peace, exploration is almost the only outline for the adventurous, and it is difficult to exaggerate the importance to a nation of the discovery from time to time that it produces men who have all the qualities which bring success and safety in war.

Pegamold; A New Water-Proofing Substance.—Pegamoid is a crystal-clear, gelatinous fluid, which is easily applied to almost any porous material, and will be found to be applicable to a variety of medical and surgical purposes. After a substance has been saturated with pegamoid it resists all and every influence of humidity, acids, oils, and various other fatty substances without the least deprivation of quality and appearance. It is claimed that every texture, from the finest to the coarsest qualities, and also papers of all kinds can be manipulated with this new invention. All fabrics and articles treated with pegamoid can be cleaned with soap and water, so that the invention, because of hygienic considerations, deserves attention. Paper, leather, cotton, linens, silks, woolens, cloth, and other goods treated with pegamoid are water-proof, protected against vermin, and remain entirely smooth, soft, flexible, unsusceptible to the change of temperature and climatic influences. There is no doubt that pegamoid leather in future will prove to be a great competitor of the genuine morocco leather, being cheaper and as fine in appearance, with the advantage of not getting soiled. All kinds of wall paper can be cleaned after the treatment with pegamoid without suffering loss of color. As to the various applications of pegamoid, there is a large field for speculations and I only desire to mention here what has already been confirmed to be a fact. The invention can so easily be applied that scarcely any object in daily use exists in which it might not be of great advantage. One of the most important uses of this invention is claimed for imitation leather, which after pegamoid has been applied to any texture, can hardly be distinguished by touch or otherwise from the genuine article. A special advantage of pegamoid for tapestry consists in its durability. The surface is, notwithstanding its pliability, very solid and does not split, an advantage which genuine leather does not always possess.—*Consular Reports*, March.

A New Bullet for the British Army.—The Lee-Metford bullet has seen its day and a more effective projectile has been called for. In the Chitral expedition one of the enemy had six wounds from the former bullets in his body and was still fighting hard when the seventh toppled him over. According to the *Field* the new missile, the Dum Dum bullet, has accuracy and good range power, caliber .303. Experiments were made on piles of burned and sun-burned bricks, earth in bags and boxes, wet and dry sand, cans full of water, coal, inch planks tied together, boiler plate, skinned sheep and sheep with the wool on. In every instance the regulation bullet passed through and was picked up in a condition almost fit to use again, but the Dum Dum bullet spread out and had best penetration, but there was a greater shock to the material through which it did go, tearing holes in a sheep big enough to put a fist in.

"Then four and five planks were penetrated by the Dum Dum bullet, twelve and thirteen by the other. I believe that a living body offers greater resistance than a dead one. If so, a clothed living body may offer sufficient resistance to prevent its going through. In that case, the whole of the enormous energy would be expended in the enemy's body.

Judging by the results on sheep carcasses, the hole of exit in a man, if the bullet went through, would be so terribly large that the use of this ammunition would be held to be too inhuman in its effects for use on men or, at any rate, against a civilized enemy. The Geneva Convention would not bar it, for that forbids the use of an explosive in a small-arm projectile, but the effect of the Dum Dum bullet is explosive. I do not see why such a bullet as the Dum Dum should not be used against such uncivilized enemies as the 'Fuzzy' and the Ghizi, who do not 'play the game,' who will not decently fall when hit, but who unreasonably come on after with the advantage of five to one, and even when mortally wounded make things nasty for our men. I shot a wild boar with a Dum Dum at eighty yards. It had its right flank diagonally to me, and the bullet struck just under the backbone, broke a rib, went through a lung and destroyed all the vessels in the throat, lodging in the jaw. The bullet has a small, soft point, where the jacket of nickel does not cover it. This allows the bullet to expand."

PRACTICAL NOTES.

An Application of the X-Rays to Anatomic Preparations.—Diakonof reports that he has made a varied and most instructive use of the Roentgen rays in preparing radiographs of anatomic preparations. Structures like arteries, veins, bronchi and bronchioles may be injected with various materials more or less opaque to the X rays, and the resulting radiograph shows with perfect accuracy their relative distribution. The best material for injecting is mercury, on account of the ease with which it can be manipulated and the fact that the same injecting fluid can be used over and over again. When it is wished to inject two sets of vessels in the same organ and to show their distribution in the radiograph, mercury may be injected into one set and a still more opaque material into the other. The following mixture is suggested: Gypsum, cinnabar and red lead, twenty parts each; flour, ten parts; add enough water to make the mixture sufficiently fluid to flow into the smallest vessels. This mixture is too opaque, and the resulting shadows in the skiagraph too black, to be recommended as a substitute for mercury, but it is useful in combination with it as a contrast.—*Chirurgia*, February.

Untoward Effects In Acute Rheumatism from Sodium Salicylate.—M. Jaccoud has pointed out in the *Journal de Médecine*, etc., February 10, certain of the serious inconveniences that may arise from the employment of sodium salicylate in acute articular rheumatism with visceral localizations. Not only does it not cure these manifestations, but it does not prevent them, and it may even favor the production of certain of them. This drug seems to favor the cerebral symptoms of rheumatism, and its employment should be suspended as soon as delirium sets in, before the diagnosis of cerebral rheumatism is established. This suppression is necessary also if the delirium is of an alcoholic or hysteric nature, or if it arises from any form of intoxication. It is the same also in cardio pulmonary localizations, which are much more important on account of their frequent occurrence. During the past ten years M. Jaccoud has observed that the salicylate acts on the pains and on the fever, but not at all on these localizations, and as it has a depressing action on the heart from the time these symptoms appear, its use must be discontinued. By persisting in its employment involvement of the myocardium in the disease is certainly hastened. Numerous statistics show, moreover, that these localizations are not cured or even prevented.—*New York Medical Journal*.

Large Doses of Olive Oil.—The ultimate disposal of olive oil when given in the enormous quantities frequently heard of, was until recently unknown to me, but is just what consideration of the circumstances would lead one to expect. That the free and available alkalis of the intestines are all seized upon after the fat splitter, steapsin, has separated the esters into

their respective radicals, is not to be doubted. Such a large amount could hardly be saponified, emulsified or absorbed, however excessive amounts of other classes of foods being refused by the economy. That all of it followed the conventional path is not a reasonable proposition, and a recent case enabled me to determine its fate in at least one instance. A confrère had a case of hepatic colic in a victim of chronic malarial disease, and gave two pints of olive oil. Subsequently his attention was directed to some peculiar masses in the vessel. He brought them to me, and I found them to be about the size of marbles, irregular-shaped, translucent, of the consistence of cheese and green in color. The history giving me the cue, I found they were glyceryl palmates colored with oxidized bilirubin. I saponified them with boiling sodium hydrate, precipitated one tube with artificially hard water, salted out another, getting a hard soap. The gallstone was found, and proved to be deposits of cholesterin crystals around an organic nucleus, presumably of mucus or epithelium. The denser palmates were evidently outclassed in the race by the more unstable oleates and came through unchanged. A close analysis of all the feces on an exclusive fat diet of determined composition would be most interesting.—A. T. Mitchell, M.D., in *New York Medical Journal*.

The Causation of Chloroform Syncope.—As the result of personal experience, in conjunction with a critical analysis of the results obtained by other investigators, Hill (*Brit. Med. Jour.*, April 17, 1897, p. 957), concludes that chloroform employed as an anesthetic induces primary failure of the circulating mechanism and secondary failure of the respiratory center. The latter fails to act not only because it is damaged by the drug, but also because of the anemia of the medulla induced by the fall of the arterial tension. This is proved by the fact that the action of the respiratory center can be renewed by raising the arterial tension. The depth of anesthesia depends as does the paralysis of the respiratory center, on the primary fall of the arterial tension. Chloroform, more than other known agent, rapidly abolishes the vascular mechanisms which compensate for the hydrostatic effect of gravity. It does this by paralyzing the splanchnic vasomotor tone and by weakening the action of the respiratory pump. When these mechanisms are totally abolished the circulation is impossible if the subject be in the feet-down position. Chloroform also produces paralytic dilatation of the heart, acting directly, like amyl nitrite, on the musculature of the whole vascular system. There are two forms of chloroform syncope: *a.* During primary anesthetization. The patient struggles, holds his breath, raises the intrathoracic pressure, congests his venous system, lowers his arterial tension and finally takes deep inspirations and surcharges his lungs with chloroform. In the first stage the left heart becomes impoverished; in the second it is suddenly filled with blood. This is drawn from the lungs and is full of chloroform. The chloroform passes into the coronary arteries and the heart is thrown into paralytic dilatation. Respiration and the pulse either cease simultaneously or the pulse before the respiration. *b.* During prolonged anesthetization. This form of syncope arises gradually from giving too much chloroform. The arterial pressure falls lower and lower and secondarily the respiration ceases because of the anemia of the medulla. The heart is in this case not paralyzed by chloroform because the drug is taken in gradually by the shallow respirations and is distributed slowly by the feeble circulation. Artificial respiration and the assumption of the horizontal position, if applied in time, will always resuscitate a patient from the second form of syncope. Artificial respiration, established with the patient in the horizontal posture, is also the treatment indicated in the first form of syncope: the heart should be rhythmically compressed by squeezing the thorax. If this does not quickly renew the pulse the patient should be put in the vertical feet-

down posture. The dilated right heart is thereby completely and easily emptied of blood. Artificial respiration is maintained during this maneuver and the patient is brought once more into the horizontal posture. By rhythmic compression of the chest an efficient circulation is maintained through the coronary arteries; by first emptying and then filling the heart a fresh supply of blood is brought into that organ. If this does not prove successful on the first trial it can be repeated. Inversion, that is placing the subject in the feet-up position, or compression of the abdomen will increase the paralytic dilatation of the heart. In this kind of syncope both these forms of treatment are worse than useless. In the condition of shock or emotional fear the compensatory mechanism for the effect of gravity is almost abolished and chloroform may easily be the last straw to completely paralyze the circulation. Vagus inhibition of the heart is of no importance as an agent in the production of chloroform syncope. Ether is in every respect a far safer anesthetic than chloroform. According to Ringer's experiments on the heart, ether is fifty times less dangerous than chloroform. The chloroform inhaler should be removed when the patient struggles or the respiration is of irregular depth. The work of all physiologists goes to prove that paralysis of the circulatory mechanism and not of the respiratory center is to be dreaded by the anesthetists.

Tuberculosis Treated by Tuberculin in a Solution of Peroxid of Hydrogen.—Hirschfelder of San Francisco offers a provisional report as to his use of a modified tuberculin which he terms "oxytuberculin," a compound that is prepared as follows: Sixty cubic centimeters tuberculin is added to 240 cubic centimeters of a 10 per cent. solution peroxid of hydrogen, and water added until the whole measures 936 cubic centimeters. This mixture is placed in a flask, stopped with cotton, covered with a rubber cap, and sterilized in the steam sterilizer for ninety-six hours. At the end of this time the liquid is dark and turbid; it is clarified with caustic soda solution and 5 per cent. of boric acid is added to the liquid, which is filtered and is then ready for use. To meet the secondary mixed infections, he has prepared an oxysepsin which is used hypodermically with the oxytuberculin. These liquids cause no greater local disturbance than an indifferent fluid would produce; there is no reddening of the skin or other signs of localized inflammation. In a few minutes the fluid injected is absorbed and the patient has no further inconvenience; there is no rise of temperature, or any other unpleasant constitutional effect. Within a few days the cough and expectoration diminish, and the most striking effect is the rapid improvement in the appearance of the patient. His eyes become bright and his color changes from the gray hue of tuberculosis to one more nearly resembling that of health. The appetite rapidly returns and with it a feeling of vigor. This is especially evident in very early cases in which there is little or no fever. In cases in which only slight fever is present, a high temperature soon diminishes and in many instances becomes normal. At the same time the inflammation of the lungs gradually disappears, so that examination fails to reveal any deviation from the normal. The bacilli in the sputum may rapidly diminish and finally disappear altogether. As far as can be known from the comparatively short observation of the method, it having been first begun in November, 1895, the patients that recover remain well. In cases of laryngeal tuberculosis the ulceration rapidly cleans and becomes changed into a granulating surface that soon heals. In one case of tubercular infection of the hand that showed no sign of improvement under ordinary treatment, a rapid healing was produced by a local application of the oxytuberculin. The formation of granulations in this case, and in ulcerations of the larynx, was quite striking. The history of several cases was given in full, showing very favorable results from this mode of treatment.—*American Therapist*, March.

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SATURDAY, MAY 22, 1897.

ENTEROPTOSIS AND EXOPHTHALMIC GOITRE.

The pathology and etiology of exophthalmic goitre are still to some extent open questions and additional contributions in the way of hypothesis are at least worthy of mention as filling out or perhaps as encumbering the literature of the subject. The latest contribution in this line is that of Dr. C. SCHWERDT, whose brochure, editorially noticed at length in the London *Lancet*, endeavors to prove that it is often the direct effect of misplacement of the abdominal viscera—enteroptosis, or GLENARD's disease—which he attributes to a primary nervous weakness leading to loss of tone in the muscular system and elsewhere and consequent yielding of the abdominal rigidity upon which the proper position of the viscera largely depends. These being misplaced cause constipation, accumulations of fluids and gases in the stomach, obstruction to the circulation and absorption and retention of waste products with consequent auto-intoxication. Then, apparently accepting the MÆBIUS theory of hyperactivity of the thyroid gland, as the condition underlying the phenomena of exophthalmic goitre, he claims that this excess of function is an effort on the part of the thyroid to counteract this autotoxis, and that in this indirect way the neurasthenia is the cause of the symptoms. The symptoms of exophthalmic goitre have in some respects and in some cases a resemblance to those of GLENARD's dis-

ease, and this is made the most of by the German author, in support of his theory of the overtaking of the thyroid in its effort to relieve the poisoned organism.

The doctor's views are suggestive, but he goes only a very little way in accounting for the origin of exophthalmic goitre. Like some other disorders of ductless glands which have a known or as yet unknown action on the general nutrition, it has undoubtedly a nervous origin and the conditions of neurasthenia, themselves imperfectly understood, may well have their influence in its origination. It is also very possible that whatever interferes with the due processes of excretion may help to induce it or favor its development. It will certainly be of interest to notice in the future the coincidence of the disorder with enteroptosis, floating kidneys or any other abnormality of the abdominal viscera. Is its comparative frequency in women due to any degree to the abdominal displacements caused by corsets or tight lacing? Were this very largely the case it would seem that it ought to have been earlier recognized and far more prevalent in times past than would appear to have been actually the case from any records at our command. What actual or presumptive evidence is there that the thyroid functioning can in any way compensate for or counteract intestinal or renal auto-intoxication as is assumed by Dr. SCHWERDT's theory? These and other questions are naturally suggested and need an answer before any one can fully accept his views. At best it is only a suggestion of one possible existing cause of the disease; the real nervous mechanism underlying and originating the disordered function of the thyroid, if we can accept that view as to its pathology, or the morbid state of the sympathetic system or of the brain itself, remains yet unexplained. The assumption of the existence of an auto-intoxication, which seems probable, is not enough to account altogether for a disorder that is so apt to suddenly follow nervous and emotional disturbance as is exophthalmic goitre; a special primary complication of some important portion of the central nervous system must apparently first occur. What this is, or even what it is likely to be found to be, is yet a question that remains to be answered.

Dr. SCHWERDT attributes to enteroptosis other disorders—scleroderma and myxedema—but in regard to these he apparently makes a less probable case. His paper has the merit of suggestiveness and of pointing out a line of inquiry that may possibly develop some addition to the sum of our knowledge of exophthalmic goitre.

SUICIDE BY SUGGESTION AND LIFE INSURANCE.

According to KRAFFT-EBING, a German woman who recently insisted on committing suicide at a certain date, was the victim of hypnotic suggestion by

her husband, who had insured her life for \$10,000, the policy terminating on the day of the suicide. It is rather astonishing, considering the tendency of life insurance companies to use all legal methods of avoiding payment of policies, that this plea has not been entered before. It is a perfectly valid plea, but of course the burden of proof would rest on the insurance company. Suicidal races like the Germans could be easily hypnotized into a state of susceptibility to suggestion as to date and manner of suicide. This would be difficult, however, in the English-speaking races when the subject is not insane, criminal or neuropathic. Many states of slight emotional depression, however, render the patient peculiarly susceptible to suicidal suggestions, of whose source the patient would be so entirely unconscious as to regard it as arising in his own mind or else hallucinatory in character. Cases have been observed in which melancholiacs had attempted suicide in various ways, accidentally or unintentionally suggested by persons in contact with them, but of whose suggestion they were unconscious as they ascribed the attempt at suicide purely to an impulse. It would be perfectly possible therefore in a melancholic patient to suggest suicide in a particular way and at a particular time without the patient being aware of the true source of the suggestion. It has happened that melancholiacs have had various ideas suggested to them, by an examination of whose source as connected with the examination they were totally unconscious, although they remembered the examination itself. From a forensic standpoint, the case of KRAFFT-EBING is of peculiar interest, not merely as related to the possibilities of suggestion in hypnosis, but also of its possibilities in other mental states. As such suggestions would undoubtedly be criminal under the common law the accused would have the benefit of a reasonable doubt, which would throw the burden of proof very severely on those alleging the existence of the suggestion. For this reason it is probable that life insurance companies will not benefit very much by raising this plea in cases of suicide.

THIRTY-SECOND ANNUAL MEETING OF THE MICHIGAN STATE MEDICAL SOCIETY.

This meeting was held at Grand Rapids, May 13 and 14. About two hundred and fifty members were present. This society does its scientific work in three sections viz., medicine and obstetrics; surgery and ophthalmology; gynecology and abdominal surgery. The first section occupied one session in discussing preventive medicines in a series of five papers, each presenting some especial phase of the subject, followed by a discussion of the topics presented in the papers. The second section by a series of four papers discussed the nature and diagnosis, surgical and medical

management of cancer of the stomach. The section on gynecology by a series of four papers discussed uterine displacements. Besides these were many other papers in each section discussing varied topics, mostly practical in their nature, often of intense interest, frequently illustrated by a presentation of the actual cases, proving the results obtained. The interest was great and persistent in the work of each section, all the rooms provided for the meetings being filled to the overflowing.

Eighty and more new members were added to the rolls. The social arrangements made by the hosts of the society at Grand Rapids were in accord with the well known hospitality of the city, a reception on the night anterior to the opening of the session, brought the members into full touch with each other; a banquet to members and their wives on the evening of the first day, still further strengthened the bonds of fellowship.

The annual addresses were of especial interest; Dr. STRANGWAYS discussed "Our Profession; a Compound of Art, Science and Business" Dr. CARSTENS discussed "Specialists and Specialism;" Dr. SHURLEY analyzed "The present Status and Prospects of the Art of Medical Practice"; while the President, Dr. MCCOLL, gave a most interesting account of observations, made during a recent trip around the world, of the Plague in India. This part of the work of the Society was of unusual interest, giving opportunity to discuss topics out of order in the several sections or the general sessions.

Perhaps the most important action of the Society related to its modification of its methods of securing members. Formerly it has been accustomed to receive into fellowship no person not present at the meetings. Henceforth it will receive as members applicants who are not at the meetings, under the same conditions as those who are present. Formerly it mattered not whether an applicant was a member of a local society or not; henceforth members of local medical societies are received into fellowship at any time on the recommendation of the president and secretary of the local society, without reference to the Committee of admissions, or vote of the Society. This can be done at any time of the year, and without attendance at a regular meeting. Such action will strengthen the local societies, because their members when applying for membership, have only to pay their dues for the current year and agree to support the constitution and by-laws. All others have to be passed upon by the committee on admissions and be recommended by two members of the State Society, and receive a two-thirds vote of the Society at a regular meeting, sign the constitution and by-laws and pay their membership fee and annual dues. Henceforth every person will know that when the State Society recognizes a local medical society, it recognizes its membership as on an equal footing with

its own. To guard the State Society against the reception of unworthy members, the committee on admissions is given the duty of examining the local societies as to the fitness of their membership to a place with the members of the State Society.

It is believed that this act of trust and privilege, given the local societies by the State Society, will stimulate the formation of new societies in districts now without a local society, and will augment the membership of those now existing. Besides that, it is in accord with the practice in many of the States. Further, the Society directed the committee on admissions to take all possible steps to develop the formation of new medical societies in unoccupied fields, just as the adherents of religious or fraternal bodies seek to form new churches or lodges in fields of humanity not fully occupied. It is hoped that each other member of the Society will omit no opportunity to do the same sort of missionary work among medical men as they are able. The State Society offers especial advantages to the members of these societies beyond those given to outsiders, advantages attended with increased honor. It is believed that this notable enrichment will aid materially in the gathering of medical men regularly together, to discuss the science and art of their profession and strengthen the bonds of personal fellowship. The lack of these things, is the great element of weakness of the medical profession.

In short, the Michigan State Medical Society, has taken the first steps to develop local medical societies to the fullest extent under existing conditions. It should have been done a quarter of a century ago, but the fact that it has begun now greatly encourages its thoughtful members.

To further aid in the work of increasing the coöperation of the profession, it appointed a committee to study the question of establishing a journal of the Michigan State Medical Society and report at the next annual meeting. Many of the members who have given attention to this matter believe that such a journal could be started and maintained greatly to the advantage, not only of the State Society, but all the local societies, and every other medical organization, and all the interests of the profession.

Others are looking for more light, and the committee is expected to make such an exhaustive study of the matter, as to enable the society at its next meeting to act intelligently in the matter. After listening to the results of the study by a committee for a year, the Society decided that it was unwise to establish the regular meeting of the Society in any one city.

It thus appears that the most notable action of this meeting was its radical change in its relations to medical societies; the outcome of this action will be watched with interest by every friend of medical

organizations. There can be no question as to the correctness of the principles involved; the only question is respecting the vigor with which they are operated by individuals in the Society. If every member does what he or she can to promote their fullest development, the profession of Michigan will develop far more rapidly than in the past; it will be able to secure a unity of thought and action upon topics which have a common interest.

The officers elected for the ensuing year were: President, Dr. J. B. Griswold of Grand Rapids; Vice-presidents, Drs. E. L. Shurley, Detroit; E. W. Davis, Saginaw; G. C. Huebner, Ann Arbor and C. B. Burr of Flint; Secretary, C. H. Johnston of Grand Rapids; Treasurer, W. G. Henry of Detroit; Members of the Judicial Council, A. W. Alvord, Battle Creek, J. E. Emerson, Detroit, Perry Schurtz, Grand Rapids.

The next meeting will be held in Detroit, with Dr. E. S. Sherrell as Chairman of the Committee of Arrangements.

SURGICAL OPERATIONS IN THE DAILY PAPERS.

Since medicine and surgery became established upon a scientific foundation certain distinctions have served to indicate to the general public the line of separation from charlatanry. To make such distinction the methods of advertising in the public prints common to quacks and nostrum venders have been interdicted on the part of the regular medical profession. In fact this is the chief criterion by which the public has learned to distinguish between scientific physicians and pretenders. Modern ingenuity in advertising as utilized by irregular practitioners and proprietors of patent medicines has so closely simulated ordinary reports of medical and surgical cases that the lay reader is often misled. This confusion is increased when regular physicians adopt the methods of charlatans to report so-called remarkable cases in the daily papers.

This vicious practice has been so frequently condemned by the medical press and by medical societies that it would seem useless to continue to animadvert upon the subject; but the eagerness of certain members of the profession to attract public attention oversteps at times all bounds of professional decorum and decency. In some instances this abuse is so often repeated that one might infer that a surgeon has adopted the practice of reporting every major operation he performs in the daily papers. Some common surgical operation is described in detail, headlined as a "Triumph of Surgery," a "Delicate Operation," "A Remarkable Case," etc., with exaggerated and sensational descriptions of ordinary surgical methods. The details, however, are usually sufficiently accurate to show that the source of reportorial information is in the surgeon himself, who seeks such notoriety as a "near cut" to public favor and patronage.

Apart from the position in which the profession as a whole is placed by such methods, the advertising surgeon is taking a most unfair advantage of his colleagues. The profession is scandalized by such conduct and should by a vigorous public sentiment condemn all such disreputable methods. When a physician or surgeon adopts the advertising methods commonly practiced by charlatans he is breaking down the barriers between scientific medicine and quackery and has no right to expect the respect and confidence of his professional brethren.

THE NEW YORK MEDICAL LEAGUE.

In another column will be found a letter from Dr. DOUGLAS H. STEWART setting forth the aims and purposes of this new creation. From it we gather that the primary and ulterior purpose of this organization is to put a check on and suppress hospital and dispensary abuses and encourage physicians to more actively participate in those affairs, municipal or State, which concern their own interests. It is most extraordinary what it has already accomplished in its three months' existence. Its membership now numbers over five hundred practitioners, and while other medical societies have contented themselves with passing ephemeral resolutions, the League has succeeded in passing a bill through the State Legislature of New York which strikes a crushing blow at the dispensary evil, and when it goes into effect, in November, many of the dispensaries in the State will necessarily go out of existence. There is, indeed, but little doubt, from what we have learned of its *personnel*, that this organization of physicians will inaugurate a most radical revolution in the body-medical, and it is probable that it may even have branches in several of the progressive cities in the United States.

THE JOURNAL SPECIAL TRAIN.

Medical gentlemen from Illinois and vicinity, the Pacific Coast and the Northwest, who intend to be present at the great jubilee meeting of the ASSOCIATION, are invited to take the JOURNAL SPECIAL, which will go by the Pennsylvania Railway without change from Chicago to Philadelphia. The time limit of ten days is as long as granted by any other route. See advertisement in another column, and make no mistake. The JOURNAL guarantees the most perfect of modern railway equipment.

CORRESPONDENCE.

What Constitutes Readable Print? Satinized, Light-Reflecting White Paper Fatigues the Eye.

St. Louis, Mo., May 15, 1897.

To the Editor: I herewith send you a few crumbs in answer to your call for a discussion of the paper on which the JOURNAL should be printed, because I am convinced that it will be calculated to do good service by directing attention to

very important questions, which must be of great practical interest to the human race both in this and future generations.

The question of the size and form of printing type, and the color of the material for background, is not only of great importance to the comfort of adults, but it is of far greater importance to children and those who quite naturally look to the typographical and mechanical features of the JOURNAL for a model.

What constitutes readable print? The most readable print is that by which one may obtain the maximum of reading, with the minimum of injury to the sight.

It is first necessary to have a clear idea of the word, readable, as applied to the impression of type.

Letters upon paper can be read without fatigue only when there is a marked contrast between the letters and the ground. This contrast may be of tone, of colors, or both.

Contrast of tone is the most favorable condition for distinct vision if we consider white and black as the two extremes of a scale, comprehending the gradations from normal gray; in fact, black letters upon a white ground present the maximum contrast of tone, and may be read in a perfectly distinct manner without fatigue in diffused light. Indeed, all whose sight is enfeebled by age require the utmost contrast of tone. The word "tone" of a color is here employed exclusively to designate the various modifications which that color, in its greatest intensity, is capable of receiving from white, which lowers its tone, or of black, which heightens it.

The light we employ to supply the place of the sun changing the relations of color under which the same bodies appear to us illuminated by daylight, it is evident to us that if we neglected this difference of relation, it would give rise to error, because any assortment of colors favorable to read in diffused daylight, might be less so by artificial light; therefore we will put aside the most desirable of all papers, the pale brown—or the paper recommended to reduce the contrast of tone, having a brownish or yellow hue when the deep black printer's ink is used—for there are some mechanical difficulties attending the perfect execution of toned papers, as well as that of expense.

All are of course familiar with the effect produced by the maximum contrast of tone, that of black print with a satinized (glossy) light-reflecting white paper, giving the greatest stimulation of the retina, and consequent fatigue.

More important factors, perhaps, in the readableness of print than tone and color of the ink and paper, are the size of the type and its corollary, length of line, to which may be added the direction of the line across the paper.

That printed lines should not be much longer (not more than fifty letters) than are found in the JOURNAL, may seem of little importance to the general reader.

The popular prejudice in regard to the double columns on a page would be untenable, were it not that the same economy which restricts the amount of space also reduces the size of the type and crowds lines together. A double column page which is properly printed and divided, is most certainly preferable to the same amount of matter extending in a single line across an entire page. It has been accepted by oculists that type embraced by an angle equal to five minutes, is the smallest printed matter which can be recognized by the average normal eye. According to this formula, the smallest print a normal eye can readily distinguish at a distance of one foot is about 1.50 of an inch; at eighteen inches (the average distance at which a book is held by an adult), the smallest recognizable type would be about 1.32 of an inch. The normal eye should never be subjected for any length of time to a type smaller than twice this size, that is 1.18 of an inch, and it would be better after middle life to employ a type even a little larger than this.

The fact, however, that spectacles are now so commonly used, removes in a degree by restoring to the focalizing power the necessity of a larger type with advancing years.

Too coarse print—such as “English type” or “long primer”—is wearisome to the eye, as it requires more exertion of the rotator muscles which govern the movements of the eye, that is, for a given amount of matter; and especially is this the case when the breadth of the page is, as usually happens, increased so as to keep the just proportion of matter on a line.

The type must be of a size to maintain a just relation between the length of the line and the ideas to be conveyed by the printed matter, but not so small as to require an effort to decipher it, and these lines must not be long enough to cause fatigue by undue use of the rotators of the eye.

No print is readable enough to preserve the sight of those who in defiance of fixed natural laws subject their eyes to a greater or longer strain than that to which the animal economy is adapted.

Vision should be looked upon as a physical capability, just as well fitted to be recognized as a point of merit in our daily exercises, such as walking, bicycle riding, running or jumping, etc.

Résumé.—1. For reading: Heavy faced type in contradistinction to light faced, properly leaded, with spaced lines, should alone be employed.

2. A dead faced white paper (with a non-reflecting surface) has considerable influence upon the ease with which the act of vision is performed and therefore should be preferred.

3. A very light almost imperceptible yellow tint paper is recognized as the best, that known to paper-makers as “natural tint” from the fact that it contains no dye whatever and has been bleached only to a moderate degree; it has the color of unbleached cotton cloth. This paper, however, is expensive. A likely substitute made from wood pulp or straw can be had in some of the second class papers in a brownish or yellow tint with a dead or non-reflecting surface at a moderate cost.

Respectfully submitted, WILLIAM B. MEANY, M.D.
3907 West Belle Place.

Blackboards in Schools.

AUSTIN, TEXAS, May 14, 1897.

To the Editor:—In your issue of May 1, page 854, Dr. A. C. Corr says: “The blackboards ought to be clean black,” etc.

The color of school exercise boards is a matter of great importance, but has been strangely neglected. For, from time immemorial, it has been a fact of common knowledge, even among uneducated people, that *black* is the worst of colors for the eyes; hence, it has long been a custom with tailors, to charge more for making a *black* suit of clothes, than for any other color. For many years we have given schoolroom hygiene much special study, and have long taught, by word and pen, that school exercise boards should *not* be *black*.

The best color for such boards is some shade of cream white, a dead surface of soft, mellow tint, varied in its degree of whiteness to suit the quality and quantity of light afforded.

The crayons for said exercise boards, for ordinary daily use, should be a clear sky-blue color; the extra colors, a canary orange and a clear dark green.

Q. CINCINNATUS SMITH, M.D.
617 Colorado Street.

Medical League.

NEW YORK, May 11, 1897.

To the Editor:—In answer to many inquiries about the New York Medical League, and hoping to set at rest many vague editorial surmises as to its purposes, I send you the following preamble from its constitution.

The objects of the League shall be:

1. To unite fraternally Doctors of Medicine, in good standing, for mutual protection and benefit, by advancing the interests of its members professionally, financially and politically.

2. By united action to secure the enactment of such laws as shall benefit the medical profession.

3. To influence Doctors of Medicine to be good citizens, in the highest sense of the term, and to urge upon them the necessity of taking active part in matters pertaining to State and local government and of voting at every election.

4. To collect evidence of hospital and dispensary abuses and to exclude well-to-do persons from medical charities, thereby securing proper care and attention for the worthy poor.

5. To secure the adoption of laws commanding the appointment by the courts of medical experts qualified for their work.

The League in its constitution and by-laws has provided with due care for all the necessary work to promote the aims above mentioned. You can readily see that there is nothing secret or underhand about the League, and its objects, being so worthy and timely, must commend it to the profession of the whole country. Granting that the present financial depression is shared by us, we must admit that the many and increasing abuses of medical charities enter largely into the vital question, Are the wages worthy of the physician? Heretofore we have suffered greatly in all matters pertaining to our profession because of lack of union, and this indifference to self-protection on the part of the physician the League seeks to remedy.

The class legislation against physicians is evidenced by:

1. The law in New York City that the president of the health board must not be a physician.

2. The exclusion of all men not connected with college faculties from all public hospitals, by the Commissioner of Charities.

3. The exclusion of all physicians from the Board of Charity Commissioners, which controls all the public hospitals.

4. The utter disregard of municipal authorities of all advice by physicians upon all questions of public hygiene.

5. The unsatisfactory position in which physicians are placed when called upon to answer malpractice suits, generally, as we know, originating in imagination and malice, if not plain blackmail.

The above statements are sufficient to warrant the formation and extension throughout this Republic of a League which shall ensure to the physicians equal rights, protection and strict justice. The motto of the New York Medical League is “Fiat Justitia, ruat Cælum.”

Yours sincerely,

DOUGLAS H. STEWART, M.D.,
Cor. Sec. N. Y. M. L.

“Medical Instruction of the Laity in the Lay Press.”

MILWAUKEE, WIS., May 17, 1897.

To the Editor:—I was considerably interested in the letter of Dr. Shastid published upon the subject of medical education of the laity. It must be admitted that the Doctor's idea is very clever and ingenious, but altogether impracticable for the following very simple reasons:

Doctors possess the same human nature as do other people, and it is altogether unreasonable to expect them to devote their time to writing articles unsigned and for no pay. Physicians, merely because they are more humanitarian than people of other professions, should not be asked to devote their time and talents for the medical education of the people without financial remuneration or fame. I might urge other objections to the Doctor's scheme, but the one mentioned is greatest, for it would be simply impossible to secure a good staff of writers who would write anonymously and for nothing.

This is not intended to detract in the least from the philanthropic character of the profession, for, while doctors may be expected to treat people for nothing, it would be unreasonable to expect that more time should be consumed in the production of scientific literary work, gratis. It would be short of impossible to get together men of acknowledged ability to further the scheme proposed by Dr. Shastid.

Very truly, A. L. HERRON, M.D.

ASSOCIATION NEWS.

The Philadelphia Meeting.

It has been necessary to make certain minor changes in regard to the various places for Section meetings and also concerning the different hotels which have been placed upon the list by the sub-committee on Reception and Accommodation, of which Dr. de Schweinitz is Chairman. In order that this corrected list of meeting places and hotels may be in the hands of every member of the ASSOCIATION we republish it below

All persons desiring to register at the meeting, if not delegates or permanent members, must bring certificates of membership and good standing in their State or County Medical Society.

The General Sessions will be held in the Main Auditorium of the Academy of Music, Broad and Locust Streets at 10 A.M. and close at 1 P.M.

Headquarters, Hotel Walton, Broad and Spruce Streets.

Registration Office in the lower corridor of Horticultural Hall, Broad Street below Locust.

Post Office in the outer vestibule of Horticultural Hall.

The Bureau of Registration and Post Office will open May 31st, at 1 P.M.

THE SECTIONS MEET AT 9 A.M. AND 3 P.M.

Practice of Medicine in the Broad Street Theater.

Surgery and Anatomy in the lower hall of Horticultural Hall.

Obstetrics and Diseases of Women in the Main Auditorium of Beth-Eden Church, corner of Broad and Spruce Streets.

Neurology and Medical Jurisprudence in the hall 1415 Locust Street, third floor, rear.

Ophthalmology in the northeast Banquet Room, tenth floor, Hotel Walton, Broad and Locust Streets.

Laryngology and Otology, Hall 1415 Locust Street, fourth floor, rear.

Materia Medica and Pharmacy, Hall 1415 Locust Street, third floor, front.

Diseases of Children, Hall 1415 Locust Street, second floor, rear.

State Medicine, Hall 1415 Locust Street, fourth floor, front. Dermatology and Syphilography in the Foyer of Horticultural Hall.

Physiology and Dietetics in the Banquet Hall of Hotel Stenton, Broad and Spruce Streets.

Dental and Oral Surgery in Parlor D, Hotel Walton.

COMMITTEE ROOMS.

The Executive or Business Committee in Parlor C, Hotel Walton.

The Judicial Council in the Ladies' Lower Parlor of the Academy of Music.

The Trustees in the Ladies' Upper Parlor of the Academy of Music.

The Nominating Committee in the Central Room, Hotel Walton, Broad and Locust Streets.

RATES QUOTED BY HOTELS TO DELEGATES OF AMERICAN MEDICAL ASSOCIATION, JUNE, 1897.

Hotel Walton, Broad and Locust Streets: \$3.00 and upward per day, European plan only.

The Colonnade, 15th and Chestnut Streets: \$1 and upward per day, European plan; \$3 and upward per day, American plan.

The Lafayette, Broad and Chestnut Streets: \$1 and upward per day, European plan; Table d'Hôte: breakfast 25c, to \$1; luncheon, 75c.; dinner \$1.25.

The Bingham House, 11th and Market Streets: \$2.50 and upward per day, strictly on the American plan.

Hotel Stenton, Broad and Spruce Streets: \$2 and upward per day, European plan; \$4 and upward per day, American plan.

The Continental, 9th and Chestnut Streets: \$3 and upward per day, strictly on the American plan.

The Windsor, 11th and Filbert Streets: \$1 and upward per day, European plan; \$2 per day, American plan.

The Stratford, Broad and Walnut Streets: \$1 and upward per day, European plan only.

Girard House, 9th and Chestnut Streets: \$2.25 to \$3 per day, strictly on the American plan.

Hotel Hanover, 12th and Arch Streets: \$2.50 per day, strictly on the American plan.

Aldine Hotel, Chestnut Street above 19th: special rates to members of the AMERICAN MEDICAL ASSOCIATION, \$2.50 per day on American plan; \$1 to \$3 on the European plan.

The price quoted in each instance is for one person only. Rooms commanding only the lowest price are naturally limited in number. It is especially desirable that each member intending to be present at the meeting shall personally, or by letter, make his arrangement with the hotel at which he desires to stop.

Department of Public Health.—There will be a meeting of the Special Committee on "The Department of Public Health," at the Hotel Walton, Philadelphia, at 8 o'clock, P.M., Monday May 31, 1897.

U. O. B. WINGATE, M.D.

Chairman of Committee.

Executive or Business Committee.—The first meeting of this Committee will be held in Parlor C, Hotel Walton, cor. Broad and Locust Streets, Philadelphia, on Monday May 31, 1897, at 5:30 p.m. Subsequent meetings will be held at the same place and hour, unless otherwise ordered by the committee, for the consideration of matters referred to it by the ASSOCIATION, and for the transaction of business.

L. DUNCAN BULKLEY, M.D.,

Secretary of Committee.

BOOK NOTICES.

Diseases of the Eye, and Ophthalmology. A handbook for physicians and students. By Dr. A. EUGEN FICK, University of Zurich. Authorized translation by ALBERT E. HALE, A.M., M.D. Philadelphia: P. Blakiston & Co. 1896.

We have at the present time a number of such excellent works on ophthalmology by American authors that we should not think it worth while the trouble of translating a foreign work unless it possess some particularly striking merit to distinguish it from our home productions.

But this book can not lay any claim to such distinction. The phraseology is often very ambiguous; as for instance, in the explanation of the shadow-test, of which we have seen far better descriptions in American works.

The information on some of the more important diseases is very defective. To illustrate, in the treatment of granular conjunctivitis the author recommends the excision of the folds, which operation has long since been abandoned as irrational; but no mention is made of the expression of the trachoma follicles, though this method is recognized, in this country at least, as the most efficient treatment.

The only operation for entropion described in detail is the obsolete method of Gaillard's sutures, which the author himself pronounces useless; for he says: "I have seen so many failures after Gaillard's operation that I have abandoned the method."

But the most unsatisfactory part of the book is the treatment of the anomalies of refraction and the ocular muscles. It is evident the author does not lay as much importance upon accurate refraction work as American oculists do, nor does he seem to recognize the far-reaching influence of refraction and muscular errors upon the nervous system, for which conclusive proofs have been furnished by thousands of clinical observations in this country. The majority of American oculists we are sure, will seriously hesitate to regard as a trustworthy guide for physicians and students a book which contains statements like this: "Young persons with slight hyperopia (up to 2 D) can usually see well both near and far objects. They need no treatment."

Catarrhal Diseases of the Respiratory Passages. By J. M. G. CARTER. Pages 135. Chicago: E. H. Colgrove. 1895.

This condensed treatise on catarrhal diseases of the respiratory passages is a well written and interesting essay rather than a text-book, and practitioners will find it good reading, containing many valuable ideas and pleasing theories. The chapter on catarrhal rhinitis and pharyngitis is the consideration of the subject from the standpoint of the intelligent general practitioner, and the conclusions drawn from a large experience are both valuable and interesting.

Diseases of the Ear, Nose and Throat and Their Accessory Cavities. By SETH SCOTT BISHOP, M.D., LL.D. Illustrated; pp. 496. Philadelphia, New York and Chicago: The F. A. Davis Co. 1897.

This condensed work covers a special field which has not been generally combined under one cover by American authors. The work is concise and practical and will be of undoubted value to general practitioners who must include this class of work within their field.

It is easily seen that the author is a close follower of the principles and practice of the great Politzer and that portion of the work devoted to diseases of the ear can only be spoken of with praise.

PUBLIC HEALTH.

Unfavorable Tidings of the Plague.—A dispatch from Bombay to the *Daily Mail* of London, May 14, says that the bubonic plague is ravaging the Cutchmandvi district. There have been 2,000 deaths in a fortnight, and half of the population have fled.

A Conflict of Benefits.—Bayonne, a suburb of Jersey City, N. J., is in arms against a proposed trunk-line sewer, fifteen or twenty miles in extent, with an estimated discharging capacity of 70,000,000 gallons per diem and at a cost of construction of about \$6,500,000. The object is to provide a drainage for the lower Passaic Valley and the city of Newark. The claim of the Bayonne citizens is that a nuisance would be created on their Newark bay shore, where there is no deep water of sufficient tide to afford relief. Besides they maintain that the Jersey Central drawbridge built on spiles across the bay would prove a barrier to the flooding away of the great volume of sewage. Engineers who advocate the project aver that the sewer in question might be advantageously continued across Staten Island into New York Harbor. Still all the parties to the controversy have not been called into counsel.

Administrative Aspects Regarding Pneumonia.—At the January quarterly meeting of the Michigan State Board of Health the question of the communicability of pneumonia and of public health duty in respect of the same was brought forward by Professor Fall, who mentioned that there had recently been brought to his attention an outbreak of pneumonia which tended to show the communicability of the disease. There were five cases with two deaths, which all seemed to have been spread directly, one after another, from preceding cases. That pneumonia is a germ disease has been demonstrated; that it is a dangerous communicable disease there is no question. It is now known that exposure to cold and to the germs causes pneumonia. There are at least two species of germs, either one of which causes pneumonia. Just which one was present in this instance was not ascertained. Probably, after a time, we shall be able to distinguish the different forms of the disease due to the different germs. But, before this can be done, physicians who have such outbreaks in charge must see that, from the germs present, cultures are made by some competent bacteriologist, and records must be made of the signs and symptoms, so that these may be compared with those in outbreaks due to the different germs. Pneumonia is a disease which causes many deaths in Michigan in every year; and while the State Board of Health has done much for the education of the people preparatory to its restriction, the board has not yet recommended isolation of patients as in diphtheria, scarlet fever and smallpox. It is anxious to collect all the information it can, bearing upon the modes in which pneumonia is spread, in order that, as soon as practicable, the best measures may be recommended for its restriction. Ballard's investigations at Middlesboro have pointed to a common cause, as sewer air accompanied with defective drainage, as being an agency in

the incidence of a pneumonic series quite as probable as the communicability from case to case. It is difficult without the closest inquiry to separate these two classes of cases. Pneumonia has been known to be "epidemic" in jails or other crowded institutions and the disease has sometimes been regarded as infective by some reporters, while others have traced it to some aerial contamination common to the inmates of the institution. One matter of clinical history of the disease that seems to militate against the theory of contagiousness is the fact that, so far as our knowledge is concerned, it has never been found necessary, in hospitals and asylums, to isolate the cases of pneumonia. It may have been done in some special instances, but if so, those instances have escaped our notice. There is room for much careful study in relation to the bacteriology and clinical history of the so-called "pythogenic pneumonia." One point in the administrative relations of the disease is apparent, namely, it is important that in all cases where communicability of pneumonia is suspected, the local health authority should be notified of the fact.

Sanitary Arrangement of Vermont School-houses.—In compliance with No. 102, Laws of 1896, the Vermont State Board of Health, hereby issues the following recommendations and regulations for "lighting, heating, ventilating and other sanitary arrangement" of school-houses. In the choice of a site for a school-house, its construction and furnishings, the following directions are to be observed as far as possible:

1. The site should be upon a slight elevation with soil dry and well drained.
2. If in a village, it should be at a point free from noises and unsavory odors.
3. If in the rural portion of a town, at a point free from violent winds.
4. As near the center of school population as possible.
5. Playgrounds should be provided for exercise and amusement.
6. In villages, or where there is a basement, play rooms can be arranged. In rural houses, without basements, a shed should be provided for exercise in inclement weather.
7. There should be plenty of pure water supplied for drinking purposes.
8. Buildings should be so located as to secure the best light. Particular attention should be given to this in villages where the school-house is likely to be surrounded by other buildings.
9. Care should be taken when the building is of wood to make it warm. This can be done either by using thick building paper under the clapboards, or by filling the space between the outside boarding and the lath with clean dry sawdust.
10. The walls of the rooms should be light gray or buff color.
11. All doors should be hung to swing out, and in large school buildings proper fire escapes should be provided.
12. As forty pupils are as large a number as one teacher can well instruct, the rooms should be 32 x 28 x 12 feet high, giving from 200 to 300 cubic feet of air space and 20 square feet of surface area for each pupil.
13. The windows should be numerous, large enough, and so arranged as to give ample light to every part (and corner) of the room. The window space should be at least one-fourth of the floor space. There should be no more space between the top of the window and the ceiling than is required to finish the building, and the window sill should be four feet from the floor. The light should be arranged so as to fall upon the pupil from the left or left and back, never from the front. There should be curtains of a gray or buff color for all windows—two to each window—hung in the center of the window so that either the upper or lower half, or both, can be shaded.
14. If there is no cellar under the building, there should be a space of at least two feet from the floor to the ground, and there should be windows or openings in the underpinning so that there can be a free circulation of air.
15. If the corridors are used as coat rooms they should be well lighted and ventilated.
16. In rural portions of a town, there should be two out-buildings—one for girls and one for boys. They should be at least twenty feet from the school building and from each other, with a high fence between. Earth closets should be used with road dust, sawdust or ashes, so arranged that they may be easily cleaned. In villages where water is available, there should be a system of bowls, urinals, drains and sewers, constructed according to modern plumbing rules. Closets should not be placed in basements under schoolrooms.
17. Desks and seats. The height of the seat must correspond with the length of the legs below the knees. The seat may be horizontal or slightly curved. The back should be formed of a lower convex and an upper concave portion. A desk for writing should have an inclination of about 15 degrees. The desk

should be fitted to the pupil each year. A perpendicular line from the edge of the desk should project only slightly over the edge of the seat. 18. Blackboards should be placed opposite windows, never between, and should be of a dark lusterless color. Lessons placed on the board for pupils to copy are injurious to the eyes by reason of the rapid change of focus required from the distant board to the paper on the desk; hence, these should be avoided.

NEW INSTRUMENTS.

EXTEMPORE SPINAL CORSET FOR POTT'S DISEASE OF THE SPINE.

LOUIS KOLIPINSKI, M.D.
WASHINGTON, D. C.

I have for some years used an extemporaneous spinal corset in place of Sayre's plaster jacket and the expensive spinal supports of the instrument makers, which possesses some advantages and may at times be found useful to others who encounter chronic diseases of the vertebral column.

The corset about to be described I have found always adequate to relieve the indications presenting in these cases; pain and impaired mobility of the trunk and lower extremities and consequently it can be passed without question of fulfilling the requirements of a mechanical support.

To prepare the corset a pattern is first made by means of a newspaper and scissors, arranging the former in a manner to fit the thorax and abdomen so that below, it slightly overlaps the iliac crests, meets edge to edge in front and extends upward two inches below the clavicles. Semicircles are cut on both sides to allow free room for the axillae.

The material used for constructing the corset is the article called "Japanese splashers," in common use as a wall protection about a lavatory. The particular form of "splasher" is that of German manufacture and consists of slender round pieces of wood of the diameter of a common lucifer match. Two are sufficient for a child or a patient of average figure. The "splasher" is readily cut with scissors to the shape and size of the paper pattern. The inner surface of the jacket is lined with cheese cloth and the edges bound with broad tape. The external surface is further reinforced by transverse strips of tape four to eight in number, secured with stitches which are passed through and across the inner cheese-cloth lining. To apply the corset it is necessary to pad pressure spots which will be found along the spinal column, the armpits, the anterior abdominal wall, the hips and sometimes the mammary and ventral regions. Cotton or cheese cloth may be used hereto varying by the seasons.

The patient lies supine with the spinal column fully extended, the corset is slipped on and secured by means of three circular straps of leather or broad tape. The first one around the upper part of the jacket, the second about the middle and the third at its base. The last must bring the jacket snug in apposition with the iliac crests as the fixed point. The uppermost one is secured as tightly as the patient's respiratory freedom may demand, the middle one must be the most secure of all.

The corset thus designed fulfils the indications previously mentioned and has I believe some obvious advantages, which are, cheapness of material, lightness, elasticity, porosity and the fact that it can be made in a few hours by any female member of a family from the physician's verbal description.

MISCELLANY.

Correction.—"The Diagnostic Significance of *Enzymes* in 'Cyst Fluid,'" published in the JOURNAL May 8, page 885, was by mistake headed under the title of "Eczema!"

Warning!—Advertisers are cautioned that the program is copyrighted by order of the ASSOCIATION, that no advertisements appear in the official program and that any representations to the contrary are fraudulent.

Illinois State Medical Society.—The following were elected officers of the Illinois State Medical Society: J. M. G. Carter,

M.D., President; T. J. Pitner, M.D., Vice-President; J. T. McAnally, Second Vice-President; E. W. Weiss, Secretary; Geo. N. Kreider, Treasurer. Next place of meeting, Galesburg.

The Most Important Discovery.—The University of Würzburg accords the distinction of having made the most important discovery during the past three years to Professor Behring, for his diphtheria antitoxin, and has bestowed upon him a gold medal and a purse of 1,000 marks.

Good Assumptions for Hypothetical Questions.—Hypothetical questions may be framed, the supreme court of Colorado holds, *Courvoisier v. Raymond*, Sept. 21, 1896, upon the assumption that the evidence tends to prove certain facts, this assumption being within the probable or possible range of the evidence.

Ferratin is one of the new remedies recommended by the committee of revision for adoption into the new fifth edition of the Russian pharmacopeia (*Chemiker Zeitung*, 31, 1897). It is an organic iron compound, of albumin and tartrate of iron, forming a definite iron albuminic acid; it contains 7 per cent. of iron, is readily absorbable, does not constipate and has no untoward effects. On the testimony of its discoverer and others, it is identical with the natural ferruginous element of food, absorbable in the system and stored in the liver and other organs as a "reserve iron for blood formation."

Niemann's Tuberculosis Antitoxin.—Niemann states that he has succeeded in isolating an antitoxin from the serum of young goats that had been inoculated with increasing doses of a tuberculin prepared from a virulent culture of tubercle bacilli. From experiments on guinea-pigs, in which tuberculosis had been produced by inoculation, he claims to have demonstrated that his goat's serum contains an antituberculin. Animals showing tuberculous ulceration at the seat of inoculation, with tuberculous enlargement of the glands, were cured by inoculating them with the goat's serum, the ulcer healing and the glandular enlargement entirely disappearing. Niemann also obtained good results in the treatment of tuberculosis of moderate severity in human individuals. Under treatment the general condition of the patients showed marked improvement, the tubercle bacilli disappeared from the sputum, and the cough and expectoration considerably diminished. High elevation of the temperature rarely followed the injection of the serum, even in large doses, while albuminuria was never observed.—*Münchener med. Wochenschrift*.

Drugs in Department Stores.—The appellate division of the New York Supreme Court gave an important decision regarding the rights of department stores to sell drugs without the supervision of a registered pharmacist. The decision was in a test case brought by the Pharmaceutical Society of Kings County. The individual members of a firm had been found guilty in a police court of a misdemeanor in selling a bottle of paregoric and a bottle of quinin. Their conviction was affirmed by the county court, and its decision is now upheld by the appellate division of the supreme court, which denies the contention of the defendants that they occupy a position similar to that of wholesale dealers by selling medicines in original packages, and that hence they should not be required to make their sales under the supervision of a registered pharmacist. The court held that the law was devised for the protection of the community at large, and that serious damage may be done if the law is not strictly observed. Hence it appears that if the department stores desire to sell drugs they must do so through the instrumentality of registered pharmacists.

The Latest in Roentgen Photographs.—Kümmel has traced with the Roentgen ray the course of the Murphy button through the organism. Syndactylia in a child was successfully treated with information derived from paternal photographs. Stechow thinks the importance of this photography in army surgery can not be too highly estimated. Levy Dorn locates foreign bodies with extreme precision by passing a needle around the

part, held behind the fluorescent screen. The two points at which the shadow of the needle coincides with the shadow of the foreign body are marked on the skin. Repeating this in two or three different positions the position of the foreign body can be found exactly. Another method is by moving the light slightly and thus taking stereoscopic photographs. Max Levy reports that it is now possible to take photographs of the thorax and pelvis with an exposure of only thirty to sixty seconds. The time has been thus shortened by obtaining a more complete vacuum, laying a supplementary screen over the sensitive plate and by using specially prepared plates with the sensitive film twice and four times the usual thickness.—*Congress of Surgery*, Berlin, April.

In Nature of Hearsay Evidence.—In the personal injury case of *Thompson v. Manhattan Railway Company*, where it was desired to prove that the plaintiff suffered from an injury to the spine, the attempt was made to prove that fact, not by the testimony of the physician who had attended her, but from the treatment that she received. Such proof, the appellate division of the supreme court of New York thinks, was in the nature of hearsay. The treatment of the plaintiff for a particular disease, it maintains, was no more than a declaration of the physician that she was suffering from such a disease; and as the declaration would not be competent, the court holds, Dec., 31, 1896, that the proof of the treatment was not competent. Nor does the court think that the jury could infer from the particular treatment what the belief of the attending physician was, because, while the witness on the stand might have given the specific treatment for one ailment, the attending physician might have given it for another. Further, it says, had the attending physician been produced as a witness on the trial, the vital inquiry would have been what at that time he believed to be the nature of the injury to the plaintiff, not what had been his view or belief on that subject at any previous time. And for that reason, his previous belief of treatment would not have been competent, except on cross-examination.

Examining Physician only an Agent.—An examining physician employed by a life insurance company examined an applicant for insurance on January 30, and on February 4, returned to the company a certificate that he had found the insured to be in sound health. February 11, the company issued a policy containing the provision "that no obligation is assumed by this company prior to the date hereof, nor unless on said date the insured is alive and in sound health." It was subsequently contended that the company was bound by the examination made and reported by its examining physician, and that it should not be allowed to prove by another physician that the insured was not in good health when the policy was issued. But, aside from the possibility that the insured might have been in good health January 30 and not on February 11, the supreme judicial court of Massachusetts holds, *Gallant v. Metropolitan Life Insurance Co.*, decided October 23, 1896, that the examining physician was only the agent of the insurance company to make the examination, and report the result of it. He had no authority to make a contract of insurance for the company, in which the results of his examination should be conclusively taken by the company to be true. The company made its own contract, a part of which was as above. If, in fact, the insured at that time was not in sound health, the court therefore holds, the company was not liable on the policy, and this fact could be shown by any competent evidence.

The Effects of Small Caliber Bullets.—In an article under this title in the *Annals of Surgery*, January, 1897, Dr. Gwilym G. Davis of Philadelphia reviews the literature of this subject and discusses critically the various conclusions that have been reached by experimenters and observers. The effects produced by a bullet are penetrative or explosive. The former are directly proportioned to: The hardness of the projectile (non-deforming); the softness or elasticity and compressibility of

the tissues; the velocity of the bullet; the small size or frontage of the bullet and lastly its weight. An increased velocity produces increased penetration only to a certain extent because the resistance to the entrance and passage of a bullet increases in a more rapid ratio than does the penetration, so that a point is soon reached beyond which any additional velocity is expended laterally on the tissues. The lateral or explosive effects are proportioned to: The softness of the bullet; the hardness and non-compressibility of the tissues; the velocity of the bullet; its large size or frontage; its weight and in a slight degree its rotatory motion derived from the rifling. The lack of disabling power has been observed in every instance in which the small calibers have been used in actual warfare, as in Chili, where the 7.6 millimeter Mannlicher rifle was used; in some of the contests of the British troops with the half-savage natives of their Eastern possessions in which the 7.7 Lee-Medford was used; in the Chinese war in which the Japanese used the Murata rifle of about 8 millimeters; in the Abyssinian campaign in which the Italian troops were armed with the 6.5 Mannlicher Caveano, and in the present Cuban rebellion in which the Spaniards carry the 7 millimeter Mauser. In the recent fighting in South Africa the British troops were unable, by their rifles alone, to stop the onward rush of the natives and it was only the opportune assistance of the machine guns that saved them from being overcome. The Italians in their campaign against the Abyssinians were not so fortunate. The disabling effect of their 6.5 bullet was so slight that it was thought the ammunition had been tampered with. Dr. Davis submits ten conclusions as the result of his study; 1. That the initial force of the bullet is an onward or a penetrative one. 2. That when penetration is impeded the onward force becomes transformed into a lateral one. 3. That explosive effect is only another name for lateral action, *i. e.*, outside the track of the bullet. 4. That lateral action is most marked in hard bones (the fragments being carried onward) and in organs containing water (bladder, brain, liver, etc.). 5. That practically the rotation of the bullet on its axis does not materially affect the character of the injury. 6. That the effect of gunshot wounds is not so severe on the living body as on the dead. 7. That the destructive power of the small caliber arm has been overestimated. 8. That its stopping or disabling power is less than that of larger calibers. 9. That wounds in future conflicts will be, as a rule, less severe and healing more rapidly, with fewer complications than has been the case in the past. 10. That less radical treatment will be required and conservatism will be followed by most brilliant results.

Detroit.

THE DETROIT MEDICAL AND LIBRARY ASSOCIATION at its regular meeting Monday, May 3, listened to a paper by Dr. Charles Douglass, entitled "Infantile Stools and Their Significance." The paper was discussed by Drs. Chapoton and Jennings.

THE DETROIT COLLEGE OF MEDICINE graduated eighty-one M.D.'s Tuesday evening May 4. This was the twenty-eighth anniversary of the college, which is in a prosperous condition. The damage done by the late fire to the main building is now being rapidly repaired. It being necessary to alter all the interior of the building, the corporation has added another half story.

AT THE COMMENCEMENT EXERCISES of the Michigan College of Medicine, held March 23, forty-seven gentlemen received their diplomas.

THE MEDICAL BILL which was before the Michigan legislature met its death. Dr. Edgar, a member of the House from Lenawee, amended the bill, but it was defeated in the House by eleven votes, a majority of the Wayne County (Detroit District) members voting against it.

Washington.

THE ANTI-VIVISECTION BILL REPORTED TO THE SENATE.—Senator Gallinger has reported the bill to regulate vivisection in the District of Columbia. The bill received the unanimous approval of the District committee of the Senate, and is a modification of the bill presented at the last session of Congress. He accompanies the bill with a very full report which discusses the subject for and against the bill from the evidence presented to the committee. He appends a most impressive list of names of some of the most influential people in the country, who favor and urge the passage of the bill. It is very plain that the efforts of the vivisectionists to defeat the bill have attracted unusual attention to this measure, thus arousing a large opposition from very prominent persons who evidently do not clearly understand the situation, but whose expressed wish and great numbers have influenced the Senate committee. (A timely

attack might yet defeat the measure.) The bill provides: 1. For the use of anesthetics in all painful experiments on living vertebrate animals, the so-called inoculation experiments, tests of drugs and medicines and cases of recovery from surgical procedure being expressly exempted from this requirement. 2. For the licensing of all experimenters by the District Commissioners, except those who are duly authorized officers of the government of the United States or of that of the District of Columbia. 3. For the prohibition of vivisection in the public schools and in exhibitions for the general public. 4. For the inspection of all places of experiment by inspectors to be appointed by the President of the United States.

MEDICAL SOCIETY.—At the meeting of the Society held on the 12th instant, the discussion of the essay of Dr. W. W. Johnston on "The effect of School Life on the Health of Children." Dr. Busey: The influence of premature school life on the health and development of children. Dr. S. S. Adams: Some of the causes of so-called school diseases found in the home. Dr. Kober: Many of the causes of so-called school diseases found in the school. Dr. Woodward: The sanitary condition and needs of Washington schools. The discussion was on motion continued to the regular meeting next week, when other members will speak on the subject.

MEDICAL ASSOCIATION OF THE DISTRICT.—At the meeting of the Association held on the 11th inst., Dr. C. Busey was unanimously elected the delegate to represent the Association of the District of Columbia at the meeting of the British Medical Association, to be held at Montreal. The following was adopted as a part of the by-laws of the Association and made binding on its members:

1. That every institution for medical charity shall require from every applicant for relief in a hospital or dispensary, a written certificate to be obtained as hereinafter provided. Emergency cases are to be excepted from the operation of this rule.
2. That such certificate be obtained from Physicians to the Poor, the Board of Associated Charities and any registered physician.
3. That cases of sick and injured persons found upon the streets, in the stations or elsewhere, who require immediate treatment, shall be carried to the Emergency Hospital, or the nearest hospital having an emergency service, or to their homes, if so directed by the patient or his friends.
4. That emergency patients shall not be detained longer in such institutions than the necessity of the case imperatively demands, but shall be discharged from the service and sent to their homes or to some public hospital as the patient may elect.
5. That members of this Association shall be entitled to the privilege of attending private patients occupying private rooms in any of the public hospitals of this city.
6. That in future the members of the Medical Staff of hospitals when attending medical or surgical cases in private pay-rooms shall insist upon proper payment for their services, except in the case of such patients who are clearly unable to pay for same.
7. That whenever the Medical Staff or a majority thereof of a hospital or dispensary resigns, and when after due hearing, this Association finds that the resignations were for just and sufficient cause, it shall be forbidden for any member of this Association to accept a position on the staff of said hospital or dispensary.
8. That whenever one or more members of the Medical Staff of a hospital or dispensary are dismissed, and when after due investigation, this Association finds that such dismissal was without just and sufficient cause, it shall be forbidden for any member of this Association to fill the vacancy created thereby.
9. That complaints made under Rules 7 and 8 shall be made in writing to the Standing Committee, which after due consideration shall report its findings to the Association.

THE PUBLIC SERVICES.

Army Changes. Official List of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from May 8 to 14, 1897.

Capt. R. R. Ball, Asst. Surgeon U. S. A. (Ft. Adams, R. I.), is granted leave of absence for one month, with permission to apply for an extension of two months.

Capt. Nathan S. Jarvis, Asst. Surgeon, leave of absence granted is extended to July 1, 1897, at which time his resignation has been accepted by the President to take effect.

First Lieut. Guy C. M. Godfrey, Asst. Surgeon, now on temporary duty at St. Paul, Minn., will proceed on the 15th instant to Ft. Yellowstone, Wyo., and report to the commanding officer for temporary duty with troops in the National Park during the season.

First Lieut. Paul F. Straub, Asst. Surgeon, is assigned to duty with Troop C, Fourth Cavalry, during the season at Sequoia National Park and General Grant National Park, Cal.

Capt. Merritt W. Ireland, Asst. Surgeon, is assigned to duty with Troop

K, Fourth Cavalry, during the season at Yosemite National Park, Cal.

Col. William H. Forwood, Asst. Surgeon-General; Major Louis M. Maus, Surgeon; Capt. Rudolph G. Ebert, Asst. Surgeon, are detailed to represent the Medical Department of the Army as delegates at the annual meeting of the American Medical Association, to be held in Philadelphia, Pa., June 1 to 4, 1897.

Navy Changes. Changes in the Medical Corps of the U. S. Navy for the two weeks ending May 8, 1897.

Surgeon A. G. Cahell, ordered to the "Monongahela" May 15.

Surgeon D. H. Morgan has been detached from the naval academy and ordered to the "Monongahela" May 15.

Asst. Surgeon R. G. Brodrick, ordered to examination for promotion May 3.

Asst. Surgeon F. C. Cook, detached from the "Vermont" May 8 and ordered to the "Willington" May 10.

Medical Inspector J. C. Wise, detached from marine headquarters, Washington, May 15, and ordered to Columbus, Ohio, as delegate to the Association of Military Surgeons.

Medical Inspector J. C. Wise, after duty at Columbus, ordered to the "Philadelphia" as fleet surgeon.

Medical Inspector J. A. Hawke, detached from the "Philadelphia" on relief, and granted three months' leave.

P. A. Surgeon C. H. T. Lowndes, ordered to duty at marine headquarters.

Surgeon C. U. Gravatt, ordered to U. S. S. "San Francisco" (fleet) per steamer of May 22.

Medical Inspector H. J. Babin, detached from the "San Francisco" on relief, ordered home and granted three months' leave.

P. A. Surgeon G. T. Smith, ordered to the naval hospital, New York, temporarily, May 15.

Asst. Surgeon M. S. Elliott, detached from the "Columbia" and ordered to the "Indiana."

Medical Inspector J. M. Flint, ordered to examination for promotion, Washington, May 12.

CHANGE OF ADDRESS.

Brothers, S., from 93 to 244 Madison St., New York, N. Y.; Barbat, J. H., from 1412 Folsom St. to 700 Golden Gate Av., San Francisco, Cal.; Brown, H. L., from 800 Monroe Av. to 508 Congress St., Chicago, Ill.; Bouffeur, A. I., from 788 to 1178 Washington Boul., Chicago, Ill.; Booth, F. H., from 522 N. Sacramento St. to 857 W. North Av., Chicago, Ill.; Brauns, E., from 341 Roscoe St. to 11 Cleveland Av., Chicago, Ill.; Beach, W. M., from Pittsburgh to 89 Arch St., Allegheny, Pa.

Cook, J. C., from Hyde Park to The Kenwood, 47th St. and Kenwood Av., Chicago, Ill.; Clausen, J. J., from 1327 E. 8th St. to 1400 Summit St., Kansas City, Mo.; Conner, R. E., from New Florence to Hickory, Pa.; Cheahire, M. C., from 828 Congress St. to 195 S. Oakley Av., Chicago, Ill.; Devine, G. C., from 277 S. Lincoln St. to 430 S. Wood St., Chicago, Ill.; Dean, G. S., from 2486 Market St. to 1089½ Valencia St., San Francisco, Cal.; Davidson, Charles, removed office to Suite 1007 Columbus Memorial Building, Chicago, Ill.

Greenebaum, E. C., from 357 S. Lincoln St. to 468 E. 42d St., Chicago, Ill.; Greensfelder, L. A., from 3000 Indiana Av. to 3500 Ellis Av., Chicago, Ill.; Gilbert, J. W., from Verona to Corinth, Miss.; Grinstead, J. F., from Chicago to cor. 4th and Washington Av., St. Louis, Mo.; Goodman, C. W. T., from 708 S. Michigan Av. to 508 N. Washington Av., Saginaw, Mich.

Houston, Jas., from Swartz Creek, Mich. to 2d Av. and 20th St., New York, N. Y.; Hanna, C. W., from Zanesville to 807 Gay St., Portsmouth, Ohio; Hill, F. E., from 7 to 10 W. 9th St., Cincinnati, Ohio.

Kaater, J. P., from Albuquerque, N. M., to Topeka, Kan.; Kirkbride, M. F., from Philadelphia, Pa. to Spring Lake Beach, N. J., P.O. Box 205.

McDaniel, E. D., from Mobile to Camden, Ala.

Peck, Geo., from 926 N. Broad St. to 840 Westminster Av., Chicago, Ill.

Reynolds, Geo. W., from 315 Webster Av. to 1924 Arlington Pl., Chicago, Ill.; Russell, E. S., from Pittsburgh, Pa. to Alliance, Ohio.

Schaper, Chas. S., from Franklin to 1304 N. 8th St., Sheboygan, Wis.

Van Velsor, Frances T., from 2480 Indiana Av. to 6059 Ellis Av., Chicago, Ill.; Wyeth, John A., from 27 E. 38th St. to 19 W. 35th St., New York, N. Y.; Wright, J. C., from 1330 27th St. to 2414 Kingman Av., Des Moines, Iowa; Wills, Wm. L., from 127 W. 1st St. to 306 Wilcox Block, San Francisco, Cal.

LETTERS RECEIVED.

American Therapeutic Co., New York, N. Y.; Armstrong-Hopkins, S., Chincoteague, Va.; Alma Sanitarium Co., Alma, Mich.

Bovee, J. Wesley, Washington, D. C.; Boehringer, C. F. & Soehne, New York, N. Y.

Colvin, J. P., New Castle, Ala.; Chambers, J. H. & Co., St. Louis, Mo.; Cokenower, J. W., Des Moines, Iowa; Connor, Leartus, Detroit, Mich.; Coplan, M., Cleveland, Ohio; Cushing, E. B., Chicago, Ill.

Doble, Ernest E., San Francisco, Cal.

Elliott, A. R., (2) New York, N. Y.

Featherstone, J. S., Macon, Miss.; Fairchild Bros. & Foster, New York, N. Y.

Graham, J., Miss, Wauwatosa, Wis.; Galbraith, T. S., Seymour, Ind.; Gaertner, Prof., Mother-Milk, New York, N. Y.

Hanson, F. A., Abrams, Wis.; Hummel, A. L., Advertising Agency, (2) New York, N. Y.

Johnson & Johnson, (2) New Brunswick, N. J.; Jones, W. G., Chicago, Ill.; Journal Advertising Agency, New York, N. Y.

Klie, G. H. Chas., (2) St. Louis, Mo.

Leffman, W. S., Philadelphia, Pa.; Litzberger, O., Converse, Ind.; Lehn & Fink, New York, N. Y.; Liston, G. M., Filley, Mo.

Mills, James, Jansville, Wis.; Milliken, J. T. & Co., St. Louis, Mo.; Merriam, G. & C. Co., Springfield, Mass.; Medical & Surgical Reporter, Philadelphia, Pa.; Miller, E. B., Malta Bend, Mo.; Martin, John C., Kansas City, Mo.; Manley, Thomas H., (2) New York, N. Y.

Nippert, L. A., Minneapolis, Minn.

Potter, William Warren, Buffalo, N. Y.; Parke, Davis & Co., Detroit, Mich.

Rice & Rice, (Drs.) Kearney, Mo.; Reibel, Curt Victor, Chicago, Ill.

Scheffelin & Co., New York, N. Y.; Schering & Glatz, New York, N. Y.; Spreckelmeyer, G. A., Lange Store, Mo.; Sickels, E. A., Dixon, Ill.; Shuey, J. J., Corning, Mo.; Stront, Eugene S., Minneapolis, Minn.

Tittsworth, B. M., Shady Grove, Tenn.

Uphorn Pill & Granule Co., Kalamazoo, Mich.

Way, Eugene, Dennisonville, N. J.; Walesby, A. E., Louisville, Ky.; Wilber, A. M., West Unity, Ohio; Watkins, Garland, Carrollton, Ark.; Wheaton, O. M., Lincoln, Neb.

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ADDRESS.

"MEDICAL" LEGISLATION AND HOW TO OBTAIN IT.

The annual address of Section Three of the Illinois State Medical Society, delivered at E. St. Louis, Ill., May 20, 1897.

BY JOHN B. HAMILTON, M.D., LL.D.

PROFESSOR OF THE PRINCIPLES OF SURGERY AND CLINICAL SURGERY IN
RUSH MEDICAL COLLEGE, CHICAGO.

Quantum animis erroris inest.—Ovid.

In these impatient days when science is aglow with the light of new discovery, the scientific mind naturally looks for sympathy and support from those following the same and kindred professions. The learned physician profoundly impressed by the wide vista which science has in so many ways opened to his view, can not but expect that the members of the other learned professions would concede his special knowledge and adopt general rules of action in conformity therewith, but to his utter disappointment he finds not only the legal profession but as well the Protestant clergy not only failing to see matters as he sees them but in many instances, arrayed in positive antagonism to his views, aims and wishes.

It is probable that the profession of medicine to fully receive that necessary sympathy and support must insist that the rudiments of medicine shall form a part of academical education, for as Blackstone has said "Sciences are of a social disposition and flourish best in the neighborhood of each other; nor is there any branch of learning but may be helped and improved by assistances drawn from other arts."

As laws are "rules of action prescribed by some superior, which the inferior is bound to obey," it is apparent that when that superior, as in this country, is the State or the Nation, the law must be equally binding on all, and that all have the same general interest in its application. That it shall contribute to the service of the public and benefit posterity should be the ultimate object of every public law.

It is too much the fashion to speak of medical legislation as the peculiar and special property of the medical profession and for their use, whereas in fact the general welfare of the people is the general object in medical legislation, sought to be attained in every instance, whenever it has been asked by this Society or kindred societies throughout the United States.

In an Illinois decision last year upon the question of the compensation of an expert witness, the Judge in referring to physicians applied the extraordinary epithet of "pampered children of the State" and actually spoke of the State Board of Health as having been created for their benefit. It is the public display of such misinformation and dense ignorance as this, that requires that proper academic education for all should include the elementary branches of medicine.

Had the learned Judge known only a little of col-

lateral science he would have known that the function of a State Board of Health is the prevention of disease, and the prolongation of human life. Had he known the actual facts in regard to the Illinois Board of Health, he would have known that almost the entire expenses of that Board are borne from the license fees of physicians and not from the State treasury, and so far from the State supporting the medical profession, that abused profession sustains that portion of the duty of the State. It is unfortunate that so little hygienic work is now performed by the State Board of Health, but that is the fault of the Legislature and not of the medical profession.

This Society through one of the ablest committees it has ever had, formulated a bill for the welfare of the people, so far as protection from the impostures of quacks was concerned. Able legal advice was procured, criticisms and comments from medical societies and individual members of the profession were solicited; the energetic chairman, Dr. Pettit spent time and money to interest medical societies, secure information and perfect the bill. It was introduced into the legislature and died without a struggle. The disgust of those of us who observed its demise, was not mitigated but only deepened when we also observed with what eagerness, not to say actual yearning, the bill legalizing "osteopathy" was welcomed by a willing senate, and we are informed that this bill positively sailed through both Houses of the Michigan legislature without meeting any obstruction or encountering any opposition.

Thus it is once more demonstrated that in the opinion of the law-making body, pains-taking labor in the acquisition of a profession is an unnecessary strain upon the human constitution, when by a short course of "osteopathy, as it is taught in Kirksville, Missouri," all restrictions upon practice may be thrown off and the "osteopath" clothed with the privilege of the State, go at once into practice.

What stimulating "incentives" were applied to the law centers of the Michigan legislature, may never be known, but that other quacks came to the financial aid of the "osteopaths" there is little doubt. Something more than an X-ray will be needed to develop the unknown quantity here.

In Iowa the osteopathy bill was promptly defeated. They have twelve physicians in the Senate of that State, and about half that number in the House.

The bill introduced by Dr. Hall in our legislature providing for professional secrecy, it was thought would pass; similar bills had passed in other States, and it was believed that no sane man would object to a measure which provided for the protection of the patient and the guarding of his secrets in all except criminal cases. It was not particularly in the interest of the doctor, but it was in the interest of the people; but a doctor introduced it, it was "medical legislation" and therefore doomed to defeat in advance. Had

some advertising quack proposed it, instead of regular physicians, its claims might have been better; but as it was it had no friends, and we are told that in committee an old lawyer with snowy locks and hands trembling with age wrought himself into a storm of passion in denouncing it. The mighty shade of Cicero was invoked in tragic tones to help defeat this joint production of man and the devil. The awe-struck committee, conscience-smitten for having for a moment dared to look at a bill introduced by a physician, hastened to perfect their record by disclaiming lot or part in the bill and jumping on it as one man. Then another bill was introduced providing for some better laws in regard to medical expert testimony; a sincere presentation of the merits of the case had been made by the Medico-Legal Society of Chicago; its framers had the advantage of the experience of the best experts in the State; but all to no purpose, except to add to the record of defunct bills.

In National legislation the only measure that has been successful was the medical practice act of the District of Columbia; that is not an ideal act, but it is probably the best attainable. Ohio, Indiana, Wisconsin and Iowa have new practice acts; all of them recognize factional medicine by name and thus perpetuates it. The committee of this Society, as I think, wisely acting in conjunction with the committeemen from the State Homeopathic Society omitted specific reference to any of the medical sects. The understanding was that in the composition of the board those sects should be represented, and it is apparent that the laws which do recognize sects have done much to keep up sectional lines; besides that, where will it end? Beginning with a statutory recognition of homeopathy and eclecticism, then passing on to physio-medicalism and now osteopathy. Can any human mind compass the infinite subdivisions of true and false science to which we may at last come? No, my brethren, if we must have sects and offshoots from legitimate medicine let us not perpetuate them by tamely consenting to have them intrenched and made everlasting by statute.

What good will it do to recite the annual failures? None, perhaps, except by continual presentation of the case to stimulate renewed effort in this campaign of education, as our friends the politicians say. That the people are indifferent in the matter is unfortunate, but the indifference is due to ignorance, not to wilful intent; whether we can say the same of our legislators is, I think, doubtful; in any event I think it safe to say that continued agitation is necessary. We shall gain nothing by waiting for our posterity to step into line. We should adopt the motto of the Silent Commander when he planted his guns in the wilderness, and ourselves "fight it out on this line if it takes all summer," and trust that in time the vibrations of the pendulum may bring legislation in our direction.

Let us recall the fads and crazes, some of them now dim with the changes of the past, while each had its meed of popularity. Suppose with the present views of those concerned with our legislation we had present with us the Perkinists, who with the same unblushing effrontery that now characterizes osteopathy, paraded the same certificates of miraculous cures and by personages of equally high rank, and yet we know that our fathers knew that these same tractors were bits of insensate brass, unanimated by

even an electric thrill. Perkins had, however, higher aspirations than he of Kirksville, Mo.; having conquered New England with skill and speed, he crossed the Atlantic and invaded the great city of London, where he soon set the fashion by the aid of the magic tractors. Lords and ladies vied with each other in the possession of the precious brasses, and when the faculty ventured to remark, *sotto voce*, that Perkins and his tractors were frauds and should not be recognized as methods of treatment by persons possessing average common sense, then the cry of bigotry, fanaticism and old fogey was raised; the American wit of the day, T. G. Fessenden, an American poet then in London, was employed to lampoon the Royal College of Physicians. This he did quite to the satisfaction of the Perkinists in a satirical poem entitled "Terrible Tractoration!! A poetical petition against galvanizing trumpery and the Perkinistic Institution, in four cantos, most respectfully addressed to the Royal College of Physicians by Christopher Caustic," one English and two American editions of this precious poem of ninety years ago are extant (a copy of which is in my own library), and on perusal I must say that the omnipresent Dr. Still has practically the same grounds for his opposition to the regular profession of today as Perkins had one hundred years ago; but who now mourns for Perkins, while "there are other pebbles on the beach." I suppose if he were here in the flesh we should be compelled to stand by while some able legislature enacted that tractoration as practiced by the immortal Perkins should, to use the language of the bone-o-paths, "not be considered as the practice of medicine within the meaning of the acts regulating the practice of medicine in the State of Illinois." And the Thomsonianism, with its alleged four elements, *earth, air, fire and water*; why does not the steaming ghost of its immortal founder arise and demand "recognition" at the hands of a compliant and awe-struck legislative body?

In reflecting upon these fads and impostures of the past, we can afford to smile at the temporary elevation of the impostures of our own time, knowing that the day will come when they will be numbered with the absent, and that "the dead and the absent are always wrong" by unanimous consent. But will medical legislation always be at cross purposes with the best interests of the community? Let us hope not. Let us reflect that we have two ways to be heard in the legislature, one is to make sure that we send friends to represent us in that body, and the other is to send physicians to the legislature and to Congress. Those in the active period of busy practice need not be sent, but those of mature years, whose experience in every day affairs would make their opinions generally valuable, and who have attained standing and dignity in the profession. I have in mind now two retired physicians, in my own city, yet in mental vigor whose ripe experience makes them welcome at any medical gathering, and are fully capable of taking hold of State questions and matters medical of medical legislation. Indeed the whole country would gain the benefit of their wisdom if they could be put in position to exercise it for the public welfare.

Shall the doctor go into politics? you ask. I say yes, if he can personally afford it and is of ripe experience. We may never hope to have correct medical legislation until we are either properly represented in the law-making body, or the community in general shall have elementary knowledge of medicine; the

latter is probably not practical in our day, and only the former course is open.

No sincere patriot need ever fear in this country to speak his political sentiments or to speak openly in defence of his principles so long as he is governed by pure and patriotic motives, by love of right, and by affection for his country and its flag. Virchow in Germany and Nathan S. Davis in this country have never hesitated to speak out when they thought the exigency demanded, and we have never heard that the people thought any the less of them on that account. Nor of Dr. Joseph Warren who made "incendiary" speeches on Boston Common, and fought in the line at Bunker Hill! Nor of Dr. Benjamin Rush, one of the Continental Congress and signer of the Declaration of Independence.

Put medical men endowed with such noble independence in the legislature and in the halls of Congress, trained by long practice and close contact with the people; they would consider the general welfare as above every earthly consideration. It is said that our profession does not and can not breed statesmen or orators, but let us recall that saying of William Winter, that "there is a better thing than the great man who is always speaking, and that is the great man who only speaks when he has a great word to say."

The acts of the members of the profession in the Iowa Legislature have demonstrated to the world the wisdom of the electors who sent them there.

ORIGINAL ARTICLES.

MEDICAL PROGRESS AS INFLUENCED BY OPPOSITION.

Read before the Florida State Medical Association at Palatka, Fla., April, 21, 1897.

BY U. S. BIRD, M.D.
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The subject of this paper is *Opposition*, especially its results, as observed in the progress of the science and art of medicine. But it is unnecessary that we confine ourselves to a medical view of this subject. During every day its influence may be observed, if not experienced. And how various are its results! We have seen people driven to despair, even to the extent of self-destruction, by blind, ignorant opposition. People who stood ready to bless the world with the fruits of their genius, but who died, crushed by neglect and contempt, and the consciousness that those who spurned them, and not they themselves, were most injured. Such a predominating consciousness of one's responsibility to his day and generation may not possess every man, but some it does, and the world does not always recognize them, nor hardly realizes what it has done when it has quenched such a spirit. The path of advance is strewn with the remains of those who have succumbed to the pressure of a force greater than they could endure.

The history of the political life of every people is largely a record of apparently fruitless effort of a few against the resistless inactivity of the many. Every difference, insignificant or of international importance, is an instance of the generality of our subject. In every contest are represented two sides, both right to a certain extent, and the champions of one side must fail. Every war represents a sacrifice of lives and interests to a superior force. It is unnecessary that there should be any right in such cases. Both sides may be admitted to be wrong. But when an individ-

ual's allegiance has been won, the fact becomes apparent that he is working for a purpose, which, for the time, may mean every thing to him, and that his failure or success has a significance of its own, independent of extraneous circumstances.

Our every-day business life shows the same conditions. It may not be amiss to suppose that every improvement in detail, every advance in method, represents the life-work, and may be the apparently unsuccessful life-work, of a man. The list of business failures in any of our great papers is an instructive but melancholy illustration of our subject and its results. A most important part of our business world is represented by the mechanical arts and sciences. In this particular branch of work, opposition may, to a great extent, be defined as being ignorance of physical law as it is observed in the various materials with which mechanics have to do. In other fields, ignorance of human nature constitutes a large proportion of the opposition which is encountered. In no other department of our industrial world has there been greater improvement, showing a corresponding activity. Our patent office is deluged with devices of every conceivable description. Many a man has spent his life in trying to prove to the world the value of his idea or design, and given up in discouragement, when he was right.

The history of religion probably contributes more instances of apparently fruitless effort than any other subject at our command. So accustomed at times have devout people become to doubt and opposition, and their results, oppression and wrong, that they have attempted to find virtue in necessity, and pleasure in their trouble. Hence we find fanatics glorying in tribulation, not from high and pure motives, but from the delusion that there is virtue in suffering, independent of the high principles which may at first have led to it.

In the history of medicine we see that great achievements have been preceded by great sacrifices. Only great men are capable of great sacrifices, and yet such men are not always recognized. Men have striven in obscurity and neglect, and have succeeded in sowing a harvest to be reaped by others. But our profession is not behind others in recognizing the merits of its deserving members.

The efforts of Hippocrates, Aristotle, Galen, Vesalius and other patriarchs in medical history have received ample recognition. Their difficulties were such as few of us can comprehend, and their achievements are justly regarded with veneration. Harvey's trials and discouragements have given to his discovery an added brilliance. The glory of Jenner's achievement is not lessened because we know that while he was working to convince people of the great value of his gift to them, he was the most abused man of his time. Abominable surgery owes, in great part, its present development to the impetus given it by McDowell, who operated under unique and dangerous conditions. We are told that ignorance and prejudice threatened his life. To Sims we owe an important surgical operation, and the subsequent impulse given to that class of work. In his book he tells us of his work, pursued under difficulties and against opposition, apparently sufficient to discourage him. Pasteur, thinking and working independently of precedent and careless of ridicule, gave us bacteriology, a science which is taking an important place in relation to every department of medical and surgical work.

But it is unnecessary to enumerate at greater length. The instances given suffice for our purpose. An effort has been made to keep in view the fact that the various instances of progress noted have encountered opposition and repulsion. These isolated facts have been used to indicate an universal condition, a fundamental truth. Since we have to do with a condition which, to a greater or less degree, affects each and every one of us, it will not do to try to explain it away. It is a ghost which will not down. It may be well to inquire why every new fact, every attempt at progress meets opposition, not only among the insignificant and irresponsible, but among the ablest, the most progressive men.

In the first place, it may be repeated that there are two aspects to every proposition. Every fact, every circumstance, has associated with it modifying conditions which make a plausible positive or negative argument possible. By keeping this point in view while studying a subject important errors may be avoided.

Opposition may be included in two classes; reasonable and unreasonable. Unreasonable opposition may be disposed of in a few words, as being due to either jealousy or ignorance, or both. For our purposes it is unnecessary to inquire into these causes. But the other kind of opposition, reasonable opposition, merits our attention.

The most probable cause of reasonable opposition is a natural hesitation to adopt every novelty which may be presented. This hesitation is the result of experience. Repeated disappointments in ourselves and others, warn us to make haste slowly. A famous lyric poet is credited with saying in his haste, "All men are liars." While we may hesitate, for personal reasons, to accept so radical a statement, it is astonishing how many such people are met. Two instances will illustrate the idea as it is sometimes observed.

At a meeting of prominent surgeons one described an operation which he had performed, laying stress on a particular detail, to emphasize which he presented a specimen which he had removed. On inspection the specimen was found to be deficient in this very matter, thereby making the operator unpleasantly conspicuous, though the point was of minor importance.

Another instance illustrates the point in view under different circumstances. A surgeon while visiting the hospitals of our large cities, saw that the reports sent out from a certain institution were uniformly false. In these reports no reference was made to mild cases of sepsis, or other such complications following operations, thereby rendering their records of no value to those who might be working along similar lines.

In those cases, the errors, one unintentional, the other intentional, were made by men of acknowledged ability and high position. No reference is made in this connection to individuals whose countenances adorn the advertisements of cure-alls in the secular press, or to persons whose signatures are appended to eloquent testimonials to the definite effects of indefinite nostrums. Such facts make thinking people slow in reaching conclusions. In the medical profession this amounts to a conservatism which no man's authority is sufficient to break through. Positive proofs must accompany every claim to consideration. Herein is one of the most efficient barriers against

fraud. The consciousness that every detail will be sifted, criticised, examined, misconstrued, forces a man to do this for himself, whether he will or no. And in doing this, he works, laying the foundation of all excellence. Were it not for this conservatism every medicine vender, every theorist would have only to present a nostrum or a hypothesis, to receive universal recognition and endorsement.

As a modification of this hesitancy in accepting innovations, may be mentioned the fact that the simple presentation of a theory or an idea, stimulates opposition in some people. Having no knowledge nor clearly defined opinions concerning the point at issue they assume a negative position, which would seem to have been suggested by contact with the affirmative. Thus we see that either side of every question has champions, who appear to have been created by the emergency.

Another cause of reasonable opposition is found in mental bias of every individual. No two people comprehend equally the same details when viewing a landscape or a proposition. Looking at a specimen of architecture, some may be attracted by color, its various combinations and general effect. Others may notice particularly the various details of form and outline. Others may have a tendency to study the peculiar relations of parts to each other, and to the whole. Still others may look past color, form and architectural effect, to the probable cost. Every other person will not see a proposition as we see it. Every detail will have a different significance to every observer. One result of this fact is that this bias gives a direction to study and investigation, which, if followed far enough, leads to an abnormal mental condition, absurdity. Perception is distorted. Facts are made to conform to our conceptions. That which is desired is seen. If a remedy is sought for a disease, it is found. When found, every sick person is seen to have this disease, and every recovery is credited to the remedy. The natural protection from this danger is that every one has the same complaint to a certain extent, and, by persisting in riding his own hobby, limits the ability of any one to ride his hobby to his own, or another's hurt. As a result of this conflict of many opinions, truth is finally seen, and order arises out of chaos.

The different environments of individuals account for many differences of opinion. An operation or a therapeutic exhibition, which may be a matter of routine hospital work, may be practically impossible under certain conditions. An attempt to use them results in failure, partial or complete. Want of success leads to discouragement and doubt as to the value of such measures. This may not be good logic, but it is a fact, as many of us can testify, and as such merits our attention. Facts are not disposed of by a comment of the illogical.

Again, supposing that the conditions are practically the same, people have a preference for things to which they are accustomed. A surgeon performs an operation with greater dexterity and better results than the modification which another surgeon performs. A physician has better success with remedies with which he is acquainted by long experience than with the therapeutic suggestions with which medical literature abounds.

One of the most important, and probably least understood causes of differences in results, and consequent differences in conclusions, is in people. No two

individuals are exactly alike, and yet individual differences are difficult of determination and interpretation. It is impossible to say that a certain disease affects an individual exactly as it did affect, or will affect, another individual. There is a certain resemblance among the grosser details of disease which justifies a classification, but the more subtle points can not be included in such a generalization. The fact that it is so little understood would indicate it as a most convenient shield for the errors of incompetence and trickery. But, because a fact may be misused, it is not to be taken for granted that it is of no use. Further study and investigation may throw such light on idiosyncrasy as to make it an important aid in medical practice.

If my propositions are admitted to be probable, it would appear that opposition is not altogether a thing of evil. Undoubtedly in the practice of medicine, it directly accomplishes much good by protecting the profession and the public from imposition. This is only a negative effect. Its positive, or indirect results are far more important and beneficial.

There are few things so stimulating, so inspiring, as opposition. Without opposition there would be stagnation. Ambition is its legitimate offspring. Were there no resistance, no obstruction, there would be no honor, no reward. The great incentive to labor would be wanting. Duties would be performed carelessly or not at all. No one strives for what all may obtain. Difficulties surrounding an object enhance its value. In many instances the pleasure of overcoming difficulties, the consciousness of having accomplished something worthy of us, is a sufficient reward. The object sought becomes of secondary importance. We encounter opposition under circumstances which make it necessary for us to rise above ourselves to overcome it. By rising to the occasion we become better and stronger. We add so much to our mental and moral stature. To opposition we owe most of the great moral and intellectual trophies bequeathed to us by former generations. Some of them are evidences of that peculiar and obscure force known as genius. By far the larger number is due to the earnest, steady, enthusiastic efforts to overcome difficulties by representatives of that great mass of humanity known as "the people," "the common people;" more correctly the typical, the normal, the intellectually, morally and physically healthy people. People who have not been dwarfed by the demands of our social customs. Those are they who are able to overcome difficulties.

Opposition presupposes movement. Not till a body begins to move does it encounter resistance to its progress. Insignificance attracts no notice nor criticism. An intellectual or physical fact may be considered as stationary, inoperative until it arouses resistance.

The lesson to be learned from this is so obvious that it is needless to enlarge upon it. It appears unfortunate that our ideas should prove faulty, our plans fail under the rebuffs and discouragements of opposition. It must be unfortunate. Our ideas are adopted, our plans laid, because they represent right to us. It is no small matter to know that our conception of right was wrong, even in an insignificant detail. The principle is the same, in great and small things. If we do our part well we can not afford to ignore results. By giving them our attention, using them as object lessons, we may learn to avoid similar

errors and overcome similar difficulties, thereby appropriating the only good in a mistake.

In the instances of medical progress referred to, each one was distinguished by an important characteristic: each one was a fact, an intellectual and physical fact. The circulation of the blood, vaccination and bacteriology are no visionary theories. Investigation, study and examination can not destroy facts. The refining fire injures and destroys refuse, but not gold. The great workers in our profession try their facts with fire seven times hotter than they expect others to use. When they present an idea they feel that it can stand any test, for have they not used every test? If one has anything which will help to advance science and benefit humanity, the object of all science, let him prove it; be sure that it is something of value, not the premature fruit of a vain and indolent imagination. Knowing this, there need be no hesitation to present it because of expected opposition. If an idea is valuable, criticism will demonstrate it. Expecting discouraging resistance it should be prepared for. Every possible contingency should be provided against, every fault and deficiency removed, and an idea, an operation, a therapeutic suggestion, presented which will not need defense. Success may not come in a month, or a year, but facts, which are truths, will ultimately prevail, their success being in a great measure the result of opposition.

THE DELIRIUM OF SHOCK.

Read at the Third Annual Meeting of the American Academy of Railway Surgeons held at Chicago, Sept. 23, 24 and 25, 1896.

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I have purposely substituted this title as the subject of my paper for the reason that "Traumatic Delirium," as announced in the program, does not apply to all cases of delirium accompanying shock, especially to those cases termed, unwisely I think, "hysteria." That many functional conditions following traumatism, or nervous shock, may be of that character I have no doubt, but I do not like the term and I am certain that in many instances the delirium of shock results from pure psychic shock and sometimes proving fatal, even when unaccompanied with any actual traumatism.

What is this peculiar psychic condition to which we briefly call attention? Has it ever been full and satisfactorily explained? It has seemed to me, from an extensive experience with surgical cases and a personal observation of many of them attended with this strange and singularly fatal element, that the subject is of considerable importance.

Some authors claim they have never observed recovery in any case of severe traumatism attended with this form of delirium, and this has been—up to a recent date—my experience. I have, however, met with cases of pure psychic shock, not traumatic, attended with what seemed to be or at least simulated closely the delirium of shock.

I will cite one case, an engineer, whose engine came into collision, knocking the cab into kindling wood. He jumped off and fell upon one knee in the gravel, slightly bruising the skin over the knee-pan. He stoutly asserted that his limb was crushed, and while they were conveying him home upon a stretcher, continually cried out, "Oh! go and get my leg," screaming at the top of his voice the same song without change

of tune or tone, and the sight of his leg or my argument and most emphatic assurances made no impression upon him. He appeared to be in terrible agony, his anguish so pitiful as to excite the crowds of sympathizing friends almost to frenzy. When I had satisfied his friends that he was not injured at all, and they began laughing at him, he sat up, took a careful survey of his limb and emerged from his delirium.

I do not deem it necessary for me to give a recital of numerous cases of this peculiar inversion or perversion of mentality. I wish, however, to cite a case of pure delirium of shock accompanying a severe and fatal traumatism. A man and his mistress were run over by an engine, picked up and carried into our elegant temporary hospital, the baggage room. The man died in a few moments, and the woman lying by his side with a severely crushed leg, seemed utterly oblivious of her condition or his presence; answered questions promptly and correctly, giving me her name, residence, etc., said she was "in no pain." "Oh, I am all right, doctor," sang merrily and chatted lovingly, as she seemed to think, with the husband she had dishonored and left, and seemed to be going rapidly over her happy married life, but with no allusion whatever to her paramour or her injuries, ignoring anything said to her upon either subject, and yet seemingly perfectly rational when asked her name, residence, etc. When asked if her limb hurt her, lifting and examining it at the same time, she answered very promptly and frankly, "No," and at once resumed her happy songs and loving chat. At that time she had no perceptible pulse and, in fact, died in a short time. This case is perhaps a fair illustration of the delirium of shock.

I will only impose upon your patience and credulity by quoting one more case, similar to the above, but with different result. In this case the man, age 22, was run over by a loaded box car, the flesh crushed and entirely torn from the bones of the leg and thigh up to mid third, requiring amputation in upper third. There was slight manifestation of delirium and utter oblivion, as in the case just mentioned, of his injury. He would look at the mangled flesh and denuded bone, and then without seeming to realize that he was seriously hurt, would ask me if I would have him fixed up in a few moments, so he could go home. There was no mental excitation in this case. The loss of blood was considerable, pallor, lowered temperature, pulse, etc., indicated a grave degree of shock, and in fact, this case was typical of many I have seen which have proved fatal, and I fully believe this one would have proved so, but for the modern heroic measures for the restoration of vitality. The intravenous saline injection, hypodermic injections of nit. strychn., nitro-glycerin, etc., and external heat were used, and this case, which I had pronounced fatal, made a nice recovery.

Now, gentlemen, I believe the other case—occurring some years prior—might have been saved in spite of the fact that she exhibited in more marked degree the delirium of shock, as her injuries were not apparently as severe as in the latter case. I have an idea that the modern treatment of shock may perhaps change materially the experience of surgeons as to the fatal indication of this form of delirium.

The delirium of shock met with upon the battlefield, with its attendant exciting environment, is in many respects similar to that observed in railway accidents. I have passed among the wounded after

some of the great battles in our late war, and noted numerous instances of this peculiar delirium. The "shock of battle" in itself produces delirium, as I well know. I was not conscious of a severe wound until my attention was called to it by others. The awful groans of the wounded and dying, of which the historian and poet tell us, were often mingled with the chattering and happy songs of the mangled and expiring soldier, and in both instances, as a rule, the victims were unconscious of any actual mental or physical suffering.

Intense and unquenchable thirst is usually, and invariably I might add, the greatest suffering experienced by the wounded. Who has ever yet satisfactorily defined or explained this awful thirst for water? What is the condition which checks the sufferer in his muttering or delirium, and prompts him to ask coherently, often imperatively, for water, thank the giver, and relapse into a condition of unconscious anguish? Is it dissolution, molecular disintegration of vital nerve centers, or a peculiarly disturbed and exalted mentality, akin to catalepsy or hypnotic suggestion? The functions of the brain seem sensible and exalted, often keen and brilliant. These cases certainly exemplify the fact, that severe traumatic conditions are not usually attended with much pain during the manifestation of shock; are they hypnotized by their terrible environment into a condition of anesthesia?

A very plausible explanation of the cause of serious and fatal shock, with its attendant symptoms of delirium, etc., seems to be the molecular disintegration of the nerve centers, or nerve fibrilla. The impaired respiration, diminished arterial tension, cardiac depression, musculo-cutaneous anesthesia, sub-normal temperature, etc., would certainly indicate this. Certain it is, the brain often retains its functions to the last, exalted and bewildered, it is true, but still the citadel of the mind, obeying its demands, even when the bodily functions are paralyzed and undergoing rapid dissolution, and acting with unusual rapidity.

I have often heard dying men give instruction as to the disposal of their effects, describing accurately where they could be found, and going into details that a lawyer would not think of, as though conscious that dissolution was rapidly approaching and yet apparently unconscious of their physical condition, or the nature of their wounds. It is a pitiful and strange scene to witness the dying look, keen and yet vague, brilliantly pale, almost phosphorescent; the bright, keen and shimmering eye; the hoarse and gradually fading voice; the imperative, pleading, pathetic demand for water! more water! as if its cooling influence might assuage the awful anguish. The poet exclaims:

"Death having preyed upon the outward parts,
Leaves them insensible; and his siege is now
Against the mind, the which he pricks and wounds
With many legions of strange phantasies;
Which in their throng and power to that last hold,
Confound themselves: 'tis strange that death should sing."

Charcot, Oppenheim, Strümpell, Guion, Thorburn, Dreschfield, Weir Mitchell and others seem to be exponents of the theory that hysteria enters largely into the element following traumatism in many cases, but others dissent from this view, and it seems to me wisely. I do not myself like the term "hysteria," especially when applied to such conditions.

In Georges Guion's work we learn that "many of

these disorders arise, not so much as the result of an immediate cause, but from the state of the nervous system being such that an exciting cause is able to provoke it to the manifestation of functional disorder."

Page, in his admirable work on railway injuries, claims that "these nervous disorders have their beginning in profound mental shock, and the cause will be found in the cerebral cortex, and that the mandate of the brain through the spinal cord is checked, as indicated by inability to protrude the tongue or move the limbs."

There is no doubt in my mind that the suggestion, or autosuggestion element, enters largely into these cases, and might properly be termed "traumatic suggestion," but for the fact that they are observed in cases of psychic shock unaccompanied with traumatism.

Railway accidents are usually attended with an element of severe nervous shock, not only to the injured, but to every one present. My experience has demonstrated, to me at least, that there are distinctive features in railway shock, and I believe the element of psychic shock is far more common in such accidents than in those met with elsewhere.

It was not my intention to go extensively into the discussion of shock, or to quote at any length the views of authorities upon the subject of the delirium of shock, but simply to call attention, briefly, to some points relative to the importance of this peculiar and usually fatal indication, believing that a more thorough examination and discussion of the subject at the hands of the learned gentlemen of this Academy might result in a better understanding and improved methods of treatment of the more severe forms of shock. The practical application seems to be that we should bend all our energies and efforts to overcome this element called traumatic shock, especially those cases attended with delirium, unless, indeed, the poet be right in assuming it to be dissolution or death.

I am frank to say that up to a recent period I have invariably given an unfavorable prognosis when this *well-defined* indication of grave element of shock manifested itself and did not feel warranted in resorting to measures for its relief when accompanying severe traumatisms.

DISCUSSION.

Dr. JAY—Delirium is a disturbance of the cerebral functions manifested by impaired action of the nerve centers, characterized by hallucinations.

Shock is the depression or grave effect produced by severe injuries, operations or strong emotions; a relaxation or suspension of the sustaining and controlling influence which the nervous system exercises over the vital organic functions of the body. It is the result of a profound impression made on the cerebro-spinal axis, either directly through the agency of an afferent nerve or through the circulating medium. There is a peculiar condition in which the manifestations of shock are due not to severe bodily injury but to purely mental causes. This variety of shock may be even more profound than that produced by bodily injury. The mental impressions produced by railway accidents come under this head; while the precise change which takes place in the cell structure of the ganglia of the cerebro-spinal system, to produce the delirium is caused by a change in cell relations produced by the shock, either bodily or mental, certainly seems plausible. It may be that the cell structures of the brain are unduly stimulated as in the delirium of intoxication, or from an anemic condition as in low grades of fever accompanied by delirium. A child will become delirious from mechanical irritation of the digestive tract

reflected through the spinal cord to the brain. In any and all forms of delirium there must be a change in the physiologic condition or the anatomic relation of the cerebral cell structures, and does it not seem probable that the anatomic relations of the cells have been temporarily changed: that the shock has disturbed the natural relations existing between the minute cells; any such disturbance of the cerebral cell structures must disturb or derange the mental processes, and the disturbance of the mental processes is the delirium? This disturbance of cell arrangement may be that the location or position or peculiar grouping together of the cell structure have been temporarily changed and the delirium will continue until the physiologic relations have been restored. Mental processes may produce this change in cell arrangement, and delirium follows. The part or organic structure involved must be the same, and similarly affected in all causes of delirium or else the mental processes do not have a fixed and definite location through which to make manifest their marvelous doings, or in which to record their wondrous achievements. In delirium the intellect or mind is not impaired, but the organic structure, through which the researches and investigations of the intellect are made known and in which they are recorded, are not in perfect condition to receive them, hence the wandering. Often this cell derangement is soon restored by rest and quiet alone. At other times help is furnished by medical aid or surgical assistance. Whenever or by whatever means this is accomplished the delirium has ended, the intellect commences where it left off, at the beginning of the delirium, and the individual is himself again.

Dr. COLE—Dr. Jay, who opens the discussion, has talked about everything but delirium of shock.

Dr. JAY—That shows how little you know about it.

Dr. COLE—That shows, Mr. President, how little any of us know about this subject. We know no more today than our forefathers did a hundred years ago about shock, and until some one gets ready to make an exhaustive and systematic explanation upon the different orders of animal kind we are not likely to. The French school, strange as it may seem, disclaims any such condition as shock and traumatic shock. I say strange as it may seem, because the French are of a neurotic temperament, and it is generally agreed that shock has to do primarily with the nervous system. We know that a snake's head may be cut off and they will live not only till sundown but perhaps several days; we know the same thing is true of other animals in the lower orders. Those of us in active practice know that the cases where we get what is called shock most pronounced are, as a rule, among patients of a nervous temperament, whether it is molecular changes, or whether it is as the French claim entirely due to the loss of blood—which claim to my mind is ridiculous because we have all seen shock where there was no excessive hemorrhage; whatever it may be, no one has as yet been able to determine, or give a satisfactory definition of shock. We see it in so many forms, including the delirium of shock which the author has so beautifully written about. It would be desirable if this Academy, representing an important branch of surgical practice, a class of surgical work where this element so largely predominates, could in some systematic way elucidate this subject.

Dr. REED—Just one point I wish to call attention to in this discussion. I do not propose to try to throw any more light on the question, but I do not think it is quite the right thing to allow the remark which our distinguished Fellow made, to go without a little check on it. I think the Doctor did not intend the meaning to be conveyed which seemed to be conveyed in that respect, and that is that shock was the result or might be the result of the shaking apart of the cells of the brain or the spinal cord. The point I wish to make is this, that while that has been advocated I do not think there is good reasonable ground on which to establish a theory that would carry it out.

For instance, a man is shot through the head—and I have seen more than one person shot through the head fall down and get up and walk off—and there is some shock, and the man gets well after all this. I saw a man in whom I am sure the cells were very much torn; he had a buzz saw cut his skull open from the occiput to a point between the eyes tearing out the sinus—and not a small buzz saw but a large saw—and that man got well to my positive knowledge and lived ten or twelve years afterward; and I made a postmortem—after his death, of course (laughter). The point I want to get at is this: There was a very marked disturbance of the cells of the brain, and yet that man did not have any marked shock, he did not have any delirium. I know another case that was hurt on a railroad in an accident near Loudenville, O., the whole side of the head was crushed in; that boy got up and in less than two minutes he walked two blocks from the engine leaving a part of his brain lying on the platform, and dripping over him, and he did not become delirious. I begin to think that the theory which the doctor did not qualify, is untenable ground, and we should be careful in taking such a position, first, because it is not tenable, and second, because we have "our friends, the enemies," ready to say that is the cause of all the spinal calamities we go into court with. I do not think it is right to take that ground which is dangerous and which has a foundation not absolutely tenable. I simply bring these cases up as evidence that it is not always, at least, shaking up the nervous system that produces delirium.

Dr. BRYANT—I am not a pathologist, but I have a friend who is a histologist and pathologist, and he tells me that all cells, nerve cells as well as others, eat, grow, reproduce and have motion; and as a pathologist he says shock is due first to lack of eating—nutrition; he tells me the loss of blood will cause shock, interfering with nutrition; anything, like joy, grief or fright, which will interfere with digestion will also cause shock—it interferes with the nutrition of the nerve cells—and that is as far as I can go in this matter; but I think that is correct, and perhaps time will prove it.

Dr. HARNDEN—I had thought perhaps I would elicit some information on the cause of the peculiar condition. I find I have failed in my object. I am satisfied we will not be able to find the cause, the peculiar condition. I do not think I have expressly stated in any part of my brief paper anything which explains the condition to my mind or to yours; I thought Dr. Reed was going to give an explanation, and he got the buzz saw started half way through the man's head, but I found he stopped the demonstration, and I stop too.

RELATIVE INSUFFICIENCY OF THE PULMONARY VALVES.

Read before the Chicago Pathological Society, Feb. 8, 1897.

BY ROBERT B. PREBLE, M.D.

INSTRUCTOR IN GENERAL PATHOLOGY AND CLINICAL MEDICINE AT THE NORTHWESTERN UNIVERSITY MEDICAL SCHOOL, CHICAGO.

I shall make no apologies for presenting to the Society the report of a case and a brief paper upon so rare a condition as insufficiency of the pulmonary valves and the rarer condition of relative insufficiency. If we would make accurate anatomic diagnoses of the commoner valvular affections, we must have some familiarity with the signs of the rare ones. I am confident that you will all agree that we should not content ourselves with the diagnosis, "heart disease," but should endeavor in all cases to make as detailed a diagnosis as possible.

Relative insufficiencies, that is, those due to enlargement of the orifices rather than to contraction of the cardiac valves, are now admitted by almost all clinicians. Those upon the two auriculo-ventricular orifices and the aortic orifices are well known and the recorded cases are very numerous.

The relative insufficiency of the pulmonary valves has received very little attention as yet, and the reported cases can be counted almost on the fingers of one hand. I believe, however, that when once the attention is directed to the subject, the cases will rapidly multiply, for many of the conditions which may in time cause a relative pulmonary insufficiency are common.

The literature of this subject may be dismissed very briefly. Cases have been reported by Stokes,¹ Kolisko,² Bristowe,³ Coupland,⁴ Litten,⁵ Chauffard,⁶ Gouget,⁷ each one and supported by autopsy. Pawinski⁸ in 1894 reported four cases, but only one went to autopsy some months after the diagnosis of relative insufficiency had been made, and no insufficiency of the pulmonary valves was found. Grawitz⁹ reports one case unsupported by autopsy, so that his case is not above question. Chauffard's case seemed well established clinically, but at the autopsy the pulmonary valves were competent to the water test. Barie¹⁰ in 1891 collected 58 cases of pulmonary insufficiency with 43 autopsies, and included in his list the cases of Stokes, Kolisko, Bristowe and Coupland. He evidently did not regard them as relative, for he questions the possibility of relative pulmonary insufficiency, although in a later article, 1895, he admits the possibility. The literature thus contains but six cases supported by autopsy.

Because of this very brief list we must infer much of the etiology and symptomatology by comparison with aortic and organic pulmonary insufficiency.

Because of the anatomic and functional similarity between the aortic and pulmonary valves, we are justified in the inference that conditions similar to those causing relative aortic insufficiency might cause relative pulmonary insufficiency if brought to bear upon the lesser circulation. The possible causes of relative aortic insufficiency are numerous, but they may be conveniently classified in three groups: 1, those affecting the aorta, altering its structure so that it is dilated more easily, as in acute aortitis, arterio-sclerosis; 2, those increasing the peripheral resistance, as in nephritis; 3, those dilating the left ventricle, as myocarditis.

By transferring this grouping to the pulmonary valve, we have:

1. Arterio-sclerosis of the pulmonary artery is uncommon and rarely reaches a high degree. There is no reason why it might not cause relative insufficiency of the valves.

2. This group of causes, namely, those increasing the resistance to the circulation of the blood through the pulmonary artery, is most important and includes many different diseases. Gourand¹¹ in 1865 drew attention to the possibility of relative pulmonary insufficiency resulting from emphysema, chronic bronchitis and indurative pulmonary processes. Coupland's case was secondary to emphysema, Bristowe's to emphysema and obliterative pleurisy. Stokes does not specify in his report as to the primary condition, but states in relation to the question that he has seen marked dilatation of the pulmonary artery in cases of emphysema.

Gouget's and Chauffard's cases were secondary to a combined mitral lesion. It is well known that these lesions cause an increase in the resistance to the pulmonary circulation, and there is no reason why the increase may not so dilate the pulmonary artery as to render the valves incompetent. The four cases reported

by Pawinski, and the one by Grawitz, were cases of mitral stenosis. From the clinical report we can not but agree with Pawinski's diagnosis, but the autopsies are wanting.

Litten's case was very different. The pulmonary artery was plugged by an embolus, an echinococcus cyst. The vessel was dilated to such a degree that the valves became incompetent.

Other diseases which might belong in this group are obliterative pleurisy, obliterative pericarditis, kyphoscoliosis, mediastinitis, aortic aneurysms and other mediastinal tumors, and all conditions which sometimes give rise to pulmonary embolism.

To these we must add the cause found in the case to be reported. When for any reason the left ventricle fails to do its work, the blood may dam back into the lungs and reach such a tension as to cause relative insufficiency of the pulmonary valves. This adds a large number of diseases, all those which can cause an increase in the resistance in the systemic vessels.

3. The third and last group, those affecting the myocardium, could as well cause relative pulmonary insufficiency as it does other relative insufficiencies.

The physical signs of relative pulmonary insufficiency do not differ essentially from those of an organic insufficiency. There is a varying degree of cyanosis, but often far less than one might expect. Sometimes there is a visible systolic pulsation in the second left intercostal space, and this may be so marked as to suggest a thoracic aneurysm. Over this same area there is often a palpable thrill, systolic or diastolic, or both. On deep palpation below the ensiform we can sometimes make out a diastolic thrill in the right ventricle.

Percussion shows that the cardiac dulness is increased to a varying degree to the right. The left borders of the heart are normal or nearly so, unless changed by some complicating condition. The dilated pulmonary artery often gives a retrosternal dulness extending to the left second intercostal space.

Auscultation shows a diastolic murmur loudest in the second left intercostal space, propagated down the sternum and outward toward the left clavicle and usually not audible over the auscultation point of the aorta. According to Bernhardt, the murmur is loudest during expiration. The murmur is quite similar to that heard in cases of aortic insufficiency, but is not propagated into the vessels of the neck. Its point of maximum intensity is not peculiar to it, for the murmur of aortic insufficiency is frequently loudest in the second left interspace. It is often accompanied by a systolic murmur, just as the diastolic murmur of aortic insufficiency is.

Friedreich in 1867 stated that there could be no doubt but that the same vascular phenomena occurred in the pulmonary circulation with insufficiency of the pulmonary semilunars, that occur in the systemic vessels in aortic insufficiency. These vessels, although removed from direct observation, still give rise to certain signs described by Gerhard.¹² Gerhard¹³ found that a manometer connected with the nose gave a tracing of the pulsation of the pulmonary artery. The tracing taken from a case of pulmonary insufficiency differed very greatly from those taken in the normal individual and in cases of aortic insufficiency, being higher and steeper and resembling the pulse tracing of aortic insufficiency.

Although we can not apply the stethoscope directly to the pulmonary artery, we still find traces of auscul-

tatory phenomena similar to those of the peripheral vessels in aortic insufficiency. Gerhard found in five cases of pulmonary insufficiency two dull tones audible over the entire chest and similar to those heard over the brachial artery in cases of aortic insufficiency. Similar tones are heard over the normal chest close to the heart, but not at a point so remote as the outer border of the right scapula. Wide diffusion of these tones is not, however, peculiar to pulmonary insufficiency, for they are found also in well-marked cases of mitral insufficiency, where they arise in the pulmonary vein, and in cases of aortic insufficiency, where they arise on the aorta.

Pulsation of the pulmonary capillaries occurs just as it does in the peripheral capillaries in aortic insufficiency. Systolic intensification of the vesicular murmur during slow and deep inspiration in the portion of the chest near the heart has been known for a long time, but this phenomenon, called by Gerhard an "audible capillary pulse" over remote portions of the chest, occurs only with the pulmonary insufficiency when the capillary pulse is derived from the pulmonary artery, with cases of mitral insufficiency when the capillary pulse is due to a retrograde wave of blood through the pulmonary vein, and in cases of aortic insufficiency when it is exactly comparable to the capillary pulse in the systemic vessels.

The second pulmonary tone may be present or absent.

These, briefly, are the physical signs in cases of relative pulmonary insufficiency. We will find in addition the signs of the primary condition.

The following is a brief clinical and postmortem report of a case, seen in Dr. Herrick's ward of the County Hospital:

German laborer, 42 years old, single and with negative family and personal history, except for an attack of gonorrhea seven years ago. Never had rheumatism or any other illness. About two years ago ran four miles without special inconvenience, but the next day spat blood, and had palpitation of the heart for several days. About one year ago had an attack of weakness and shortness of breath. Present illness began some days ago with dyspnea, headache, vomiting, cough, precordial pain and edema of feet and legs.

Examination showed a well-nourished man, face flushed and slightly cyanotic, moderate dyspnea, edema; veins of the neck prominent, showing a negative pulsation, and at no time did they show the positive pulse characteristic of tricuspid insufficiency. Temperature normal. Pulse slow until just before death. Small amount of fluid in chest, later increasing to such an amount that the chest was aspirated, drawing off a pint and a half of serous fluid of specific gravity of 1009, and containing few red blood corpuscles. Chest and lungs otherwise negative.

Heart: Apex beat in sixth interspace in the anterior axillary line. Deep cardiac dulness to second rib above, and one and one-half inches to right of sternum and to the apex beat. Palpation showed over the apex a systolic and presystolic thrill. The pulse had the characteristics of the pulse of aortic insufficiency well marked; capillary pulse distinct. Auscultation at the apex showed systolic, diastolic and presystolic murmurs. At the base two diastolic murmurs resembling the murmur of aortic insufficiency, that is, soft, long drawn and blowing. One of these murmurs was transmitted downward from the aortic area toward the apex; the other downward along the sternum. The second pulmonary tone was wanting, as was also the second aortic.

The liver was enlarged from passive congestion.

The urine scanty, of high specific gravity, albumin with granular and hyaline casts.

The interpretation of the cardiac findings was not entirely simple. The shape and size of the cardiac dulness indicated an enlargement of both ventricles. The character of the pulse and the diastolic murmur at the base satisfactorily demonstrated an aortic insuf-

iciency, which accounted for the enlarged left ventricle.

The enlarged right ventricle was referred to a mitral lesion, either double or single. Relying mainly upon the presystolic thrill at the apex, the lesion was thought to be a combined mitral insufficiency and stenosis. Had there been only the presystolic murmur at the apex, it would have been interpreted as the presystolic murmur described by Flint in cases of aortic insufficiency. I have since learned that Schwalbe has found a presystolic thrill at the apex in a number of cases of aortic insufficiency without any accompanying mitral stenosis.

We had yet to account for the second diastolic murmur at the base, transmitted down the sternum, and for the absence of the second pulmonary tone, which, if there was a mitral lesion, should have been accentuated. Both of these could be easily explained by the supposition of a pulmonary insufficiency. This supposition was strengthened and confirmed when, after a few days' treatment, this murmur disappeared and the second pulmonary tone reappeared. The improvement was but temporary and the pulmonary tone was again replaced by a murmur.

The clinical diagnosis was aortic insufficiency, mitral stenosis and insufficiency, relative pulmonary insufficiency, parenchymatous nephritis, hydrothorax and passive congestion of liver.

After being in the ward a few weeks the patient died, and an autopsy was held four days after death.

The heart unopened weighed 1040 grams. Walls of both ventricles thickened, left ventricle 2 centimeters, right ventricle 1 centimeter. Aortic semilunars thickened, not more than two-thirds the normal size and incompetent to the water test. Pulmonary valves unchanged in structure, but are incompetent to the water test. Mitral valves thickened at the base, many vegetations. Orifice admits six fingers. Myocardium soft and friable, with scar in the interventricular septum. Tricuspid negative. Aorta shows atheromatous plaques. Liver of passive congestion. Kidney of parenchymatous nephritis.

Postmortem diagnosis: Hypertrophy and dilatation of the heart; aortic, pulmonary and mitral insufficiency, fatty and congested liver, parenchymatous nephritis.

The autopsy showed first that there was no mitral stenosis, so that our inference of mitral stenosis from the presence of the presystolic thrill at the apex was not warranted.

It is much to be regretted that the pulmonary orifice was not measured. The normal, according to Rauling, being 67 millimeters in the male, measured in fifteen cases, and 63 millimeters in the female, measured in sixteen cases. Peacock's figures vary from these, being 90 mm. in the male, measured in sixteen cases, and 88 mm. in the female, measured in thirteen cases.

The water test as applied to the pulmonary valves is much more reliable than when applied to the aortic valves, for there are no coronary arteries through which the water may escape, and the difference between the blood pressure under which the valves close during life and the pressure of the water test is not so great as with the aortic valves.

From this case and the others so far reported, we must conclude that relative insufficiency of the pulmonary semilunar valves is possible, and inasmuch as the primary diseases which may cause this lesion

are common, we are justified in believing that this condition is not so rare as so far supposed.

- 1 Stokes: Diseases of the Heart and Aorta, Case xx.
- 2 Kollisko: Zeitschrift d. K. K. Gesell. d. Aerzte zu Wien, 1859, xv.
- 3 Bristowe: Trans. Path. Soc. London.
- 4 Coupland: Trans. Path. Soc. London, 1875, 26.
- 5 Litten: Charité Annalen, 1878, II, 182.
- 6 Chauffard: Rev. gen. d. clin. et d. Therap., 1895, 2, 821.
- 7 Gouget: Rev. d. med., 1895, xv, 768.
- 8 Pawinski: Arch. klin. Med., 1894, 52.
- 9 Grawitz: Zeitschrift klin. Med., 1893, 23.
- 10 Baric: Arch. gen. d. med., 1891, 27 and 28.
- 11 Gourand: Paris Thesis, 1895.
- 12 Gerhardt: Congr. Intern. Med., xi.
- 13 Gerhardt: Charité Annalen, 1892, 17, 255.
- 14 Schwalbe: Virchow's Arch., 1890, 119; Deut. Arch. klin. Med., Vol. xlix and xlv.

ON THE PRODUCTION OF HYDROCHLORIC ACID IN THE GLANDS OF THE STOMACH.

BY J. A. WESENER, PH.C., M.D.

CHICAGO, ILL.

PRELIMINARY COMMUNICATION.

In *Medicine* of November, 1895, I showed that hydrochloric acid is secreted by the mucous membrane of the stomach and not formed by chemic action on the food products or fermentation. In these experiments I found a nearly constant relationship in the percentage of acid produced after each stimulation. Since then I have performed the same experiments upon three cases of chronic gastritis. In these cases free hydrochloric acid could never be detected with Boa's reagent, but upon quantitative determination of total chlorin before and after evaporation of stomach contents a difference of chlorin was found which gave about the same per cent. of volatile chlorid as was found in the cases of normal stomach, where free hydrochloric was always present.

This decomposition of chlorid was not syntonin, as the experiments were performed upon empty stomachs. This led me to believe that I was dealing with a very unstable organic chlorid, which when evaporated to dryness volatilized the same as free hydrochloric acid, but would not give Boa's test. On the strength of this observation I performed the following experiment:

1. Pure nucleinic acid was obtained from three dozen thymus glands of sheep.

2. A syntonin solution was prepared; this contained .2 per cent. of egg albumin and .1 per cent. of hydrochloric acid; the acid was all taken up by the albumin.

Then before proceeding, the nucleinic acid solution and syntonin were tested for free hydrochloric acid with Boa's reagent, to be absolutely certain that it was absent. To 5 c.c. of syntonin a saturated aqueous solution of nucleinic acid was added as long as a precipitate was formed. (The precipitate is a nuclein proteid.) This precipitate was filtered out and the filtrate tested for free hydrochloric acid. Boa's reagent gave a positive reaction. The experiment was repeated several times, the results always the same.

On making a quantitative estimation of the chlorin, in the syntonin and after precipitation with nucleinic acid, it was found that all the combined chlorin had been discharged as free hydrochloric acid.

About this time I had the good fortune of seeing a case at the laboratory which I must report as it will be the keynote of my theory, which I will state in the conclusion. The patient was a man who has suffered from chronic gastritis for several years. The first examination of the stomach contents gave the following: Reaction alkaline, free hydrochloric acid absent,

mucus abundant. He was given hydrochloric acid; three weeks later another examination was made. Reaction slightly alkaline, Boas' and Günzburg's reagent gave a reaction for hydrochloric acid. The red color which was produced was not as sharply defined as when free hydrochloric acid is present, but more of a diffuse red; furthermore, the reaction did not take place until the last drop was evaporated, whereas when the acid is present in a free condition, the color shows very soon after the heating is commenced. A quantitative determination of chlorin before and after evaporating the stomach contents, showed that a loss of chlorin always took place. From these facts I feel justified in saying that hydrochloric acid is never present in a free state in the glands of the stomach but always in combination with a proteid, and when this body is thrown off from the glands a decomposition takes place, giving free hydrochloric acid and a proteid.

The reason I have for this statement is:

1. In the cases of chronic gastritis that I have examined, there is a very unstable proteid chlorid (which is not syntonin), which when tested for free hydrochloric acid is negative, but when estimated quantitatively acts just like free hydrochloric acid.

2. I have shown what a powerful affinity nucleinic acid has for albumin and that when chlorin is in combination it is discharged as free hydrochloric acid.

3. In the one case of chronic gastritis a reaction was had for free hydrochloric acid, although the reaction of the fluid was alkaline to litmus, phenolphthalein and lacmoid. The acid could not have been there in the free state but must have been there in a proteid combination, which when heated very gently decomposed giving free hydrochloric acid.

4. That the nucleus of the cells in the glands of the stomach take up the chlorids from the blood and combines them with the pepsinogen and rennet zymogen; this combination remains intact in the glands, but when discharged decomposes into free hydrochloric acid, pepsinogen and rennet zymogen. The acid thus liberated first acts upon the albumins to form syntonin and then acts upon the zymogens and liberates them into an active state. I believe this assertion is correct for the reason that pepsin and rennet are very closely related to nucleinic acid.

FISH SLIME DISEASE.

Read before the Cape May County (N. J.) Medical Society.

BY EUGENE WAY, M.D.

PRESIDENT OF THE CAPE MAY COUNTY MEDICAL SOCIETY AND MEMBER OF THE AMERICAN MEDICAL ASSOCIATION.
DENNISVILLE, N. J.

The title of my paper is the name applied by the laity to a disease, which, owing to the location of our county and the occupation of a large number of its inhabitants, is frequently met with by the members of this Society, and undoubtedly by all physicians living near the seashore, but of which little or nothing has been written or published in our text-books.

The disease consists essentially of septicemic inflammation due to the entrance into the blood through the lymphatic system of the slimy exudation covering the fish of our bays and ocean.

The class of persons most liable to this disease are the hardy fishermen who follow the sea for a livelihood, and so well is the disease and its cause known to them that they have named it as above.

The poison causing this disease, in the majority of

cases, enters the system through an abrasion on the hands, usually caused by a puncture made by the fins of the fish.

The symptoms vary in degree according to the amount of poison entering the system.

In some cases there is only a slight swelling and redness at point of injury, or a small nodule forms which is annoying for a few days. In other cases painful abscesses form which are slow in healing, the patient, however, being able to go about but unable to follow his vocation.

In the severest type of cases met with there is after two or three days of general languor, a well-marked chill followed by fever and sweating. The point of injury becomes swollen, red and very sore and develops into a deep-seated abscess, the pain from which is excruciating and agonizing in the extreme. The chill or a chilly sensation recurs daily and fever becomes continuous, accompanied by vomiting and great muscular weakness, sometimes attended by delirium. The tongue becomes heavily coated and the skin usually sallow.

These symptoms continue with greater or less severity until the formation of pus, which occurs in from four to eight days, when they ameliorate, leaving the patient exhausted and often anemic. Secondary abscesses often form in the axilla, and congestion of lungs a not unusual and dangerous complication.

The prognosis is favorable as the disease is seldom seen except in fishermen, who are of necessity a hardy and robust set of men, but would in more delicate persons undoubtedly show a small percentage of deaths.

The treatment consists of removing the exciting cause of the disease, relieving pain and keeping up the strength of the patient.

The prophylaxis, which can seldom be applied, consists in at once washing the abraded or injured surface with fresh water and an antiseptic solution.

Purgatives at the beginning of the disease are a necessity in most cases and calomel in small doses is usually indicated during its continuance.

The strength of the patient must be kept up by quinin and iron and opiates freely administered.

When suppuration is established tincture cinchona comp., aromatic sulphuric acid and stimulants are to be freely given.

The abscesses which form must receive careful attention, early and free incision made and the position of the parts so arranged to favor the escape of the secretions.

Poultices must be freely used until the discharge of pus has nearly ceased, when carbolyzed cosmolin or an ointment composed of hg. cum creta two parts, cosmolin eight parts, should be applied.

Perfect cleanliness must be insisted upon and disinfectants such as acetanilid, creolin, carbolic acid or corrosive sublimate, unsparingly used throughout the disease.

Medical Caprice.—A prominent physician of India recently died from the bite inflicted by one of the deadliest of snakes; he had been making experiments with a view to the discovery of an antidote, and supposed he had rendered himself proof against the venom of snakes. One of the worst victims of rheumatism we ever knew was a man who had discovered a positive cure for that disease. The secretary of a notorious Cincinnati consumption-cure company died of tuberculosis. The former proprietor of the Lydia Somebody's great female nostrum is in her grave dead from the very diseases that her successors are indecently advertising against in the poorer class of daily papers. *—Massachusetts Medical Journal.*

SERUM THERAPY WITH REPORT OF CASES.

Read before the Tri-State Medical Society, St. Louis, Mo., April 7, 1897.

BY JOHN M. ALLEN, A.M., M.D.

PROFESSOR OF PRINCIPLES AND PRACTICE OF MEDICINE IN THE UNIVERSITY MEDICAL COLLEGE, KANSAS CITY, MO.

The announcement of the subject matter of my paper carries with it the idea that I would cover the field of serum therapy, but I shall confine myself to the use of antitoxic serum and its effects in diphtheria and phthisis pulmonalis.

The curative effects of antitoxic serum in diphtheria is now so well established that there is no need of argument or detail report of cases to establish its benefits in this disease to the medical profession. Hence I give only a summary of my cases. I have treated fifty-three cases of diphtheria without the loss by death of a single case. Forty of these cases were treated with serum only, cleanliness and good food. The remainder had had other treatment before I saw them. The complications which occurred among these cases were as follows: Hoarseness, seven; five of aphonia; two of toxemia; one of broncho-pneumonia resulting from the extension of the membrane into the bronchi; one case of paralysis. No operative interference was needed. In none of these cases of complication did I see them before the third day. All of the cases which I saw within the first twenty-four hours recovered without complication. Hence it is my opinion that cases seen thus early rarely have any complications.

My mode of administering the serum is to begin with a full dose the first day; two-thirds the next day; one-half the next day in mild cases. If the case is of malignant variety, I repeat full doses of serum every ten hours until improvement begins. Then lessen the dose, and give from two to four more. This repeated administration of the serum is based on the fact that the bacilli may be found in the fauces for several weeks after the membrane is thrown off.

It does occasionally happen that the larynx has been attacked a week or ten days after the membrane disappears from the fauces. But where the remedy is continued as directed above, the bacilli are either destroyed or are so attenuated as to lose their vital energy. It is my opinion that the serum has immunizing properties, because I injected it into seven children who were dangerously exposed to the disease. None of them had it. The dose used was full size.

I have treated four cases of phthisis pulmonalis with Paquin's antitoxic tuberculosis serum.

Case 1. June 1894, Mrs. D., age 32, mother of one child, presented herself for treatment and I found her in the following condition: Hereditary tendency to phthisis, had gradually lost flesh and strength until reduced from 115 pounds to 75 pounds, in a period of about twelve months. Severe cough and expectoration for about last seven months. Sputum had been examined about four months before I saw her and found to contain bacilli tuberculosis. At the time of my first visit she stated that she had had hectic fever and colliquative sweats daily for some time. Temperature 103.5, respiration 37, pulse 98. Entire loss of appetite. Sputum under microscopic examination found to contain large quantity of bacilli. Auscultation and percussion located two spots in upper portion of right lung that were impervious to air. There was no evidence that the tissues had broken down.

I began the treatment with Paquin's antitoxic tuberculosis serum, giving ten drops by hypodermic injection, increasing the dose within three days to a dram, which was continued daily for 120 days. After

which for another 120 days it was given every other day. After this it was given three or four times a week for the remainder of the year. This treatment was supplemented by the following prescriptions:

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| R. Creosote | xxiv gtt. | 130 |
| Tr. cinnamom | 5iv | 1600 |
| Glycerin | 5xx | 8000 |

Sig. Teaspoonful gradually increased to five teaspoonful three times daily before eating.

| | | |
|-----------------------------|----------|-------|
| R. Oil eucalyptus | 5i | 400 |
| Oil cassia | 5i | 400 |
| Creosote | 5i | 400 |
| Oil tar | 5i | 400 |
| Liq. vaselin | q.s. 5iv | 12800 |

Sig. Inhale in nebulizer frequently.

By the end of the third week her appetite began to return, hectic fever ceased, cough and expectoration gradually ceased and in less than six months she weighed 120 pounds. From the end of the third month the bacilli began to be attenuated and continued to decrease in size and number until the end of the fifteenth month when none could be found in the sputum nor has there been any since. The points of dulness in the lungs have greatly decreased in size, but have not entirely disappeared.

Case 2.—July 1895. Unmarried lady, age 26; hereditary tendency to phthisis. Had been an invalid for five years, visiting many climates in search of health. When presented to me I found her in the following conditions. Extreme emaciation, loss of appetite, hectic fever, chronic diarrhea for the last fifteen months; pulse 110, evening temperature 103.5, respirations 45; auscultation and percussion revealed a large abscess in apex of right lung. Mouth covered with aphthae. Sputum loaded with bacilli. My prognosis was that she would not live sixty days. She was placed on the same course of treatment as Case 1. At the end of four weeks hectic fever had ceased. Her appetite had returned. Diarrhea very much better and entirely ceased before the sixth week. She steadily improved until the end of the fifth month, when a thrombus formed in the left femoral vein from which she died thirty days later.

Case 3.—December, 1895. There had existed for five years a tubercular deposit in the apex of the right lung. Childbirth caused it to rapidly break down. Microscopic examination showed tubercular bacilli. Began treatment and continued irregularly two months. This case was refractory to treatment from the beginning; therefore was not benefited and died at the end of five months.

Case 4.—March, 1896. Male, age 22, of good proportions. Had hemorrhages several times during the preceding year. Progressive emaciation; weight 130 pounds, appetite not good. Evening temperature 101.5; respiration 34. Auscultation and percussion indicated tubercular deposits at two points of upper right lung. Microscopic examination of sputum showed an abundance of bacilli. Began treatment as above and within three weeks patient began to improve, which continued without interruption until he was compelled to leave me, September, 1896. At this time temperature normal, respirations 22, weight 150, appetite good. Sputum contained attenuated bacilli. When last heard from he was at work on a ranch in Colorado.

In an analysis of the above cases it is fair to conclude that if this treatment was begun before the structures began to break down, it would be certainly beneficial and possibly curative. After abscesses have formed it is beneficial but probably not curative. Yet if the disease is not too far advanced in the second stage, many could be cured if supplemented by climate influences.

In estimating the curative value of the remedies used, the inhalation of germicidal remedies is certainly in the right direction; but alone they are useless. The creosote has for years had some reputation as a cure for phthisis. That it is beneficial, there is no question; but it is not curative, for the reason that it practically has no effect on the bacilli. This I have many times demonstrated by microscopic inspection of sputa in patients in my clinic at the University

Medical College of Kansas City, who had taken large quantities of it. Creosote is beneficial in two ways. 1. It reduces the toxins in the blood, thereby lessening or preventing hectic fevers and colliquative sweats. 2. In a very large percentage of cases of phthisis pulmonalis next to the lungs the most frequent structure involved is the duodenum with chronic inflammation and ulceration. This interrupts intestinal digestion and assimilation, also often by reflex irritation interrupts stomach digestion. Hence is the progressive emaciation in phthisis. Creosote stands at the head of the list as a curative remedy in this pathologic condition, thereby increasing the digestive and assimilative force of the person.

With these facts before me I must conclude that the active force in affecting the bacilli was the serum. The next question is as to the effects of the serum after entering the blood. On this point many theories have been advanced.

I abstract the following from an address delivered by Dr. William Carter, of Philadelphia, before the Pan-American Medical Congress, 1893. "That blood serum is a powerful and active therapeutic force is just now beginning to be recognized. Landois discovered more than twenty years ago that the mixing of the blood of different animals resulted in the destruction of red corpuscles." Recently Dr. Carter by experiment has established the globucidal property of blood serum beyond question. He has further demonstrated that the serum of some animals are destructive to the life of others. Mettall and Buckner have shown that the blood serum of certain animals which are refractive to certain diseases is highly destructive to the bacteria that caused the disease. This shows that there are other forces in the blood which are destructive to bacteria, besides that of Metchnikoff's theory of phagocytosis. It is also well established that animals naturally susceptible to certain diseases can be immunized to those diseases by injection of the blood serum of animals either naturally immune or rendered so artificially. That the injection of blood serum of immune animals after infection has taken place will destroy it and terminate this disease is true.

That serum has globucidal and germicidal properties is well established. Its globucidal effects can be well understood, but whether its germicidal effect be by actual contact or by destroying the entity upon which the germ lives and develops is doubtful.

In view of the fact that the life and development of the germ depends as much on its environments as that of the human family, and further that its life and development ceases as soon as the pabulum upon which it lives is consumed or destroyed, we deduct the idea that serum destroys this pabulum, thereby terminating the life of the germ. This is proven by the natural history of all the contagious diseases, first by their being self-limited, secondly by the fact that one attack in the majority of them immunizes against a second, no matter how badly we may be exposed to the contagion. Indeed inoculation will not produce the disease. For no other reason than the entity upon which the germ lives and develops has been eradicated by previous attack. When serum is injected into the blood to immunize the person, it is done before there exists any germs in the blood; therefore, not for its germicidal effect. The only phenomena observed is a slight reaction attended with elevation of temperature. Hence immunity is nothing

more than the eradication of this entity upon which this germ lives and develops. I give as an example, smallpox. After the person has been immunized from the disease no difference can be detected by the microscope or otherwise between the immune person from smallpox and the one who has not been. The blood, the secretion and exhalation are exactly alike. I think this holds good in all germ contagious diseases. We see this exemplified in the following process of fermentation, acetous, venous, alcoholic. The bacterial ferment lives and develops as long as the fluid element contains the essentials necessary for its life, after which it dies and no further germ life can exist in this fluid. The same is true of all culture media.

Hence it is my opinion that the curative effect of serum is indirectly germicidal by destroying an entity, which is necessary for the life and development of the bacilli. This is manifested in the fact that after its use the bacilli becomes attenuated; and from the further fact that many of us do not possess this entity. Hence the bacilli can not develop in our structures.

A FEW NOTES ON SQUINT.

BY WILLIAM B. MEANY, M.D.

ST. LOUIS, MO.

It has long been known that hyperopes easily become the victims of exaggerated strabismus constituting squint; the disturbance between the two functions—accommodation and convergence—leading to this result. The accommodation is measured and recorded by the Nagels plan of metric angles—a plan which corresponds with the metric measurement of the accommodation.

An emmetrope looking at an object half a meter away would use two diopters of accommodation; he would at the same time converge to the same point, and thus convergence would be expressed by two meter angles, so that we record it thus: $A = 2 D$; $C = 2 m a$. If the object looked at be 20 cm. off, then: $A = 5 D$; $C = 5 m a$. The position of the p. p. (near point) and the p. r. (far point) of accommodation vary according as the patient is emmetropic, hyperopic or myopic; and in all, the p. p. and p. r. of convergence is much the same, whatever the state of refraction may be, and the amplitude of convergence is not reduced by advanced age.

The foregoing remarks show how much latitude must be allowed when considering the connection between the linked functions of accommodation and convergence. Therefore the hyperope for a given amount of convergence will have to call into play an amount of accommodation in excess of his convergence equal to the amount of his hyperopia. Now if accommodation does not exceed the positive part of his range of accommodation, he will be able to see clearly; this is the case in the lower degrees of hypermetropia, but in the higher degrees it will be impossible to harmonize these two functions which preside over binocular distinct vision. The amount of accommodation necessary for clear vision calls into action a greater amount of convergence than can be used for that particular distance, and convergent strabismus is the result.

I am aware that in thus considering the connection between accommodation and convergence, one is assuming that binocular fixation is a faculty which exists from birth, and not (as it might be considered) an acquired habit.

A hypermetrope therefore may find himself in this predicament—either he can see binocularly but indistinctly, or he sees distinctly with a loss of binocular vision. If the production of squint be due to a want of harmony between the two functions of accommodation and convergence, how is it that while some hypermetropes become the victims of strabismus, and others do not?

This is a question which it has always been difficult to answer satisfactorily, as much so now as in the past; the most probable explanation is that when one eye is inferior to the other in point of vision, it is sacrificed for clear and distinct monocular vision; so that any slight or trivial complaint—ulcers or nebulae—or even the covering up of one eye for a few days, an instance of which we have long been familiar as assisting in the development of concomitant squint. The squinting eye is often found to be amblyopic (at least 50 per cent.), and until A. D. 1880 (about) this amblyopia has been considered as the result of squint caused by suppression of the image in the squinting eye; the object of the suppression being the prevention of diplopia, which could not fail to be of great inconvenience to the patient; no evidence is forthcoming in support of this theory.

I know of no case on record in which the vision of both eyes was found good before the squint developed, one of them afterward becoming amblyopic. One is somewhat inclined to neglect taking the visual acuity of young children owing to the time taken up in endeavoring to get correct answers from them and the ease with which one can "estimate" (approximate) their refraction by other methods, such as retinoscopy or the ophthalmoscope, and by thus omitting the acuity of vision one diminishes the chances of finding cases in support or otherwise of this theory.

Is it not fair then to assume that the theory of suppression of the false image followed by amblyopia is quite acceptable as the one of congenital amblyopia.

While errors of refraction are important factors in the production of squint, has for a long time been generally agreed upon, yet the surgeon who neglects to keep strict account of the disturbed muscular functions will find the results of his attempts to correct the obliquity entirely negative.

Surgical interference for the correction of squint is a binocular proceeding and should only be resorted to after a study of each eye separately, and both as regards their reciprocal movements. A thorough consideration of the factors influencing the movements of the eye in the commencement will aid us materially in the treatment. The factors favoring convergence are, lowering of the plane of vision, fixing near objects, exercising of the accommodation; while the absence of fixation for near objects, raising the eyes, repose of accommodation by the aid of dark smoked glasses, the instillation of atropin, paralysis of accommodation, diminish convergence and favor divergence.

Every measure taken to reestablish binocular vision facilitates the cure in a strabismic subject. If for example a convergent squint having developed at an early period of life, be operated upon without first submitting the patient to a tonic treatment; orthoptic exercises and especially the stereoscope or the use of other well-known measures to further diminish the squint, we may expect not only a return of the original trouble, but it has been the experience of the past that prediction with almost a certainty of having an

over-correction often resulting in a disfiguring divergent squint, that may cause an endless amount of trouble to counteract.

By submitting a child to the therapeutic treatment as herein detailed, I have witnessed a squint of 30 degrees rapidly diminish to 15 degrees of convergence; having derived from therapeutic measures all the advantages they have furnished.

The following case may prove interesting, having been treated in the "old way."

A young man 19 years of age applied for treatment, as he stated it, for loss of sight in the right eye.

Ophthalmoscope examination reveals:

Left eye: Hyperopia total, 3.5. V = 1.

Right eye: Hyperopia total, 3.5. V = 0.

Right eye: Convergent strabismus apparent, 52 degrees.

Angle K (angle between the lens of fixation and the radius of the cornea which passes through the pupil) + 10 degrees.

Here we have a case with a total convergent strabismus of $52 + 10 = 62$ degrees; an exceptionally high degree.

Fields of fixation measured with perimeter:

| Left eye. | | Right eye. | |
|--------------------|-----------|------------|-----------|
| External. | Internal. | Internal. | External. |
| 32 | 47 | 47 | 34 |
| Instead of normal: | | | |
| 47 | 47 | 47 | 47 |

It will be readily observed that the field of fixation is strongly limited to the outer side of both eyes; binocular vision absolutely abolished. It was found impossible to provoke the union of the two stereoscopic images or the simultaneous vision of such with the stereoscope.

A tenotomy of the internal and advancement of the external recti muscles was practiced in the right eye; the internal rectus muscle was found enlarged and exceedingly strong; the external rectus weak, narrow and flattened; a slight resection of the tendon was made. Atropin having been instilled, both eyes were securely bandaged, antiseptic dressings of mercuric bichlorid, 1 to 5000, being used. Both eyes were kept bandaged until the removal of the threads on the fourth day.

The eye operated upon was again bandaged, the opposite eye was left free and provided with its correcting glass + 6D. The fifth day after the operation the bandage was removed and a + 6D provided for the right eye.

The hyperopia proved to be of six diopters in each eye. On careful examination of the eyes a slight tendency to convergence persisted; the eyes were again examined on the ninth day after the operation and, instead of a total apparent strabismus of 62 degrees as existed before the operation, it was found to be one of 10 degrees only.

With a stereoscope furnished with convex glasses of 12 diopters for each eye, the patient unites the images when they are separated by a distance of 60 millimeters. Stereoscopic exercises were ordered and to be continued daily; after several days' use of the stereoscope, the patient having learned how to observe his optical impressions, indicates (one eye being covered with a colored glass) distinctly a monocular diplopia for each eye.

The two monocular images appeared to be very near each other, separated by six or seven centimeters when the object, a flame, is placed at a distance of five meters.

Twenty-eight days after this patient was operated upon the apparent strabismus had practically disappeared; with a colored glass a distant flame though first seen in homonymous diplopia, the patient quickly unites with the two images.

The binocular vision persists up to a one-seventh m. (14 cm.), so that with hardly a month's treatment he has obtained almost normal amplitude of convergence. $PC = 7 \text{ m a}$; $RC = 0 \text{ m a}$; $7 AC = \text{m a}$. The patient unites the stereoscopic images with a distance of 73 mm., which shows the increasing strength of the divergent power with simultaneous contraction of both external recti muscles.

Does not the foregoing history of this case illustrate that a success was possible only with a combined tenotomy of the internal and advancement of the external recti muscles, followed by orthoptic and stereoscopic exercises, as well as the correction of the existing error of refraction? I am quite sure the results would not have been the same had we dispensed with any one of the measures resorted to in the treatment.

Are the functions of the muscles of the eye of a chemical nature, or a mechanical one, or both? Is the solution to be had only in mathematical research?

There are other muscles of the body which act in concert in order to produce certain effects, those of the glottis for example, about which anatomists to this very day have held such contradictory and confused opinions. The muscles of the eye, however, are about as well understood as those of any organ of special sense.

I thought it well at this period of time to register, in a general way, some of the views on squint held by the ophthalmic surgeons in the early *eighties*, and to cite a case successfully treated in the "old way." Just where the "old methods" so radically differ from the "advanced" disquisition, as set forth by some writers of late with the suggestion of recent promulgation, we submit the foregoing observations chronicled from the period hereinbefore referred to, for your consideration.

3907 West Belle Place.

TAXIS IN INCREASED INTRA-OCULAR TENSION.

Read in the Ophthalmological Section of the Congress of American Physicians and Surgeons, May, 1897.

BY S. O. RICHEY, M.D.

WASHINGTON, D. C.

The principal arteries of the globe enter it posteriorly and pierce the sclerotic directly, limiting as far as possible resistance to the access of nutrient blood. On the other hand, the veins pass very obliquely through the sclerotic in channels varying from 1.5 mm. to 5.5 mm. in length and contain no valves distal to their junction with the ophthalmic vein. The intra-ocular vessels have no vaso-motor constrictors, and the tension of the eyeball depends upon the pressure in the extra-ocular arterial current¹; after death it is lowered. Given an abnormal propulsive force in the extra-ocular arterial current from any cause, and the increased influx of arterial blood raises intra-ocular pressure. So long as this influx does not exceed the ability of the venous system to remove it, the increased tension is within the limits of safety; but should there be any slowing of the outflow of venous blood, that is, a loss of balance between the influx and the efflux of blood, "a vicious circle" is at once

formed, which is more or less able to break itself, depending upon the less or greater violence and persistence of the general vascular excitement.

Unfortunately, from this point of view, the anatomic course through the sclerotic of the veins favors obstruction to the outflow of venous blood, they for a limited part of their length being parallel with the sclerotic and within its meshes; so that *any* increase of pressure within the eye must narrow their lumen and diminish the outflow. This in turn adds to the existing intra-ocular pressure, farther reducing the caliber of the veins, and resulting in edema of the surrounding tissues, conveying a false impression that glaucoma is due to a disturbance of intra-ocular secretions.

Venous stasis in chronic glaucoma, if not relieved, results in thrombosis and connective tissue hyperplasia, in addition to other recognized changes. The difficulties and uncertainties arising in the history and management of chronic glaucoma have their immediate cause in thrombosis of the choroidal veins, complete relief from which depends upon the length of time it has lasted, and the more or less permanency of the changes within the vessels from the presence of coagula; for organized tissue may have formed there, with final abolition of the vessels, of which no mitigation is possible.

Previous to organization of the coagula and obliteration of the vein, during stasis and even when thrombosis is recent, the flow of venous blood is favored, or the coagula may be broken up, passed into the larger vessels and re-dissolved by pressure upon the external surface of the eyeball in imitation of the normal interrupted pressure upon it of the eyelids, of the extrinsic muscles and their tendons, and that produced by the contractions of the iris, which here, as elsewhere, promotes the movement outward of the current within the veins, and is antagonistic to stasis. This proceeding² I suggested and described at the meeting in 1896 of the American Ophthalmological Society, under the name of *taxis*, because the movement of the fingers is the same as in reducing hernia. It is an imitation of a normal function adjusted to a condition of normal tension, and is necessary because this function of the lids and muscles requires aid in a state of high intra-ocular tension, which offers increased resistance to pressure. It should be cautiously practiced when the coats of the vessels are weak, to guard against intra-ocular hemorrhage, the risk of which is small, except when hemorrhage is imminent or has previously occurred. It will accomplish what may be achieved by operation, with the advantage that it may be repeated with the recurrence of venous stasis and increased tension, which is a chronic tendency in chronic glaucoma.

That a myotic stimulates the iris to the production of this kind of pressure; that a mydriatic favors an attack of glaucoma by paralysis of the iris, thus allowing an advance of the vitreous body and lens, and consequent increased intra-ocular engorgement and obstruction of the anterior channel of filtration; that iridectomy, the force of the extra-ocular circulation being lessened, acts by temporarily relieving pressure upon the surface of the veins, permitting them to discharge themselves; that after iridectomy, malignant glaucoma, intra-ocular hemorrhage and failure of the anterior chamber to reform are caused by the per-

¹ Resistance of the eyeball to pressure is equal to 26 mm. Hg., and pathologically may reach 70 mm. (Norris and Oliver, *System of Diseases of the Eye*, Vol. I, p. 125.)

N. von Kries found arterial pressure in the capillaries of the hand when raised to be equal to 24 mm. Hg.; when the hand hung down, 54 mm. (*Physiology*, Landolt and Stirling, 2d Ed., p. 151.)

² A paper on "Massage of the Eyeball as a Therapeutic Measure in Glaucoma," by Dr. G. M. Gould, to be read at the meeting of the AMERICAN MEDICAL ASSOCIATION next month, is announced.

sistence of undue *vis a tergo* in the extra-ocular arterial system, I am convinced.

This paper is an appeal to my colleagues to transfer their attention in glaucoma from the anterior channels of filtration to the fundus; from the relative amounts of secretion and excretion of the fluids of the eye to the influence of the vascular system, local and general; from a possible vicious circle in the anterior to a more rational vicious circle in the posterior section of the eyeball; satisfied that only thus will they find an acceptable solution of the many perplexing phenomena which have been observed in glaucoma.

ASTIGMATISM.

Read to the Western Ophthalmological, Otolological, Rhinological and Laryngological Association at St. Louis, April 8, 1897.

BY DUDLEY S. REYNOLDS, A.M., M.D.

Professor of Ophthalmology, Otolary, and Medical Jurisprudence, in the Hospital College of Medicine, Medical Department of the Central University of Kentucky. Surgeon to the Ear and Eye Department of the Louisville City Hospital, and the Gray Street Infirmary, etc.

LOUISVILLE, KY.

This report is based upon the recorded observations of 4,686 persons, excluding as far as possible all cases of presbyopia.

I rely absolutely upon the stenopeic disc, and the test type of Snellen, illuminated always with parallel light, with the patient's accommodation completely suspended. This is the only method which I consider worthy of the confidence of either the patient or the practitioner.

| | |
|--|------------|
| Total number of cases of spherical error requiring correction | 8450 |
| Number of cases with H. in one eye and M. in other | 168 = 3282 |
| Astigmatism H. in both eyes | 380 |
| " H. Comp. in both eyes | 254 |
| " H. in one eye only | 282 |
| " H. Comp. in one eye only | 185 |
| Mixed astigmatism in both eyes | 54 |
| " in one eye only | 37 |
| Astigmatism M. in both eyes | 76 |
| " M. Comp. in both eyes | 89 |
| " M. in one eye only | 44 |
| " M. Comp. in one eye only | 57 |
| Persons with H. Astigmatism in one eye and M. Astigmatism in the other eye | 4 = 1404 |
| Astigmatism of oblique axis | 206 |
| " of different degree in each eye | 154 |
| " at right angles in both eyes | 167 |
| " in one eye only | 535 |
| " of same degree and axis in both eyes | 322 |
| | 1404 |
| Total number of recorded cases | 4686 |

It may be interesting to observe that the mydriatic used in the first 576 cases, in which there were 113 cases of astigmatism, was sulphate of atropin. In the remaining 4,110 cases, in which there were 1,291 cases of astigmatism, the mydriatic used was the hydrobromate of homatropin. The manner of employing the latter has been varied: at first I used one grain to two drams of distilled water, dropping the solution into the eyes every fifteen minutes until four applications had been made. This method proving unsatisfactory, I doubled the strength of the solution, and employed it every five minutes until four applications had been made. In a large number of experimental observations to determine just when the accommodation is suspended under this method of using the mydriatic, I concluded thirty-five minutes to be the minimum, and fifty minutes to be the maximum time required to produce complete suspension of accommodation.

In the last 2,000 cases I have employed ten instillations of the homatropin solution, in the strength of one grain to the dram of water, the instillations being one minute apart. I find that complete suspension

of accommodation is almost invariably present forty-five minutes after the last instillation, and that the effects have begun to fade away at the end of an hour and a half. I have occasionally found it necessary to repeat the instillations, causing the patient to remain another half hour after the last, and in the repetition of the instillation, I deem four applications quite sufficient. I have never known a case, even in high grades of astigmatism, which would not finally succumb to the action of homatropin. I have, in twenty or thirty cases, found a third repetition of the instillation of the homatropin necessary. I use the same strength of solution, and the same mode of application in children and adults alike. I have never known constitutional disturbance to follow its use, excepting in three instances, two of these young ladies of very sensitive nervous organizations, and one a boy with phimosis.

The asthenopia has not always yielded promptly to the correction of the refraction, but in a large number of instances constitutional treatment has been necessary. Change of diet, and habits of life are most essential in nearly every case. The nature of the constitutional medication should always be determined after careful examination of the general condition of the patient. I find patients with severe asthenopia recover quicker under treatment when the use of the eyes for the purposes of study is interdicted, pending the general treatment. Most persons suffering from asthenopia, require better blood and more sleep. Unfortunately a great many have acquired drug habits.

Persons who take yeast bread, cooked fruits, and other forms of glucose, suffer necessarily from the pressure, upon the nerve trunks, of the abnormally increased volume of the lymph stream, aside from the gastric irritation which adds to the severity of the headache, induced by the over-taxed accommodation of the eye. Phenacetin and other drugs of this class, including the bromids, simply aggravate the patient's condition, and no amount of pains-taking care in the correction of the errors of refraction will relieve such cases. A great many young men whose nervous systems are disturbed by the toxic effects of tobacco, are alike troublesome to manage.

Correcting errors of refraction in the eyes relieves those cases of asthenopia found in persons of good general health only. Recovery in all other cases is contingent upon other means of relief.

SURGERY ONE HUNDRED YEARS AGO.

AN HISTORICAL STUDY.

BY DR. GEORGE FISCHER.

DEDICATED TO THE GERMAN SURGICAL ASSOCIATION.

TRANSLATED FOR THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION BY CARL H. VON KLEIN, A.M., M.D.

(Continued from page 982.)

VII.—THE RISE OF GERMAN SURGERY UNDER AUGUST GOTTLIEB RICHTER.

Frederick II: German poets and musicians; Kant; Social relations in the second half of the century; Surgery and clinical institutions at Göttingen; The life of Aug. Gottl. Richter; Richter as a surgeon, as a writer, as a teacher, as a physician.

At the close of the Seven Years War, Prussia became one of the great powers of Europe. Frederick the Great, at home and abroad, was considered the greatest commander-in-chief, to whom only a few leaders of former times could be compared. Europe's

armies were amazed at his mode of warfare and tried to imitate the strategy of the German armies. As grew the belief in the invincibility of their King, so grew the confidence of the Germans. For hundreds of years there had been no man among them who had so powerfully taken hold of their entire affairs. At last, after so many long years of profound depression and national misfortune, a star arose, to whom the Prussians could look up with pride. And that luminary was Frederick II., the only man whose popularity struck root in this prostrated nation and who evoked such worship among his people. Indefatigably active, plain and unpretending in appearance and having good common sense, he disdained pretense, mendacity and flattery, and showed great love of justice. His highest ambition was to conquer ignorance and prejudice, to enlighten mankind and ennoble its customs. Frederick II. was the practical genius of that century. Filled with great perseverance and patience, his orders proceeded from a well-considered political management; he always retained a statesman-like calmness, his infallibility and judicious reckoning. In spite of the way in which his people worshiped him, Frederick grew almost indifferent to the enthusiasm of his subjects in his advanced age; he became more silent and reserved, and at the decline of his life said that he was quite tired of governing slaves. The following is taken from one of his posthumous manuscripts: "During a king's lifetime, he is the idol of his court, the eminent sprinkle incense before him, the poets celebrate him in song, the public fear him, but little is he loved. When he is dead, the evil he has done lives after him, for the good has been interred with his bones." Thoroughly German as the King was, nevertheless the French nourishment and training he had received during the deplorable condition of German literature, were revenged by his great contempt for the golden fruits that home literary products reaped later. He absolutely ignored Lessing's "Minna von Barnhelm" and "Nathan"; he considered Goethe's "Goetz von Berlichingen" an *imitation détestable de ces abominables pièces de Shakespeare*. There can still be seen in the public library at Zürich, framed and covered by a glass, a letter written to Professor Müller on the publication of the "Nieblungenlied" by Frederick the Great, in which he says: "You have too great an opinion of these things. In my estimation, they are not worth a penny (einen Schuss Pulver), and do not deserve to be resurrected; I would not tolerate such trash in my library, but would throw it out." However, what did the genius of the German poet care whether the emperor and the kings took a personal interest in his art or not; his own strength carried him through. But Goethe thought that, with the appearance of Frederick the Great and the good results of the Seven Years War, the grand epoch in German poesy and the evolution of the national spirit began. The German became cognizant of his worth, and with this confidence of self Lessing exclaimed: Show me an abstract of the great Corneille upon which I could not improve. We can well understand the importance of these words, if we picture to ourselves the fact that the French literature entirely controlled the German mind in the first half of the century. The courts copied after Louis XIV., the aristocratic Germans took no notice of their countrymen, the poets and authors, but wrote and conversed in French, and the Parisian tailor had no less an influence on our good tastes than the Parisian Academy. Now

German literature began to rid herself of her foreign adornment. A golden age of German belles-lettres, music and science dawned, without encouragement on the part of a kind Medici or a gracious prince.

It is charming to see how, simultaneously with the breaking forth of the *genius of the German poet* and the enthusiasm aroused thereby, our sciences are likewise promoted also without the good will and favor of a sovereign. Since the year 1750 new blossoms of German poesy have been developing, which, even then, breathed of national sentiment. Soon thereafter a new era in surgery also dawned, of which August Gottlieb Richter was the leader, obtaining the professorship of surgery at Göttingen in 1766. If we consider the following twenty years when Richter, in the prime of his life, wrote his most important works, we first of all come across his surgical library, which, as it were, opened a new world for the German surgeon. Daring, only on account of similar success, to compare the appearance of polite literature (*belles lettres*) of this epoch with the above—not judging the importance of the writers concerned—we find that Herder, by means of his studies of Homer and Shakespeare, his Oriental and Spanish literary researches, greatly enlarged the literary horizon. Richter annihilated the itinerant rupture and cataract butchers with his great works on cataracts and ruptures. This extirpation of fungi which grew so exuberantly on German soil, has a parallel in Lessing's exertions to expose the errors of the French dramatists, who beguiled the German art with the severity of Aristotelic philosophy. If there was still a point on which the poet and the surgeon agreed, it was the positive, productive reviews which both were so capable of writing. At last, Richter's principles opened the road for the progress of the science of surgery. What did the poets do during the interim (1766-1787)? Lessing, who composed "Minna von Barnhelm" during the last year of the Seven Years War, now published "Laokoön," and his dramas, "Emilia Galotti" and "Nathan." Wieland published "Mercury," "The Abderites" and "Oberon," Herder, a "Journal in Art and Science," "The Opinions of the Nations" and his "Ideas on the Theory of the History of Mankind." Then followed Goethe, the most ingenious representative of our tumultuous and oppressive period, with his great works, "Goetz von Berlichingen," "Werther" and "Clavigo;" toward the latter end of this period we also find the works of the favorite poet of the Germans, Friedrich Schiller. They are: "Die Räuber," "Fiesco," "Kabale und Liebe" and "Don Carlos." An antique work on the beauty of the Greek form and style was resurrected and revived by Winkelmann, but the views obtained therefrom had to be revised for the Germans before sculpture, architecture and painting derived any benefit from it. There was a new turning-point in dramatic art when the first German National Theater was opened by the Ackermann troupe and the famous actor, Conrad Eckhof, in 1767, and when the Wiener Burgtheater was established by the Emperor Joseph II., in 1776, the sole object of which was "the improvement of good taste and ethical culture."

And the *German composer of music* furnished another step in the grand progress of the Germans. For twenty years he had not been blessed with so much talent. Gluck was the founder of a new dramatic style. After "Alceste," appeared his opera, "Iphigenie in Aulis," which was performed in Paris in

1774, with immense success, and within two years was sung 170 times, giving the older French music the death blow. Then followed his "Armida" and "Iphigenie in Tauris." At the beginning of that period, many symphonies, quartettes and sonatas of Haydn, the conductor of the Prince Esterhazy Band, and of Mozart, were known. The latter's "Idomeneus," "Entführung" (The Rape), "Figaro," which was composed in six weeks, and "Don Juan," which outshone all the others, belong to this epoch. The youth, Beethoven, was just becoming known, and his performances on the violin and piano, as well as his free fantasias, astonished the public. What an abundance of brilliant, truly patriotic works of art were showered upon Germany, as from a cornucopia filled with blessings, in the short space of twenty years following the Seven Years War, and while formerly but a single genius adorned a century, now one jostled the other.

But the sciences did not lag behind the belles lettres, but were greatly revolutionized by Frederick the Great's maxim, "Freedom of thought." The period of enlightenment in Germany began with him and Joseph II. The priest had to submit and the boldest idea gained ground over the old productions in spite of him. Ancient customs and modes of thinking became obsolete, prejudices were conquered. It was no accidental event that, in Germany at this time, the great thinker Kant "created thoughts which threatened to overthrow the entire former views of the world with wonderful boldness." In 1781 appeared his criticism on "Pure Reason." His philosophy, with which he ascertained the origin and limits of the human mind, which never permitted the entire theoretical use of our reason to extend beyond objects of practicable experience, and which discarded all old-fashioned ideas and prejudices, had a great influence on all the sciences. Those who did not wish to be behind the times had to resort to his prescribed course of free, independent research. To this guidance the German sciences owe their greatest success. History and philology took a new upward flight with Johann von Müller, Niebuhr, Schlosser and W. von Humboldt; the old classics were given new life by Heine and Wolff. Kant's ideas were also transplanted into the natural sciences (Blumenbach and Sömmerring); they did not, however, make any great, wide-spread progress, because the apprehension of simplicity and plain fact was lacking.

We will here make a few remarks on the social relations in the second half of the eighteenth century. This gave itself the nickname of the "Enlightened;" from all chairs of learning and from the pulpits, in society and in the workshops of the mechanics, sounded the word "Enlightenment," and yet contemporaries talked of our "disordered period, in which sense and nonsense, wisdom and ignorance, bigotry, superstition and incredulity, enlightenment and darkness, integrity and deception cross each other" (Baldinger, 1787). This is similar to what Scherr, in our times, terms a kaleidoscopic variety of contrasts as being characteristic of the eighteenth century. General prosperity was discernible throughout the various German cities; the houses were more comfortable and more spacious and had larger windows and bright stairs; the towns were embellished with walks and gardens; the merchants and the manufacturers were now the wealthy people of the city; the wounds of the Seven Years War had healed. The government

founded charitable institutions for the care of the poor and of the sick, placing physicians in charge; for the vaccination of the public in general and for the deaf and dumb, the latter the first institution of its kind established in Leipsig, in 1778, by Heinike. Among the places of amusement, which were few in number and not very expensive, the theater was the most popular. The wandering theatrical companies increased in number and the arrival of one of them was an event of great importance. In spite of the poor transportation and the few good high roads, there was more traveling done than in the middle of the century, and that oftener into the mountains, on account of the growing taste for nature's beauties. The middle class, occupying a position between the nobility and the laity, comprised the learned, the officials, clergymen, and the prominent merchants. This class, which was separated from the mass by its exemption from military services and which considered it a disgrace when their children, after having been given an education at school, fell into the hands of the recruiting officer, represented the best portion of national power. It was the training received at college that united these men and distinguished them from all others. While formerly at the Latin schools a pedantic, thoughtless method of teaching was pursued everywhere, now a knowledge of the life of the ancients and an intelligence of its embellishments were the essential factors of study. The young people had to do their own thinking. In short, a classical education was the aim of the middle-class youth. The great value of athletics for physical development became known, and we are proud to say that the same did not alone emanate from Germany (Guts-muths, 1793), but was also greatly cherished in our Fatherland. On the other hand the interests of the government and the most important affairs of the nation were still slumbering. There were plenty of honorable men, but sentimentality prevailed instead of virility. Who does not know the touching story of Klopstock, when he with his friends was at the cemetery and at the sight of the roses, the flowers of love, in contrast to the grave, became so agitated that they bought a bottle of wine and caroused at the cemetery in accord with the roses and graves. We have mentioned heretofore how Voss and his friends formed the "Göttinger Hainbund," a society of young poets who vowed their friendship under the sacred trees of the "Hain," increasing the sentimental feeling to the utmost degree. When Goethe's "Werther" appeared the tears flowed in torrents; à la Werther became the favorite habit of sentimental gentlemen, and Schiller's "Lotte" was the most famous type of woman of that period. On account of the dearth of political interest, there grew an uncomfortable condition of frankness among the educated. While the Revolution was going on in France, the muse was calmly being cultivated in Germany, revelling in her two greatest poets. Louis XVI. and Marie Antoinette beheaded in France, while "Reinecke Fuchs" was being composed in Germany; Robespierre's Reign of Terror and the "Letters on Æsthetic Culture of Man;" the battles at Lodi and Arcole at the time of the writing of Wilhelm Meister, Horen and Xenien; Belgium sided with the French, "Hermann and Dorothea" were being written in Germany; Switzerland and the Ecclesiastical States (Papal territory) were French, while "Wallenstein" materialized in German; the left bank of the Rhine belonged to the French,

her natural daughter though, the "Maid of Orleans," was being composed across the border; Hanover was occupied by the French, when "Braut von Messina" was being written in German; Napoleon was crowned Emperor when the work "Wilhelm Tell" saw its first light. The ten years during which Schiller and Goethe, bound by the tender ties of friendship, lived together, the ten great years of German literature, were the same years that France suffered from her Reign of Terror (G. Freitag). To adorn oneself with the finery of others for a short time results in an uncomfortable feeling, even if this little loan of remarks on historical culture are pardonable on the part of the surgeon. We will therefore return to our sciences.

The predecessors of A. G. Richter were at *Göttingen*, the objective point of activity. Soon after the founding of the famous "Lein Athen" by George II., the very learned body physician of the Bishop of Lübeck and afterward of the King of Sweden, George Gottlob Richter, was appointed head salaried professor of medicine, and A. von Haller second professor of anatomy, botany and surgery by Werlhof in 1736. Haller's achievements for science at Göttingen were extraordinary. In 1738 he founded the anatomy amphitheater, a botanical garden the following year and in 1750 a maternity hospital. He also established a museum of anatomic collections and a school for artists whose specialty was plants and animals. His purpose to erect a clinic failed, for these institutions were not thought necessary until after van Swieten's successes in Austria. In 1745 he founded a scientific journal which, edited by him in a most skilful manner was, next to the Jena literary journal for scientific contributions, the most important collections in Germany. Richter carefully looked over all matter handed in for his journal, willingly accepted knowledge from foreign nations and always used a simple style of expression. After he had constructed a plan for the formation of a royal society of sciences in Göttingen, the same was organized in 1751 and attained great renown under his superintendence as its life-long president. Haller had put aside poesy as his influence in that direction amounted to nothing. No periodical publication on poetry could succeed by the side of the scientific journal. During the ten years after the appointment of the above men, two other professors were added to the medical faculty: Segner, who taught natural philosophy and mathematics, and Brendel. Somewhere about the year 1750, when Haller went back home and Segner moved to Halle, Röderer was given charge of the anatomy amphitheater and the maternity hospital while G. Zinn taught botany, but at the same time carried on anatomy. In the following ten years beginning with 1760, when the old professors, with the exception of G. G. Richter, had passed away or accepted positions outside of Göttingen, four additional salaried professors were appointed: R. A. Vogel for chemistry, mineralogy, pathology, semiology and materia medica; Ph. Schröder, summoned from Marburg, obtained the third position in the faculty and read on general therapy to the students; Büttner taught therapy and botany; the fourth, Matthiä, who, tutored by Heister, occupied his time principally with historical works, wrote on Hippocrates and Quintilian, but translated also more modern writings (Winslow's Anatomic Treatise on the construction of the Human Body, Garengot's Treatise on Surgical Operations,

le Dran's Manual on the Extraction of Stones from the Bladder). Three extra (unsalaried) professors, who taught during this period were: Murray, having charge of the botany, Wrisberg of the anatomy, and A. G. Richter, surgery. The professors had a great habit at that time of meddling with all the branches possible in teaching, A. Wrisberg, for instance, using certain manuals in his lectures. He taught anatomy and physiology according to Haller's manual, obstetrics according to Roederer's principles, legal medicine according to Ludwig, surgery according to Heister and Ludwig, ophthalmology according to St. Yves and osteology according to Böhmer's manual. In 1773 Baldinger arrived in Göttingen to teach general pathology and the natural sciences, but remained here only until 1782. During the time from 1780-90 there were besides Murray, Wrisberg and A. G. Richter four more salaried professors: Peter Frank, of pathology; Gmelin, of chemistry, pharmacy and mineralogy; Blumenbach, of physiology, comparative anatomy and natural history; V. Stromeyer, of general therapy and materia medica. The unsalaried Professor Fischer had charge of the maternity hospital, and Arnemann delivered surgical lectures. Some of the later professors with date of appointment were: 1792, the obstetrician Osiander; 1800, Wardenburg; 1803, Himly of Jena, as director of the hospitals and in 1804 C. M. Langenbeck was appointed unsalaried professor of anatomy and surgery.

But what was the *condition of surgery* and what *were the clinical facilities at Göttingen?* The auspices under which practical surgery began in Göttingen were poor: A. v. Haller accomplished nothing during the seventeen years he was employed here. About the year 1765 the following lectures on surgery were given by three of the professors: The first one by G. G. Richter, who read Boerhaave, the second by Vogel, who taught according to Heister's little "Surgery" and performed operations on cadavers alone, and the third one by Wrisberg, who taught Haller, Heister and Ludwig, as mentioned heretofore. The students were now and then given opportunities to accompany their teachers on their visits to the sick and in 1764 Vogel founded a sort of ambulatory clinic (*collegium clinicum*) where the sick of the poor people in the city and from the country came. Vogel's students accompanied him to his patients' bedsides, and Saturdays they took little trips with him into the country visiting the more important cases. The students kept a notebook on the patients referred to them and for defraying the expense of the medicines they made a contribution out of their own pockets every quarter year. When patients needed surgical attendance the university surgeon, Tolle, was summoned, who had then to follow Vogel's instructions. Since the year 1750, the surgeons of Göttingen have been united in a secret corporation and one of the professors was appointed over them as *Praeses Collegii Chirurgici*; this position was held respectively by Haller, Roederer, Schroeder and A. G. Richter, in the order named. Not until 1780 a hospital with fifteen beds for medical and surgical cases was founded. The idea was suggested by the Free Mason's Lodge, which made yearly contributions for its support, but from the very beginning the government furnished the greatest share. The patients received their hospital grub, board and medicines gratuitously; only for the wealthier sick a few rooms were reserved. A. G. Richter was appointed superintendent and

granted the right to use his discretion in admitting the most important of those sick who applied. Two hours of his afternoons were spent in visiting, and in attending the necessary operations. Some of his assistants were: Dr. Böhmer, Professor Stromeyer, who also gave clinical directions in the hospital, and later Wardenburg and Himly. The help consisted of one male and one female nurse and one servant. Every month the Göttingen surgeons took turns in performing the operations for nothing, and their pupils were admitted as free spectators. Students who attended the daily visits paid reasonable fees for the same and were allowed to perform operations. Theological students also practiced there, but aside from this, there was religious services on Sunday and on holidays. From the time of the opening of the hospital in May, 1781, up to December, 1787, 667 patients were enrolled.

About the period of 1788-90 several alterations were made in the clinical institutions. Vogel's ambulatorium was changed to a endowed public Clinical Institute under Baldinger (1773) and afterward successively superintended by Frank, Fischer and Oslander. The number of cases treated at the ambulatorium, about 500 yearly, corresponded to the small number of inhabitants at Göttingen. The "Chirurgische- und Krankenhaus" also underwent a change. When, in 1793, all the secret societies, consequently also the Free Mason's Lodge, were dissolved, the latter presented the establishment and 5,000 thalers to the government, which from that time on maintained the same alone. It remained under the direct supervision of A. G. Richter until 1797. Two years later two of the sixteen beds were given in charge of Professor Arnemann, while the rest were equally divided between Stromeyer and Wardenburg. In 1802, Oslander took the superintendency of the hospital, but in 1803 turned it as well as the management of the Ambulatory Clinic over to Himly, who was assisted by the surgeon Langenbeck. The two institutions were combined for the instruction of the students to great advantage. Why Richter resigned the direction of the hospital after having served seventeen years and why Himly was appointed with his approval, has never been known. Himly improved the hospital; when in 1809 it had become too small, he moved it into a three-story building with two wings (from Geismarthor to Stumpfenthal) and increased the number of beds to twenty-eight. Loder, Sömmering, Stiebel, Heusinger, Chelius and the Hanoverians, Spangenberg, Wedemeyer, Holscher, and others were educated there. Afterward many good army physicians were procured from this school for the military hospitals of Hanover. In the year 1807 there were 220 patients treated at the Hospital and seventeen practitioners with twenty-six auditors (pupils) were on duty.

Besides the Royal Clinical Institute and the Hospital the following four private clinics were established one after the other in the city: 1. Arnemann's Surgical Clinic (1796), which he established on account of the great number of patients afflicted with sore eyes and ears, and that, at his own expense paying for the medicines needed by the poor, and accepting contributions only from the wealthy. Later the institution was endowed by the government. During the first five years 1,096 cases had been taken in for surgical treatment. From 1801 on, medical patients were also admitted and then a special hospital (Medical Surgi-

cal Institute) was founded for them, in which the members of the same performed the operations. 2. The Medical Surgical Clinic founded by Wardenburg in 1799. Here the auditors were also allowed to practice operations on cadavers, and were placed in the sections that belonged to A. G. Richter's department (Physikat). This clinic was united with the Academic Hospital in the following year, accepting 349 patients (270 medical, 28 surgical, 36 operative) during that winter, besides the regular hospital patients. 3. The clinic established by Professor Cappel and the private tutor Jordan in 1801. 4. The Clinical Institute for Surgery and Ophthalmology founded by Professor C. M. Langenbeck, who then resigned his position in the Academic Hospital. In Langenbeck's Institution which was endowed and presented with a building by the board of trustees, there were treated 290 patients during the first year, 18 cataract operations and six amputations were performed and was attended by 82 students. The number of patients increased so rapidly that the structure had to be enlarged and thirty beds were now needed. Dr. Seyde and Pauli, Langenbeck's right hand man, were his assistants, the latter since 1813 at this institution which was free to all. We thus see that Göttingen had fine and exceptional facilities.

And now comes *August Gottlieb Richter*. If we modern physicians put the question: What do we know of Richter's accomplishments and achievements and his rank in German surgery, we would be compelled to answer: As much as nothing. When the writer conversed with a practitioner of the modern school, whose office was generally filled with patients, on Richter, the only praiseworthy deed he knew of him was as the author of a valuable work on ulcers; but this was an error on the part of the colleague, who had mistaken Rust for Richter. My only knowledge of him at first was, that a certain kind of scissors bore his name, and that he had written a book on ruptures. Surely there are many colleagues who are today wandering about in this wilderness. With shame we must confess that we have no complete biography of the best surgeon of but one hundred years ago. We certainly do not care about an encyclopedic order of dates and it is about the same to us when and where Richter was born, and yet of our own flesh and blood we German surgeons ought to preserve with the feeling of deepest gratitude and piety, his memory. In order to obtain the following facts regarding Richter, the writer had to interview various ones of his contemporaries still living.

Richter was born April 13, 1742, in Zörbig (district Meissen) and Her Royal Highness the Princess Augusta Carolina, the Duchess of Saxony, was his godmother. His father, George Gottfried Richter, who married Christina Dorothea Feichmann, was a master of arts and philosophy, the prime minister and the superintendent of the school in Zörbig; a brother of the above mentioned George Gottlob was professor of medicine in Göttingen, and George Frederick, professor of political economy and moral philosophy in Leipsig. Richter's grandmother, Johanna Maria, née Pinckert, prided herself on her ancestry dating back to the Burgomaster Lucas Pinckert in Meissen to the year 1507, ubi gens Pinxeria jam diu ante floruit. Presumably his uncle at Göttingen, who had no children and was a wealthy man (established a fund of 1,200 thaler to be used for scholarships), won over the young August Gottlieb to the study of medicine, for,

according to the family tradition, he ought to have become a clergyman. His father, grandfather, great-grandfather and all his ancestors up to the sixteenth century were pastors, and the last one of these known, Paul Richter, was ordained by Luther in 1545. It had become a proverbial expression that clergymen are blessed with a big family, and Richter's proved no exception; August Gottlieb's father had nine brothers and sisters, and he himself had five; one of his brothers became a minister in Hanover, another was counselor of the consistory of Anhalt-Dessau, and one of his sisters married a preacher.

Having been instructed by competent teachers and sufficiently prepared to enter the university, he began the study of medicine at Göttingen in 1760, during the war. So when a hospital was equipped for the wounded soldiers, the young student joined the managing physicians and was so enthusiastic that he spent almost all of his time there. Under these circumstances, it was not surprising that he had no fascination for the learned profession of his uncle. Probably from a motive to please him, not to satisfy himself, Richter wrote a Doctor-dissertation on "*de prisca Roma*," after studying four years. He publicly substantiated his views on Sept. 12, 1764, "with honor," and on the 17th of the same month, at the inaugural ceremony of the Academy, received his degree from his uncle, whereupon Richter, "with due propriety expressed the usual thanks from the cathedra." Only a few weeks later, so that he might teach, he wrote a work on his observations made in connection with a cancerous ulcer of the stomach, and he defended the same with the Livonian Pfing. In October he started on an eighteen months' trip at his uncle's expense, visiting the following cities: Strassburg, Paris, London, Oxford, Leyden, Amsterdam and Gröningen. Much of his time was spent in London, where he studied with untiring diligence at the Bartholomew Hospital under Percival Pott. Richter pronounced it a most excellent school. Pott distinguished himself then especially in the treatment of diseases of the eye and hernias; later his pupil followed in his footsteps. Richter seems to have continued his friendly intercourse with his teacher, to whom he dedicated the second part of his *Surgical Observations*. In Paris his principal instructor was Petit, who took the lead in surgery at that time; Levet also taught him. When 24 years old, June, 1766, he returned to Göttingen and immediately received the appointment as professor. In his opening address he supported Daviel's ideas on the extraction of cataracts. Soon after he held a discourse on the great advantage of combining surgery and medicine, of which union he himself was an illustrious example. His acquirements were thus fully in keeping with the expectations that he had studied the very best surgeons while on his trip—as remarks the scientific journal of which he afterward became a contributor. He now began his course of lectures; in 1767 he delivered a discourse on surgery according to Ludwig's system, then he read one on diseases, "which required the use of instruments and surgical operations," and gave a public talk on ophthalmology. During the following semester he gave practice lessons in operating on cadavers at the Anatomical Amphitheater. In June of 1771, he became a regular professor and founded a surgical quarterly.

(To be continued.)

SOCIETY PROCEEDINGS.

Annual Meeting of the American Surgical Association.

Held in Washington, May 4, 5, and 6, 1897.

TUESDAY, MAY 4.

The President, Dr. John Collins Warren, delivered an address upon "The Influence of Anesthesia on the Surgery of the 19th Century."

Dr. John Homans, of Boston, read a paper entitled "The Indications for and the Technique of Hysterectomy."

Dr. H. H. Mudd, of St. Louis, in discussing this paper, said that hysterectomy for fibroid tumors had a technique which was not uniform and which varied with the special indications. He expressed himself as especially gratified to hear that Dr. Homans discards the clamp. In his opinion, hysterectomy for suppurative peri-uterine inflammations should be strictly limited to a very narrow field of action. Vaginal hysterectomy for malignant disease is efficient and desirable for those cases where the disease is limited to the external os. The extension of carcinoma of the os is by infiltration of new tissue in two directions, first, along the vaginal tissue and, second, into the broad ligament. Most of the cases in which malignant growth begins in the body of the uterus should be subjected to abdominal hysterectomy as this is certainly the only method of operation where the uterus is secondarily involved. The greater number of cases of malignant disease which require hysterectomy have their origin in the os, and if presented early to the operator may be removed by the vaginal route. The preparation of the patient for those operations is in accordance with the general rule, but the author's preference is to have the patient anesthetized upon the operating table in order that the time necessary for the anesthetic may be as short as possible. The Trendelenburg position is much preferable, and the abdominal incision should be free enough to give room for rapid and accurate work. If the growth is soft and pliable, it should be cleansed with a curette, washed with sterile water, wiped with a gauze sponge and the firmer margins approximated by sutures.

After describing at some length the various steps of the operation, the question of the ligature was taken up and silk was advised to be used in securing the ovarian artery. It may be cut short or left with one end resting in the vagina. Hemorrhages should be well controlled by ligatures or by clamps. The author has discarded iodoform gauze in all cases where it comes in contact with the peritoneum, as he considers it a dangerous agent.

Dr. F. E. Lange of New York, stated that in his opinion the principal dangers in these cases were hemorrhage and sepsis, and he thought it a good idea to lay down certain general rules to be followed in approaching all these cases. All working in the dark should be avoided. The speaker has occasionally employed a crux incision in these cases and in some has made an incision above the symphysis pubis, but has found that in some of the crux operations, the fleshy portions do not offer enough resistance, and this is especially true where the patients have not been pregnant before the operation and become so afterward. In some cases such an extensive raw surface has remained after operating, that it has been necessary to use the apron of the large omentum in order to prevent the agglutination of the intestines. The para-vaginal or para-rectal incision has also been employed to good advantage, which consists of the separation of all the soft parts along the side of the rectum. The hemorrhage is considerable in those cases and it is well to secure the vessels as much as possible before they are cut. The advantage of this incision is that the floor of the pelvis becomes much more accessible. Provision against infection is also greater because the drainage takes place away from the peritoneal cavity.

Dr. Dudley P. Allen referred to an operation in which the patient is placed in the Trendelenburg position, the fibroid is drawn over the pubes and is separated from the surrounding structures with a pair of scissors. The uterus is divided from the bladder anteriorly by a few cuts of the scissors and the broad ligament is held between the thumb and finger. This operation up to the present time has been very successful.

Dr. Albert Vanderveer of Albany, said he agreed with Dr. Homans that when curetting and all intelligent lines of practice had been carried out without recovery for the correction of misplacement, removal of the uterus is the proper procedure. As to the method of removal, he declared himself firm in the conviction that if the vagina is normal or comparatively so, if the cervix, particularly the external os, is in a healthy condition, the abdominal or supra-vaginal hysterotomy gives the pa-

tient a degree of normal vaginal anatomical relations that is comforting and beneficial to her, in addition to giving the operator an opportunity to examine the pelvis from above, to relieve adhesions, to bring under positive observation the tubes and ovaries and if not healthy to remove them. On the other hand, if there be present decided cystocele or rectocele or prolapse of one or both ovaries, then the vaginal route is to be preferred. In his opinion, the clamp should be avoided in the abdominal operation. He regretted very much the fact that these cases are not brought to the attention of the surgeon before the disease is so far advanced, and referred to the various diseases to which the condition is ascribed, as, for example, supposed change of life or ill health from last confinement or miscarriage. Speaking of carcinoma, he considered an operation was called for when it was confined to the uterus and all suspected symptoms and indications had been confirmed by microscopic examination of specimen removed. When the uterus is not too large from invasion of the body by the disease, when there is no considerable fibrosis present and when no pregnancy beyond the third month complicates, the surgical route should be through vaginal hysterectomy. The presence of a fibroid does not necessarily mean an operation, as many patients suffer so little inconvenience that such a procedure is not called for and curetting will answer in a few cases. As to the combined operation, pan-hysterectomy the author considered that but few cases called for this procedure, but when it is done, surgeons should give themselves the benefit of a free abdominal incision. He objected strongly to taking away any more of the pelvic organs than was absolutely necessary if like good results could be secured by a less severe procedure. In his opinion, it was inadvisable to place a Jacques self-retaining catheter in the bladder after these operations.

Dr. J. William White of Philadelphia read a paper entitled "The X-Rays in Surgery." He divided the consideration of the subject, 1, in its relation to foreign bodies; 2, fractures and luxations, and 3, diseases of the bones and joints. He stated that foreign bodies in the cavities of the body could be located by a system of triangulation by means of successive skiagraphs having known relations to one another and to a fixed point on the surface of the body next the plate. Bullets in the cranial cavity have been located and removed and their recognition is easy in the majority of cases, while in the thoracic cavity, they can be located with reasonable accuracy in the trachea, bronchi, lungs or pleura. Rubber drainage tubes in the pleural cavity can not invariably be detected by the Roentgen method, as they seem to be more or less translucent to the rays. Detection of bodies in the esophagus continues to be very satisfactory, and the conditions of foreign bodies in the abdominal cavity are about the same as in the thorax. Bodies in the pelvic cavity can be found by taking skiagraphs with the patient in various positions. With regard to fractures of the skull, it is especially desirable that we should be able to recognize, *a*, fracture of the inner table; *b*, linear fracture, and *c*, fracture of the base. Up to the present time, there is no case on record of the first two having been done clinically, but it has been done experimentally with entire success. Skiagraphy will doubtless result very beneficially in the future in the prognosis and treatment of fractures and dislocations of the spine, and will no doubt give us great help in obscure cases of fracture of the sternum, scapula, clavicle and pelvic bones. On account of the movements during respiration, skiagraphing the ribs is especially difficult, but this movement can be much restricted by a fixed dressing not opaque to the rays. Fracture and luxation of the bones of the extremities can usually be readily demonstrated. Ununited fracture even in the presence of close fibrous union can be demonstrated with great accuracy. In disability following old fractures near joint, skiagraphy has been of the greatest help in determining the mechanical cause of the limitation of motion. Referring to the medico-legality of this matter and to the question of whether or not the patient has a right to demand as ordinary care that the medical attendant should have a skiagraph of the fracture taken, the author stated that at the present time he would unhesitatingly answer in the negative. There can be no doubt, however, that skiagraphs will figure largely in suits for damages in the near future. There is no doubt that a definite diagnosis will soon be possible in cases of diseases of the bones and joints and it is evident that skiagraphy has added to the precision of our management of many forms of these diseases. In various forms of cardiac disease, the fluoroscope is likely to be more useful than the skiagraph, as, in the case of organs in motion, the skiagraph can only give the net result during the period of exposure. Referring to the amount of exposure necessary, the author stated that this varies very much, and in the case of stone in the gall bladder, thickness of the abdominal walls and the depth of the calculi from the

surface played an important part. Renal calculi had been found and successful operations performed based on the skiagraph evidence, while vesicle calculi are more difficult to find on account of the super-position of the pelvic bone. Urethral stone has not yet been seen clinically, but seem likely to be easy of recognition. As to the possible therapeutic properties of the rays, they were first thought to be germicidal, but this has since been denied. The author stated that he had directed his attention to the cure of cancer with the rays and his hopes of success had been somewhat bolstered up by his experience, although as yet he had no results to report. In the meantime, he felt confident that no harm could come to the patient, even though the experiment should be unsuccessful.

DISCUSSION.

Dr. W. W. Keen of Philadelphia in discussing this paper, called attention to the importance of the medico-legal relations of the X-rays and mentioned a case showing the unreliability of skiagraphs as a means of diagnosis.

Dr. Charles B. Nancrede of Ann Arbor dwelt upon the importance of taking skiagraphs in various positions and quoted cases in support of his statement that one or even two or three pictures should not be used as a basis of diagnosis. He also stated that the fluoroscope will occasionally be successful where the skiagraph has failed and *vice versa*. He illustrated his remarks with several skiagraphs and mentioned that an apparatus costing \$50 would throw a spark seven and three-quarter inches and do all that was necessary in the majority of cases.

Dr. G. R. Fowler of Brooklyn dwelt upon the importance of taking in various positions and mentioned a case in which he was able to demonstrate in a perfectly sound limb an apparent deformity similar to that which existed in a previously injured limb. He also stated that the fluoroscope was often of use when the skiagraphs gave negative results, and laid great stress upon the possibility of defective skiagraphic plates.

Dr. M. H. Richardson of Boston showed a number of skiagraphs and laid great stress upon the medico-legal relations of the X-rays. He stated that a number of judges had signified their intention of admitting these pictures as evidence in suits of malpractice.

Dr. Williams showed a number of skiagraphs and also demonstrated an instrument for showing calculi in the bladder.

Dr. Christian Fenger of Chicago referred to a case in which search was made for a bullet in the cranium and in which the soft parts of the skull down to the bone subsequently died, presumably due to too long exposure.

Dr. Edmond Souchon read a paper entitled "Operative Treatment of Irreducible Dislocations, Recent or Old, Simple or Complicated."

The writer considers all the forms and varieties of irreducible dislocations and studies for each one, the operation performed, the difficulties and complications after the operation, the results immediate, the results remote, and formulates the conclusions as to the advantages of each. The study is based on 140 operated cases. The profound silence of text-books and also of special books on dislocations in regard to this most important subject renders this study most imperative and timely.

All irreducible dislocations recent, simple or complicated, with fracture, that were operated by reduction or resection have given good results with one exception, in which death does not seem to be due truly to the operation alone, but to a complication of shock, unusually severe at that.

Irreducible dislocations, old, simple and forward, operated by resection through an anterior incision, are the most frequent, fifty-six cases against thirty-three by arthrotomy and reduction. Results remote show a great mortality percentage in resections from injuries to the vessels, but this is unavoidable with special care. The fatalities in reductions are due to sepsis, now preventable. The disadvantages of reductions are necroses of the cartilages and of the bone of the head, calling later for sequesterations and resection.

This is probably due to the greater dissection, and denudations of the head and surgical neck necessary to reduce than to simply resect the head. Reduction is the more desirable operation of the two because it preserves the head and all the movements depending therefrom, but the necrotic consequences are serious drawbacks, as also ankyloses following sometimes the reduction. It should not be resorted to unless it can be done easily, without too extensive dissections, although it may be necessary to use hooks, levers and some curetting of the cup, as the cases reported show. The duration of the dislocation is immaterial; it is the condition of the parts that is all important. Recent irreducible dislocations have given as much if not more trouble to reduce than dislocations of months' standing.

The anterior incision is the route in all forward dislocations; almost all forward cases operated by the axillary route and the posterior incision have been unfavorable.

Cases reported as operated by subcutaneous section of fibrous bands, of tendons, of muscles and by osteotomy have given good results, but they are so few. It seems extraordinary that surgeons have not employed the method oftener; perhaps they have, but having failed, have not reported the cases. In considering the extent and density of the tissues binding down the head and surgical neck to the surrounding parts, as reported by operators, it is a wonder that these methods should succeed except in very selected loose cases.

Irreducible dislocations, old, downward, four in number; have all been treated by the axillary incision with the resection, *i. e.*, removal of the fractured head more or less loose in the axilla, with favorable terminations. In one case, however, the head was "pegged back" and reduced, with a good result. One downward dislocation (Desprès) was treated by osteoclasis, but it was a failure, no false joint forming. Yet there are cases on record of forward dislocation in which the bone was fractured near the head, or through the surgical neck during efforts at reduction and which yielded a fair enough result.

Irreducible dislocations, old and backward, in the adult, have been reported twice. They were operated by resection with a very ordinary result.

Irreducible dislocation, old, upward and operated, have not been found on record.

Irreducible dislocations, congenital, have been operated several times; they were old, backward dislocations. Two cases were operated by reduction; one case died, the other had to have sequestra removed, and then did well. Three cases were operated by resection, two with good results; the third one is not stated.

Irreducible old dislocations in young subjects or in old subjects are duly considered; also old dislocations double, *i. e.*, of both shoulders; also spontaneous or pathologic paralytic irreducible old dislocations.

The forms and varieties due to complications are fully treated and also the forms and varieties due to relapses or recurrences and to the sequels of the operations performed for irreducible dislocations and old, simple or complicated.

Dr. J. Ewing Mears of Philadelphia, referring to Dr. Souchon's paper, advised that the word "irreducible" should be dropped and the word "unreduced" should be substituted. The word irreducible is a term which can be applied when efforts at reduction are limited to manipulation, while the word unreduced would refer to dislocations which could not be reduced even by operative procedures. He suggested that some rule should be laid down as to when a fracture should be considered acute and when chronic. In all cases of recent dislocation of the shoulder which can not be reduced by manipulation and operation is considered advisable, he recommended an incision through the deltoid muscle as being probably the best method. He considered that disability and pain were the two indications for operative interference in old dislocations and mentioned that he had seen cases of old unreduced dislocations in which as much freedom of movement had been accomplished as was necessary for excision of the head of the bone without any bad effects resulting. In some old cases of dislocation he considered massage as being very advisable before resorting to operation. With regard to the relief of pain in these cases, he thought any operation that would relieve pressure should be performed and that that was a question that could hardly be discussed. He referred to an operation performed by himself in 1896 in which he did a subcutaneous section of the neck of the humerus in which the object was to form a false joint. Although the operation was successful as far as the relief of pain was concerned, upon the death of the patient one year later, examination showed that a false joint had not been formed, but union had taken place at an obtuse angle in such a manner as to pull the head of the bone off the axillary plexus. The tissues around the joint had been stretched to such an extent as to permit the head of the bone to almost return to the cavity of the glenoid.

Dr. Joseph Ransohoff of Cincinnati considered that operative treatment in uncomplicated dislocations of the shoulder of recent occurrence were so readily reducible under anesthesia by manipulation, that operative treatment very rarely came into the question, and that unreduced dislocations of long standing, as far as treatment is concerned, must be entirely determined by the degree of disability entailed. Where this is slight, the patient is enabled to gain a livelihood, and pressure symptoms are absent, particularly if the dislocation is one of more than two or three months' standing, the advisability of operative interference must be questioned; but pressure upon the vascular or nerve trunks was a positive indication for opera-

tive interference. The operations suggested and practiced for irreducible dislocation of the shoulder are, 1, subcutaneous division of the adhesions; 2, subcutaneous osteotomy of the neck of the humerus; 3, arthrotomy; and 4, resection; but the French surgeons alone advocate the first named, the last two being most frequently indicated. In old cases, even where reduction is accomplished, there remains where the head had been contained a large cavity bounded by firm fibrous walls and often lined with an imperfect serosa which closes with difficulty and affords a ready nidus for infection. The earlier that interference is practiced, the better are the end results. The immediate fatality following arthrotomy is very considerable. The present status of the question of operative interference in shoulder luxations may be summarized as follows:

1. Immediate operative interference is indicated when the ordinary methods by manipulation under anesthesia have failed.
2. In irreducible dislocations, operations should not be delayed until irremediable changes have taken place in the capsule and about the humeral head. In comparatively recent cases arthrotomy offers the best end results.
3. In old standing cases the conditions found must determine the choice between arthrotomy and resection.
4. In unrecognized dislocations of long standing, a year or over, only grave compression symptoms must be recognized as indications for interference.
5. Special attention must be given to the prevention of sepsis, since in a very large proportion of cases recorded sepsis has been either the cause of death, or, by the destruction of the humeral head or obliteration of the joint cavity, has frustrated the very object of the operation.

Dr. Owens of Chicago stated that his experience with cases of this kind was only three in number, the first of which was of the subcoracoid variety in which attempts at reduction were unsuccessful and it was necessary to cut down through the deltoid muscle into the joint. Caries, suppuration and necrosis set in and finally resection had to be done. Since this case, he had seen one which proved to be a dislocation of seven or eight weeks' standing, although it was said to be a fracture. In this case an incision was made through the deltoid muscle, which was enlarged with a probe-pointed bistoury, but it was still impossible to reduce it. The subscapular tendon was then divided and although nothing could be found which seemed to be holding the bone, it was still impossible to reduce it and a resection had to be done which was followed by excellent results. The third case was one of dislocation which had been overlooked and mistaken for a fracture, and in this case also manipulation failed. In performing Kocher's method of rotation of the arm outward, the upper end of the bone gave way. Its position was improved at once and the pain finally disappeared. In order to prevent union, and to make a false joint if possible, the bone was moved every day. Movement increased and considerable usefulness was secured, so that he was satisfied with this accidental result.

Dr. John D. Roberts of Philadelphia referred to one case in which, in attempting to reduce it, much bruising of the soft parts resulted, and it was necessary to postpone operative interference until this condition improved. Later he discovered that he had put the head of the bone on the brachial plexus, so that the patient was worse off than ever and resection was necessary. The patient succumbed from shock and hemorrhage within twenty hours.

Dr. L. McLane Tiffany of Baltimore saw no reason why cases of dislocation of the shoulder joint should be considered in a different manner from those of any other joint, and considered free opening a proper procedure. As to the time when a joint should be considered irreducible, no hard and fast rule could be laid down as the variation is too great. After the head of a bone is firmly fixed in its abnormal position, resection is the best thing to do, as a painless and useful arm will invariably result.

Dr. Souchon closed the discussion of the paper, and referred to the fact that even Dr. Kocher had fractured cases in his attempts to reduce dislocations, and one patient had died. He spoke against waiting too long before operating on these cases on account of the adhesions which so often occur. He considered the deltoid muscle the all-important factor in the operation, and particularly on account of the division of the filaments of the circumflex nerve and the resulting paralysis. He laid great stress upon the after treatment, and particularly as to when it should be commenced, stating that this must be decided according to the case.

Dr. E. H. Bradford of Boston read a paper on "Tendon Anastomosis." Referring to the transplantation of tendons and tenoplastic surgery, he spoke of the good results which have followed the transference of one of the peronei muscles from one side of the limb and attaching them to a paralyzed

muscle on the opposite side to correct a deformity of the foot resulting from such paralysis. He also referred to the union of the anterior tibial and extensor longus pollicis muscles, to shortening of the extensor tendons of the foot and also of the tendo Achillis, as well as transplantation of the sartorius tendon. In cases of spastic paralysis, he advocated lengthening of tendons and muscular fasciae in the popliteal space, in the groin, in the forearm and in the hand. He also showed diagrammatically a method of splitting the patella, of shortening a lengthened ligamentum patellae and shortening a relaxed capsule. He stated that before transplanting a muscle one should prove by electricity that the muscle itself is alive and healthy and that the muscle to which it is to be attached is strong enough to do the work. He stated that excellent results have followed these operations, and demonstrated with photographs and drawings cases before and after operation.

Dr. John B. Roberts of Philadelphia referred to a case in which paralysis of the extensor of the fingers existed and in which a laceration of the common extensor was found. Upon attaching the piece of tendon of this muscle to the thumb, the hand was rendered practically as good as ever.

Dr. De Forest Willard of Philadelphia stated that in a number of cases in which he had employed similar methods, much improvement has followed.

Dr. Bradford closed the discussion by referring to a case of Dr. Dawbarn's in which the insertion of the ligamentum patellae was transferred by chiseling off the tubercle to which it is attached, crushing a portion of the tibia and inserting the tubercle there.

Dr. John B. Roberts of Philadelphia read a paper entitled "The Surgical Treatment of Suppurative Pericarditis." The author advocated, as he had since 1876, the treatment of pericardial effusions in the same manner as pleural effusions, and stated that paracentesis was insufficient to cure suppurative pericarditis. Incision and drainage were essential, and should be adopted as soon as the diagnosis of pus in the pericardium was made. The diagnosis of the purulent character of the effusion was only determinable by exploratory puncture. This should be done at the upper part of the left xiphoid fossa close to the top of the angle between the seventh cartilage and the xiphoid cartilage. Pericardotomy should then be done after resection of the fourth and fifth costal cartilage in the manner described by the author. The operation was believed to be novel in some of its details, though others have recommended and operated by various forms of resection. This method was devised to avoid injury of the left pleura, which is nearly always a complication in the ordinary methods of puncturing or incising the pericardium. As a rule, empyema is liable to occur as a sequel of pericardio-puncture or incision in suppurative pericarditis. The prognosis is good in pericardotomy for pyo-pericardium. In a table of 26 collected cases 10 recoveries and 16 deaths were shown. This gave a percentage of recovery of 38.44. Of the fatal cases at least 9 were septic, and all the others which died had complicating lesions such as pleuritis or pulmonary, cardiac or renal lesions. The operation devised by Dr. Roberts consisted in raising a trap door of the fourth and fifth costal cartilages and connecting the soft parts, and using the tissues of the third interspace as a hinge. The internal mammary vessels and left pleura are thus exposed and pushed to the left.

Dr. Charles B. Porter of Boston discussed this paper and gave the history of one case which was operated on in a manner similar to that recommended by Dr. Roberts. The result in this case was that after convalescence was established the patient was in excellent health, and was able to ride a bicycle a considerable distance without fatigue. With regard to the indications for the operation, it may be said with confidence that the percentage of recovery after its performance warrants the statement that it is indicated in all cases of purulent pericarditis. The author then referred at some length to the surgical anatomy of the pericardium, and said that the ideal operation was as far as possible, 1, to avoid opening the pleural cavity; 2, to open the pericardium opposite the point where drainage will remain good after the sac has contracted; and 3, to secure permanent and free drainage. He then detailed the steps of the operation, and referred to a number of cases of reported recovery from purulent pericarditis treated by incision and drainage. A number of charts and diagrams accompanied the paper.

Dr. J. McFadden Gaston of Atlanta, Ga., discussed this paper, and stated that discussions on this subject have lately inclined to more vigorous measures of internal treatment before using any means of mechanical evacuation, the reason being more urgent in pericardial effusions than in pleural effusions. It may be said that aspiration is not applicable to purulent collections in the pericardium and should be limited to serous

effusions. The author then referred to a number of medical publications in which references were made to this subject, and stated that the only means available for testing the character of the contents of the pericardium is the aspirator or the hypodermic syringe. If serum is found, it should be evacuated, and medication with such agents as have been found most efficacious in serous pleural effusions, but if a purulent collection is already present, the case required a resort to incision and drainage without any delay.

Dr. Dudley P. Allen of Cleveland, and Dr. G. R. Fowler of Brooklyn, also commented on this paper favorably.

Dr. Roberts closed the discussion by stating that he would add the cases referred to by the discussers to the statistics in his paper.

Dr. S. H. Weeks, of Portland, Me., read a paper entitled "Report of a Case of Removal of the Gasserian Ganglion." The author gave the history of the case as related by the patient himself and the only apparent cause for the neuralgia seemed to be excessive mental work. After describing at length the details of the operation, the speaker stated that the only marked symptom remaining is inability to call up or speak certain names. There seems to be a limited amount of aphasia, which has been present from the first but which is gradually disappearing.

Dr. G. R. Fowler of Brooklyn, stated that he knew the patient in this case personally and could vouch for his intense suffering previous to the operation.

He also reported that the two cases of ligature of the common carotid and of the external carotid performed to starve off the Gasserian ganglion which he reported to the society last year have remained free from a return of the disease.

WEDNESDAY AFTERNOON.

In conjunction with the Alumni Association of the Jefferson Medical College of Philadelphia, the Association unveiled the statue of the late Prof. Samuel D. Gross, M.D., near the Army Medical Museum. Dr. C. A. Mastin and Dr. W. W. Keen delivered addresses, the statue being presented to the United States Government by the former.

THURSDAY MORNING.

Dr. Dudley P. Allen of Cleveland, read a paper entitled "The Origin of Appendicitis."

The author considered that there are three factors which must have some causative relation to disease, first, a bend of the appendix itself; second, a stricture of the appendix on the proximal side of the inflamed portion, and third a great increase in thickening of that portion of the appendix distal to the point of flexure and stricture. The author dwelt at great length on the pathology of the disease, and illustrated his remarks with a number of drawings demonstrating the histology of the appendix, as well as with an actual appendix and also with a fetus showing the appendix *in situ*. In concluding his paper, the author summarized his conclusions as follows:

1. In the descent of the cecum from the right hypochondriac to the right iliac fossa, the position of the appendix with relation to the cecum becomes changed.
2. The bend thus produced may be sufficient to embarrass the passage of the contents of the appendix into the bowel.
3. To empty the appendix an increased effort becomes necessary on the part of the muscular coats.
4. The increased effort on the part of the muscles results in hypertrophy, amounting in the specimen presented to nearly five diameters.
5. Increased pressure at the point of flexure produces irritation and inflammation causing destruction of mucous membrane, and at length organic stricture.
6. The hindrance to the escape of mucus produces the repeated attacks of pain resembling colic.
7. When the escape of the contents of the appendix is no longer possible, either from the tightness of the stricture or because it is closed by a concretion too large to escape, distension of the distal portion may gradually go on to perforation, or if the distension be rapid and extreme to gangrene.
8. In some cases the inflammatory process may not cause perforation but terminate in destruction of the mucous coat, and final obliteration of the lumen of the appendix.

Dr. L. M. Tiffany of Baltimore read a paper on "The Technique of Cranial Surgery." The author dwelt at some length on the difference between traumatic and pathologic operations, the best way of gaining access to the brain, and the various methods of arresting hemorrhage. He also went into considerable detail concerning the recognition of the brain area presenting through an opening in the skull, the removal of intracranial structures and the closure of the wound.

Dr. W. W. Keen recommended Pyle's chisels for opening the skull and stated that no rule could be laid down as to the size

of the opening necessary, each case being a law of itself. He was not in favor of employing the dental engine in opening the skull for several reasons, but he was in favor of osteo-plastic operations in certain cases. He advised that the operation should be performed in two stages. The interval between each to be governed according to the special case.

Dr. Weir of New York discussed the question of hemorrhage and the various methods of controlling it. He has to a large extent given up the use of the chisel, and rarely resorts to osteo-plastic operations.

Dr. J. Parmenter of Buffalo preferred the gouge and hammer to the chisel, as he considers them less dangerous. He advised against the practice of palpating the intra-cranial structures and laid great stress upon the importance of cleanliness in these operations.

Dr. S. J. Mixer of Boston considered that no trephine should be over three-quarters of an inch in diameter and believed in the employment of extensive flaps rather than run the risk of having to enlarge the incision. He also suggested the placing of a piece of celluloid between the skull and the skin to prevent adhesion where the operation is performed in two stages. He thought the question of how much pressure the brain could stand, and how much compression was safe in the case of hernia of the brain were very important. He recommended the presence of a skilled pathologist when exploring the brain so that removed fragments might be immediately examined and their true nature determined.

Dr. Christian Fenger of Chicago read a paper entitled "Ureterectomy." The author stated that ureterectomy had been performed for, 1, tuberculosis; 2, suppuration in the dilated ureter; 3, hydro-ureter, non-infected dilated ureter. He referred to the operations as primary, secondary, total and partial. He considers a primary as one when the ureter is removed simultaneously with the kidney; a secondary operation when after nephrectomy the removal of the ureter of the same side becomes necessary, as total when the entire ureter is removed and as partial when only a portion of the ureter is removed. He gave four methods of operating, 1, transperitoneal; 2, extra-peritoneal; 3, sacral; 4, trans-vaginal.

Dr. A. T. Cabot of Boston saw no special advantage in transplanting the end of the ureter into the vagina, and he thought the discharge from the lumbar fistula quite as endurable as from the vagina. He advised that the ureter should be cut off as low as possible when it was tuberculous, stating that the remainder could be removed if necessary subsequently.

Dr. M. H. Richardson of Boston read a paper entitled "A Case of Fenger's Pyloroplasty for Intermittent Hydronephrosis." In this case it was only when pain and tenderness were present that the tumor could be felt, and it was supposed to be a distended gall bladder, but proved to be an enlarged renal calculus. After describing at some length the steps of the operation, the author stated that the patient made a good recovery and has no recurrence of the symptoms.

Dr. Richardson read a paper entitled "A Case of Chronic Intestinal Obstruction from Incomplete Volvulus of the Sigmoid Flexure." This case occurred in a man 47 years of age who had constipation alternating with watery discharges, and occasionally sudden pains. Upon opening the abdomen the sigmoid flexure was found to have a capacity of at least two gallons, and was so twisted upon the colon as to obstruct the fecal flow. After untwisting the colon it was fastened to the abdominal wall and the patient made a complete recovery.

Dr. H. Burrell and Dr. R. W. Lovett of Boston read a paper entitled "Habitual Dislocation of the Shoulder Joint." The author mentioned several methods of treating these cases, mentioned the way in which the X-ray and the fluoroscope acted in these cases and referred to two cases successfully operated upon.

Many other papers were read by title.

Chicago Academy of Medicine.

Regular Meeting held April 9, 1897, at the Leland Hotel.

Dr. William L. Ballenger in the Chair.

Dr. L. Blake Baldwin reported a case of "Erythema Multiforme Bullosum."

On February 21 was called to see a young man 21 years of age, American, single. Family history: Father and mother both living, brother died nine years ago of phthisis, sister died one month ago of phthisis, another sister has been operated upon for tubercular glands of the neck.

Personal history: Patient has always been of slight weight, about 112 pounds. Suffering from infantile paralysis when 4 years of age which resulted in ankylosis of the ankle joint; the leg shows arrest of development. He has suffered from

attacks similar to the present one since his 8th year. They recur about once in eight months. Dr. Jaggard treated him for the first attack, which was diagnosed as herpes zoster. The attacks have been increasing in severity. Each one of these attacks has been preceded by a distinct emotional disturbance, the last one following the death of his sister, which created the suspicion that the exciting factor is a nervous one. He complained a great deal of pain in the joints about a week before each attack. The pain increases until eruption appears.

Present illness began about January 15. Complained of nervousness and irritability, which increased up to the time I saw him until he would cry with pain if you touched his hands or feet. He complained chiefly about a prickly and itchy sensation about the plantar surface of his feet and the palmar surface of his hands. Also that the skin about these parts felt as if some one was holding a hot iron about an inch away. Upon examination I found papules upon the palms of his hands and the soles of his feet. On the next day the ankles were covered with small papules, as were also the knees, the wrists and the lips. These enlarged so that they formed bullae from a pinhead to a ten-cent-piece in size. The mouth and throat were next involved, the tongue having eight large bullae upon it, and was so edematous that the patient could not articulate. The bullae extended down his throat, covering the tonsils and induced painful respiration. The coverings of these bullae were of a dirty, grayish-white color, rupturing early and leaving exposed the swollen, easily bleeding papillae. The bullae upon the lips and adjacent skin ruptured later and upon their site there appeared black crusts consisting of dried serous exudate and blood. Some of these bullae were originally of a distinctively hemorrhagic character. There was evidently considerable irritation of the salivary glands, as the quantity of saliva approximated that in acute stomatitis.

The patient has had similar attacks of a less severe type since he was 8 years of age. They occur about once in eight months. Upon the strength of these symptoms I made the diagnosis of erythema multiforme exudativum bullosum, which diagnosis was corroborated by Dr. Baum. The local symptoms rapidly subsided upon internal administration of eliminatives, cathartics and 5 grain doses of sodium salicylate with $\frac{1}{2}$ grain ergotin every three hours. Locally no application was made, but an astringent wash composed of 1 dram of fluid extract of eucalyptus rostrata to a glass of water was prescribed. The patient was confined to the house for ten days. After the subsidence of the local eruption there remained a considerable amount of pigmentation, which is slowly disappearing. There are several interesting features about this case. 1, the frequent recurrences, always preceded by violent emotional disturbances, and the increasing severity of each successive attack; 2, the extensive involvement of the mucous surfaces of the mouth and throat. These latter mean a serious menace to the life of the patient, as shown in the reported case by A. Lanz (*Archiv für Dermatologie und Syphilis*, Bd. xix, 1887, p. 575).

This patient is neurotic, mentally irritable, has the general nervous and metabolic instability frequent in this type of patients. In this case the instability has expressed itself in digestive disorders, after severe emotional disturbances, which have resulted in such malassimilation that the local manifestations are the expression of auto intoxications, acting through the vasomotor centers.

Dr. William A. Pusey—I agree with Dr. Baldwin's diagnosis in the case he has reported, and I mention this at the beginning because the question of diagnosis in these angioneurotic disturbances of unusual type is a very difficult one. The whole question of the angioneurotic dermatoses is an extremely interesting one, and every case illustrating a peculiar type is worthy of record. From the simplest to the most complicated forms of these dermatoses there is the widest divergence. At one end of the scale we have such simple disturbances as unacular erythema and urticaria, next in grade to these we find the ordinary forms of multifiform erythema—the papular and tubercular and circinate erythemas, then the bullous and vesicular erythemas; and at the other end of the scale we meet those most peculiar and striking diseases, pemphigus and dermatitis herpetiformis. I think there is a drift of opinion among dermatologists to the view that all of these are clinical manifestations of very closely related pathologic processes, and I believe they all deserve to be classed in one pathologic group. Such a case as Dr. Baldwin has presented tonight is peculiarly interesting as showing a transitional type of these conditions. Such a case, with its emotional disturbances and other evidences of marked nervous instability, presents many differences from the average case of erythema bullosum. On the other hand, while in its nervous symptoms it strikingly suggests to one the graver forms of these disturbances, like der-

matitis herpetiformis, it certainly could not be classed as a case of that disease. Indeed, I think such a case has its chief interest in the fact that it presents a transitional type. I agree with Dr. Baldwin that it is probably a toxemia. The patient, I infer from Dr. Baldwin's remarks, has pulmonary tuberculosis, and I imagine that the toxemia in the case is of tubercular origin. There is a peculiar form of erythema associated with tuberculosis, namely, the indurated erythema of Bazin, in which tubercular gummata occur. I mention it here because it is of tubercular origin and to express the opinion that it belongs to an entirely different class from those erythemas like the case under consideration due to the presence of toxins.

Dr. William L. Baum—The question of erythema multiforme is one that interests dermatologists and most general practitioners. Cases of this type present clinically interesting features, mainly on account of the frequency with which the diagnosis is not made. As for its etiology, we know but little. It is my belief that the vast majority of cases are due to an irritation of the vasomotor centers. This irritation may simply be the result of a predisposition in the system itself, or it may be due to a reflex irritation from the absorption of some of the products of digestion. All of us have undoubtedly not only seen in others but in our own persons have experienced a sensation of distress following a hearty meal when something has happened to us, causing unpleasant emotional disturbances. If such conditions arrest the ordinary process of digestion, we must expect in certain individuals that there will be a greater amount of resorption of partially digested food products which in themselves not only act as irritants but as powerful poisons to the system. So, in cases like this, where there is a pre-existing defect in the nervous system and the system generally, it is no small wonder that such irritation should be excited and produce these disastrous consequences. This case is interesting in view of its frequent occurrence, as the Doctor has said, and in view of the fact that sooner or later by progressive recurrence it will become a formidable disease for the individual. When I saw the case in connection with Dr. Baldwin the patient had a large number of bullæ which had broken down in the mouth. The tongue was so edematous that the patient could hardly close his mouth and the bullæ extended upon the posterior walls of the pharynx as far down as could be seen. There are a number of cases on record of the extension of these processes so as to produce partial suffocation, and there is no doubt but that such cases may have occurred without having been reported. Another feature is this, that if these violent disturbances can take place upon the mucous membrane of the mouth and throat, it is but reasonable to suppose that they also occur upon the mucous membranes in the deeper lying structures, and this is one feature frequently found associated with these attacks. For instance, in a case in which I have noted a number of recurrent attacks of erythema multiforme, I have also noticed that the patient had always coincidentally a very violent ileocolitis. This ileocolitis was not, as was first supposed, due to infection with the bacillus coli communis, but was evidently due to an irritation of the vasomotor centers, because the patient had hemorrhages from the bowels and has passed large mucous casts from the intestinal tract. I should look upon this as being eminently a vasomotor disturbance occurring in patients whose system had been previously undermined, and not so much to the general toxic condition *per se*.

Dr. James G. Kiernan—One point that impressed me with regard to the case narrated by Dr. Baldwin and that is, on the one hand, the defect shown in the predisposition to tuberculosis (it being a congenital or hereditary defect) and, on the other hand, the factor of emotional disturbance. It is a very striking thing when you study the untoward effects of drugs which depend in no small degree on the two predisposing factors which make up the etiologic moment, namely, the constitution of the individual, as narrated, and the constitution of the patient at the time the drug is administered, that you notice in all the classes which play a part on the general system through the nervous and alimentary systems one uniform, or practically uniform untoward disturbance. In almost all of those you will find a simple erythema or an erythema resembling that which has been described as bullæ. Furthermore, if we take the untoward effects which have been from time to time reported by observers in connection with the use of the antitoxins, whether the streptococcus antitoxin or the diphtheria antitoxin, we will find no small number of cases which in many respects resemble the case described by Dr. Baldwin. Now, it seems to me, that in dealing with this subject we have to consider, in the first place, the predisposition; in the second place, the condition of the individual at the time the disturbance occurs; thirdly, the exciting cause and the vicious circle

which is produced by all three, as Dr. Baum has put it. Undeniably in that class of cases in which we have erythema with bullous disturbance and the other conditions that occur with the insane, we will find so-called membranous enteritis in not a few cases. There are probably not a few cases in which the general condition is demonstrable as connected with some emotional disturbance, while the exciting cause of erythema also is connected with that emotional disturbance. It seems to me, therefore, that in dealing with these conditions we should take into account the general nervous state of the individual, as well as the disturbance of the gastro-intestinal tract and the liver and the resultant auto-intoxications. While it is true that auto-intoxication will play a large part in not a few of these cases, still there are a large number of others in which the vasomotor disturbance, directly traceable to a condition of emotional overstrain, can be proven to exist. The question is of considerable importance from the standpoint of orthotherapy, especially since we are more and more observing the untoward effects of drugs.

Dr. W. X. Sudduth—The remarks of the preceding speaker brings up the question of emotional states for consideration in connection with the case reported. The question arises, what is immunity? What is intoxication, and what are the conditions that favor intoxication? I have at the present time a case under treatment that has given me an excellent opportunity to study the effect of the emotions in intoxications. A sinus, following a surgical operation, of some four or five months' standing, at the present time secretes pus periodically; at other times it is ingood shape, and the periodicity is dependent upon the emotional condition in which the patient periodically finds herself, and we can exactly prognosticate the condition that will result following the emotional disturbance. On the other hand, what is it that gives immunity from infection? Why is it that physicians, priests and nurses go among epidemic diseases and in the main escape infection? And why is it other people are taken down with epidemics when they come? Why is it people panic-stricken are the first to come down? I attribute it to the fact that the emotional disturbance changes the secretions of the body, making them good culture media. I have seen experiments made in the hypnotic state with tests for anesthesia, when hatpins were taken from the hats of women in the audience, run through the cheek, and through the biceps muscles, and yet have never seen infection follow. In all cases the affirmation went ahead, "this will not hurt you." The patient was disarmed of fear and had immunity from infection. And these are surely points we must consider in these forms of disease. This particular case I speak of, where a recurrence of suppuration had invariably followed on the part of the patient to entertain fear or a fearful result to herself, just as sure as she anticipates that condition of mind she has a recurrence of the discharge of pus. I have seen this in so many cases, that to me it is positive evidence that the emotions play an important part in the matter of infection, and also in producing immunity. A hopeful, joyous, happy frame of mind gives immunity; whereas a fearful or even apprehensive state of mind tends to change the fluids of the body so as to permit of infection.

Dr. James G. Kiernan—It seems to me, in limiting the principle of auto-intoxication in the way it has been done, the fact is ignored that is very frequently essential, that auto-intoxication precedes toxemia, and that after all the limitation is a little too narrow in regard to the general question of etiology.

With reference to the question of immunity, incidentally raised by Dr. Sudduth, there is very little doubt but that the general tropho-neurotic condition of the patient plays a part, and may be dependent upon an emotional state. Kasperek, whose observations were published about two years ago and have been verified by experiments since, tried the old experiment of Brown-Séquard of making a section of the sciatic nerve on one side in a rabbit, and then injecting the ear on the opposite side with various pyogenic bacteria. Some time after, a given time being allowed, the rabbit was killed. The side on which the section had been made, which would produce certain tropho-neurotic conditions, was found to be the seat of very grave and large abscesses, but the side on which the sciatic nerve was healthy was found to be free from abscesses. It would seem, therefore, from this demonstration that the tropho-neurotic states play a part in the predisposition to microbic invasion on the one hand and their interactions also play a part in producing immunity on the other.

Dr. Fenton B. Turek—I simply wish to object to the indiscriminate use of ascribing the conditions to toxemia. In the first place, to prove the existence of toxemia we are obliged to find the toxins. In the next place, we must determine the origin of the toxins. Thirdly, we should endeavor to determine the excretion of the toxins. The work of determining

toxemia by examinations of the urine, as has been done by Bouchard, on animals, is faulty, because the urine varies at different times, and the degree of concentration of the urine present is not accounted for in connection with the experiments and the conditions existing. An examination of the material taken from the stomach, has been carried out by myself, but this also is a source of error, for the variations that occur physiologically would in the same way mar the perfect scientific work of determining the exact toxicity of the contents. An examination of the blood would probably offer better evidence, in that if the toxins are found circulating in the blood and we can produce an action upon the animal, it is more conclusive evidence that toxemia exists. Van Gieson has carried out some very interesting pathologic experiments upon animals and has found the effects of toxins upon the neurons, showing parenchymatous degeneration of the cells of the cortical area. Now in this we are nearer determining the question of toxemia.

Concerning the question of toxemia from the intestinal tract something is definitely known, yet in the absence or exclusion of toxemia from the retention of metabolic products, it offers a very interesting study. But, at present, we are in no position to generalize and to make sweeping statements that a certain case is one of toxemia. It would be interesting if, in some of these cases, we could take the urine, the stomach contents, the fecal excreta and blood and by combined biologic and chemie methods examine them until something more accurate is arrived at. This is being done now, and I think it is better for us to make statements with a little caution, and, at the same time, await future results. At the time when bacteriology was first presented to us, all manner of diseases were ascribed to various forms of bacteria, and every time a postmortem was made and a certain microbe was found, the microbe was ascribed as the cause of death. The result was that our literature was filled with statements that were untrue, and had to be retracted; so that, at present, in reference to toxemia it is safer for us to be cautious in making statements. I would not like to say in a paper like this, before a scientific body, that this or that case was one of auto-intoxication without first having made experiments to determine the presence of toxins. I believe this can be done by withdrawing blood from patients and thoroughly examining it, as well as from examinations of the urine at different times, and withdrawal of the stomach contents in these cases. The poisons thus extracted can be injected into animals and results obtained.

Dr. William A. Pusey—I want to do some more protesting, and this time it is to take pronounced exception to Dr. Turck's statement that we can not scientifically attribute a condition to toxemia until after we have found the toxins either in the fluids or tissues of the body. It would be a happy day for medicine if the chemie and biologic means at our disposal would admit of such exact analyses. But in the present state of our knowledge I believe that most of those who are familiar with the uncertainties of analysis of highly complex organic products will admit that the actual determination of most of the toxins are problems at present beyond us. On the other hand, the determination of toxemias by indirect evidence is in many cases capable of the strictest scientific accuracy. For example, we have an urticaria in a patient after eating tomatoes or strawberries; we must wait until the infinitesimal quantity of toxin that is causing the trouble can be determined before we accept the position that such a condition is a toxemia? Or take another patient, with constipation, who develops urticaria; clean out the bowels thoroughly and his urticaria disappears; does it shock any of our ideas of scientific accuracy to decide that such a case is a toxemia? Or, take almost any of the drug eruptions—most of which develop after the ingestion of what is an infinitesimal quantity of the toxin when the total weight of the body is considered—and what inference is more absolute than that the resulting disturbance is due to the presence of the peculiar toxin? Indeed, in contrast to Dr. Turck's position, I would maintain that the determination of a toxemia can be far more accurately made from indirect evidence than can be done by a direct examination of the tissues and the fluids of the body. The position taken by him neglects the fact that the compositions of the human tissues and fluids are exceedingly variable; that we are not agreed among ourselves yet as to what are normal and what are abnormal constituents; and that the analyses made by competent investigators are often wide apart. Such being the case, I would maintain that Dr. Baldwin's determination of the existence of toxemia by inference is the accurately scientific position, and I am willing to assume the position, in contradistinction to Dr. Turck's, that a toxemia can in most cases be better established by indirect evidence than by the methods of technical examination which we have at present at our command.

Dr. William L. Baum—Since I have been one of the habitual users of the term auto intoxication, it is perhaps incumbent upon me to come to its rescue, which has been so energetically attacked both by Dr. Sudduth and Dr. Turck. Dr. Sudduth's position in regard to auto-intoxication is an untenable one, for the reason that he leaves out of consideration the preexisting chemie change already present, and a physiologic action may become a perverted one simply through a chemie change, and for that reason belongs to the class of toxemias or auto-intoxicants, because it is not what a patient has taken into his system that produces intoxication *per se*, but the chemie condition of the individual already present.

Dr. Turck's position is entirely untenable. A number of years ago (I think it was in 1888) in making some examinations I came across a number of reports of medico legal cases. One of them was a case of so-called strychnia poisoning in which a chemie examination had been made by an Italian chemist. It was shown that goose meat, which had undergone putrefactive changes taken internally, produced symptoms similar to strychnia intoxication. I would like to know if perchance we were to give one grain hypodermatic injection of hyoseyamin, it would produce an intense toxic condition, and perhaps prove fatal. How would you demonstrate either by an examination of the contents of the stomach, the condition of the blood, or of the feces that this grain of hyoseyamin is present? It only requires a small quantity of chemically altered tissue to have a physiologic action which is akin to that of some of the most powerful poisons: we know that these can produce chemie conditions of which the chemist or biologic student has no knowledge. How to look for these conditions, how to find them, is beyond the province of chemistry.

Dr. Baldwin—I have nothing to add in closing the discussion, except that it might be interesting to remark that the case I have reported went to his business on the 15th of February. He weighed himself on that day and was 109 pounds. He weighed himself again day before yesterday and was 121 pounds. He has been taking three quarts of milk a day and nine drops of arsenic.

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SECOND DAY.

Dr. Ruhrah, physician in charge of the Pasteur Institute of the City Hospital, opened the discussion on "Rabies." He spoke of the preventive treatment of rabies. This institute has been opened twelve days and has six patients. The disease is very common where there are no dog laws, but where there is a high dog tax and careful supervision there are few cases of hydrophobia. The incubation period is about ten weeks, although it can be as short as two or three. In one case it is 18 months. Deaths in three weeks are rare. Of the cases which were reported about 47 per cent. of those bitten developed the disease. Men have a greater mortality than women, and children the greatest of all. Eight per cent. of suspected cases developed. When the wound was immediately cauterized the mortality only reached 33 per cent. of the 47 per cent. mentioned above, while in the uncauterized they reached 80 per cent. In the department of the Seine mortality of hydrophobia was 25 per cent. the first year in the Pasteur institute and 16 the second year. The virus gets into a part of the central nervous system so that in preparing virus a rabbit is inoculated from a rabid dog. Pasteur's idea was to make a modified form of the disease.

Dr. Wm. H. Welch then said that in drawing conclusions it is well to remember that such a disease as hydrophobia exists. This is unquestionable. Mistakes occur but the disease has characteristic symptoms. Inoculation in animals in series is a positive pathologic proof of the existence of the disease. The state of mind has nothing to do with the matter nor the element of fear, not more than syphilophobia can cause syphilis. The method of treatment rests on a complicated experimental basis which is just as satisfactory as is the treatment of diphtheria. The best way of finding its value is by the statistical method; there is no other which is so valuable for this purpose, and thus we show that the method is efficacious. It is not a sure cure, failures occur but are not numerous. The case which dies between the time of the bite and fifteen days after the beginning of treatment should not be counted in the statistics. The percentage or mortality is from 1 to 3 or 4 per cent. Those bitten through the clothing are often not dangerous. The mortality of those bitten on the head without treatment is from 80 to 100 per cent; under

treatment, 5 to 6 per cent. From 1886 to 1895 there were seven-teen deaths from bites on the head and face at the Pasteur institute, or 1.31. From 1890 to 1893, 135 persons were bitten on the head and face by rabid dogs and were treated with no deaths, not including those who died within less than fifteen days.

Dr. N. G. Keirle then explained very thoroughly how a dog was judged to be rabid both by the contents of his stomach and the bacteriologic examination of his spinal cord.

Dr. J. B. R. Purnell of Easton then made some remarks on this subject also.

Dr. C. Birnie of Tarrytown thought there was no doubt about the efficacy of the treatment.

Dr. John Morris did not believe that there were so many cases of hydrophobia, and thought that the discussion of the subject rather did harm in cultivating fear among the people. The paper was further discussed by Drs. Kemp, Goldsmith and Norment.

Dr. H. B. Jacobs then read a very elaborate paper on "Early Spinal Syphilis with the Brown-Séquard Paralysis." This was discussed by Dr. Geo. J. Preston.

Dr. J. W. Humrichouse of Hagerstown reported eight consecutive cases of laryngeal diphtheria successfully treated with intubation and antitoxin. These cases were not malignant. The membranes were small and toxic symptoms were not marked, but in every case he was obliged to perform intubation in order to avert death from stenosis of the larynx. It was the diphtheritic toxins which threatened life through the local lesions in the larynx. The mild character of the disease is due either to the type of the epidemic or to the use of antitoxin. He does not believe the cases would have done so well without antitoxin. The ages of the patients were from 16 months to 7 years. Bacteriologic cultures were not made. The small dose usually was 1,000 units and the large 5,000.

Dr. William T. Watson then read a paper illustrating the value of "Bacteriology in Preventing the Spread of Diphtheria." Physicians are very philanthropic, doing everything possible to prevent or cure disease and thus cut off the sources of their prosperity. He related several cases in which the bacteriologic examination showed the presence of diphtheria organisms in the throats of children who were in all other respects apparently free from the disease, and therefore he had had great trouble in convincing the mother, who depended on her own efforts for her support, that she must keep each child from school and herself from intercourse with her neighbors. In several cases he found the families had become discontented with bacteriology and also with their doctor for not sooner destroying the germs. They could not understand that children who had never been ill enough to be off their feet were a source of danger to the community for several weeks. This led him to ask the question, how long the bacteria of diphtheria might remain in the throat and mouth of persons apparently well since recovered from diphtheria. In looking over the work of Dr. Herman M. Biggs of New York he found that in a large number of cases collected the bacteria were found in persons anywhere from seven days to nine weeks after recovery, and these bacteria were in many cases virulent at the longest period. He thinks that general circulars should be issued by the health authorities to parents who can be made to clearly understand the possibility of the danger on this infection after this disease.

Dr. S. K. Merrick, in discussing these papers reported a case of diphtheria in an adult 56 years old. It was a case of laryngeal diphtheria, which gradually grew worse and when the edema rendered the attack dangerous antitoxin was used. It began with a small patch on the left arytenoid. The case recovered.

Dr. T. A. Latimer has used antitoxin in thirty cases with only one death and in many instances he used it early without waiting for a diagnosis by culture tests. Further remarks were made by Drs. Gardner, W. R. Stokes, Harlan, Humrichouse and Watson.

Dr. William Royal Stokes, Bacteriologist to the Health Board of Baltimore, then read a very interesting paper on "Microscopic Examination of Milk." He briefly reviewed the methods used in the municipal laboratory in examining milk. When the milk examined was from one cow, or even when it was a mixed milk from many cows it was centrifugalized for some minutes and then the sediment was spread out on a glass and strained. If many pus cells were found the specimen was rejected; but if there was only one or two pus cells in the field the specimen was passed. Often the milk from one cow whose milk was healthy was contaminated by milk from other cows.

Dr. J. C. Hemmeter then read a paper on "Food Adulteration." He spoke first of beer adulterations and said that the beer made in Baltimore was especially free from adulterants,

while the imported beer was not so good on account of the salicylic acid put in to preserve it during export. The water of Baltimore was especially good and contained very few organisms. He had examined a great many oysters and had failed to find any typhoid or pathogenic bacteria. He thought that the tidal waves of the Chesapeake Bay and lack of contaminated water kept the oysters free from a diseased condition.

Dr. Morris then said in reply that the examination of beer was not difficult.

Dr. Osler referred to the report published a few years ago in the *Lancet* on the Munich beer.

Dr. Charles O'Donovan then read a paper on "The Treatment of Gastric Ulcers after Hemorrhage." Gastric ulcers which tend to recover and in which the hemorrhage gradually decreases need no medical treatment; but those cases which recur and seem to grow worse should be treated surgically.

Dr. Samuel Theobald then reported 100 cases of "Cataract Extraction." He reviewed 100 of his consecutive cases of cataract showing his method of treatment and his results. This paper was discussed by Drs. Woods, Harlan, Randolph, Bernstein, Funck and Theobald.

At the evening session the various committees reported and the officers for the ensuing year were elected.

THIRD DAY, 12 NOON.

Dr. Harry Friedenwald read an interesting historical sketch on "The Early History of Ophthalmology and Otology in Baltimore." He said that as early as 1805 reference was made to licenses for oculists in Baltimore. Dr. Pierre Chatard, who came from France in his early life to Baltimore in 1797, was a prolific writer and contributed articles on diseases of the eye. Other writers, such as Dr. Wm. Gibson, Dr. George Frick, Dr. Cohen, Dr. Jameson and Dr. Harper show that the diseases of the eye and ear received very early attention in Maryland. In fact, Dr. Frick's book was the first to appear in English on the subject in Baltimore, and the third in the English language. This paper was discussed by Dr. Randolph.

Dr. R. L. Randolph then read a paper on "Pathologic Eye Specimens," and showed some beautifully executed water colors on the pathologic condition of the eye ground. He also showed specimens embedded in glycerin jelly according to Priestley Smith's method. This paper was discussed by Dr. Raik.

Dr. Raik then read a paper on "Exhibitions of Eye Specimens" and exhibited eye grounds mounted in glycerin jelly and showed some beautiful and normal specimens.

Dr. E. J. Bernstein then read a paper on "Prevention and Treatment of Ophthalmia Neonatorum."

Dr. R. L. Randolph said it would be interesting to hear from the obstetricians on this point.

Dr. Wilmer Brinton said that in his lying-in hospital he followed the method of Credé and in 800 cases he had 27 cases of ophthalmia neonatorum with no deaths. He rarely had occasion to use his method in private practice unless under very exceptional circumstances.

Dr. J. S. Fulton said he thought too much stress was laid on the connection between ophthalmia and gonorrhea and referred to two cases of midwives who had been fined for not reporting cases. He thought the assumption that all cases of ophthalmia in newborn children came from gonorrhea was wrong and kept many persons from making complaints.

Dr. R. Percy Smith of Sunnybrook, then read a paper on "Fracture and Dislocation of the Vertebral Column." He exhibited a case in which a heavy weight of 550 pounds had fallen on the back of a man and had both fractured and dislocated his vertebral column and injured his skull. The patient is able to go about and his recovery is remarkable.

Dr. J. E. Stokes then read a paper on "Two Cases of Anteparturient Asphyxia," which was discussed by Dr. Tiffany.

Dr. Frank Martin then read a paper on "Joint Tuberculosis Treated by Iodoform Emulsion." He reported several cases of severe joint tuberculosis on which he operated by first opening the joint, scraping off the tuberculous part and packing with iodoform gauze. The case had recovered. In answer to Dr. Taylor he said that the motion was not restored, but the fact that he had arrested the disease justified him in the operation.

Dr. Robert W. Johnson read a paper on "Two Cases of Gastrotomy and one of Gastro-enterostomy." He exhibited one of his patients entirely well. She was a young girl who had severe vomiting before the operation of gastrotomy, and that after the operation she had never vomited, and now considered herself well. In one case he recovered a long bonnet pin. This case of gastro-enterostomy died.

Dr. Hemmeter referred to this cured case as one in whom he

had used the electric light of the stomach, showing that the dilated condition of that organ extended below the symphysis.

Dr. Winslow said he had never had any success in operating for gastro-enterostomy, but he hoped to have better luck as his operations increased in number.

Dr. R. Tunstall Taylor made some remarks on the "Plaster Jacket vs. the Steel Brace," and showed five children who were undergoing treatment for Pott's disease. He thought that the plaster jacket gave good support when the curvature was below the seventh cervical vertebra; above that point the steel back brace was best. This paper was discussed by Dr. Smart.

Dr. Hiram Woods, Jr., read a very elaborate paper on "Suppurative Otitis Media with Symptoms of Sepsis and Intra-Cranial Disease," with recovery under mastoid operation and removal of polypi. He showed the importance of attending to certain running diseases of the ear which appear harmless but which in reality were dangerous.

Dr. Reik said that there was great necessity for good work in otitis media. He had seen a great many cases in which physicians had advised them to let the running ear alone. This is not right. For this reason too many cases come to the specialist too late for treatment. They need treatment early.

Dr. Hodgdon asked if there were any symptoms of meningitis.

Dr. Woods said that two cases were acute and seemed to be primary mastoid disease. This is very rare. There were no original symptoms observed, except slightly in one case where pain might have been from other trouble, but it disappeared with drainage, which does not occur in meningitis. He does not believe that these ear troubles are neglected as much as they used to be.

EVENING SESSION, 8 P.M.

"Does Medicine Advance?" This was the subject of the annual address, which was delivered by Dr. David W. Cheever, Emeritus Professor of Surgery at Harvard University. He said that the prime object of medicine was to prolong life, to relieve suffering and to prevent and cure disease. People lived longer than they used to, pain is more remediable. Many diseases can be prevented or avoided, but can we say that more sick people are cured. He then went over the various branches of medicine and gave a historic survey of the advance in medicine and concluded finally that medicine had made advances along every line. At the conclusion of this address the banquet was served.

FOURTH DAY—DAY SESSION, 12 M.

"Models of the Original Chamberlen Midwifery Forceps." Dr. J. Whitridge Williams then gave a demonstration of some models of the original Chamberlen forceps. He spoke of the early professional life of Peter Chamberlen and his son and their connection with the barber surgeons of London. By permission of the Royal Medico Chirurgical Society of London Dr. Williams was allowed to have made models of the original models of these forceps. In some the blades were connected by a piece of tape, while in others there was a mortise lock. He showed how Chamberlen tried to sell these in Paris and in Amsterdam and exhibited one pair. He called attention to the fact that there was very little difference in the shape of the blades of the forceps of the present day from those originated by Chamberlen at the end of the 16th century.

Dr. J. H. Branham then related a "Case of Complete Hysterectomy of the Uterus and Vagina During Confinement."

Dr. George W. Dobbin, Resident Obstetrician, Johns Hopkins Hospital, then related the "Frequency of Contracted Pelvis in the Obstetrical Service of the Johns Hopkins Hospital." He gave a careful record of the obstetric cases in the Johns Hopkins Hospital and showed the importance of practicing pelvimetry on all cases, without regard to any other conditions. These statistics have been of great assistance to them in their work, but allowances had to be made, from the fact that many of the cases were of the negro race.

Dr. Wilmer Brinton said that Drs. Dobbin and Williams deserved great credit for their excellent work on this subject at the Johns Hopkins Hospital. For the past three or four years he has kept account of the measurements of the cases coming under his care in his hospital and he had about three hundred measurements to report. It must be remembered that in the Maryland General Hospital 60 per cent. of the women were negroes. Of the 120 cases delivered there, three were high forceps cases, and the antero posterior measurement of all were under 4 inches.

Dr. L. E. Neale said that he thought that each case should be treated on its own merits, and that while he carefully measured each case in his own hospital he thought that a great many other conditions could be taken into account also.

Dr. J. Whitridge Williams said they simply recorded these

for future work and he had no intention now of drawing conclusions, as the cases treated were too few in number. He hoped that all the members delivering women would take pains to measure their cases carefully. By this method he had discovered several cases of osteomalacia.

Dr. T. C. Gilchrist then read a paper entitled "The Common Contagious Diseases of the Skin as met with in School Children and How to Prevent Them." He said that ringworm of the scalp was one of the most frequent and dangerous diseases among the school children of Baltimore. It occurs in three forms, all of which he has found in two orphan asylums which he has lately visited. No child that has this disease should be allowed to go to school, and no child should be allowed to go to school who has dandruff or head affection unless it can be proved that ringworm of the scalp is absent. The disease is very hard to cure and not easy to diagnose. The short hairs, when the hair breaks off and little ends appear above the scalp give cause for suspicion. Another disease common among school children is pediculosis and pustular eczema. The proper treatment is to kill the nit with petroleum and the eczema will recover itself. Impetigo contagiosa is also another disease common among school children, and last of all, tinea favosa. Schools should be inspected against these diseases, and as in New York, so in other cities, immigrants with these contagious diseases should not be allowed to land. Scabies is another common disease. All these diseases are preventable and curable and should be more carefully looked after by those interested in the health of school children. Dr. Gilchrist also showed a case of pityriasis rubra and a case of alopecia areata, the latter of which was evidently, in his opinion, a case of myxedema, which he had treated with thyroid extract, 2½ grains at dose.

Dr. Micheau thinks that often children in private schools are affected by these diseases, and related a case of a child taken to be very clean and who had, in spite of every kind of treatment, a continuous case of ringworm.

Dr. Brush asked if the first case presented had any nervous disorder, as he had had several cases of pityriasis rubra in his insane asylum.

Dr. Osler asked if the hair did not always return after the use of thyroid extract. This had been the case with his experience. He also said that he thought the girl was rather young to have myxedema.

Dr. L. G. Smart asked if 2½ grains was the usual dose of thyroid extract. He always began with 5 grains and kept it up unless there was digestive disturbances. From this small dose he obtained no reaction.

Dr. Blake asked whether the falling out of the hair had any connection with the pain.

Dr. Gilchrist said, in conclusion, to Dr. Brush, that the man was not nervous, and that otherwise was entirely well. He had used the thyroid extract in 5 grain doses and had found it too large, and got excellent results from 2½ grains.

"Caries of the Skull," was the subject of a very interesting paper by Dr. H. H. Biedler. He also exhibited a specimen.

"Some Diseases of Worcester and other Counties," was the subject of a paper by Dr. J. B. R. Purnell.

"The Spread of Tuberculosis Among the Russian Jews in this City," was the subject of a paper by Dr. J. E. Gichner, who as the attending physician to the Hebrew Benevolent Society had ample opportunity to study tuberculosis among that class. He found that each year the cases of pulmonary tuberculosis seemed to be increasing very markedly, and he attributed it in part to lack of cleanliness and to the unhealthy manner of living of the people. This paper was discussed by Drs. Canfield, Schaeffer, Brinton, Micheau, Biedler, Osler, Blake, J. T. Smith and Gilchrist.

"Rupture of the Aorta," was the subject of a paper by Dr. W. G. Townsend, who showed the picture of a pathologic specimen.

"Uric Acid Diathesis in Children," was the subject of remarks made by Dr. Frank D. Sanger, who exhibited several specimens of the kidney showing uric acid alkali petris of the kidney and in the ureters.

Dr. Charles M. Ellis of Elkton was elected president for the ensuing year.

Chicago Ophthalmological and Otological Society.

Regular meeting held at the Victoria Hotel, April 13, 1897.

Dr. Montgomery in the chair.

There were twenty-one members and visitors in attendance. The minutes of the last meeting were read and approved. Dr. K. K. Wheelock of Fort Wayne was elected a member. The

secretary read the applications of Drs. A. E. Bulson, Jr., of Fort Wayne, and E. A. Lawbaugh of Chicago.

Dr. Ware showed a colored boy, 9 years of age, on whom one year ago there appeared a swelling at the outer upper angle of each orbit. These swellings increased rapidly in size, so that they became about three-quarters of an inch long, projecting forward and downward, dislocating both lachrymal glands and causing complete ptosis of both lids. The patient was first seen about a month ago and a diagnosis of specific periostitis made. Under large doses of iodid the swellings rapidly decreased, so that at present they can hardly be felt. There was no pain at any time in the course of the disease.

Dr. Colburn opened the discussion on "Muscular Asthenopia" by reporting four new cases of chorea treated by tenotomies.

The first case is a girl of 10 with a hyperphoria of 4 degrees and exophoria of 30 degrees, which was corrected by operation. Four weeks after the operation the patient was well, and has been so since.

The second case, a girl of 26, had chorea of three months. Operated on twice and cured.

The third case, a boy of 5½, which improved by the correction of 2½ D. of astigmatism, but chorea remained on using the eyes. No operation was done in this case.

Fourth case, a boy of 10, with marked degree of astigmatism, the correction of which cured the chorea.

The doctor reported four new cases of epilepsy, all of which were cured. He thinks that of the different heterophorias hyperphoria is far more important in the causation of muscular asthenopias than insufficiencies of the lateral muscles. His statistics showed a large percentage of asthenopic cases due to troubles with the extrinsic muscles, and his results have been very satisfactory.

Dr. Haight reported two cases, one with 4 degrees and the other 12 degrees exophoria, both of which were cured by operation.

Dr. Coleman had in years past operated a number of times for muscular asthenopia, but had found the results of operations so very uncertain that he had practically given it up, confining himself only to those cases that have diplopia. He found many cases in his own experience and in that of others where, after the muscular error was completely corrected, it had returned in from one to three months, and no amount of operation was able to permanently correct it. He had also found that the methods of testing for heterophoria were very unsatisfactory and uncertain.

Dr. Hotz reviewed 61 cases in his own practice, 10 with hyperphoria, 21 with esophoria and 30 with exophoria in which operations had been done with satisfactory results. He found that hyperphoria was most often the cause of symptoms. He had found that exercising the muscles after the manner of Gould was of no value in these cases.

Dr. Gradle thought that less than 1 per cent. of all cases of asthenopia had any relation to muscular troubles. He had found many people without any symptoms with marked degrees of muscular trouble. The only cases that he had thought important were those where there was what was formerly called a latent squint, but these cases did not have true asthenopia, but they have diplopia. Dr. Gradle considers that muscular asthenopia is merely an expression of one of many symptoms in a neurotic person, and he does not believe that balancing the muscles by operation is the best method of treating such cases.

Dr. Colburn, in closing the discussion, referred to the fact that it was not sufficient to test a patient's muscles with the eyes directed straight ahead. It was of great importance in many cases to test the muscles with the eyes in a different position.

On motion, the Society adjourned.

C. P. PINCKARD, M.D., Secretary.

SELECTIONS.

Amebic Abscess of the Liver, with Perforation of the Inferior Vena Cava. Flexner (*American Journal of the Medical Sciences*, May, p. 553) reports two cases of amebic abscess of the liver, together with the only other one that he was able to find recorded in the literature, in which secondary perforation of the inferior vena cava resulted. One of the cases occurred in a man, 51 years old, in whom the diagnosis lay between abscess and neoplasm of the liver, with a leaning in favor of the former. An exploratory operation was undertaken, but it was not

until the aspirating needle was introduced in the right sixth interspace in about the anterior axillary space, passing through the diaphragm and about 5 cm. of the liver substance, that it entered a cavity from which about 20 c.c. of a brownish pus-like fluid, having the appearance of anchovy sauce, was evacuated. Portions of the sixth and seventh ribs were resected, the pleural cavity shut off by means of gauze and the diaphragm incised, and the peritoneal cavity protected in like manner. On the following day the liver was incised and between 1000 and 1500 c.c. of fluid similar in appearance to that aspirated evacuated. A large drainage tube was introduced and the wound was packed with iodoform gauze. The patient did well for eleven days after the second operation, when there occurred a copious hemorrhage into the wound and death soon resulted. Examination of the fluid aspirated on the first day showed no well preserved cells, but only granular débris. In the contents of the abscess evacuated at the operation were found a number of actively motile bodies with the characteristics of the ameba coli.

Postmortem examination disclosed in the right lobe of the liver a funnel-shaped cavity near its anterior edge, 5 cm. from its superior border. In its widest part this cavity measured 4 cm. in diameter, and led directly into a cavity in the substance of the right lobe of the liver the size of an orange. This second cavity at its deepest part measured 10 cm. in its greatest diameter. Across its upper portion ran the inferior vena cava, and at a point 2 cm. from the superior border of the liver it was occupied by a thrombus that half-filled its lumen. On removing this thrombus two perforations, one the size of a split pea, the other of a poppy-seed, were disclosed, leading directly into the cavity in the liver. For a distance of 5 cm. the adventitial coat of the cava was in contact with the abscess and assisted in the formation of its posterior boundary wall. The right lobe of the liver contained numerous additional abscesses of varying size. The intestines were free from ulceration, but several pigmented and depressed spots were present in the large intestine: and in the ileum, about 50 cm. above the ilco-cecal valve, there was a puckered area 1 cm. in diameter. Microscopic examination of sections from these parts showed, however, the normal structure of the mucosa. No evidence of previous ulceration was made out. Each lung contained an embolic abscess. Examination of the fresh contents of the abscess at the autopsy showed living amebæ in moderate numbers. Several varieties of bacteria were also present. The smaller abscesses and necrotic areas contained streptococci in pure culture. The pulmonary abscesses also were of streptococcus origin.

The second case occurred in a man, 45 years old, who had had recurring chills and fever, followed by profuse sweating. Subsequently cough developed, with blood-streaked expectoration, which later assumed the appearance of anchovy sauce and contained, in addition to pus cells, red blood corpuscles and epithelial cells, distinctly motile amebæ and crystals believed to be bilirubin. The fecal matter obtained by the rectal tube did not show amebæ. There was no history of dysentery. While under observation the patient was seized with sudden pain on the right side and immediately complained of dyspnea and oppression. Fulness and immobility of the right chest were noted on examination, with increased vocal fremitus and percussion flatness. Resection of the sixth rib on the right side permitted of the evacuation of a large quantity of pale-brownish pus. Subsequently amebæ were found in the discharges obtained by means of the rectal tube, and later diarrhea set in. The patient, however, grew progressively more and more feeble and death took place.

Upon postmortem examination the right lobe of the liver was found to contain a large abscess communicating directly, through the diaphragm, with a cavity in the lung. The abscess was bounded posteriorly, in addition to the thickened capsule of

the liver, by the adventitial coat of the inferior vena cava, into which it had ruptured at the point of entrance of the hepatic veins. The cava, beginning at a point just above the rupture, contained an occluding, partly decolorized, firm and adherent thrombus, which extended upward and projected into right auricle, about one-third of which it filled. Some of the main hepatic veins contained thrombi, which were firm and decolorized in the upper and red and soft in the lower portions. The small intestine showed only congestion and a few small areas of ecchymosis, chiefly in the mucous membrane. The large intestine, on the other hand, was the seat of many ulcers, which for the most part did not reach the size of a bean. They were in the mucous membrane or at most projected very superficially into the submucosa. They were quite regular and smooth, not undermined, and were covered with a sticky pus-like material. The majority were in the cecum and upper colon; they were fewer and well separated in the sigmoid flexure and rectum. The fresh material taken from the abscess common to the liver and the right lung contained many living amebæ. The left lung contained many small abscesses, presumably of embolic origin, and the left lobe of the liver two or three, of which none was larger than a split pea. In none of these were amebæ found. They, as well as the large abscess, contained cocci in clumps. Bacteriologic examination revealed the presence of *staphylococcus pyogenes aureus* in these situations, as well as in the blood of the heart and organs generally.

It is pointed out that the special features of interest in the cases reported are the existence of an amebic abscess of the liver in the first in the absence of intestinal lesions, and the probability in the second of the intestinal lesions being secondary to the hepatic and pulmonary abscess, perhaps through the biliary passages and the bile.

Surgical Significance of Gallstones.—Dr. F. Lange, before the Johns Hopkins Hospital Medical Society, offered the following as the outgrowth of a large experience in the treatment of hepatic calculus. In operating, his preferences have led him to entirely abandon the longitudinal incision, but, according to the proposition of Corvisart and the experience of other surgeons, as reported in the *Hospital Bulletin*, he further said, "I do exclusively the operation parallel to the border of the ribs. Correspondingly to the thickness of the abdominal wall, this incision must occasionally be a very large one. A very great difficulty must occasionally be met with through the smallness of the liver. It is a mistaken idea that in consequence of stagnation of bile the liver must be enlarged. On the contrary, I have had the experience that in occlusion of the common duct of long duration, probably through the influence of pressure, an atrophic condition of the liver tissue will take place, and occasionally the liver will be concealed high up behind the ribs and this may cause a great deal of difficulty in consequence of the high and deep position of the field of operation. I have taken, in eight of these cases, to excising the adjacent cartilages of the ribs, and I should like to commend that. It facilitates the operation very much. On the other hand, the enlargement of the liver may be a great hindrance, and, especially in fat and plump persons of short build, it may be quite difficult to get down to the common duct. In one of the cases I was unable, in spite of the excision of the ribs, to get effectually down to the point of the trouble, and not until I had pulled the liver as far as I could out of the incision, almost one-third of the liver substance being brought outside of the abdominal wall, was I able to easily get to the cystic and common ducts. It was the case in which I was obliged to open the cystic duct at two different points and, besides that, the common duct at the usual place about the middle of its course. In the cases of acute inflammation it is necessary, wherever one has reason to presume that the neighborhood of the gall bladder is infected, to keep everything as

much as possible open and give entirely free outlet for the peritoneal secretions. At the same time I always drain the gall bladder with a long tube with the view of having a siphon action upon the secreted gall, and this will act very effectually. Occasionally a blockade will take place through mucus or blood clot, and then it will be necessary to change the tube or make a cautious washing through it. I should advise against the injection of any irritating antiseptic solution into the gall bladder. I have observed that occasionally this fluid will cause distressing symptoms, attacks of colic, probably because it may get into the common duct and the hepatic duct and irritate. I only use saline solution or boiled water. I have always found that the bile itself was an antiseptic agent. After a short time the amount of purulent secretion is insignificant, and the healing of the abdominal wounds, although constantly in contact with the bile, is mostly uneventful and without any untoward symptoms.

"About stones in the liver substance I have no practical experience. I have once found a stone in the liver after it had perforated the walls of the gall bladder, but I have not had any experience with stones in the liver that have formed in the gall system above the hepatic duct. It is a fact that these stones will occur, that occasionally quite extensive casts of stone formation will take place in the gall system. I will not mention comparatively frequent uncomplicated cases, where we have to deal with dilated gall bladders and stones, and where the surgical treatment is comparatively simple. I never do the operation in two sittings. I find that it is entirely safe to operate in one sitting. I have always aspirated as much as possible the contents of the gall bladder through a thick aspirating needle, protecting as cautiously as possible the surroundings to guard against infection.

"I think that in some of my cases I have reason to assume that there is some valve action, especially in one case of stone in the common duct of small size. The patient had had an attack of gallstone some three months before this attack with jaundice lasting several weeks, most likely because of obstruction from this stone, which was solitary, as judged by its very round, regular shape. Probably after a time this stone shifted back and later on again caused obstruction together with an infection. This we saw not uncommonly in cases of obstruction of the common duct. Even if the stones are ball-like or rounded, at intervals a certain amount of bile will get into the gut. It is almost characteristic that if, in prolonged jaundice, at intervals the condition of the feces and the urine points to the passage of a certain amount of bile through the duct, we have probably to deal with obstruction from stone. Regarding the drainage of the common duct I have tried everything; I have left the duct entirely opened, and I have sewed it up with the insertion of a small drainage tube into the lumen of the duct, and I have sewed it up entirely. In cases where the common duct is healthy I think it preferable, if it can be done, to sew up the duct entirely. If there is reason to assume that there is obstruction beyond the stone I should prefer to drain, and I do this in such a way that I insert a small drainage tube from the wound in the common duct and pack gauze around it. This gauze (iodoform gauze boiled in glycerin) I leave in for five or six days. The tube I leave for a sufficiently long time to secure the proper outlet of any secretion as long as it exists. In draining a gall bladder I pack the gauze around the tube and leave the opening comparatively large for the reason that, at least the inflammatory cases, the surface of the gall bladder is such that it will necessitate some thorough cleansing and local treatment for a limited time. There will be clots of blood or shreds of tissue or inspissated mucus which might easily obstruct. I mostly remove this tampon in two or three days, and give the inside of the gall bladder an additional thorough washing and cleansing. Besides this we have either sewed the peritoneum to the

surface of the gall bladder where there is no infection outside of it, or we have packed around the circumference of the gall bladder in such a way that even if some of the contents of the bladder escape it is not likely to cause a spreading inflammation. A very serious complication that has led to fatal issue in several of my cases of advanced cholemia, is an inclination of the patient to bleeding. Three of my cases I have lost from secondary hemorrhages. Two of these cases were complicated with malignant disease of the pancreas. Necropsies were not made, and I can only say that I felt in the region of the head of the pancreas a resistant hard mass which I took for a malignant affection. Lately, Professor Riedel, a surgeon who has perhaps worked more in gall surgery than any other man living, has published cases in which he is inclined to assume that occasionally these apparent malignant thickenings of the pancreas may be but inflammatory thickenings, and he mentions one case which seems to be beyond any doubt. In an elderly gentleman, in whom the operation was abandoned, assuming that this was a case of cancer of the pancreas, the stones merely were removed. A fatal issue was awaited, but the patient lived for years and became healthy and strong, and there could be no question about his not having malignant disease. He assumes that through the presence of stones an irritation is kept up in the pancreas, and that this irritation, after the removal of the stone, may cease and the condition improve. I have lost one of these cases by the separation of the Murphy button after establishing cholecystenterostomy. The patient had had up to that time small hemorrhages from the inside of the gall bladder. I had purposely kept the gall bladder open, stitched to the abdominal wall, because I had the impression that this would probably be a case of bleeding, and in order to tampon and make counter pressure I kept the gall bladder open and was able up to the tenth or eleventh day to check the bleeding, but after the separation the patient had a profuse hemorrhage into the large intestine and succumbed to anemia."

PRACTICAL NOTES.

A Sensitive Test for Sugar.—A test tube of ordinary size is filled for about half an inch with hydrochlorate of phenylhydrazin in powder: then acetate of soda in powder or small crystals is added for another half inch. The test-tube is then half filled with urine and boiled over a spirit lamp, the powders passing into solution as soon as the liquid is heated. After the urine has reached the boiling point allow it to boil for two minutes. The tube is left in the stand, and examined again some time afterward. If sugar is present a yellowish deposit forms, which under the microscope is seen to consist chiefly of beautiful needle-shaped crystals of a bright sulphur yellow color. The crystals are often found after the urine has been standing for half an hour; but after boiling the tube we have generally placed it in the test stand, and not examined the deposit until at least six or eight hours afterward. If no sugar is present, only brownish amorphous globules or yellowish scales are found. The test when thus carried out is very sensitive; a diabetic urine so diluted with water as to contain only 0.015 per cent. of sugar gave no reaction with Fehling's solution and no indication of sugar by the fermentation test, but with the phenyl-hydrazin test showed a distinct deposit of long yellow crystals.—*Dublin Journal of Medical Science.*

Successful Suture of a Penetrating Wound of the Heart.—At a recent meeting of the German Surgical Society Rehn (*Deutsche med. Woch.*, May 6, 1897, Suppl. p. 88) reported the case of a man 22 years old who was stabbed with a knife in the left chest and came under observation in a most unfavorable condition, with dyspnea and cyanosis, almost pulseless and covered with blood. A wound was found in the left fourth intercostal space.

The area of cardiac percussion dulness was increased to the right; the heart-sounds were clear. On the following day the condition of the patient had improved, but the area of cardiac dulness had increased. On the third day the condition had grown worse, the pulse failing and the respiration becoming greatly accelerated. The area of cardiac dulness had increased still more and the patient appeared moribund. Operation was now decided upon and an incision was made in the fourth intercostal space, the fifth rib also being divided, and the pericardium exposed. When the wound in this sac was enlarged a large clot was encountered and an incised wound of the right ventricle 1.5 cm. long was found. No blood escaped during systole and it was possible to compress the wound with a finger without embarrassing the action of the heart. Three silk sutures were introduced during diastole and the hemorrhage ceased. The pleura was irrigated with saline solution and together with the pericardium packed with gauze. Immediately after the operation pulse and respiration were better. The surgical progress of the case was complicated by purulent pleurisy necessitating later reopening of the pleura. Except for slightly increased activity of the heart the condition of the patient was an excellent one seven months after the accident.

Plaster Bed for the Treatment of Scoliosis.—Jagerink has secured gratifying results with his plaster bed in treating twenty patients, mostly adults, some 25 years old, all with advanced scoliosis. They sleep in this bed all night and remain in it several hours a day. The plaster cast reaches from the top of the head nearly to the knees and is strengthened with iron bands. A slit is cut on each side of the spine corresponding to the points of the greatest curvature, through each of which a broad band is passed and fastened to an iron support projecting a foot or two above each side. These flat bands are gradually tightened until they exert considerable pressure upon the curvatures, while the head of the bed is raised, which stretches the spinal column. Full directions and cuts are published in the *Ztschrift. f. Orthop. Chir.*, Vol. v, No. 1, in which he recommends it in the warmest terms.

Lucas' Balloon Dilator for the Cervix Uteri is an hour-glass shaped balloon of inelastic and very strong rubber tissue distended with water. The concave top of the balloon receives the head and its pressure deepens the concavity, as the water within is forced by the pressure out into the other part in the vagina. This is considered an important advantage of this balloon as it favors correct presentation and does not alter it, which is one of the dangers of the Champetier balloon. Lucas believes that it will be found extremely useful in cases requiring prompt evacuation of the contents of the uterus, also in hemorrhage from placenta previa and in deformed pelvis.—*Jour. de M. de Paris*, January 31.

Success of Osmic Acid in Neuralgia.—Franck reports thirty-four cases completely cured in seventy-seven, some truly remarkable cures after years of suffering and the failure of other remedies and surgical intervention. He uses Chapiro's formula: Osmic acid, 0.1 gram; aq. dest., 6 grams; glycerin, 4 grams. Keep in black flasks. Usual amount injected, 0.01 gram.—*Nouv. Remèdes*, February 8.

Test for Peptone in the Urine.—As trichloroacetic acid precipitates the albuminoids, a concentrated solution of trichloroacetic acid added to an aqueous solution dissolves the albuminoids, while the peptone remains on the filter undisturbed. The addition of copper sulphate to the peptone residuum then produces the typical biuret reaction.—*St. Petersb. Med. Woch.*, No. 4, 1897.

Value of Somatose as an Anti-Emetic.—Lutaud calls attention to the peculiar and powerful anti-emetic action of somatose, with which he has promptly controlled a number of cases of rebellious vomiting in pregnancy, and prevented vomiting after chloroform narcosis. He adds that there is apt to be diarrhea when more than four teaspoonfuls a day are taken.—*Jour. de Méd. de Paris*, April 18.

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SATURDAY, MAY 29, 1897.

THE OCCASIONAL EXCITANT ACTION OF THE
BROMIDS.

The occasional untoward effects of the bromids, especially in certain epileptics, which were the subject of editorial comment in the JOURNAL last year at the instance of a paper read by Dr. S. WEIR MITCHELL, were again brought up before the Association of American Physicians at their recent session at Washington. Dr. H. A. HARE read a paper giving the results of inquiries made by him, in which he stated that these effects were well known to asylum physicians generally and that there already existed a considerable literature upon the subject. In the discussion doubt was apparently thrown upon the statements he had gathered from asylum physicians, which were held to have an insufficient basis; the bromid merely diverted the attack, it was hinted, but did not cause it, and presumably the idea was intended to be conveyed that its connection with the violence it was said to induce did not really exist.

It is not an important matter whether the bromids act by suppressing the ordinary outlet of the irritability in the fits or by some special excitant action of their own in particular cases, or whether the effects apparently due to the drug are caused by individual idiosyncrasy or not; the real question is, are they the result of its administration? As to this there seems little doubt, though the fact has been ignored or overlooked by some very prominent neurologists. This is the

more remarkable when it is known that these effects were mentioned in one of the earliest elaborate studies of the action of the drug, that of VOISIN, who reported several pronounced cases of bromid mania. It was later noticed expressly or incidentally by ECHEVERRIA, HAMMOND, STARK, and others, and in a discussion in the American Neurological Association, in 1881, Dr. J. S. JEWELL suggested the possibility that a certain proportion of the epileptics in asylums probably owed their commitment to attacks due chiefly or entirely to the administration of bromids, and Dr. SPITZKA expressed the opinion that 25 per cent. of them were thus liable. There seems to be very little doubt as to the accuracy and thoroughness of the earlier observations, and the very general recognition of the phenomenon by asylum physicians is corroborative. It appears to be a clinical fact that has been recognized by alienists in this country, while it has been overlooked both in observation and in the medical literature by some very prominent specialists.

Most of these instances of the evil effects of the bromids have been observed in cases where the potassium salt was employed, but whether there is any essential difference between them as was suggested in the discussion of Dr. HARE's paper is a yet unsettled question. There is some reason for the belief that it is the drug and not the suppression of the epileptic attacks which it induces, thus cutting off the natural outlet of the nervous irritability, which is responsible, at least in some cases. There is also evidence and a general probability that with moderate doses these effects are rare with any of the bromid salts; and that their lack of observation of late years may be due to the excessive bromid medication formerly employed. There is still, however, room for caution in regard to the administration of these very valuable agents, which when given in excess or injudiciously employed are by no means altogether harmless drugs. It is well that such a high therapeutic authority as is Dr. HARE, has taken up this subject and given his findings to the profession.

PROFESSIONAL INCOMES.

The average annual income of a metropolitan lawyer has been quoted as being \$800, but the *New York Herald* of May 16, makes that of the "Gotham" physician to be \$1,630. One who possibly may have inspired the interview stated in the article that his practice brought him \$10,000 each month, while another with a much clearer conscience said he was happy when he received \$100 in the same time. For prudential reasons both these unnamed brothers under theegis of "the Code" teach us nothing of their money-making methods, and thereby incur none of the risks of that "competition" just now so much talked of by politico-economists. With the accord of modesty to the poorer exemplar let us think of an

income of \$120,000 a year with the long line of office patients jostling over each other at \$10 per somersault, and then be deaf to the coarse imprecations of the baffled tax-gatherer who ever flits through the "borough of Manhattan."

Verily we can not believe that our sister city, whom we always sincerely respect, can spare enough from the throngs about her well-appointed charities to support a medical prodigy who has so opened his books to a voluntary receiver. We confess to the view usually entertained by the biographers of rich physicians that more is due to "judicious investments" than to adroit advertising. Moral: Let us avoid the shoals of commercialism and enjoy the peace of the country practitioner who can steal a day or two for the philosophies of life beyond ear-shot of the "dull and sickening thud" of statistics such as these. Meanwhile let us not forget that our brother with so fashionable a practice may be posing before a glass for a grander rôle in the near future. He may prove to be a Paracelsus with much trimmed abilities.

THE MEDICAL TEMPERANCE ASSOCIATION.

This Association of medical men, whose special purpose is the study of alcohol and its effects on the body, hold their annual meeting in Philadelphia at the same time as the AMERICAN MEDICAL ASSOCIATION. Organized six years ago with Dr. N. S. DAVIS of Chicago, as president, and composed entirely of members of the AMERICAN MEDICAL ASSOCIATION, they hold an annual meeting for the election of officers at the same time and place. For several years they have read papers on the alcoholic question in the different Sections of the MEDICAL ASSOCIATION. For three years the Section on State Medicine has welcomed them. Some of the members have read papers in the Sections on Practice, Neurology, and Surgery, and the impression and interest created has been excellent. No moral or ethical side is discussed, and the topics are purely scientific and medical. This Association has grown to nearly a hundred and fifty members, all of whom are interested in the study of alcohol as a medicine and food, and who are trying to ascertain the facts as they appear to each one personally and in their separate fields of practice.

An English association, called the British Medical Temperance Society, has been organized for over twenty years, with the same purpose and plan, and composed entirely of members of the British Medical Association. They have an annual breakfast, and discuss alcohol at the table freely and frankly. Leading medical men attend these breakfast occasions, and speak for or against alcohol as a medicine with great freedom. This Society now numbers over five hundred members, and is considered an important annex to every meeting of the British Medical Association. The American society has not been able to rouse up

so much personal interest in the profession, and yet by its numerous papers every year, the subject has been kept quietly before the profession. Many physicians not members of this Association seem anxious to hear all the papers read, and some very interesting discussions have followed the reading of these papers.

The committee of fifty organized in New York a few years ago for the investigation of the alcoholic question, has followed some of the same lines marked out by this Association, and with much boasting reached the same conclusions. The impression has been created that they were doing the only real scientific work in this country. Most of these papers read in the Sections of the ASSOCIATION have appeared in the JOURNAL and have passed unobserved, except by those interested.

The sneers of some wise persons who thought this subject settled beyond further question, at this Association "as a set of cranks" unworthy of notice, have not been heard lately. In reality the medical side of the drink problem is as urgent and important a topic in medicine as any other. We shall never be able to understand it until the entire profession takes it up seriously, and studies it as this Association is doing, by short papers on the clinical aspects of alcohol in every-day observation.

The annual meeting will be held in the hall of the Section on State Medicine on Thursday, June 3. Dr. CROTHERS, of Hartford, Conn., is the secretary.

SYSTEMATIC COLD BATHING IN THE TREATMENT OF TYPHOID FEVER.

In his oration delivered on the occasion of the recent unveiling at Washington of the monument of the late Prof. SAMUEL D. GROSS, Dr. W. W. KEEN, in contrasting the numerous statues erected to the memory of statesmen and warriors with the few erected to honor the memory and the services of medical men, opportunely pointed out that "peace hath her victories no less renowned than those of war." In exemplification of this fact we need but refer to the conquest of smallpox through vaccination and to that of diphtheria by the antitoxin. There died recently in the seclusion of his home in Germany a modest provincial practitioner of medicine to whom the world owes a debt of gratitude of which it appears scarcely to be cognizant. For more than thirty years ERNST BRAND of Stettin labored zealously and unselfishly in deed and in word for the systematic employment of cold bathing in the treatment of typhoid fever and he was fortunate enough to live sufficiently long to enjoy the reward of seeing the principles he advocated and the methods he recommended adopted throughout the whole civilized world, with the result of saving from five to ten lives in every hundred submitted to the therapeutic measure that bears his name.

One may search in vain through the pages of history for the names of greater benefactors of their race than those of JENNER, of BEHRING and of BRAND. The time has happily passed when the prophylactic value of vaccination, the utility of the cold-bath treatment of typhoid fever and the therapeutic efficacy of the antitoxin of diphtheria could be made subjects of discussion. Each of these agencies has been established upon a foundation so strong as to be secure from attack by fanaticism and ignorance. The results obtained in the German and French armies from systematic cold bathing in the treatment of typhoid fever and the favorable statistics reported by HARE from Australia, as well as by numerous clinicians in various parts of the world, have done much to surround with confidence a measure that often seems cruel, sometimes unnecessary and occasionally harmful. In the United States BARUCH in especial deserves commendation for his persevering and consistent advocacy of the cold-bath treatment, while WILSON and OSLER have shown its value in hospital practice and SIHLER its practicability in private.

Among the largest individual statistics contributed to the now very considerable literature upon the hydrotherapy of typhoid fever are those of HARE of Australia, who now publishes (*Medical Record*, May 8, 1897, p. 656) the figures from the Brisbane Hospital for a period of fifteen years, during the first five of which so-called expectant treatment was employed in the treatment of cases of typhoid fever and during the remaining ten systematic cold bathing according to the method of BRAND. These statistics show that from 1882 to 1886, prior to the employment of cold bathing, there were among 1,828 cases of typhoid fever 271 deaths, a mortality of 14.8 per cent. The highest mortality in any year of this period was 17 per cent., the lowest 13.3 per cent. From 1887 to 1896 cold bathing was employed systematically and there were treated 1,902 cases, with 143 deaths, a mortality of 7.5 per cent. The highest mortality of any year of this period was 11.6 per cent., the lowest 1.3 per cent. The mortality was thus just halved. Omitting the cases treated during the first six months of this period, when the method was but imperfectly carried out, there were 1,731 cases extending over a period of nine and a half years, with 122 deaths, a mortality of scarcely more than 7 per cent. Dividing these cases into three equal groups of 577 each, the mortality was respectively 7.5 per cent., 6.9 per cent., and 6.9 per cent. Among the whole 1,902 cases 56 deaths were due to intestinal perforation, 2.9 per cent.; 23 were due to intestinal hemorrhage, 1.2 per cent.; and 64 were due to other causes, 3.1 per cent. As compared with the statistics of previous years these figures show no noteworthy change in the proportion of deaths due to intestinal hemorrhage and perforation, while the reduction in the mortality in consequence of bathing

is due to a diminution in the number of cases fatal from causes other than perforation and hemorrhage.

Under expectant treatment the mortality had been higher among females than among males, while under the cold-bath treatment this relation was reversed. The foregoing statistics include all cases of typhoid fever admitted to the hospital during the period specified, independently of the gravity of the case and of the plan of treatment pursued, and thus they exhibit the results secured in the most unfavorable light possible. The facts here briefly narrated surely require no elaboration. They are eloquent in their suggestiveness, and none will gainsay the justice of the claim that the man who devises the means of saving an additional seven of a hundred threatened lives is deserving of the gratitude of his fellow-men during life and of having his memory perpetuated in tablet of bronze or carving of stone equally with the greatest military commander, the most distinguished inventor or the most intrepid discoverer.

QUININ A HARMFUL REMEDY IN MALARIAL HEMATURIA.

Considering the very frequent occurrence of that alarming complication of malarial infection, malarial hematuria, in certain parts of the United States and its study in these regions as carried out by capable practicing physicians (and also in Greece where this symptom is also commonly met with), it is a remarkable fact that the writers of text-books and "Systems of Medicine" are able to give us so little information concerning the disease from a pathologic standpoint and that they persist in recommending the use of quinin for its relief. A lack of knowledge of the pathologic process underlying this condition is perhaps the excuse for this distinctly erroneous and harmful therapeutic statement. Doubtless in the majority of instances the author of a text-book, or article in a "System," simply quotes the mistake made by a previous writer and so perpetuates the error. Of the recent writers who commend the use of quinin in malarial fever may be named LOOMIS, who states that quinin is indicated in all forms of paroxysmal hematuria or hemoglobinuria; and TYSON, who believes that if quinin does not stop a hematuria that the hematuria is not malarial but due to other causes; and we find in the last edition of FLINT'S "Practice," edited by HENRY, the use of quinin is urged in this affection. In the editorial additions of F. C. SHATTUCK to STRUENPELL'S "Practice" the statement is made that the hemorrhagic form of malarial fever "demands cinchonism." Finally in THAYER'S admirable article on malarial fever in the "American System of Practical Medicine," edited by LOOMIS and THOMPSON, this author, while recognizing the fact that some persons have protested against the use of quinin in malarial hematuria, lends his influ-

ence to its use by saying that this adverse view, "is not held by the majority of observers." If he had said writers instead of observers, his statement would be correct, but the majority of *observers* are arraigned against this use of quinin. A review of the journals which represent the views of southern practitioners will reveal the fact that the most of them assert the harmfulness of quinin in such cases and of those who condemn this plan of treatment may be mentioned MEEKS, who writes in the *Therapeutic Gazette* for May. In this article, written by a physician of large personal experience with this affection, the injurious effects of quinin are emphasized. His conclusions are supported in this country by a collective investigation carried out by HARE in 1892 and published in the same Journal for July of that year. Thus out of 155 replies sent out to discover the views of physicians residing within the area shown by the United States Census to have a mortality of over seventy per cent. HARE found 19 experienced physicians who regarded quinin as useful in malarial fever and 28 who considered it harmful, while 12 experienced physicians believed it to cure malarial hematuria 27 asserted that this drug was capable of producing this symptom. PLEHN in the *Deutsche Medicinische Wochenschrift*, 1895, Numbers 25, 26 and 27, asserts that quinin will produce hematuria in many cases of malarial fever and that cases of malarial hematuria treated without quinin recover more rapidly than those who receive this drug. These statements are strongly supported by earlier writers than those just quoted, particularly in Greece where malarial hematuria is remarkably commonly met with. Thus KARAMITSAS of Athens has recorded seven cases of this character, the patients consisting of one female and six men. These cases he had under his personal observation and he records others reported to him. Two of his patients were medical men and he was able to produce hematuria in them again and again by the use of quinin. It is a notable fact that these patients did not have hematuria in the malarial attack if quinin was withheld. RIZOPOULOO asserts that the use of quinin in some cases will give rise to all the signs of a bilious hematuric malarial fever. TOMMASELLI has recorded similar cases. PAMPOUKIS and CHOMATIANOS also record cases of hemoglobinuria in persons both non-malarial and malarial and caused by quinin.

The following cases reported by KARAMITSAS also show that hematuria may be produced in an attack otherwise non-hematuric by quinin.

The patient, after irregular meals, arose October 14 with much anxiety, a headache and slight lumbago, but without fever. Two hours after noon some fever came on, with slight chills. The temperature rose toward evening to 38 degrees C., the pulse to 100; the tongue was a little dry, and covered with a white coating; there was thirst, heaviness of the cardia,

headache, especially in the frontal region. They gave him soda lemonade. About two hours after midnight the fever diminished, the temperature became 37.5 degrees, but the other symptoms remained in the same condition. In the morning (October 15), as the patient had no evacuation for two days, he was given a decoction of tamarinds with manna, which was followed by evacuations. The temperature toward noon was 37 degrees; except for extreme lassitude, the patient felt no other discomfort. Three hours after noon came a fever without chills, more severe than the day before. The temperature rose little by little to 39.5 degrees. Insomnia and fever existed during the entire night. About three hours after midnight the temperature descended to 38 degrees; then the patient began to take quinin; he took, up to seven o'clock in the morning, 20 grains, 5 grains an hour; an hour after the first dose, he felt much weakness, heaviness, with pains in the lumbar regions, and a desire to urinate. He passed shortly after copious urine of a red-black color. Let us observe that during the paroxysm and before having taken the quinin, there was ordinary febrile urine.

The weakness became still greater, also the painful heaviness in the lumbar regions. Two hours after having taken the lost dose of quinin, he had again bloody urine. For twenty-four hours his urine always presented a red color, but little by little it became lighter and less bloody, and the morning of October 17 had a normal color. The patient felt no indisposition save weakness. He was very pale, and his conjunctiva was during two days of a yellowish color, which disappeared little by little.

Aside from the fact that nearly all Greek writers of today believe the malarial poisoning renders the patient peculiarly susceptible to the hematuric influence of quinin, additional evidence can be adduced showing that quinin is harmful in the great majority of cases of malarial hematuria. In the first place the drug is never given except in very full doses in this affection and these doses are capable of irritating the kidneys, which, in many cases of acute malarial infection, are acutely inflamed, and in chronic malarial disease are generally seriously impaired in their functions. In this connection reference may be made to the valuable research of ATKINSON of Baltimore and the researches made by the Tri-State Medical Society of Alabama, Tennessee and Mississippi, which found nephritis in all cases of fatal malarial hematuria.

RALFE states that renal changes undoubtedly occur, although in some instances these may be due to cold and damp rather than the malarial poison, and ATKINSON has shown that malarial nephritis is tubal and diffuse, and that the inflammation is most marked in the neighborhood of the glomeruli. KIENER and KELSCH also describe a hemoglobinuric hyperemia as occurring during an acute attack of ague in which the

organs are intensely congested. The cortex is cloudy from blood-coloration, the glomeruli are prominent and red, and the pyramids redder still. Finally, in this connection we may cite the facts stated by THAYER as follows:

The grave damage which the kidneys may suffer in certain acute malarial infections, either from the direct action of some toxin produced by the hematozoa or from the presence in the circulation of injurious substances, due indirectly to the action of the parasite, is most strikingly brought to one's notice in the intense acute nephritis which may follow malarial hemoglobinuria. The kidney, however, rarely escapes a certain amount of damage in any severe malarial infection. Thus, out of 284 cases analyzed by HEWETSON and the author, albumin was found in nearly one-half, while severe acute nephritis was present in 4 instances. The nephritis following malarial fever is usually a mild acute, diffuse process similar to that observed in any infectious disease. In some instances, as stated in the section on malarial hematuria, the course may be rapid and fatal; in the majority, however, the prognosis is favorable and complete recovery occurs. It is not impossible that, in some instances, a fatal chronic diffuse nephritis may owe its origin to the malarial poison; however, definite proof of this is as yet wanting. There is nothing absolutely characteristic, clinically or pathologically, in these instances of malarial nephritis.

GUYOCHIN (*Action Physiol. et Thérap. de la Quinine*, Paris, 1872) has reported cases of genito-urinary irritation after the use of quinin, and FAGINOTI reports a case in which there was pain in the urinary passages, and the discharge of a few drops of blood on urination. MONNERET has seen positive hematuria follow its use, and RIVET (*L'Union Médical*, Nov. 1, 1884) has observed vesical spasm and hematuria after an ordinary dose of the drug. DASSET (*Bulletin de Thérapeutique*, xv, 248) reports the development of hematuria with retention of urine from cystic irritation due to quinin; and CACHERE (*New Orleans Journ. of Medicine*, October, 1869) records two cases in which hematuria followed the use of quinin. One of these, a boy of 13, had profuse hematuria after the dose of 10 grains, and a girl of 7 years was affected similarly whenever quinin was used. STILLE states that quinin irritates the urinary organs and if any part of this tract is diseased, the disease is aggravated.

An argument which may be well adduced in support of the use of quinin in malarial hematuria is the fact that this drug is undoubtedly a specific for the cure of ordinary malarial infection by reason of its destructive effect on the plasmodium. While at first sight this reasoning is cogent, in reality it is not so, for the hematuria is the result of a pathologic process produced by the infection and arises either from the sudden setting free of large amounts of hemoglobin in

the blood or because of degenerative vascular changes in the kidneys. To give quinin therefore to relieve an attack of malarial hematuria is to "lock the door after the horse is stolen" and its use will give the engorged and over-worked kidneys only the additional labor of eliminating the drug. If quinin is used at all in such cases it should be used as a prophylactic against future attacks and be given after the hematuria has passed by.

To denounce the use of quinin and offer no other plan of treatment is not the intention of this editorial. The use of copious draughts of pure water to flush the kidneys, hot applications to the loins, chloroform spirit given internally and the use of purgatives to unload the bowels and relieve the liver are indicated. Further, it was proved by the collective investigation of HARE, already referred to, that hyposulphite of sodium is to be regarded as a most useful remedy in the dose of 20 to 40 grains every four hours. A calomel purge is universally recognized as useful and tincture of the chlorid of iron seems to be of value if clinical reports can be relied upon.

PRESIDENT MCKINLEY WILL ATTEND.

We are advised by Dr. HOBART A. HARE, Chairman of the Committee of Arrangements, that President MCKINLEY has formally accepted the invitation to visit the meeting of the ASSOCIATION and will be present Wednesday morning. To prevent crush all members must show registration cards at the door for admission.

THE JOURNAL SPECIAL TRAIN.

Medical gentlemen from Illinois and vicinity, the Pacific Coast and the Northwest, who intend to be present at the great jubilee meeting of the ASSOCIATION, are invited to take the JOURNAL SPECIAL, which will go by the Pennsylvania Railway without change from Chicago to Philadelphia. The time limit of ten days is as long as granted by any other route. See advertisement in another column, and make no mistake. The JOURNAL guarantees the most perfect of modern railway equipment.

CORRESPONDENCE.

Food for Diabetics.

NEW YORK, May 18, 1897.

To the Editor:—The articles of Dr. Edward L. Munson in the current numbers deserve attention. It would be better for the profession if the serious chronic diseases were more fully noted and published. I can not fully agree with the Doctor in his deductions, and must put the evidence that has been presented to me against his, and with the evidence which is to come, we will all finally get at the truth.

In an experience more or less closely connected with seven cases of diabetes, I have seen a mortality of about 50 per cent. The treatment has been the use of the best of beef, broiled in the form of steaks, or with the white fibrous connective tissues

removed (which glue connective tissues ferment), and the lean muscle pulp broiled over a good live bed of coals, so that the resultant cake of meat would be of a dark brown color on the outside, and when opened reddish but not raw in color. This served on a hot water plate, properly seasoned with pepper, salt and butter as desired; and if in making the lean muscle pulp, it is not touched directly by the hands, and the cake of meat before broiling is made an inch and a half deep, and not too tightly pressed together, and care taken in broiling to turn often, this resultant cake of meat will be very palatable, and the patient bear the same for a long time. If the beef animal has been over-driven before death, or has been poorly fed, the beef is not good, and will be livery and gelatinous, and ferment in the alimentary tract.

If a patient can eat starches and sugars without their fermenting and adding to the sugar, I allow them to have such, but my plan of treatment has been to stop the fermentation of any kind of food in the alimentary tract, because such fermentation produces carbonic acid and other paralyzing gases, and these gases act directly on the liver, and help to increase the production of sugar. Again, American morphologists have shown for over thirty years that starches and sugars promote alcoholic and acetic acid fermentation in the stomach and bowels. These facts have been confirmed by German chemists. Victor Hugo, in 1862, in his great work "Les Misérables," called attention to the kinship of consumption and diabetes, and to the rôle that sugar and sweets play in acid fermentations, and as a cause of these two diseases. In 1888 I was in Kentucky attending the annual meeting of the State Medical Association. Some of the Louisville doctors were criticising another because he had made a diagnosis of consumption in a case of diabetes, as he had found the tubercle bacilli in the expectoration. I questioned my father, Dr. Ephraim Cutter, afterward about the matter, and he said the diagnosis was correct, as the two diseases may coëxist. It has been my experience to see the sugar increased and the patients made worse by their "spreeing" on sugars and sweets. The hardest thing I have had to contend with has been the adverse circumstances surrounding the patients as to their money matters, and the worry incident to such has helped to cause death. As to prognosis: a young woman in 1888 with not a large percentage of sugar, is living today. I do not know what her condition is, but she is living, and I judge in fair health.

In 1885, as a student, I saw a case in my father's office of a man with enlarged heart, diabetes and Bright's disease; the triad of stigma of albumin, casts and fatty epithelia being present in the urine. This man I again saw in 1890, when he consulted me, my father being in Europe, for a nervous condition he was then in. There was no evidence of Bright's disease or diabetes. A case of a young man in our care three years ago, whose specimens ran up to 1060 and were heavily loaded with sugar, who also had occasionally present the stigmata of Bright's disease, and whose liver dulness extended up the back and side over twice normal dimensions, was tremendously improved by living closely on beef with but little vegetable food. He was greatly hampered in his money matters, could not earn any money, had a wife and young child, and he would occasionally go a-spreeing as to his food, and go into jellies, sweets and fruits, with the result that he would be appallingly sick and nearly die. This case, however, died after two years in Denver of diphtheria. I do not care to go into other details as to patients now, but I must call attention very specifically to one point. It has been considered by the profession for years that beef causes uric acid conditions which lead to coma and death. Now, I feed beef in chronic cases because it has all the chemie elements necessary to nourish the body, and if good beef is rightly prepared, it digests easiest, and can be borne longer as a single article of food than any other element I know of. I do not believe in keeping any patient down to

one article of food unless absolutely necessary, but nine-tenths of my work is the handling of chronic cases of diseases, and with some of them I examine specimens of urine from 100 to 200 times in a year. I never have yet seen uric acid, coma and convulsions caused by beef, and I have seen specimens of urine which would deposit full of nitrate of urea on the addition of nitric acid. If my experience in this line was limited to one or two cases, and but a short time, my opinion would be worthless.

Finally, I hope that Dr. Munson and others will give us more of the evidence which they have in the handling of this most serious complaint.

Yours sincerely,

JOHN A. CUTTER, M.D.

Association of Acting Assistant Surgeons U. S. Army.

In reply to a letter concerning the status of this organization, we have the following letter from Dr. Parker:

GROVELAND, MASS, May 12, 1897.

To the Editor:—Replying to your letter, in which you state, as Dr. Shady and others have done, that "a society which has no time of meeting can not be said to have any pronounced standing," I would state that our Association is fast going to pieces. Acting assistant surgeons no longer exist in the army. The new generation of army medical officers do not know of them except by hearsay. The brave deeds of the acting assistant surgeons have nearly been forgotten. There is no one brave enough and unselfish enough to plead for them. The AMERICAN MEDICAL ASSOCIATION has heard their cry, but has never helped them. Each year our notices have many which are returned with the simple word, *dead*. Our members have toiled hard and faithfully and spent their money generously, but no one in Congress will aid them, so one by one they lose interest and drop out. Of the eighty members remaining only a few can be found in Washington, still less in Philadelphia and New York. To come together would be a tremendous expense, as they are scattered from the Atlantic to the Pacific, from Dakota to Mexico (one member in Mexico). We meet at the call of our president, but can not obtain a quorum, and yet at these late days it is a pleasure to have some form of organization and to continue an effort for right and justice. The acting assistant surgeons have never been appreciated as they deserve to have been. They did magnificent service in the war. Hamilton, Flint, Agnew, Hunt, Morton, Shady and many others served as such. Since the war almost all the dangerous field service in Indian campaigns was most willingly and faithfully performed by them. Deeds of heroism like that of Dr. Porter on the Custer battle field have been recorded. Will you not allow us the pleasure of legitimate organization, even if we can not meet *every* year? Will you not say a kind word for us and encourage a meeting worthy of the good men and true? I know you would hate to refuse. Hoping to hear favorably, I am, dear doctor,

Sincerely yours, WM. THORNTON PARKER, M.D.

Are Coal-tar Derivatives Incompatible with Mercury?

HOT SPRINGS, ARK., May 15, 1897.

To the Editor:—I am interested in the above query. Some years ago, soon after the introduction of the coal-tar derivatives as antipyretics, I yielded on several occasions to the inclination to prescribe what would seem a reasonable dose of calomel, soda and acetanilid, and in every instance noticed on the part of the patient an alarming distress. The toxic symptoms in each case being a marked griping of the bowels and an elevation of temperature followed by an alarming asthenic condition. I gave up the idea of combining calomel and acetanilid, until recently I was again tempted to use it in the case of a child 3 years old suffering with a gastro-intestinal dis-

order. Convulsions returned more severe with intense pain in bowels, increased tympanites and tenderness, the child dying from exhaustion. I do not think the dose killed the child, for it was almost in a dying condition when I was called to see it; but I am certain that the fateful combination caused a return of symptoms with increased severity. J. C. MINOR, M.D.

Seborrhea and Alopecia.

MILLEDGEVILLE, IND., May 1, 1897.

To the Editor:—I see in the JOURNAL that it has been announced from the Pasteur Institute that M. Sabouraud has established the fact of the identity of the microbe in seborrhea and alopecia. I was very much disappointed by not finding the remedy. Could you tell me in the JOURNAL something that will destroy the microbe and stop the disease? Respectfully yours, J. S. SHIELDS, M.D.

ANSWER—Sabouraud now supplements his discovery of the identity of seborrhea and alopecia (JOURNAL, April 24, page 801), with the results of his research into the causes and mechanism of ordinary baldness, which he summarizes as follows: 1. The specific microorganism of fatty seborrhea introduced into the hair follicles produces there four constant results, sebaceous hypersecretion, sebaceous hypertrophy, progressive papillary atrophy and the death of the hair. These phenomena resulting from the seborrheic infection occur both on the glabrous and hair-covered portions of the body. 2. The vertex is the chosen seat of the infection on the scalp, and chronic fatty seborrhea is therefore the cause of the loss of the hair, which constitutes ordinary baldness. This follicular seborrheic infection is not only indispensable to the evolution of baldness, and baldness does not develop without it, but the same seborrheic infection continues intense, pure and permanent until the baldness is completely and definitely established. 3. Ordinary baldness is therefore a specific microbial affection with distinct characteristics. He adds that these statements are the results of three years' pains-taking research, which he describes more fully in the *Ann. de Derm. et de Syph.*, March, 1897. The therapeutic indications in alopecia and baldness are, therefore, the remedies which have been found effective in seborrhea, especially sulphur.

Acromegaly.

ONEIDA, N. Y., May 24, 1897.

To the Editor:—In your issue of May 22, page 986, Dr. Osborne reports a case which in nearly every particular was like one I had nineteen years ago this month. A man aged 69 years had the disease upward of twenty-five years, and had been able to do light farm work, and had received but very little medical treatment during the whole period. I was first called to see him April 9, 1878, when I found him suffering from general edema, more marked in lower extremities, difficult breathing, irregular action of heart, etc.

In the condition I found him it was difficult to diagnose the case, myxedema from acromegaly. The usual remedies in such cases had but little effect, only palliative, and he died on May 5, being confined to his bed only about one month. Owing to the absence of friends, I did not get a postmortem examination till about eighty hours after death. I found hypertrophy of nearly all the bones throughout the body. Thyroid gland was very large, and the heart weighed three pounds and three ounces.

H. W. CARPENTER, M.D.

The Portable Sterilizer.

DENVER, COLO., May 17, 1897.

To the Editor:—I am pleased to waive any claim of priority for developing or presenting the principle of the "Compact Portable Sterilizer" illustrated in your issue of May 1, and regret that unfamiliarity with the publications of Dr. Carl

Beck in regard to his sterilizer made it necessary for me to work this instrument out for myself, and that I should appear to claim that to which I am not entitled.

I shall feel that my labor has not been wasted, however, for it has resulted in giving me a most satisfactory instrument, one I believe to be in a number of essential details a great improvement upon that described by Dr. Beck; the lamp, stand and absence of wire screens and baskets being among them. Its extreme simplicity is one of its best features.

HORACE G. WETHERILL, M.D.

Excessive Doses of Opium.

SAC CITY, IOWA, May 24, 1897.

To the Editor:—I am collecting material for a paper on excessive doses of opium in children, either administered as medicine or taken accidentally. Any readers of the JOURNAL who may have seen such cases in their practice, or met them in any other way, will confer a great favor by sending me an outline of the case with prominent points. In all such cases proper acknowledgment will be made and due credit given.

Yours very truly, CALEB BROWN, M.D.

ASSOCIATION NEWS.

The Philadelphia Meeting.

PHILADELPHIA, May 24, 1897.

To the Editor:—The arrangements are thoroughly completed for the reception and accommodation of those of the profession who expect to attend the semi-centennial meeting to be held in Philadelphia June 1. The Committee of Arrangements has every reason to believe that visitors will be satisfied with the meeting places which have been prepared for them and we are ready to entertain as many of the profession as may honor us by their presence. I append to this letter the latest information in regard to the Section dinners. It is earnestly hoped that all those who belong to Sections, or who intend to belong to Sections, will write to the gentlemen whose names are attached to each notice of a Section dinner, engaging a plate. It will also interest those of the profession who intend bringing their families with them, to learn that an exceedingly active and competent committee of ladies has undertaken to see that all visiting ladies are thoroughly entertained during the hours that the members of the ASSOCIATION are busy in the general meetings or in the discussion of scientific subjects.

Everything promises a most enjoyable meeting and the only thing that the Philadelphia Committee requires now to make the meeting in every way a success is the large attendance which we have been hoping for since it was decided that Philadelphia was to be the meeting place for 1897.

In the name of the committee I desire to earnestly urge all readers of the JOURNAL to make special effort to attend this meeting, which I am sure will be a memorable one in the annals of the ASSOCIATION, largely because of the unusually good scientific program which will be presented in the various Sections.

Yours very truly, H. A. HARE, M.D.

SECTION DINNERS.

Section on the Practice of Medicine.—Dinner at the Aldine Hotel, Chestnut above 19th Street, at 7 P.M. \$3 per plate. Notify Dr. J. H. Musser, 1917 Chestnut Street, Philadelphia.

Section on Surgery and Anatomy.—Dinner at the Bellevue Hotel, Broad and Walnut Streets, at 7 P.M. \$3 per plate. Notify Dr. Orville Horwitz, 1115 Walnut Street.

Section on Obstetrics and Diseases of Women.—Dinner at Hotel Walton, Broad and Locust Streets, at 7 P.M. \$3 per plate. Notify Dr. Milo B. Ward, Hotel Walton.

Section on Ophthalmology.—Dinner at Hotel Walton, at 7 P.M. \$3 per plate. Notify Dr. G. E. De Schweinitz, 1401 Locust Street, Philadelphia.

Section on Diseases of Children.—Dinner at the Bourse, 5th Street between Market and Chestnut Streets, at 7 P.M. \$2

per plate. Notify Dr. Alfred Hand, Jr., 211 S. 17th Street, Philadelphia.

Section on Laryngology and Otology.—Dinner at the Stenton, Broad and Spruce Streets, at 7 p.m. Notify Dr. E. L. Vansant, 1909 Chestnut Street, Philadelphia.

Section on Materia Medica and Pharmacy.—Dinner at Willow Grove Park. Take cars at Broad and Locust Streets, after the session on Tuesday. Notify Dr. Frank Woodbury, 218 S. 16th Street, Philadelphia.

Section on Neurology and Medical Jurisprudence.—Dinner at the Aldine Hotel at 7 p.m. \$3 per plate. Notify Dr. Chas. K. Milla, 1909 Chestnut Street, Philadelphia.

Section on Dermatology and Syphilography.—Dinner at Hotel Walton at 7 (?) p.m. \$3 per plate. Notify Dr. M. B. Hartzell, 3634 Chestnut Street, Philadelphia.

Section on State Medicine.—Dinner at the Aldine Hotel at 7 p.m. Notify Dr. Elmer Lee, 103 State Street, Chicago, Ill.

Section on Dental and Oral Surgery.—Dinner at the Aldine Hotel at 7 p.m. Notify Dr. E. Talbot, Columbus Memorial Building, Chicago, Ill.

Dinner of the American Medical Editors' Association will be held at the Aldine Hotel, 19th and Chestnut Streets, at 7:30 p.m. \$5 per plate. Apply to Dr. Judson Daland, 319 S. 18th Street, Philadelphia.

There is but One Official Program.

NEW YORK CITY, May 21, 1897.

To the Editor:—Replying to yours of the 19th inst., we were approached by a plausible gentleman pretending to represent the AMERICAN MEDICAL ASSOCIATION bearing with him documents apparently proving that he was authorized to take advertisement for the official souvenir program, and upon his assurance as a man of honor that this was the official program we placed contract for one-half page space. Now that we are advised that the official program published by the ASSOCIATION will be issued by you, and will contain no advertisements, we shall refuse to pay for the space contracted for and shall also refuse to consider all propositions hereafter emanating from any source for space in any official program. This is the third time we have been bitten, and the last. Such proceedings on the part of unauthorized individuals do more harm to the AMERICAN MEDICAL ASSOCIATION than its officials probably estimate. Very truly yours, SHARP & DOHME.

President McKimley.—It is officially announced that the President of the United States will be present at the Wednesday morning session of the ASSOCIATION.

Department of Public Health.—There will be a meeting of the Special Committee on "The Department of Public Health," at the Hotel Walton, Philadelphia, at 8 o'clock, p.m., Monday May 31, 1897. U. O. B. WINGATE, M.D.
Chairman of Committee.

Executive or Business Committee.—The first meeting of this Committee will be held in Parlor C, Hotel Walton, cor. Broad and Locust Streets, Philadelphia, on Monday May 31, 1897, at 5:30 p.m. Subsequent meetings will be held at the same place and hour, unless otherwise ordered by the committee, for the consideration of matters referred to it by the ASSOCIATION, and for the transaction of business.

L. DUNCAN BULKLEY, M.D.,
Secretary of Committee.

SOCIETY NEWS.

Ohio State Medical Society.—The fifty-second annual meeting was held in Cleveland and in many features was decidedly successful. The total membership is nearly 900 and about one-third were in attendance. The society took action on the proposed amendment to the State medical laws which provides for the establishment of boards of examiners independent of college faculties. It met with considerable opposition especially from Cincinnati college representatives and at one session the resolution was tabled. But the sentiment of the decided majority could not be thus silenced and on reconsideration the

opposition was overwhelmed by the strong arraignment of the college authorities and the manifest endorsement of the provisions of the amendment. Three hundred and twenty-five participated in the annual banquet of Thursday evening. Dr. Dan Millikin, the prince of post-prandial orators, presided and it was demonstrated that this form of entertainment can be made a most potent factor in cultivating the fraternal spirit, in the noblest profession, and securing recuperative relaxation.

It was demonstrated that the Ohio society has outgrown the one section method of presenting papers. Out of an average attendance of 250 there are about 100 who are interested in all kinds of papers. The remaining 150 drift in and out according to what papers are under discussion and thus add to the confusion. Profitable discussions can not be had unless there is close attention. Aimless and useless discussions are tolerated in our State societies to the extent of driving the best men from attendance. The brightest thoughts of the keenest minds can be aroused under the influence of convention enthusiasm as in no other manner, and it becomes the duty of the officials to so arrange surroundings that these scintillations of brilliant intellects will be received, appreciated and recorded.

Dr. W. H. Humiston of Cleveland was elected president; Dr. T. Clarke Miller, Massillon; Dr. Geo. Mitchell, Mansfield; Dr. D. H. Brinkerhoff, Fremont; Dr. E. H. Hyatt were elected vice-presidents; Dr. Jno. A. Thompson of Cincinnati, secretary; Dr. H. M. W. Moore, Columbus, asst.-secretary and Dr. James A. Duncan, treasurer. The society is to meet in Columbus in 1898.

Washington State Medical Society.—The eighth annual meeting of the Washington State Medical Society was held at Spokane, Wash., Tuesday and Wednesday, May 11-12, 1897. The following officers were elected for the ensuing year: President, J. B. Eagleson, Seattle; first vice-president, J. J. McKone, Tacoma; second vice-president, D. G. Russell, Spokane; secretary, F. H. Coe, Seattle; treasurer, J. W. Bean, Ellensburg. Seattle was chosen as the place for holding the next meeting.

Montana State Medical Society.—At the annual meeting of this society, held at Helena, the following officers were elected, viz: Dr. G. T. McCulloch of Missoula, president; Dr. B. F. Sandon of Neihart, first vice-president; Dr. C. M. Chambliss of Bozeman, second vice-president; Dr. B. C. Brooke, secretary; Dr. W. M. Bullard, corresponding secretary. The meeting next May will be held in Missoula.

PUBLIC HEALTH.

Secretary of Illinois State Board of Health.—A meeting of the new Illinois State Board of Health was held at Springfield May 24. Dr. J. A. Egan of Chicago was elected secretary, vice Dr. John W. Scott of Springfield, term expired. Dr. Julius Kohl of Belleville was elected treasurer. The board adjourned to meet the last Tuesday in June. It will be recalled that Dr. F. W. Reilly was some time since offered reappointment as secretary, but declined in order to retain the assistant health commissionership in Chicago. Dr. Egan has a splendid army record and gained his appointment in the Chicago Health Department by competitive examination. He is a young man of more than average ability, and is well equipped for his new position.

Hawthorne's Experience in India.—Julian Hawthorne, who was sent to India to describe the scenes of the famine and of the bubonic plague, returned to New York on the steamship *St. Paul* May 22. "The only other correspondent I met in India," he said, "was one from the Reuter News Agency. I spent only thirty days in India, a fortnight in Bombay and a fortnight in the famine district among the native villages. Millions of Hindus and Bengalees died from starvation, and the govern-

ment figures represent one-sixth of the actual deaths from the plague."

The Virgolia State Board of Health.—The term of office of the State Board of Health appointed in 1893 expired in March. Their successors appointed the following as members of the State Board of Health for the next four years: Drs. Rawley W. Martin, Lynchburg; Vernon G. Culpepper, Portsmouth; Hugh M. Taylor, Richmond; Landon B. Edwards, Richmond; Paulus A. Irving, Richmond; Lewis E. Harvie, Danville, and J. H. Neff, Harrisonburg. The latter two are new members of the board, succeeding Drs. Robert J. Preston of Marion and Paul R. Carringer of the University of Virginia, who retire. The *State Bulletin* says: "While we welcome most cordially the newly appointed members, Drs. Harvie and Neff, yet we part most regretfully from our old friends, Drs. Preston and Barringer, both of whom are prominent and distinguished in their special work in the profession, and have been useful, suggestive members of the board."

There were in London during 1896, 135,797 births, 83,511 deaths and 79,738 marriages.

Influenza and diphtheria are reported on the increase in London.

NECROLOGY.

CHARLES R. NELDEN, M.D., Bellevue Hospital Medical College, 1864, died May 2 in Stanhope, N. J., aged 55 years. During the war he was a medical cadet, U. S. A., from 1862 to 1864, after which he served a while as an acting assistant and surgeon. He conducted a pharmacy in connection with his practice for twenty-five years and was well known in Sussex County. The cause of his death is given as locomotor ataxia.

CORNELIUS OLCOTT, M.D., died May 2. Born in Jersey City, N. J., Jan. 21, 1828, he was of English descent. In 1849, soon after his graduation from the New York University Medical Department, he took up his life residence in Brooklyn, N. Y., and at once strongly identified himself with its sanitary interests. With the exception of his service as a volunteer surgeon at Fortress Monroe and during the Fredericksburg campaign, he devoted himself to private practice, but without resigning his position on the surgical staff of the Eastern District Hospital. He was also President of the Greenwood Lake Association. He leaves a widow and a son, Dr. Charles A. Olcott.

ROBERT ROSKOTEN, M.D., of Peoria, Ill., died May 8, aged 81 years. He served in the armies of Germany, France, Portugal and the United States; was a profound scholar, speaking several languages fluently. His medical education was acquired at the universities of Halle and Jena. Becoming involved in the revolution of 1848, he was forced to flee and came to the United States. At the breaking out of the Civil War he was one of President Lincoln's first appointees on the board for examination of army surgeons, afterward going to the front and attaining rank of brigade surgeon. Injuries received at Shiloh compelled him to leave the service.

N. P. PEARSON, M.D., an old resident of Chicago, died at his home May 6, aged 72 years. He received his medical education in his native country, Denmark, coming to Chicago in the 50's. For a number of years he was Danish consul in that city and stood high in the estimation of the people.

TRAILL GREEN, M.D., Easton, Pa., died April 29, aged 84 years. Dr. Green was a graduate of the University of Pennsylvania and afterward professor of chemistry in Lafayette College. In 1841 he accepted the chair of natural sciences in Marshall College, and for half a century was a member of the American Association for the Advancement of Science, and became the first President of the American Academy of Medicine, as well as being a prominent member of many other scientific bodies.

C. E. CRANE, M.D., Green Bay, Wis., died May 8, aged 71 years. He was surgeon in the army during the rebellion, afterward President of the Brown County Medical Society, and from 1874 to 1879 mayor of Green Bay.

JOHN CRESSWELL, M.D., who died lately at his home in New Bethlehem, Clarion County, Pa., was a graduate of the Cleveland Medical College, 1857. By his death this community has lost an upright citizen and the medical profession a devoted member. That the evidence of our affection for him may live when we too have gone, we recommend that the following be recorded in our minutes:

WHEREAS, Death has removed from us Dr. John Cresswell, an old and faithful member of our society,

Resolved, Dr. Cresswell by his exemplary life, both as a physician and as a citizen, was endeared to us all; always honorable in his intercourse with his confrères and always kind and sympathetic to the sick and afflicted.

Resolved, We regret his death and mourn with those who are dear to him, but submit in sorrow to his last call.

Resolved, That a copy of these resolutions be sent to the family of the deceased, a copy to the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, and a copy to each of the papers in Clarion.

W. M. CLOVER, M.D.,

I. J. WIREBACH, M.D.,

R. S. WALLACE, M.D.,

Committee.

CHAS. L. BLAKESLEE, M.D., of South Windsor, Conn., died May 2, aged 34 years.—E. C. Bright, M.D., Mt. Sterling, Ky., died at his home May 4.—Geo. W. Burdett, M.D., a graduate of the Dartmouth and Harvard medical schools, at Worcester, Mass., May 10, aged 76 years.—J. J. Ikirt, M.D., East Liverpool, Ohio, May 18, aged 70 years.—Henry Wilson, M.D., Oberlin, Ohio, April 24, aged 56 years.—Robert L. Hartman, M.D., Independence, Pa., April 24, aged 66 years.—Franklin Wayne Entrikin, M.D., Findlay, Ohio, May 13, aged 67 years.—Hugh F. McNairy, M.D., superintendent of the Lakeland Asylum, Frankfort, Ky., May 12.—Joseph R. McLean, M.D., Scranton, Pa., May 5.—Benjamin Eddy Cotting, M.D., for fifty-five years curator of the Lowell Institute, Boston, died May 22, aged 75 years. Dr. Cotting was consulting surgeon to the Boston City Hospital, a fellow of the American Academy of Arts and Sciences, and held diplomas of membership in medical societies in Rome and Athens.—Noah Torrey, M.D., South Braintree, Mass., May 9.—Joseph W. Cushing, M.D., Boston, May 9, aged 60 years.—Frank J. Gould, for twenty-three years clerk of Rush Medical College, Chicago, May 21, aged 53 years.—Alexander J. Mullen, M.D., Michigan City, Ind., May 4, aged 40 years.

MISCELLANY.

Dentistry a very Ancient Profession.—A floating clipping has reached us that Dr. Geist-Jacobi of Frankfort, Germany, has written a history of dentistry from 3700 B. C. to the present time. According to this it is known that there were men practicing the profession of dentistry in Egypt at least 5,000 years ago.

Would Lister Approve?—The Hungarian government permits women to study medicine if they so desire, but one of the professors of the University of Budapest has recently proclaimed that he has something to say in the matter. Of the five women now studying medicine there, one has a remarkably fine head of hair, which the professor of surgery says must come off before she can be permitted to attend his clinics. The reason that he gives for his prohibition is that "wool carries infection."—*Medical Review*.

Precocious Parturition.—Dr. Floyd Young reports the following unusual case from Chilhowie, Virginia. A young white girl, aged 10 years and 2 months, daughter of respectable parents, gave birth to a fully matured child weighing three pounds. The parents seemed to know nothing of the condi-

tion of the little woman, and on the night of her confinement they thought she was suffering with colic, hence sent for no physician, and knew no better until they heard the cry of the child. The girl was well developed in every respect, having menstruated regularly since she was 2 years old. The baby was not allowed to nurse and only lived a few weeks.—*Bulletin of the Virginia Health Board.*

Suicides in Times of Financial Depression. It is stated as a fact that in 1890 the number of suicides was 2,040, in 1891 3,531, in 1892 3,860, in 1893 4,436, in 1894 4,912, in 1895 5,759, and in 1896 6,420, and these all occurred in the United States. What relation has this to the general business depression, and the consequent inability to provide for the family, if any, and is the same increase shown during other times of financial depression? The records of insurance companies ought to be particularly interesting as to these statistics. Among those who have considered the subject the incontestable policy is blamed very largely for the enormous increase in self-destruction.—*Medical Examiner*, April.

Liability of Physician Making Examination for Third Party.—Where a physician undertakes to examine a person, and to report whether he is diseased, the supreme judicial court of Massachusetts holds, in *Harriott v. Plimpton*, Oct. 21, 1896, that he is bound to have the ordinary skill and learning of a physician, and to exercise ordinary diligence and care. If he fails, and the person examined is injured because of his want of such skill and learning or his want of such care, he is answerable in damages. The fact that the purpose of such examination is information and not medical treatment is, in the opinion of the court, immaterial. But the breaking of a marriage engagement of the person examined, in consequence of a wrong diagnosis, the court considers too remote a damage to sustain an action. Whether the physician has used ordinary care, learning and diligence is, upon the evidence, for the jury to determine. When the physician's subsequent conversations with third parties on the subject of the examined person's condition are had under circumstances which justify him in communicating the information, the court further holds that the absence of express malice is a defense to an action for slander.

Alcoholic Fermentation Produced by the Fluids of the Living Cells.—By crushing yeast cells and compressing the crushed cells with a pressure of 400 to 500 atmospheres, E. Buchner has obtained a clear, yellow fluid containing over 10 per cent. of solid particles, largely albumin. After filtration, which eliminates every vestige of the living cells, the fluid displays the extremely important property of producing alcoholic fermentation, namely, converting glucose into alcohol and carbonic anhydrid. "These results are the complete refutation of the hitherto accepted ideas that fermentation is only associated with the presence of the living cells, and opens new paths for biologic and bacteriologic investigations, by which pathology and possibly also therapeutics may benefit." Buchner claims priority over Koch in this mechanical crushing process, which is the basis of Koch's new tuberculin. His description of the process was published last January. He also states that he offered to patent it for the firm now manufacturing the tuberculin, who refused after long deliberation.

Doctor's Bills as Expenses.—In actions for personal injuries, in order to recover for medical attendance and similar items, the supreme court of Nebraska says, in *Golder v. Lund*, March 3, 1897, that it is necessary for the plaintiff to show two facts: First, what expense he actually incurred; and, secondly, that it was reasonably incurred. It is not the reasonable charge for medical services which he may recover, but the expense to him of such services, not to exceed their reasonable value. But in order to recover in such an action for expenses of medical treatment, the court further holds, it is not necessary to prove

by the record that the physician rendering the services was licensed to practice under the statute. Proof that he practiced as a physician raises the presumption in actions between third parties that he was licensed to do so.

A Contemptible Misrepresentation.—The *New York Medical Record* of May 22, 1897, contains the following:

Dr. John B. Hamilton, formerly of the Marine Hospital Service under Surgeon-General Wyman, has gone to the Illinois Northern Hospital for the Insane at Elgin, to assume the duties of superintendent. We understand that, while abandoning his extensive surgical practice in Chicago, he will still be retained as editor of the *JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION*.

Dr. Hamilton was formerly the head of the Marine Hospital Service and from 1879 to 1891 Dr. Wyman served under him. From 1891 to 1896 he was a surgeon in the Marine Hospital Service stationed at Buena Park, near Chicago. Elgin is just beyond the border of Cook County, only a short run by rail. Dr. Hamilton does not abandon anything. It is pleasant to know from the *Record* that he will be retained as editor when the Trustees meet again, and it is to be hoped that Messrs. Wm. Wood & Co. will retain Dr. Geo. F. Shrady for at least another year. It has lately been suspected that some lineal descendent of Ananias, with an exaggeration of the family traits, was temporarily occupying Dr. Shrady's stool.

The Illinois Health University Ousted.—The supreme court of Illinois affirmed, April 3, 1897, the judgment of ouster in the quo warranto proceedings, brought on the relation of the attorney general, against the Illinois Health University. The latter was incorporated, under the laws of Illinois, April 16, 1895, "for the education of teachers in the science of health and the true art of healing; and fitting men and women for the rights and duties of citizenship, and of conferring upon such teachers, when duly qualified, such diplomas, such degrees or certificates of qualification, as may seem proper and just to the officers and faculty of the institution." The supreme court, speaking through Mr. Justice Carter, says that there was sufficient alleged in the information filed by the attorney-general to show that the "University" had assumed and usurped powers, privileges, and franchises not conferred by its charter; that it had not in good faith carried out the object for which it was incorporated, but was engaged in the fraudulent business of selling medical diplomas to, and conferring the degree of doctor of medicine upon incompetent persons, for gain; that it did not conduct a medical school, college, or university, and that its pretended business of educating teachers in the science of health and in the true art of healing, and of fitting men and women for the rights and duties of citizenship, and of conferring upon such teachers, when duly qualified, such diplomas, such degrees or certificates of qualification, as might seem proper and just, etc., was a mere pretense. It is not consistent with the public policy of a State which enacts stringent laws for the preservation of the public health, and for the protection of its people from quacks and ignorant pretenders to a knowledge of the science of medicine and surgery, continues the court, to authorize or permit a pretended health university to turn any one, whether known or unknown, qualified or unqualified, into a doctor of medicine, armed with a diploma and degree as one qualified to heal the sick, who may answer its prescribed list of questions and pay its prescribed fee. The charter of a corporation is the full measure of its power, and, if any doubt arises out of the language employed in such charter, such doubt must be resolved in favor of the State. By demurring to, instead of answering and denying the charges in the information, the court adds that it stood admitted that there was a wilful misuse and abuse of the powers conferred on this corporation, and a prostitution and perversion of its corporate powers to objects and purposes for which no certificate of incorporation could be properly issued, and which would be against the policy of our laws. It was a clear abuse of the liberal privileges conferred by our incorporation laws for the Illinois Health University to make use of them for the purposes set forth in the information. And for such abuse and misuse, the supreme court holds, its charter might and should be revoked.

New York.

THE CRAIG COLONY OF EPILEPTICS.—Governor Black of New York State has signed the bill appropriating \$126,600 for the Craig colony of epileptics. The State Board of Charities, who have been clothed with ample powers, believe that the colony will be in time self-supporting since it is largely an agricultural institution, with nearly 1,800 acres to its credit. The claim is that the above-named appropriation will benefit some six hundred dependents now waiting for the improvements.

THE NEW BELLEVUE FACULTY.—The professorial staff of the recently combined University and Bellevue Colleges of New York city has been formed by choice from some of the old timber from both schools and by the importation of some from the outside. Of the latter, Prof. J. G. Adami from the McGill College of Montreal is to occupy the important chair of pathology; he was formerly an instructor at Cambridge University, England. Dr. Austin Flint takes the subject of physiology. Dr. E. G. Janeway will give clinical instruction; Dr. LeFevre will serve as secretary. The other members of the faculty, so far as has been announced, are Dr. H. M. Biggs, public medicine and infectious diseases; Dr. J. D. Bryant, applied anatomy and clinical surgery; Dr. I. S. Haynes, practical anatomy; Dr. H. P. Loomis, materia medica and therapeutics; Dr. W. T. Lusk, obstetrics; Dr. W. M. Polk, gynecology; Dr. A. A. Smith, medicine; Dr. L. A. Stimson, surgery; Dr. W. G. Thompson, medicine; Dr. R. A. Witthaus, chemistry, physics and toxicology, and Dr. G. Woolsey, anatomy. Emeritus professors—Drs. R. O. Doremus, A. E. McDonald, C. I. Pardee, L. A. Sayre, W. H. Thomson and H. G. Piffard. Assistant professors—Drs. J. C. Edgar, J. F. Erdman, F. W. Gwyer, E. LeFevre, J. A. Mandel, G. T. Stewart and I. Sickles. Clinical and special professors—Drs. S. Alexander, G. Bacon, F. H. Bosworth, C. S. Bull, C. G. Coakley, E. B. Dench, F. S. Dennis, E. D. Fisher, A. Flint, Jr., J. A. Fordeyce, C. F. McDonald, P. A. Morrow, W. P. Northrop, H. D. Noyes, C. E. Quimby, B. Robinson, R. H. Sayre and J. E. Winters.

Washington.

DR. RALPH GALLINGER'S PROMOTION.—Dr. Ralph E. Gallinger, son of Senator Gallinger, who spent the past year in the French Hospital in New York city and the Emergency Hospital in this city, has accepted an appointment as house officer in the Boston City Hospital, and is now at his new post of duty.

ILLEGAL PRACTITIONERS FINED.—During the past month three illegal practitioners of medicine have been fined and ordered to stop operating in the District of Columbia.

MEDICAL SOCIETY.—During the past month some very interesting work has been done in the medical society, viz.: Dr. Kober read a paper entitled "The Relations of Predisposition and Heredity to Disease;" Dr. James Kerr "Nephrectomy for Malignant Disease," case and specimen; Dr. Lamb "Hydatidiform Mole," case and specimen, Dr. D. K. Shute "Heredity with Variations;" Dr. A. A. Snyder "Esophagotomy for Removal of Foreign Body," case and specimen; "Appendicitis," case and specimen; Dr. Lamb "Spina Bifida" case and specimen; "Cerebral Hemorrhage," Dr. Bovee, specimens showing complicating tubal and ovarian suppuration; Dr. Wm. W. Johnston, "The Effect of School Life on the Health of Children." This latter was a most valuable paper showing the work which had been done in this direction in foreign countries and its neglect in this country. The paper was fully demonstrated by charts showing percentages of relations of different diseases with respect to age, sex, kind of study and varied defects.

GARFIELD HOSPITAL.—Dr. W. W. Johnston has resigned from the staff of the Garfield hospital and criticises some recent acts of the Board of Directors.

CENTRAL DISPENSARY AND EMERGENCY HOSPITAL.—Dr. Wm. P. Carr, Professor of Physiology in the Columbian Medical College, has been elected a member of the attending staff.

Colleges.

THE NEW YORK UNIVERSITY MEDICAL DEPARTMENT held its fifty-sixth annual commencement at Carnegie Hall May 2, and will reopen October 1 under the name of the New York University Bellevue Medical College. The number of graduates was 103 and they are the last of the three-year course men. Medals and prizes were distributed and the speakers duly emphasized the importance of hard work.

AT THE annual commencement of the Woman's Medical College of Kansas City, April 22, three young women received diplomas.—The degrees conferred by the University of Buffalo (N. Y.) April 27, in the department of medicine, number seventy-four.—Niagara University has just graduated ten new doctors.—The New York Medical College and Hospital for Women had seven young women graduates this year.—The class of 1900, College of Physicians and Surgeons (N. Y.), recently presented Prof. C. F. Chandler with a loving cup in token of his twenty-five years' service in the college.—The graduates of Albany Medical College, at the recent commencement numbered 60; those of Jefferson Medical College 161, of the Medico Chirurgical College, Philadelphia, 66; of the Medical College of Virginia 33, with 15 more from Georgetown University and 24 from the Columbian University, Washington, D. C.—Stephen Smith, M.D., a graduate of the College of Physicians and Surgeons (N. Y.) and professor of surgery in Bellevue Hospital, has donated 1,500 volumes to the medical library of Syracuse University.—Twenty-eight young women received diplomas from the Woman's Medical College, Philadelphia, May 19.—Among the twenty-two graduates from Howard University Medical Department May 10, were six young women.

Hospitals.

ACCORDING to the twenty-fifth annual report of Roosevelt Hospital, New York city, the number of patients during 1896 was 3,118. The daily average was 140, and the number treated in the accident room, but not detained, was 5,128. A training school of nurses was established November 16 and the private patients' pavilion opened two days later. The expenses have been considerable, and an appeal is made for additional contributions. Meanwhile charter applications for the hospital and dispensary of the Pasteur Institute, as well as for St. Bartholomew's clinic, have been denied by the State Board of Charities. The reasons given for the refusal in the case of the latter are that the "vicinity is fully supplied with institutions for medical relief of the sick poor, and that the policy of the board is to discourage unnecessary increase of charities of this kind, etc." The motto adopted seems to be "Divide and conquer."

THE net proceeds of the festivities in Los Angeles, Cal., attendant upon the Queen's Diamond Jubilee, are to go to the Good Samaritan Hospital of that city. It is believed that \$4,000, the amount necessary for a new wing, will thus be raised.—An addition to the Monte Vista (Colo.) Hospital, costing \$2,000, has been decided on.—The new buildings of the Plant System Hospital, Waycross, Ga., have just been opened to patients, cost \$45,000.—Between June 1 and Oct. 1, 1896, about 4,000 children were given the benefits of La Rabida Sanitarium, Jackson Park, Chicago. During the six months that this old convent was open the management paid the car fares of more than 1,500 people who otherwise would have been prevented from enjoying the benefits of La Rabida. The work will begin again June 1. During the year ending April 1, 1897, Augustana Hospital, Chicago, cared for 938 patients; two-fifths of these without cost.—The new annex to Michael Reese Hospital, Chicago, cost \$13,000, was recently opened. It was the gift of Jacob Rosenburg.—In 1896, 2,104 patients were admitted to the Alexian Brothers' Hospital, Chicago. The new buildings 307 x 226 feet exterior, are now in process of construction.—The Victoria Diamond Jubilee Association of Chicago, invites contributions toward the endowment of hospital beds in Chicago, in celebration of the sixtieth anniversary of Queen Victoria's reign.—An addition to the gynecological department of the Johns Hopkins Hospital, costing \$10,000, is under construction.—Elizabeth T. L. Warren, late of Brookline, Mass., has bequeathed property to the value of

\$65,000, for the establishment of free beds in the Massachusetts General Hospital. — The building fund of the Eastern Maine General Hospital has been increased to \$20,000 by a gift of \$200 from Mrs. T. N. Egery of Bangor. This puts the hospital in the way of receiving larger sums which were conditionally promised. — Charles H. Sentf, Whitestone, L. I., has donated \$10,000 to the Flushing (L. I.) Hospital. — St. Joseph's (N. Y. City) treated 1,331 indoor patients in 1896, and 2,956 outdoor cases. — The Kelly donation to St. Vincent's (N. Y. City) is \$50,000. — The Mount Sinai Hospital (N. Y.) reports 3,106 patients admitted in the year 1896, while the dispensary treated 33,694. — St. Margaret's Hospital, Pittsburg, is almost under roof. Mr. J. H. Shoenberger bequeathed \$250,000 for the building alone, his entire bequest for hospital purposes being \$800,000. — Mrs. Felix R. Brunot, Pittsburg, has notified the board of foreign missions of the Protestant Episcopal church, that she will build and endow, in any part of China which they may select, a hospital for lepers. She prefers Shanghai. — The old Pennsylvania Hospital (Phila.) was founded by members of the Society of Friends, and was the first general hospital in the country to open its clinics to women medical students. — The Baltimore Hebrew Hospital and Asylum Association receive \$200 by the will of the late Solomon Katzenberger. — After June 1, the Stormont Hospital, Topeka (Kan.) will cease to be a hospital for women, and admit general cases.

Societies.

COLORADO STATE MEDICAL SOCIETY. — The twenty-seventh annual convention of the Colorado State Medical Society will be held in Denver June 15, 16 and 17. Thirty-two names are on the program and a large attendance is expected. — The one hundred and sixth anniversary meeting of the New Hampshire Medical Society was held May 24 and 25 at Concord. — The annual meeting of the Berkshire district medical society was held in Pittsfield, Mass., April 29. The following officers were elected: President, Henry Colt, Pittsfield; vice-president, M. M. Brown, North Adams; secretary, L. C. Swift, Pittsfield. The society has a membership of forty. — The Middlesex county medical society held its one hundred and fifth annual meeting at Haddam, Conn, April 23. — The New Mexico Medical Association convened at Albuquerque May 12. — The fifty-third annual meeting of the American Medico-Psychological Association was held in Baltimore May 11 to 14. — The Iowa State Medical Society held its forty-sixth annual session at Marshalltown May 19 to 21. — The regular quarterly meeting of the Illinois and Iowa Medical Society took place at Rock Island April 22. — The Kansas Medical Society closed its annual meeting at Topeka May 14. — The Detroit Medical and Library Association recently adopted resolutions urging the passage of the Michigan Medical League Bill. — Detroit will be the next place of meeting of the Michigan State Medical Society, which met May 13 and 14 at Grand Rapids. — The physicians of Piatt County (Ill.) have recently organized a Piatt County Medical Society. — The semi-annual convention of the Minnesota Valley Medical Association convened at Mankato May 11. — The Central District Medical Society of Missouri met at Sedalia May 6 and the Southwest Missouri District Medical Society at Springfield May 13. — The following recent conventions in New York are noted: Cattaraugus County Medical Society, at Salamanca, May 11; Madison County, at Oneida, May 11; Onondaga County, at Syracuse, May 11; Orange County, at Goshen, May 4; Orleans County, at Albion, May 12; Oswego County, at Oswego, May 11; Westchester County, at White Plains, May 7; Utica Medical Library Association, Utica, May 12. — The one hundred and sixth anniversary of the New Hampshire Medical Society was celebrated at Concord May 24 and 25. — The Ohio State Medical Society closed its annual convention at Cleveland May 21. — The seventh annual session of National Association of Military Surgeons convened at Columbus, Ohio, May 25. — The Logan County Medical Society met May 14 at Bellefontaine, Ohio; the Union Medical Association, at Salem, May 6; the Guernsey Co. Medical Society at Cambridge, May 11. — The annual session of the Pennsylvania Medical Society convened at Pittsburg May 18. — The sixty-fourth annual meeting of the Tennessee Medical Society was held May 11, at Nashville. — Cameron, Texas, entertained the Brazos Valley Medical Association May 12. — The Franklin County Medical Society met at St. Albans (Vt.) May 11. — The fifty-first annual convention of the Wisconsin State Medical Society closed, at Racine, May 7. — The Southwestern Kentucky Medical Association held its semi-annual session at Paducah May 10.

THE PUBLIC SERVICE.

Army Changes. Official List of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from May 15 to 21, 1897.

Capt. Edward C. Carter, Asst. Surgeon, leave of absence granted is extended two months.
Major George W. Adair, Surgeon U. S. A. (Washington Bks., D. C.), is granted leave of absence for one month.
Capt. Charles E. Woodruff, Asst. Surgeon, is relieved from duty at Ft. Sheridan, Ill., to take effect June 1, 1897, and ordered to Ft. Custer, Mont., for duty.
First Lieut. Powell C. Fauntleroy, Asst. Surgeon, is relieved from duty at Ft. Niobrara, Neb., to take effect upon the arrival at that post of Capt. Philip G. Wales, Asst. Surgeon, and ordered to Ft. Robinson, Neb., for duty.
First Lieut. Charles Lynch, Asst. Surgeon, is relieved from duty at Ft. Robinson, Neb., to take effect upon the arrival at that post of Lieut. Fauntleroy, and ordered to Ft. Sheridan, Ill.
Lieut.-Col. William E. Waters, Deputy Surgeon-General, will be relieved from duty at Columbus Bks., Ohio, on July 15, 1897, and will then proceed to his home, where, at his own request and for his own convenience, he is authorized to await retirement.

PROMOTIONS.

To be Asst. Surgeons with rank of Captain after five years' service: First Lieut. Champe C. McCulloch, Jr., Asst. Surgeon, May 5, 1897; First Lieut. Frederick P. Reynolds, Asst. Surgeon, May 5, 1897; First Lieut. Isaac P. Ware, Asst. Surgeon, May 5, 1897; First Lieut. Robert S. Woodson, Asst. Surgeon, May 5, 1897; First Lieut. Madison M. Brewer, Asst. Surgeon, May 5, 1897; First Lieut. George D. De Shon, Asst. Surgeon, May 5, 1897.

CHANGE OF ADDRESS.

Angear, J. J. M., from 482 W. Lake St. to 143 S. Western Av., Chicago.
Bell, S. D., from Pinhurst, N. C., to Butler, Pa.
Berry, Wm. F., from Neillsville, Wis., to LaFayette, Ind.
Blair, P. B., from Chicago, Ill., to 274 E. 5th St., Winona, Minn.
Bower, C. L., from 26 S. 18th to 1937 Vine St., Philadelphia, Pa.
Chandler, E. C., from 1317 to 1236 Noble Av., Chicago, Ill.
Cleveland Medical Gazette from 837 Superior St. to 812 Prospect St., Cleveland, Ohio.
Crocker, Geo. L., from Chicago to Springfield, Ill.
Gillman, R. W., from 76 Lafayette Av. to 107 Fort St. West, Detroit, Mich.
Hawley, A. W., from Chicago to Illinois Eastern Hospital, Hospital, Ill.
Heise, W. F. C., from 251 to 245 S. Winchester Av., Chicago, Ill.
Harrison, W. K., from 32 Delaware Place to 52 Walton Place, Chicago.
Kempker, J. F., from Valley Junction to Mercy Hospital, Des Moines, Iowa.
Klebs, A. C., from Citronelle, Ala., to 602 Stewart Bldg., Chicago, Ill.
Lancaster, W. B., from Wellesley Hills to 719 Boylston St., Boston.
Montgomery, Listou H., from Central Music Hall to Stewart Bldg., Chicago, Ill.
Obage, J., from 245 to 241 E. 7th St., St. Paul, Minn.
Porterfield, Jr., John D., from Chicago, Ill., to Cape Girardeau, Mo.
Packard, J. H., from 26 S. 18th St., to 225 S. 16th St., Philadelphia, Pa.
Ritter, C. L., from 510 to 846 Virginia Av., Indianapolis, Ind.
Storrs, W. D., from 330 to 616 Kansas Av., Topeka, Kan.
Tolotson, H. T., from 6301 Yale Av. to 6256 Wentworth Av., Chicago, Ill.
Tappey, E. T., 141 W. Fort St. to 270 Woodward Av., Chicago, Ill.
Tasche, J. C., from Howard to Franklin, Wis.
Vincent, D., from Cleveland to Youngstown, Ohio.
Williams, Robt. F., from Richmond to Warm Springs, Bath Co., Va.

LETTERS RECEIVED.

American Journal Publishing Co., St. Louis, Mo.; Armstrong, Hopkins S., Chincoteague, Va.; Ames, Delano (2), Baltimore, Md.; Atkinson, W. B., Philadelphia, Pa.; Austin, Lewis K., Clinton, Me.
Bremer, Ludwig, St. Louis, Mo.; Beck, Carl, New York, N. Y.; Brittin, A. L., Athens, Ill.; C. F. Boehringer & Soehne, New York, N. Y.; Burlingame, D. E., Elgin, Ill.; Bogie, M. A., Kansas City, Mo.; Bell, H. S., Kearney, Neb.; Burd, E., Lisbon, Iowa.
Chicago Eye, Ear, Nose and Throat College, Chicago, Ill.; Crittenton Co., the Chas. N., New York, N. Y.; Cheney, Wm. Fitch, San Francisco, Cal.
Devine, Chas. A., Ann Arbor, Mich.; Davis, N. S., Chicago, Ill.; Doliber-Goodale Co., 2, Boston, Mass.
Elliott, A. R., New York, N. Y.
Fessenden Mfg. Co., The (2), Pittsburgh, Pa.; Fassett, Charles Wood, St. Joseph, Mo.; Fidelity Mutual Life Association, Philadelphia, Pa.; Ferguson & Goodnow, Chicago, Ill.
Gutwald, D. K., Springfield, Ohio; Gotham Co., The, New York, N. Y.; Herdman, W. J., Ann Arbor, Mich.; Hatch, H., Quincy, Ill.; Hare, H. A., Philadelphia, Pa.; Hotel Walcott, Philadelphia, Pa.; Hunter, James, Westville, N. J.
Imperial Granum Co., New Haven, Conn. (2).
Jones, Mary A. D., New York, N. Y.
Keasby & Mattison Co., Ambler, Pa.; Krafft, Wm., New York, N. Y.
Long Island College Hospital, Brooklyn, N. Y.; Londonderry Lithia Spring Water Co., Nashua, N. H.
Morse, Lyman D., New York, N. Y.; Musser, J. H., Philadelphia, Pa.; May, W. L., Gulf, Ala.; Mather, E., Paterson, N. J.; Marvin, S. B., Cincinnati, Ohio; Malsbury, L. O., Peru, Ind.; Malsbury, G. E., Cincinnati, Ohio; Montborne, H. P., Spokane, Wash.
Proctor & Gamble Co., Cincinnati, Ohio; Parke, Davis & Co., Detroit, Mich.
Richardson, J. R., Chicago, Ill.; Rosenthal, Edwin, Philadelphia, Pa.; Ray, J. M., Louisville, Ky.
Scherling & Glatz (2), New York, N. Y.; Saxlehner, Andreas, New York, N. Y.; Sharp & Dohme, New York, N. Y.; Souchon, Edmond, New Orleans, La.; Sanitas Food Co., Battle Creek, Mich.; Shastid, T. H., Galesburg, Ill.; Stearns, Frederick & Co., Detroit, Mich.
Upjohn Pill and Granule Co., Kalamazoo, Mich.
White, A. J., New York, N. Y.; Wyeth, John, & Brother, Philadelphia, Pa.; Williams, Brown & Earle, Philadelphia, Pa.; Walker, James B., Montgomery, Minn.; Wegge, Wm. F., Oshkosh, Wis.; White, J., Leeds, England; Wilson, Norton L., Elizabeth, N. J.; Wampole, H. K., & Co., Philadelphia, Pa.

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ADDRESSES.

THE AMERICAN MEDICAL ASSOCIATION: ITS PAST, PRESENT AND FUTURE.

President's Address, delivered at the Semi-centennial Anniversary
Meeting of the American Medical Association, at
Philadelphia, Pa., June 1, 1897.

BY N. SENN, M.D., Ph.D., LL.D.

CHICAGO, ILL.

The AMERICAN MEDICAL ASSOCIATION was born at the dawn of a great era in the history of medicine. Only a few years before its organization was effected anesthesia, which has robbed the operating room of its greatest terrors, came into general use and at once opened up new fields of usefulness for the surgeon. The new science of bacteriology, upon which is based our modern views regarding the etiology and prevention of disease, has been founded and firmly established since that time. The principles which govern the present treatment of wounds conceived by the immortal Lister and developed to the existing state of perfection by a host of his enthusiastic followers, have revolutionized the practice of surgery during the last quarter of a century. Normal and pathologic microscopic anatomy are recent acquisitions to our knowledge of living tissues in health and disease. Aseptic midwifery is the direct descendant of aseptic surgery and has secured for the lying-in-woman the same protection against puerperal complications, as the employment of aseptic precautions will prevent largely the occurrence of suppuration, sepsis and pyemia in the treatment of the injured and patients requiring operative treatment. Anesthesia and asepsis have created visceral surgery. Our knowledge of chemistry and physiology has been vastly increased during the last fifty years by thousands of earnest and devoted students in possession of improved instruments and apparatuses for accurate investigations. During the same time great strides have been made in the practice of medicine and the preparation and methods of administration of drugs. In the light of many of these recent advancements we have at least learned that disease is influenced for the better by aiding and assisting, rather than by combatting and opposing nature's resources. Translumination of the body by the wonderful Roentgen ray is the last and most important addition to our diagnostic resources in medicine and surgery. In these stirring events which have startled the medical world in such rapid succession during the last half of this century many members of our ASSOCIATION, dead and living, have taken a prominent and often leading part. In looking about for an appropriate subject for my address at this meeting I have deemed it expedient to utilize my time and this unusual opportunity in discussing as briefly as possible "The AMERICAN MEDICAL ASSOCIATION, its Past, Present and Future."

This is a day of rejoicing to the medical profession

of the United States. We celebrate today the semi-centennial, the golden jubilee of the AMERICAN MEDICAL ASSOCIATION. You have come here from all parts of the Union to do honor to this festive occasion. It is appropriate that you should have selected Philadelphia as the place of meeting at this time; it was here that the organization of our ASSOCIATION was completed half a century ago. Philadelphia is near and dear to every American citizen, as it is the birthplace of the greatest and most prosperous nation in the world. It is here that on July 4, 1776, the most precious document in the possession of the American people—the Declaration of Independence—was signed, read and approved by the representatives of a people who craved for freedom, liberty and independence. It was here that the sweet music of the liberty bell was first heard, the reverberations of which reached from the Atlantic to the Pacific, and from the Great Lakes to the Gulf of Mexico, and which has continued and will continue to echo and reëcho over our vast and free country for all time to come. It is a source of congratulation to every and all honest and progressive practitioners of medicine that that document, which was the means of planting a free government upon the virgin American soil and creating a new nation, was signed and heroically defended by America's greatest physician—Benjamin Rush. The blood struggle for independence by a united patriotic people and its great success culminated in the foundation of the great Republic of the United States which in time gave the medical men an opportunity to establish American medicine upon a free American soil. It required a long time after the permanency of our government was assured for our professional ancestors to appreciate this opportunity and to take the necessary steps to secure adequate facilities for our young men to obtain a satisfactory medical education in this country and to create a medical literature of their own. Foreign text-books were used and European universities continued to be the Mecca for American students who sought a higher medical education. The country was new, its resources limited, its inhabitants represented different customs and nationalities, and the number of qualified practitioners limited. It is, therefore, not surprising that the organization of the profession, the establishment of institutions of learning and the foundation of an American medical literature met with many difficulties which it required years to correct and remove. Philadelphia has a special charm for every practitioner of medicine who has the interest and welfare of his profession at heart, as it has been, and still remains, the center of medical education and medical literature in this country, besides being the birthplace of the AMERICAN MEDICAL ASSOCIATION.

The members of the medical profession of this city, with Benjamin Rush at its head as a noble and inspiring example, have always been loyal to the

cause of a united profession, advanced medical education and the foundation of an independent American medical literature of the highest merit. In coming here today from the most remote parts of the United States in such vast numbers you are performing a duty you owe to the city so memorable in the history of our country and its medical men, who have taken such a conspicuous and active part in the development of American medicine and surgery. We are assembled here today to commemorate the work of a group of earnest men, patriotic American citizens, who took such an active part in uniting the medical profession of this country by bringing into existence and active operation the AMERICAN MEDICAL ASSOCIATION. Most of those who were helpful in laying the corner-stone of this great national institution have gone to their reward; few are left to tell the tale of the early struggles, frequent disappointments and final triumph. Of those who have been permitted to live long enough to witness the celebration of the semi-centennial, four names are familiar to you all, Nathan S. Davis of Chicago, Alfred Stillé of Philadelphia, J. B. Johnson, St. Louis, D. F. Atwater, Massachusetts. Davis, the father of the ASSOCIATION; Stillé, its efficient and faithful Secretary for many years. These two names have illuminated the firmament of American medicine for half a century, and they will continue to shine brighter and brighter as the ASSOCIATION increases in influence and membership. Honor to these men. A monument of marble or bronze; resolutions of thanks printed upon white satin and framed in precious metal would be but a feeble expression of the gratitude we owe them for their work so unselfishly rendered in founding and maintaining this ASSOCIATION. Their greatest satisfaction must remain in having been instrumental in launching the ship, steering it through many a storm with resolute determination and firm hands safely into the semi-centennial harbor, clearing it and handing it over in splendid condition for another generation to manage. While our hearts are full of gratitude toward the few surviving founders of the ASSOCIATION, we must not forget the labors of the many who have joined the silent majority. Hundreds of former members of the ASSOCIATION have performed important duties, written scientific papers, and by their work and example have distinguished themselves sufficiently to have their names written upon a tablet to be placed in the Memorial Hall of the future permanent home of the ASSOCIATION.

History.—Time does not permit to give a full history of the ASSOCIATION from its foundation to the present semi-centennial year, but I regard it as a duty to the ASSOCIATION to give a brief account of the motives that animated its founders and to call your attention to a few of its early members whose worth stands out in bold relief in its early history.

The founders of the AMERICAN MEDICAL ASSOCIATION were deeply impressed with the dignity and responsibility of our profession. They had for their object to secure by united action a higher standard of medical education, a more general diffusion of medical knowledge and the creation of a respectable medical literature. The motives which incited them to action are well shown in the utterances of two of the early Presidents. At the Baltimore meeting in 1848 Dr. Chapman, the President, alluded to the necessity of the members of the profession to work in harmony and unity to secure a more uniform and higher stan-

dard of medical education and to preserve the dignity of the profession as follows: "From slumbers too long indulged, the profession has at last awoken, and shaking the poppies from its brows, is recalled to a sense of what is due to itself and the obligations it owes to preserve its heritage, to be transmitted to posterity unsullied and without detriment or loss. Excited by this generous impulse it comes forward in the majesty of its might to vindicate its rights and redress its wrongs. To no other tribunal does it deign to appeal for these purposes. No mean petition of grievances, or supplicatory memorial for relief, or more immediate addresses to popular feeling to engage its favor shall sully our proceedings. We have in a spirit becoming our just pride trusted, and will, I hope, continue to trust our cause exclusively to the clear heads, the warm hearts and strong arms of the host enlisted in its service. We do not want, nor will condescend to accept any extraneous assistance. Confiding in our own resources, we shall through them maintain the struggle till conducted to victory and triumph." The implicit faith in the work of the ASSOCIATION entertained by Dr. Chapman and the results obtained have been fully realized during the past fifty years of its existence. At the same meeting the President-elect, Dr. A. H. Stevens, pointed out the power and influence of a united profession in the following beautiful and truthful language: "Our profession, gentlemen, is the link that unites science and philanthropy. It is one of the strongest ligaments that binds together the elements of society. It teaches the rich their dependence, and elevates the poor to a sense of the innate dignity of their nature. Its aim is to add to the comfort and the length of human life."

Animated by such noble sentiments the founders of the ASSOCIATION commenced and finished their task with a spirit of unselfishness and a keen sense of responsibility and devotion to their important mission. The idea of organizing a National Medical Convention originated in the New York State Medical Society and was discussed for the first time at the meeting in 1844. The main object of the promotion of this project was the elevation of the standard of medical education, and consequently the betterment and advancement of the whole profession. The needs of such a step were very apparent at that time. The wonderful increase of the population of the New Republic by immigrants from all parts of the civilized world required a rapid increase of medical men. New medical colleges sprang up in rapid succession in different parts of the country, and the rivalry between them made it impossible to effect a change for the better without strong influences brought to bear upon them from without. Young men began the study of medicine without even a common school education, and had no difficulty in obtaining a diploma upon attendance of two courses of lectures of four months each. All students attended the same lectures with limited or no hospital and clinical facilities. To the thoughtful medical men of that time it was plain that such a condition of things would soon result in lowering the practice of medicine to a trade instead of elevating it to the dignity of an art and science. Quackery in its worst forms prevailed, the services of the honest physician were undervalued and his standing in the community, compromised on all sides by his less conscientious competitors with and without diplomas. The founders of the ASSOCIATION had in view, to effect through

their combined influence a higher standard of preliminary education of those who should enter upon the study of medicine, lengthening of the college terms and better qualifications for the degree of Doctor of Medicine. All this had to be gradually accomplished without any legislative aid. Such radical changes in our system of medical education could only be attained by our persistent efforts in the course of time, but during the fifty years of the existence of the ASSOCIATION they have been wrought and perfected to an extent far beyond the most sanguine expectations of its most enthusiastic founders. The ASSOCIATION during this time has accomplished much more than what it was originally designed for. Through its influence nearly all of the medical colleges have adopted a systematic graded course of instruction combined with ample hospital, clinical and laboratory facilities. Besides all this it has brought the members of our profession in the various sections of our vast country in close touch and intimate social relationship so beautifully described by one of its distinguished and most active members, the late Dr. Bennett Dowler, who in an editorial on this subject said; "As a social and professional *reunion* of kindred spirits and great minds, its memories afford perennial delight. It has given impetus to the progress of medical polity and science; it exercises moral suasion, rather than that of authority; it has brought together a bright constellation of intellect, cemented the bonds of friendship among good men and true, and it will leave a luminary track of light in the moral firmament of the Esculapian heavens throughout the expansion of the Republic."

History has demonstrated the necessity of associated action in advancing the interests of the arts and sciences, commerce and the learned professions. The origin and the success of the AMERICAN MEDICAL ASSOCIATION have demonstrated the full meaning and force of this statement. Individual efforts accomplish but little in the correction of long standing and widely disseminated evils. In 1835 the faculty of the Medical College of Georgia proposed the holding of a convention of delegates from all the medical colleges of the Union. This proposition met with little encouragement on part of the remaining medical schools, and the first movement which contemplated a convention of delegates, not only from all the medical colleges, but also from the regularly organized medical societies throughout the New Republic, was made in the Medical Society of the State of New York, at the annual session in February, 1839. At this meeting, upon motion of Dr. John McCall, it was decided to hold a National Convention in the city of Philadelphia in 1840. The movement did not meet with sufficient encouragement to carry out the desired object. In the meantime the cause of medical education received a new and vigorous champion in the person of young Dr. N. S. Davis. He was born in the State of New York, Jan. 9, 1817. Until 16 years of age he assisted his father in managing a farm. After receiving the limited advantages of a rural-district school training he attended for six months Cazenovia Seminary. With this scanty preliminary education he entered upon his professional studies at Fairfield, in the old College of Physicians and Surgeons of the Western District of New York and graduated with the class of 1837, being then but a few days over 20 years of age. Endowed with a logical mind and great power of discrimination he became impressed during his college life with the importance of a systematic graded course of in-

struction. His attendance upon lectures was arranged with such an object in view and he is probably the first graduate of an American Medical College who enjoyed the benefits of a graded course of instruction, which was arranged by himself and not by his Alma Mater. Ever since his graduation as a member of the American medical profession and as a teacher he has been an ardent advocate of systematic graded medical instruction, and the medical college which he later founded was the first one in this country to formulate and carry out his ideas. At the time he entered upon the practice of his profession in New York the Medical Society of that State was fostered and guided by Dr. John Stearns. Almost from the beginning of his professional career Dr. Davis became a leader among his colleagues, and a strong advocate of much needed reforms in medical education.

Between the years 1830 and 1845 the number of medical colleges in the United States nearly doubled. As there was no concerted action between the schools and the profession this rapid increase of competing schools furnished a formidable obstacle to the cause of improved medical education. Two courses of lectures from thirteen to sixteen weeks were usually required. Dr. Davis served as a delegate from Broome County in 1844, and at once entered upon his life work in agitating the necessity of concerted action to elevate the standard of preliminary and medical education. He introduced a series of resolutions to that effect and was appointed Chairman of the standing Corresponding Committee, to which the resolutions were referred. The following year the subject was again discussed *pro and con*, but many of the delegates from the medical schools placed themselves on record as being opposed to such radical changes as proposed by Davis and others. It was at this meeting that Alden March privately suggested to Davis that the objections which were made might be possibly overcome by calling a convention of delegates from all the colleges and thereby inducing the institutions of the several States to act in harmony. A preamble and resolutions for the formation of a National Convention were then immediately prepared and read by Davis. Few of those present and who took part in the discussion which followed were of the opinion that it would be possible to carry the movement into effect. However, a committee of three, composed of Davis, Peter Van Buren and McNaughton, was appointed. The Chairman immediately entered into active correspondence with the officers of the colleges and medical societies and received unexpected encouragement from sources least expected. The animosity manifested toward the ASSOCIATION came principally from the representatives of the medical schools, many of whom were opposed to extension of the lecture term to six months and a higher standard of preliminary education. The medical colleges which openly refused coöperation were those in New York and Boston. It was decided to hold the National Convention in the College Building of the New York University on the first Tuesday in May, 1846. Dr. L. Ticknor in the meantime suggested the advisability of organizing out of the National Convention a permanent National Medical Society. The National Convention was held at the appointed time and was attended by nearly one hundred delegates, representing sixteen different States. Dr. Jonathan Knight, professor of surgery in Yale College was elected President. After completion of the organization of the Convention Dr. Gunning S. Bedford

presented a resolution to adjourn *sine die*, asserting that the Convention did not represent a sufficient number of States. As the mover of this resolution was a member of the faculty of the medical school in which the Convention met, his open opposition came as a great surprise. The motion was lost by a vote of seventy-four to two, the latter being cast by the mover of the resolution and his colleague Pattison. A committee of nine was appointed to frame propositions for discussion and action. Of the propositions presented by the committee the first provided for the organization of a permanent National Medical Association, the next two recommendations related to preliminary and medical education, while the fourth suggested the framing of a code of medical ethics. A number of committees were appointed for the purpose of completing the organization next year and to place the ASSOCIATION at once into working order. It will be seen that the most violent opposition to the organization of the AMERICAN MEDICAL ASSOCIATION came from New York and it, therefore, does not appear strange that years later, after the ASSOCIATION was completed and had demonstrated by the work done and influence exerted, that it was in this same State that a part of the profession rose in open rebellion and seceded. The meeting in Philadelphia in 1847 was held in the Academy of Natural Science, May 5, when the organization of the AMERICAN MEDICAL ASSOCIATION was completed. It was attended by two hundred and fifty delegates, representing more than forty medical societies and twenty-eight colleges, embracing medical institutions in twenty-two States and the District of Columbia. Jonathan Knight was reelected President. Harmony characterized this meeting. The report on Medical Ethics made by Drs. Bell and Isaac Hayes was full and explicit and was unanimously adopted. In the preamble preceding the Constitution, the purposes for which the ASSOCIATION is organized are declared to be "for cultivating and advancing medical knowledge; for elevating the standard of medical education; for promoting the usefulness, honor and interests of the medical profession; for enlightening and directing public opinion in regard to duties, responsibilities and requirements of medical men; for exciting and encouraging emulation and concert of action in the profession; and for facilitating and fostering friendly intercourse between those engaged in it." The sentiments contained in the preamble show that the founders of the ASSOCIATION were infused with a spirit of enthusiasm and energy regarding the future welfare and usefulness of their profession and laid a wide and firm foundation upon which to build the temple of American Medicine. At this meeting committees were appointed representing the different departments of the healing art which were expected to report at the next meeting. The articles of the Constitution were adopted without much discussion and only a few amendments. The Convention then resolved itself into the AMERICAN MEDICAL ASSOCIATION, and the committee to nominate officers made a report which was unanimously adopted. Dr. Nathan Chapman headed the list of officers. The permanent organization of the ASSOCIATION gave a new impetus toward the formation of State medical and local societies, which soon became auxiliary to the National ASSOCIATION and excited a spirit of scientific investigation throughout the Union. The membership increased very rapidly. At the meeting in Baltimore the following year four

hundred and ninety-two delegates were registered, of which number two hundred and sixty-six were in attendance, representing the United States Army and Navy, twenty-four States and the District of Columbia. The annual meetings were held with regularity and with increasing attendance, until the great War of the Rebellion drew a line between the North and South, which temporarily parted the profession. The firing upon Fort Sumter brought on the greatest war the world ever witnessed, which for five long years made the earth tremble and saturated our soil with the blood of those engaged in the deadly conflict. Accounts of battles and rumors of battles filled the columns of our newspapers and furnished the all-absorbing subject of discussion in the home circles, business places, offices, the pulpits and at the seat of war. The brave men in blue and gray fought with a determination that could only be inspired by a sense of conviction of the justice of their respective cause, and born of a spirit of patriotism that has always typified the American citizen. Our profession took an active and honorable part in this terrible contest. The medical schools on both sides became almost depopulated, as many of the students shouldered the musket and hurried with the improvised armies to the bloody scene. The medical officers of both armies, composed mostly of men with a ripe experience as practitioners, but entirely ignorant of the many details required of military medical officers, ministered to the sick and wounded with an efficiency and devotion that challenged the admiration of the world. No armies ever enjoyed to a greater extent the blessings of military surgery. The services rendered by civilians so suddenly pressed into military life did much to mitigate the horrors of the many battlefields, and are remembered with gratitude by many of the surviving scarred and maimed veterans. The work done by the medical officers on both sides will always occupy an honorable position in the annals of military surgery, and in the history of our own country it will remain as a bright spot, a shining star during its most trying ordeal, when the very foundations of our Government were trembling from the desperate attacks of an honorable, well-meaning but misguided enemy.

The ASSOCIATION voted to meet in Chicago in 1865. The War of the Rebellion interrupted the meetings until 1865, when it was practically over, and after a number of adjournments, the ASSOCIATION met in Boston in May, 1865. It required repeated and continued efforts on the part of N. S. Davis to secure a meeting at this time, as the chairman of the Committee of Arrangements was strongly in favor of adjournment for another year. This meeting was attended by two hundred delegates. The only thing which savored of war and which showed the intense excitement which still prevailed and which caused a serious discord was the expulsion from the ASSOCIATION, without trial, of Dr. Montrose Pallen, an alleged sympathizer with the South and who then resided in Canada. Dr. Pallen was charged with the most unreasonable and heinous crime of introducing smallpox among the people of the North and East. In spite of earnest protests by a number of more cool-headed delegates, he was expelled without trial. Seventy of the delegates entered protest against this hasty and unwarrantable action. As the only redeeming feature in this unpleasant episode in the history of the ASSOCIATION, I find that after the close of the war Dr. Pallen

was exonerated and reinstated at the next meeting, which was held in Baltimore in 1866. After the close of the war the delegates from the South at once resumed their attendance, the most cordial relations were restored and many of the largest and best meetings have taken place in Southern cities. The attendance has increased steadily and the influence of the ASSOCIATION has been felt throughout the Union and has extended far beyond the limits intended by its founders. The ASSOCIATION is now in a healthy, vigorous condition, a precious and responsible heritage of its founders. Its membership now consists of nearly nine thousand physicians. The responsibility of its officers and members increases with every additional advantage it offers. Its influence for good will increase with every new membership. Every regular physician practicing his profession owes a duty to the ASSOCIATION, and the least he can do is to join its ranks. There is no reason why, in the course of ten years, our membership should not increase to fifty thousand. It is my duty and your duty to bring within its folds every respectable physician of our acquaintance. Increase the army of regular conscientious physicians, secure concerted action and be helpful in inciting among its rank and file a spirit of scientific investigation, and you discharge a part of the duties imposed upon you by the founders of the ASSOCIATION.

MEDICAL EDUCATION.

One of the principal subjects in view of the founders of the AMERICAN MEDICAL ASSOCIATION was to effect a much-needed reform in medical education, looking toward a higher standard of preliminary preparation, lengthening of the lecture course and a systematic graded course of instruction. These objects have been nearly attained and largely through the influence of the ASSOCIATION. Nearly all of our medical schools, large and small, now require four years' attendance, of eight months each, of a systematic graded course, and with few exceptions furnish adequate laboratory and clinical facilities. Our printed transactions from the beginning of the ASSOCIATION until the present time are loaded down with matter pertaining to medical education. This mission of the ASSOCIATION is about fulfilled. We have medical schools that are on a par with those of the older nations. There is no further excuse for our medical students to seek foreign universities to obtain a thorough medical education. Some of the very best practitioners of the United States are men who graduated in our own schools and who have never left their native soil. It requires no stretch of imagination to predict with certainty that our country will become the center of medical education within twenty-five years and our medical institutions will be sought by foreign nations, as they will in the course of that time furnish facilities for teaching far in advance of those of any other country. Our medical schools are not tampered by politics and they are undergoing a rapid evolution by acquiring unlimited financial resources and by the ceaseless activity, the wide-awake, energetic and enthusiastic practitioners who by hard work, frequent intercourse with representative medical men at home and abroad become model practical teachers. The next function of the ASSOCIATION, as far as medical education is concerned, lies in another direction—post-graduate education.

MEDICAL SOCIETIES AS POST-GRADUATE INSTITUTIONS.

We are all aware of the fact that the best medical education obtainable anywhere is but the entering wedge, the foundation for a broader practical education needed at the bedside, which occupies a lifetime and which is never completed. The diploma from any college is but an evidence that its possessor is prepared to enter with understanding upon this post-graduate study of medicine. The recent graduate has but a faint idea of the limitation of his knowledge when measured with the rigid requirements at the bedside. The successful progressive physician is, and remains, an earnest steady student. He enters at once upon a course of post-graduate instruction in an institution which he never leaves and from which he can never expect to graduate. It is and must be one of the principal functions of medical societies, National and local, to receive the young practitioner and direct and supervise his post-graduate work. The medical societies, large and small, are the legitimate and proper post-graduate medical schools. The polyclinics and post-graduate medical schools, which have recently appeared upon the field of medical institutions and which had their origin in this country, have done good work in furthering the objects and directing the ambitions of the progressive practitioners, old and young. They have fostered and favored specialism, and have as often retarded as advanced the true interests of the science and art of medicine and surgery. They never did and never will take the place of the medical societies as post-graduate institutions for the enlightenment and advancement of the great mass of practitioners. Post-graduate medical education must be systematic, graded, continuous and not spasmodic. Is it not true that many city, village and country doctors, after a few years of active practice, tired of the monotony of their work and the severe exactions placed upon the general practitioner, seek one of our post-graduate institutions, after a term of two or three months, receive their certificate printed upon the finest sheepskin, signed by forty or fifty professors, most of them themselves recent graduates and next appear upon the surface as full-fledged specialists? I am willing to accord our post-graduate medical schools a field of genuine usefulness, but they can never take the place of medical societies in imparting and supervising post-graduate instruction. Rational post-graduate work consists in the reading of the current medical literature, in mastering the contents of modern text-books and monographs, the diligent use of the microscope as a means of scientific investigation and as a diagnostic aid, in acquiring and maintaining an adequate practical knowledge in interpreting disease from a bacteriologic standpoint, and a regular attendance of the meetings of medical societies, local, State and National. Not a single day should be permitted to pass without absorbing something useful from the mass of medical literature or the study of some specimen, histologic or pathologic, under the microscope. Application and practice will soon initiate the intelligent seeker of knowledge into a systematic course of study. The fruit of such individual efforts belong to the medical profession and should be brought into the proper channel through medical societies or the medical press. Every recent graduate should affiliate himself with the local, State and National societies, and the time and money spent in attending their meetings will be well invested. He should always be an

attentive listener, and as time and opportunity present themselves, an occasional contributor. There are at present two apparent prevailing evils regarding medical societies as educational institutions; too many societies and too many papers. The multiplication of medical societies of all kinds has gone on with unwarranted speed, and the *furor scribendi* that is prevalent at the present time is unparalleled in the history of medicine. Specialists have their own societies, all of which are doing excellent work. There can not be too much said in favor of city, county and State medical societies, all of which should be in affiliation with the AMERICAN MEDICAL ASSOCIATION, which is now and always will remain the recognized representative body, the final tribunal of the American profession. The organization of district and sectional medical societies is of questionable utility, as these societies detract from the attendance and scientific work of the National associations, and the State and county medical societies. Medical societies are especially intended for scientific work. The great majority of doctors who attend the meetings, do so for the sole purpose of receiving or imparting knowledge. There are, however, men who attend these gatherings from less pure and unselfish motives; they are the political doctors, the wire-pullers who are always on their feet making and discussing motions, offering amendments to amendments, often to the great consternation of the presiding officer and the detriment of the scientific work of the society. These men appear more for the purpose of being seen and heard, to kill time rather than to promote the legitimate work of the society. Every society contains more or less of this morbid material. These men come early and place themselves on record at the very first possible opportunity; they seldom read papers or take part in the discussion of scientific subjects. Some of them have been mayors, aldermen, or if fortune smiled upon their political career, perchance, members of the State legislature. They know something about parliamentary law and are anxious that their more timid and less informed colleagues should know it. The general meetings of the ASSOCIATION have on many occasions resembled more a political caucus or a stirring debate in the Senate or House of Representatives than the calm proceedings of a scientific body. Many valuable hours have been consumed by discussing subjects that should never have appeared. Our constitution and by-laws have undergone so much mending that even those best informed would find it difficult to tell what is old and what is new. Let this part of our work be referred to appropriate committees who take the necessary time and pains to inform themselves correctly and in a calm deliberate way make the necessary recommendations to the society. Let us in the future devote our whole time to scientific work and not tempt the patience of those who come for that sole purpose by the prolonged discussion of business and executive topics that can be done much more satisfactorily in the committee room than the general sessions of the ASSOCIATION. To make medical societies a proper and useful training-school for the practitioner, young and old, the scientific work must be done in a systematic manner. The young graduate with a practical experience dating back two or three years should not feel called upon to appear in any of our sections and occupy our time by relating wonderful cases or a series of daring surgical feats. His maiden efforts belong to the local society, the smaller the better. After a training for

five years or more he is then qualified to serve the State medical society in an active capacity, preparatory to his entering the working ranks of the AMERICAN MEDICAL ASSOCIATION at the expiration of six or ten years of active practice. By taking such a course he is adopting a systematic course of post-graduate education and instruction which will slowly but surely bring success and recognition. The ephemeral reputation which occasionally rewards early literary efforts on high-sounding subjects is frequently followed by a depression from which it is difficult to recover. It is the slow growing solid oak, and not the slender poplar that reaches out early for the sky, that offers the greatest resistance to wind and storm. The young physician will do well to select subjects for his early literary work from the primary branches of the science of medicine, anatomy, physiology, histology, chemistry, pathology and bacteriology and reserve his efforts in writing on practical subjects until he has acquired sufficient experience to speak authoritatively. By pursuing such a course he will interest and instruct his older colleagues and command their respect and admiration at the very threshold of his professional career. One of the glaring faults of the medical societies of the present day as teaching institutions is the presentation of too many papers. A bulky volume of transactions is no indication of the value of the work accomplished. The papers should be few, concise and thorough, the discussions free and general. It is usually more difficult to discuss a paper intelligently than to write it. It is seldom that in a prolonged discussion the remarks remain limited to within the legitimate limits of the subject under consideration. To discuss a paper properly requires careful preparation. Off-hand statistics must be regarded with suspicion. A sense of honesty should compel participants to report their unfavorable as well as their favorable cases, and to record their mistakes as well as their successes. Embellished, painted statistics, too prevalent at this time from ambitious operators, are dangerous traps and should be scrupulously excluded from the current medical literature. Honesty in medicine, as elsewhere, is always the best policy and will be amply rewarded at the proper time. Clinical reports are valuable when properly made; harmful and misleading when based on superficial observation and written from memory instead of from an accurately kept case-book. The results of postmortem examinations should be given with the same candor as the clinical history and the reasons which lead to the diagnosis and the treatment pursued, as it often furnishes the last argument in favor of or against what was surmised or done for the patient during life.

Scientific work of the Association.—The published transactions and the volumes of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION are a mine of information for the general practitioner as well as the specialist, as they contain valuable contributions to medical literature, embracing all the departments of the healing art and the allied sciences. Many of the contributions have found a permanent place in our general literature and must be referred to by authors who write on the subjects of which they treat. It is a source of regret that many of the most important and interesting papers read during the early history of the ASSOCIATION have been buried in the volumes of the transactions. The value of these compendious volumes are as a rule underestimated by medical literary men, and are not consulted and quoted with the

frequency they deserve. No other works contain a more accurate report of the early history of anesthesia. Indigenous medical botany receives well-merited attention. Endemic and epidemic diseases which prevailed in this country at that time are discussed by the most prominent and competent medical men. Surgery is ably represented by a number of the most distinguished surgeons of that period. From the very beginning of the ASSOCIATION hygiene and sanitation were given a prominent place in the proceedings. Anatomy and physiology received more attention then than now. During the early history of the ASSOCIATION the scientific work was done by committees and the reports were read and discussed in the general sessions. The reports were comprehensive and long. W. T. Wragg made the first report of the Committee on Medical Sciences in 1848, which occupies fifty pages of the first volume of the transactions, and embraces the current medical literature of that year in a condensed clear form. The same year the Committee on Practical Medicine reported through their Chairman, Joseph M. Smith, "On the Contagious and Infectious Epidemics." The report was quite a lengthy one and deals largely with the etiology and pathology of typhoid fever. In the same volume the Committee on Surgery gives a detailed account of Brainard's work on the "Treatment of Spina Bifida and Serous Effusions by Tapping and Injections of Tincture of Iodin;" and a very interesting treatise on "Anesthetic Agents."

A special and comprehensive report on "Anesthetic Agents, Their Mode of Exhibition and Physiologic Effects," by J. R. Bigelow, contains the most authenticated account of the early history of anesthetics and some practical suggestions how they should be administered, which are the safest guides today. The members of the Committee on Obstetrics discussed the "Use of Anesthetics in Labor." Their conclusions are summed up as follows: "The committee do not think it important to express an opinion as to the comparative value of sulphuric ether and chloroform in obstetric practice. While the latter is more convenient, the former is probably more safe, owing to the fact perhaps that it is not cumulative in its operation. They are both efficient and either may be employed at the option of the accoucheur." The Committee on Medical Literature, headed by Oliver Wendell Holmes, gave short abstracts of the more important articles published in the medical journals of the United States during that year and of the works on medicine and surgery by American authors and translators. N. S. Davis writes the report of the committee on "Indigenous Medical Botany," which includes the botanical description, medical properties and uses of *Lycopus virginicus*, *Hamamelis virginica* and *Cimicifuga racemosa*. Adulteration of drugs is treated by T. O. Edwards.

In the second volume Dr. James Wynne makes the "First Report of the Committee on Public Hygiene," which covers 223 pages. In the same volume Francis C. Porcher read the "Report on the Indigenous Medical Plants of South Carolina," which occupies 250 pages and includes a description of 319 plants and their medicinal uses. It was soon found that these lengthy reports, although extremely valuable, did not meet with the requirements of the profession. Consequently, at the Charleston meeting, the standing committees were abolished upon motion of Dr. Isaac Hayes, and upon motion of Dr. G. B. Wood it was

Resolved, that a committee of seven be appointed to take into consideration the arrangement of committees for future action, and to report as soon as possible. In accordance with the action of this committee the future scientific work of the ASSOCIATION was to consist of discussions of special subjects selected for the next year. The committee also recommended the appointment of a Committee on Volunteer Communications which should be authorized to award a prize of \$50 for each of the essays approved by it, not, however, exceeding five in number in one year. The action of the committee led to the appointment of twenty-seven special committees. This arrangement proved satisfactory for a number of years, when the rapidly increasing attendance made it necessary to do the scientific work in sections representing the different departments of the healing art, adding new sections for the study of special branches as specialism asserted itself. This plan has proved eminently adapted for the needs of the general practitioner, as well as the different specialists. A vast amount of valuable material is brought to the different sections annually by many men, who, at the same time, take an active part in the proceedings of societies devoted to special work. Most of the prominent men in the profession attend our meetings annually and are always sure of bringing the fruit of their labors and product of their pen before an appreciative audience. Our section work is improving from year to year, and has done much toward creating and moulding the medical literature of this country.

Prize essays.—Literary work in this country is appreciated only by the profession, and the only prospective reward is a consciousness of a duty performed and the recognition it may receive from the profession. Government recognition, such a strong stimulus to hard work in many of the countries abroad, is out of question here. For the purpose of stimulating original research the AMERICAN MEDICAL ASSOCIATION during the first few years of its existence took the necessary steps to establish prizes for meritorious literary productions. The origin of awarding prizes for essays was by the following resolution offered by Dr. Alfred Stillé, while Chairman of the standing committee on medical literature at the annual meeting in Cincinnati in May, 1850:

"Resolved, that the sum of \$100 raised by voluntary contributions, be offered in the name of the ASSOCIATION, for the best experimental essay on a subject connected either with physiology or medical chemistry, and that a committee of seven be appointed to carry out the objects of this resolution; said committee to receive the competing memoirs until the first day of March, 1851, the author's name to be concealed from the committee and the name of the successful competitor alone to be announced after the publication of the decision."

The Treasurer's report at the next meeting showed that \$50 had been paid in through Dr. A. Stillé and \$50 through Dr. F. G. Smith; and at that meeting, Charleston, S. C., May, 1851, the first prize was awarded to Dr. John C. Dalton, his subject being "On the Corpus Luteum of Menstruation and Pregnancy." The prize in 1852 was awarded to Austin Flint, who wrote "On the Variations of Pitch in Percussion and Respiratory Sounds, and Their Applications to Physical Diagnosis." The successful competitor the following year was Washington L. Atlee, who presented a notable paper on "The Surgical Treatment of Cer-

tain Fibrous Tumors of the Uterus Heretofore Considered Beyond the Resources of Art."

In 1853 Walter J. Burnett presented a paper on "The Cell, Its Physiology, Pathology and Philosophy, as Deduced from Original Investigations, to which is added its History and Criticism," and received the coveted prize.

The following year the prize was awarded to Daniel Brainard, the most distinguished surgeon at that time of the great and distant West, for his classical paper: "An Essay on the Method of Treating Ununited Fractures and Certain Deformities of the Osseous System." Among the remaining prize essays, the one on "Resection of Joints," by Culbertson, is entitled to special mention for its thorough exposition of this subject and its statistical value.

Prizes were annually offered in the name of the ASSOCIATION until 1880, when at the annual meeting in New York, all previous regulations awarding prizes were abolished and a new system for awarding prizes through the agency of the several sections was adopted. Since that time no essays have been offered and no prizes awarded.

It will be seen from what has been said, that the prize essays of the AMERICAN MEDICAL ASSOCIATION take a high place in American medical literature, and it must appear plain to everyone that the practice should be resuscitated. Authors and investigators should be encouraged in their work. The awarding of medals and prizes will encourage the younger members of our profession to apply their talent and energy in a proper direction. The recognition by the American profession of the merits of a literary production is a source of greater satisfaction to the author than the gratification afforded by the intrinsic value of the prize.

I would recommend as the greatest stimulus to original research the awarding of an ASSOCIATION gold medal for the best essay on any subject pertaining to the healing art. The gold medal to be offered by and at the expense of the ASSOCIATION. I would suggest that one side of the medal should bear the bas relief of the father of the ASSOCIATION, Dr. N. S. Davis, and the name of the AMERICAN MEDICAL ASSOCIATION; the other inscribed with the name of the successful competitor, the date of the award, with an Æsculapius staff in the center. The ceremony of awarding the medal should be in public on the last day of the meeting of the ASSOCIATION, preceded by an appropriate speech by the presiding officer. The competitive essays should be placed in the hands of a special committee on prize essays three months before the date of the meeting in the same manner as was customary in competing for prizes in the past. It is time that the profession of this city, the home of the distinguished Benjamin Rush, should do something substantial to commemorate his memory. They can do nothing better than to establish at once, before this meeting adjourns, a Rush Memorial prize to be awarded for the best treatise on any subject relating to the science or practice of medicine. This city has the enviable reputation for its distinguished, enthusiastic and wealthy physicians, and I am confident they need only to be reminded of this late obligation to their most eminent colleague of the past to step forward and subscribe the necessary fund of five or six thousand dollars. I am sure if Benjamin Rush had a voice in this matter he would prefer such a monument to one of marble or bronze. I trust that

in the near future every section will establish an annual prize. If this is done we may expect a rich harvest of the most valuable contributions to indigenous medical literature.

American medical literature.—During the early history of our country students and physicians had to depend upon foreign authors for their text-books. With the Declaration of Independence came a sense of responsibility to our representative medical men to create a literature of our own. The first timid attempts consisted in translating or editing foreign books. The great evil of this then, and to a certain extent even now too general a practice, did not escape the good sense and keen eye of one of the early members of this ASSOCIATION, whose name has become a household word throughout the civilized world—Oliver Wendell Holmes, who alludes to this subject in the following plain but significant language: "It can not be denied that the great *forte* of American medical scholarship has hitherto consisted in 'editing' the works of British authors. The committee are not disposed to disguise the fact that this business has been carried on in a very cheap and labor-saving fashion. A tacit alliance between writers and publishers has infused the spirit of trade into the very heart of our native literature. The gilt letters of the bookbinder play no inconsiderable part in the creation of our literary celebrities. Sometimes the additions by the 'American editor' have been real and important, often nominal and insignificant." Dr. S. D. Gross, the Nestor of American surgery, and the foremost medical author this country has produced, raised his voice against such a parasitic literature at the meeting of the AMERICAN MEDICAL ASSOCIATION in 1850 by offering the following preamble and resolutions, which were unanimously adopted:

WHEREAS, The interests and dignity of the medical profession of the United States, as well as the true spirit of patriotism and a love of independence, demand that we should use all proper and honorable means for the establishment of a National Medical Literature, and

WHEREAS, We have hitherto paid too blind and discriminate a deference and devotion to European authority;

Resolved, That this Association earnestly and respectfully recommend to the medical profession generally, and to the various medical schools in particular, the employment of native works as text-books for their pupils, instead of the productions of foreign writers.

Resolved, That the editing of English works by American physicians has a tendency to repress native literary and scientific authorship, and ought therefore to be discouraged by all who have at heart the object contemplated in this preamble.

Resolved, That this Association will always hail with satisfaction the reprints in their original and unmutated form, of any meritorious works that may emanate from the British press.

At this same meeting Dr. G. B. Wood spoke upon this subject and said, among other things: "Our literature will start forward at a rate that will probably astonish the world as much as our profession in the arts, in wealth and in all the comforts of life. It will have the advantages, moreover, of conformity with our institutions. It will intertwine itself with the popular feelings, convictions and habits, imparting to them consistency, strength and durability; growing with their growth, at once giving and receiving support, and, above all other means, adorning, ennobling and strengthening the natural character."

The utterances of these three eminent members of the AMERICAN MEDICAL ASSOCIATION were made at a time when our ASSOCIATION was passing through the stage of infancy, and yet how forcible and positive is

the language pleading for an undefiled, pure American literature. Largely through the influence of this ASSOCIATION their wishes have been realized. Foreign works edited by American authors are becoming fewer year after year, while books written by American authors have nearly displaced English text-books in our college and physicians' libraries. Today the best text-books for students and the safest guides for physicians and surgeons are those written by American authors. We have every reason to take a just pride in the rapidly growing and high standing of our American medical literature. Our foreign colleagues will soon be compelled to acknowledge our literary independence and to recognize more fully the pen-products of American authors. The time is coming and is near at hand when we will be in a position to pay our indebtedness to them and their predecessors with compound interest, and they will follow to a limited extent our example in the past and commence to edit and use American text-books. Let us stimulate the awakening and growing interest of American authors by creating the necessary funds for a number of prize essays and the future distinction and preëminence of American medical literature will be assured.

Journal of the American Medical Association.—One of the potent agencies in the hands of the members of this ASSOCIATION to place American medical literature upon a sound basis is our official organ, the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. It should be and already has become the mouthpiece of the American medical profession. It depends for its support, not upon a wealthy publishing firm or drug house, but upon the profession upon which its existence and maintenance depend. It has only one object in view, the advancement of the science and art of medicine and surgery. Its editor is chosen not for his influence to secure a large subscription list, but for his abilities to manage the JOURNAL for the benefit and betterment of the American profession; in other words, not so much for his business as literary attainments. The JOURNAL has become a permanent institution. It has passed through the trial stage; it has become a power for good in the land. It required years of discussion, preambles and resolutions before the ASSOCIATION abolished the publication of its Transactions in volume form and decided to journalize its proceedings together with the papers read in the general and section sessions. The first suggestion to publish a journal was made by Dr. J. B. Flint of Kentucky at the Richmond meeting in 1852, who gave notice of a proposition to amend the Fifth Article of the Constitution, "So as to provide that, instead of the annual volume of Transactions, the ASSOCIATION may establish and maintain a quarterly journal to be a medium for the publication of the proceedings, and of the most valuable contributions of its members; an organ of resolute and impartial criticism, and an efficient exponent and advocate of the views of the ASSOCIATION on medical science, education and ethics."

It required years for this proposition to come into effect, and when finally, largely through the efforts of N. S. Davis, the Society voted to journalize its Transactions, many had serious doubts as to the ultimate outcome of the new enterprise. At the earnest solicitations of the Board of Trustees, Dr. Davis consented to become its first editor, and placed the JOURNAL upon a sound basis. He was followed by J. H. Hollister and J. C. Culbertson, both of whom labored earnestly and faithfully in the trying editorial chair.

The present editor, Professor John B. Hamilton, assumed the responsibilities of the office with an ability and confidence born of thorough preparation and long practice. He took charge of the JOURNAL at a time when it was in a critical condition. He was well prepared for the duties of this position by nature and education. His long and successful career as a public officer, his keen knowledge of human nature, his good judgment and power of discrimination, his classical education, his intimate acquaintance with the history of medicine and his long experience as a teacher of pathology and surgery, had amply prepared him to manage successfully and edit with ability the official organ of our ASSOCIATION. You are familiar with what he has accomplished. The number of subscribers has been increased threefold, the JOURNAL has been increased in size and greatly improved in quality. Under his editorial management it threatens to become in a few years a dangerous competitor to the *British Medical Journal*, which it will soon equal in the number of subscribers and perhaps in influence. The JOURNAL deserves our undivided influence, as it is the organ which strengthens the ASSOCIATION and binds together in one great brotherhood its members, and its columns are largely devoted to the medical literature of our country, of which it has become its foremost exponent.

Code of Ethics.—At the time the AMERICAN MEDICAL ASSOCIATION was organized the profession of our country was in a most trying condition. The standard of medical education was at the lowest ebb. Of preliminary education there was none. Quackery in all forms was rampant, and no restraints to practices of all kinds by legal enactment. Those who had at heart the elevation of the profession had to make some provision in singling out from the incongruous mass the men who were entitled to professional recognition and public confidence. This was done by the founders of the AMERICAN MEDICAL ASSOCIATION by framing a Code of Medical Ethics, which was called for in the preamble introducing the Constitution. The Code of Ethics was framed by a Committee of seven with Dr. John Bell as Chairman, and was adopted in 1847 without discussion and by an unanimous vote. The Code is liberal in tone, lofty in its sentiments. It requires nothing of its devotees but what would be most willingly subscribed to, observed and carried out by anyone who has the true interests of his profession and his patients at heart. Its language is closely akin to that of that great book, the authority of which but few have the audacity to doubt. The language is that of Percival and our own Benjamin Rush. It is a document which is the backbone and corner-stone of the AMERICAN MEDICAL ASSOCIATION. It is the very foundation upon which the ASSOCIATION is built. It is the rock of Gibraltar upon which all attacks have foundered. Remove it and the AMERICAN MEDICAL ASSOCIATION will be no more; let it remain, and it will continue to grow, flourish and exert its influence for good for all time to come. No changes in the Code have been made whatever since its adoption, except the addition of Section or Paragraph 2, under the head of "Duties for the Support of Professional Character," second division of Code. That addition originated from a charge against admitting delegates from the Michigan State Medical Society on account of the Society having elected as one of its delegates Prof. E. S. Dunster, who was represented as engaged in teaching and giving certificates to students in the Medical Department of the

Michigan University knowing them to be intending to practice an "irregular exclusive system of medicine." The charge was made near the close of the annual meeting in 1877 and referred to the Judicial Council, but too late for the latter to investigate and report at that meeting. At the meeting in 1878 the Judicial Council made an explicit report, declaring that the Code of Ethics contained *no provision* touching the subject under consideration. After much discussion, the members of the Judicial Council were appointed a special committee to report such an amendment to the Code as would cover the subject. Accordingly, at a later stage of the same meeting, the committee reported a paragraph to be added to the first section of the second division of the Code, under the head of "Duties for the Support of Professional Character." But the President decided that amendments to the Code of Ethics must be subject to the same rules as amendments to the Constitution, and the ASSOCIATION acquiesced in his decision. Consequently the proposed amendment or addition to the Code was laid on the table until the next meeting, which was held at Atlanta, Ga., May, 1879. At that meeting the amendment was taken from the table and briefly discussed, and again laid on the table until the next annual meeting. The next meeting was held in New York, June, 1880, and the amendment to the Code seems to have escaped attention until near the time of final adjournment, when, on motion of Dr. Foster Pratt of Michigan, it was postponed and made a special subject for consideration at 10 o'clock of the second day of the next meeting, which was held in Richmond, Va., May, 1881, and at the appointed time the proposed amendment was taken up, and it was discussed in opposition to Dr. E. S. Dunster and H. O. Marcy, when further consideration was postponed until 12 o'clock the next day, at which time it was taken up and advocated by N. S. Davis and opposed by Dr. Dunster, and again postponed until the following morning, when a substitute was offered by Dr. J. S. Billings, seconded by Davis, which was adopted by a three-fourths vote of the ASSOCIATION. (Trans., Vol. xxxii, pp. 38, 39.)

It is evident from the lengthy and complicated proceedings necessary to make this unessential addition to the Code of Ethics, that the American profession fully endorses the action of the Committee which drafted it, and are unwilling for any alterations or additions to be made. The Code has fulfilled the purposes for which it was intended, and will remain a *noli me tangere* for generations to come. I am sure that this feeling will prevail at the centennial celebration fifty years from now, and that our successors will be grateful to us for handing it down to them in an un mutilated form.

Rush Monument.—I have mentioned Benjamin Rush in this address in various connections, but I feel constrained to refer to him once more regarding a movement initiated by Dr. A. L. Gihon to erect to his memory a suitable monument in the City of Washington. The City of Washington is embellished and graced by many statues of the men whose lives are part of the Nation's history. The services of Presidents, heroes and patriots have been commemorated by the erection of statues of marble and bronze, the gift of an appreciative and grateful people. Law and science have been recognized in a similar manner by the erection of monuments or costly oil paintings to the memory of the leaders in the legal profession, and the exponents of science and art, as a token

of respect by the legal profession and the devotees to art. Religion and philanthropy are represented among the group of statues as an evidence of gratitude to representative men who devoted their lives to the church and the welfare of the needy. It is only recently that the disciples of Hahnemann have erected a beautiful statue to the memory of the erratic renegade of the regular medical profession, the founder of a medical sect who originally attributed nearly all disease and suffering to the *acarus scabiei*, and pretended to cure disease by producing a duplicate with high potency dilutions and triturations. What have the people done to immortalize the name of the greatest physician this country has ever produced, the man who had the honor and courage to sign the Declaration of Independence? Nothing, absolutely nothing. Is it not time that the AMERICAN MEDICAL ASSOCIATION should take hold in earnest to correct this wrong and remove from the medical history of this country a blemish that has been permitted to remain too long? Can we afford to let this semi-centennial celebration go by without securing sufficient funds to erect a suitable monument to the memory of Benjamin Rush? No! a thousand times no! The time is at hand to act and not to talk. Dr. Gihon has labored incessantly for a number of years in this worthy cause, but he has not met with the encouragement he had a right to expect. In 1884 he introduced a resolution at the annual meeting which was held in Washington, which had for its object the appointment of a committee to report at the next meeting as to the advisability of erecting a monument to Benjamin Rush in the City of Washington, as commemorative of the part taken by the profession of medicine in the establishment of the Republic of the United States. The resolution was unanimously adopted, and the President, Austin Flint, appointed a committee of seven with Dr. Gihon as chairman. This committee reported favorably upon the proposition at the next meeting, which was held in New Orleans. It was the desire of the committee that the statue should be completed and dedicated with appropriate ceremonies coincident with the meeting of the International Medical Congress at Washington in 1887. It was originally resolved that the necessary funds for the erection of the monument should be obtained by subscriptions limited to \$1, from each physician and student of medicine in the United States, and by voluntary donations of such additional sums as might be tendered by persons interested in the work. The burden of work in accomplishing this purpose has been consigned almost exclusively to the shoulders of the enthusiastic and energetic mover of the proposition—Dr. Gihon. Year after year he has addressed the members of this ASSOCIATION in the most earnest and eloquent language, pleading the cause which has possessed his body and soul. He has written thousands of letters and spent a small fortune in purchasing postal stamps, and what has been the result of his thirteen years of faithful endeavor in accomplishing a task that ought to have been performed before this ASSOCIATION was born, the erection of a monument to our immortal patriot-physician, Benjamin Rush? He only asks \$40,000, and of this sum, by constant appeals in this ASSOCIATION, State medical societies and the medical press, he has received up to date less than \$4,000. It has been well said that "Dr. Gihon deserved to have a monument himself for his efforts." But Dr. Gihon's labor is an unselfish one; he looks for no other reward than the con-

sciousness of having done his duty. What he does want, however, is that the profession sustain and aid him in this noble enterprise. No wonder he has often been discouraged, his patience has been severely tried, and it is time that we should hasten to his rescue. The necessary funds should and must be raised during the present session, or at any rate during the semi-centennial year. Loosen your purse strings and let the people of this country know that the profession is loyal to one of its greatest lights. See to it that the capital city will soon be graced by a magnificent statue of the idol of the American profession, the patriot-physician, and one of the greatest benefactors of our country—Benjamin Rush.

Prominent deceased members of the Association.—I have incidentally alluded to a number of the founders and prominent members of our ASSOCIATION. On an occasion like this it is appropriate to mention additional names of deceased members who took a most active interest in its organization and proceedings. Time does not permit to enumerate the names of all who deserve a permanent place in the memories of those who have enjoyed the privileges of the ASSOCIATION since their time. Among the physicians the following merit special mention:

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| Askew, H. F. | Griscom, John H. |
| Arnold, Richard B. | Hartshorne, E. |
| Bowditch, H. I. | Haxall, R. W. |
| Bache, Franklin | Holmes, Oliver Wendell |
| Blatchford, Thos. W. | Ives, Eli |
| Bartlett, J. K. | Johnson, H. A. |
| Brodie, Wm. | Jones, Joseph |
| Bowling, Wm. K. | Jackson, Samuel |
| Butler, S. W. | Lindsley, J. B. |
| Beck, John B. | Lee, Chas. A. |
| Bell, John | Mendenhall, Geo. |
| Clark, Alonzo | McNaughton, James |
| Comegys, C. G. | Palmer, A. B. |
| Chapman, Nathaniel | Pitcher, Zina |
| Clymer, Meredith | Parish, Isaac |
| Cooke, James | Smith, Francis Gurney |
| Dunn, Theophilus C. | Swett, John A. |
| Delafield, Edward | Stewart, F. Campbell |
| Drake, Daniel | Stearns, John |
| Dixon, Samuel H. | Thayer, Samuel W. |
| Elliott, Elsworth | Toner, Joseph |
| Francis, J. W. | Van Dusen, Harmon |
| Flint, Austin | Wood, Geo. B. |

Anatomy and physiology are well represented by

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| Dalton, J. C. | Horner, Frederick |
| Draper, J. W. | Wistar, Casper |

Of the surgeons who made a deep impression on American surgery and who fostered the AMERICAN MEDICAL ASSOCIATION, the following brilliant array of names grace from time to time the proceedings of our ASSOCIATION:

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| Agnew, D. Hayes | Norris, G. W. |
| Brainard, Daniel | Pope, Chas. A. |
| Buck, Gordon | Pancoast, Joseph |
| Briggs, W. T. | Pancoast, Wm. |
| Bigelow, A. J. | Parker, Willard |
| Carnochan, J. M. | Post, Alfred C. |
| Campbell, Henry F. | Richardson, T. W. |
| Dawson, W. W. | Stevens, Alex. H. |
| Eve, Paul F. | Smith, R. N. |
| Gross, S. D. | Stone, Wm. |
| Gross, S. W. | Smith, H. H. |
| Hamilton, F. H. | Wolcott, E. B. |

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|---------------------|-----------------|
| Hodgen, John T. | Warren, John C. |
| Knight, Jonathan | Watson, John |
| March, Alden | Watson, A. B. |
| McDowell, Joseph W. | Wood, James R. |
| Mussey, Reuben D. | Yandell, D. W. |

A number of the members of the AMERICAN MEDICAL ASSOCIATION have done pioneer work in the development of rational gynecology, and the names I shall quote now are frequently met with in text-books on diseases of women here and abroad:

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|-------------------|--------------------|
| Atlee, Washington | Drysdale, Thos. M. |
| Atlee, John L. | Goodell, Wm. |
| Byford, Wm. H. | Kimball, Gilman |
| Batthey, Robert | Lente, Fred D. |
| Dunlap, Alexander | Sims, Marion |

American obstetrics was advanced and honorably represented by

| | |
|-----------------|---------------------|
| Barker, Fordyce | Meigs, Chas. D. |
| Channing | Miller, Henry |
| Elliot, G. D. | Storer, D. Humphrey |
| Hodge, Hugh L. | White, J. P. |
| Howard, W. T. | |

Richard J. Dunglison, treasurer of the ASSOCIATION for a number of years, is best known as the author of a medical dictionary which has served a useful purpose to students and physicians for half a century. Isaac Hayes, one of the most influential members of the ASSOCIATION, was a distinguished oculist and editor of the *American Journal of the Medical Sciences* for many years. I might continue to enumerate the names of additional illustrious members of our ASSOCIATION, but enough has been said to show that much scientific work has been done by many distinguished members of our profession through the AMERICAN MEDICAL ASSOCIATION. The AMERICAN MEDICAL ASSOCIATION has been a post-graduate medical institution in which most excellent work has been done, the influence of which has extended far beyond the limits of our own country.

I have attempted to give you a brief account of what has been accomplished by the AMERICAN MEDICAL ASSOCIATION during the first fifty years of its existence, but it is impossible to estimate the benefit derived by the thousands of members who have attended its meetings, men who have contributed little or nothing, but who have been attentive listeners, and who never failed in returning to their homes with knowledge increased and renewed enthusiasm in resuming their responsible and onerous duties. At each meeting new friendships have been made and old ones renewed and more firmly cemented. One of the pleasant and attractive features of our annual meetings is the free social intercourse between the members, coming as they do from all parts of the Union. The social element of our gatherings should be encouraged and I know of no better way in which to foster it than to establish a new departure by making provision and establish the custom of making arrangements for the evening of the second day of our meeting for an

Association dinner.—The Committee of Arrangements are always severely taxed in procuring suitable entertainments for the members at each annual meeting. Much time and money have been spent for this purpose and all of us can testify to the lavish hospitality extended year after year by the local physicians and public spirited citizens. The evening receptions have been enjoyable and conducive in bringing the

delegates and members in closer contact. But I am sure you will all agree with me that they can not take the place of an ASSOCIATION dinner in making strangers friends and in affording the best possible opportunities for an interchange of ideas and experiences often of much more value than in listening to the reading of a scientific paper. Let us relieve our Committee of Arrangements of the greatest burden of their work and take the necessary steps to become independent, as far as our social enjoyments are concerned, by gathering around the festive board at our own expense. Section dinners have been a failure and should be abolished. Let us have a dinner where the sturdy country physician can sit with his more nervous and excitable colleague from the city, where the surgeon can meet the physician, the physician with the specialists of all kinds, that is, an easy, informal commingling of the different professional elements. Occasions like these could not fail in strengthening the ASSOCIATION and in diffusing knowledge not obtainable in any other way. The great medical societies in England and Germany have followed this custom for years, and the annual dinner is always looked for with anticipations of pleasure and profit. Let us imitate their example and I am confident we shall never regret the departure. It will not be difficult to furnish a mental feast for the guests by a number of well chosen toasts to be responded to by some of our members and representative men from the clerical and legal profession. Medicine, law and theology, the three great learned professions, have many things of common interest, and a closer acquaintance and relationship will prove of mutual benefit to all.

Annual addresses.—The scientific work in the general sessions is largely limited to the reading of addresses on medicine, surgery and State medicine. These addresses, as a rule, are carefully prepared and are always listened to with interest. The Chairman of each Section prepares an address which he delivers at the opening of the section over which he presides. A distinction should be made in designating the work done in the general sessions and in the different Sections, and I would respectfully suggest that the addresses delivered in the general sessions should be known as orations, instead of addresses, and the persons delivering them as orators, to still further distinguish them from the Chairmen of the Sections and their work.

Evening demonstrations.—It has occurred to me that the third evening of each session should be devoted strictly to scientific work of a special character. It seems to me that nothing would prove more profitable and attractive than a lecture on bacteriology, histology, normal or morbid, illustrated by magic lantern pictures from photomicrographs, projected upon a screen. The lecturer should be chosen by the Nominating Committee from year to year. We have an abundance of men well qualified for such a task within the ranks of our ASSOCIATION. A lecture of this nature, with numerous illustrations, would secure a large attendance and would be one of the means of keeping our members informed of what pure science is doing for the healing art.

Permanent home of the Association.—One of the present needs of the ASSOCIATION is a permanent home, with an editorial office and press room, for its official organ, a hall for the meetings, at least every three years, which could also be utilized for the meet-

ings of local societies, a library room for American medical literature, and a memorial hall for paintings, busts of distinguished members of the ASSOCIATION, and a room for a collection of indigenous medical plants and surgical instruments, the invention of American physicians and surgeons. The site for such a home should be decided by vote of all members of the ASSOCIATION. The present financial status of the ASSOCIATION justifies the taking of the necessary steps to bring such a project into effect at an early date. I am sure the profession of the city that will be honored by becoming the site of such a wonderful institution will contribute liberally toward erecting and maintaining it. Such a modern Æsculapian temple would soon become the Mecca for those in search of American medical literature, and a rich storehouse for everything pertaining to the medical history of this country.

A glimpse of the future.—Fifty years of steady growth has made the AMERICAN MEDICAL ASSOCIATION strong. It has passed the experimental stage; it has done a great deal in advancing and diffusing medical knowledge, and in the prevention, alleviation and cure of disease. It is the recognized final tribunal which directs and controls all other medical societies and medical educational institutions. It is the final Court of Appeals to which the regular practitioners and the public can look with confidence for the enforcement of a pure discipline and needed protection. It is the highest post-graduate medical institution in this country which without tuition provides a course of instruction annually of a scientific and practical character, well adapted for the busy practitioner, from which everyone returns with a firm determination to do more and better work. It is the great bond of fraternal union which binds and cements together the physicians and surgeons and devotees to special departments of medicine and surgery. The ASSOCIATION has done much for the profession and the people in the past, it can and will do more in the future. The organization is now completed and in excellent working order. We can devote in the future all of our time to scientific and practical work. The increase in membership during the last two or three years is unparalleled in the history of the ASSOCIATION. An awakening interest in the usefulness and prosperity of the ASSOCIATION is noticeable on all sides. The papers read in the sections and the discussions are becoming better from year to year. The fiftieth birthday of the ASSOCIATION will give a new impetus to the work and growth of the ASSOCIATION. It is difficult to foretell the possibilities of the second half of the first century of the existence of the ASSOCIATION. It is, however, safe to predict that when the first centennial celebration will be held in this city fifty years from now, the membership will have increased from 9,000 to 75,000 or 100,000, and our official organ at that time will be recognized the world over as the most enterprising and best medical journal. Few, if any, who, constituting my audience today, will live to see that day to bear testimony of the proceedings, festivities and incidents commemorating the first semi-centennial. The President who will then occupy this Chair and who probably at this time is laboring with his lessons in arithmetic, spelling, geography and grammar in some public school will then review the work of the ASSOCIATION for the first century, and may we trust from the records we shall leave behind that he may adjudge us faithful

servants in the cause of science and humanity. Taking up the thread of history from this day he will chronicle inventions and discoveries of which we have now no conception. The literature of today will be as old and useless as that of fifty years ago. We have the satisfaction of have been permitted to live and labor at a time when the science and practice of medicine and surgery were undergoing a complete revolution. We are now laying the cornerstone and are slowly but surely building the foundation for rational medicine and surgery. The work of the next fifty years will no doubt contribute much toward making what has been sought for ages in vain, the rendering of medicine and surgery exact sciences. The American profession will contribute liberally toward accomplishing this object.

In conclusion, let us implore Almighty God to shower the richest blessings upon the AMERICAN MEDICAL ASSOCIATION and the labors of all and every one of its present and future members. May it please Him who, during His earthly career, went from place to place as the Great Physician to heal the sick and maimed, through His boundless mercy and tender sympathies for suffering mankind, to so guide our lives and labors as to imitate His inspiring example in relieving suffering and in adding to the happiness of our fellowmen.

RECIPROCITY IN MEDICAL LICENSURE; A PLEA FOR INTERSTATE INDORSEMENT.

Presidential Address before the National Confederation of State Medical Examining and Licensing Boards, at its Seventh Annual Meeting, held at Philadelphia, Pa., May 31, 1897.

BY WILLIAM WARREN POTTER, M.D.

EXAMINER IN OBSTETRICS, NEW YORK STATE MEDICAL EXAMINING AND LICENSING BOARD, BUFFALO, N. Y.

For the second time it becomes my duty to assume the functions of presiding officer over the deliberations of this Confederation, and I beg at the outset to offer you my best thanks for this renewed mark of your favor.

Since our meeting at Atlanta last year the Confederation has suffered beyond measure in the death of Dr. Perry H. Millard, of St. Paul, one of its most able and useful members. Since the death of Dr. Rauch, I know of no one whose counsel has been so necessary to our welfare and of none whose devotion to the interests of the organization has been greater. It was my sad privilege to visit him at Johns Hopkins Hospital only a month before his end and then, though feeble in body, his clear and active mind was busy with the affairs of this Confederation; and especially with the report of the committee on minimum standards which he, as chairman, hoped to make at this meeting. But his final summons came on Feb. 2, 1897, when this accomplished physician and useful citizen passed to his immortality. "His spirit was twenty, his years were fifty, but, alas! his body was eighty. Farewell."

At our meeting last year it seemed proper to explain in considerable detail the objects of this organization in order that there might be no misunderstanding as to its purpose. For some time previously the medical schools, or at least some of them, had looked with oblique eyes upon our movements, fearing possibly that we might be scheming to interfere with their prerogatives in the educational field. At first, too, some of them were inclined to criticise the provision

made in most of the States that teachers in medical colleges shall not be eligible to appointment on examining boards. The wisdom of this proviso, however, must be apparent to every thinking man. No one disputes the fact that there must be absolute impartiality in the examinations; but how could this prevail if college teachers were made members? Obviously, one college would be jealous of another, and there would be no end of criticism and contention over the work as well as the representation on the boards; especially so in those States in which there are several schools. It was further alleged in some quarters that none but teachers were competent to prepare questions or mark answers. The absurdity of this suggestion has been abundantly proven. As a matter of fact the test of the State examination is different from that applied to undergraduates. The State examiners must by a few well chosen and comprehensive questions in each topic determine a man's general fitness to practice the science and art of medicine. They must so frame the few questions they are permitted to ask and which there is but scant time to answer so as best to develop that fact in a general way. On the other hand, teachers having been in close relationship with their pupils for three or four years merely examine upon the subjects in which they have given instruction; they often ask categorical questions or those admitting of incomplete answers—a defect that is expected to be supplied in answer to the next question, in further elaboration of the subject, which is easily understood to follow. This method is quite right and proper in a teacher's relation to the pupil or the candidate for the doctorate degree, but not admissible from our standpoint. Here each question must be clear, comprehensive and complete in itself, not susceptible of being answered by "Yes" or "No." Ours is, or should be, essentially a post-graduate examination.

In order to test this matter I have asked teachers in a few instances to submit groups of question; but I have found them, speaking generally, not adapted to the State test although quite satisfactory to ask at pass examinations or of candidates for the doctorate degree. A State examiner will soon acquire the skill of asking the sort of questions best adapted to his work, especially those that will best test the quality of instruction the candidate has received. Once this important knowledge is obtained his services become of incalculable benefit to the State and he should be retained as long as he will consent to serve.

Another fear of the schools was that the high standards would empty their benches or that there would be such a diminution of pupils as to materially deplete their incomes. Quite the contrary has been the fact. Bellevue, at New York, graduated a larger class this year than in some years past and its lecture rooms are reported to have been full. The College of Physicians and Surgeons (Medical Department of Columbia University) has found it difficult to provide room for its overflowing classes. In the city of Philadelphia, which since an early day has been a center of medical education, the schools are full even to embarrassment. In Buffalo the University Medical College never had so many matriculates nor so large a graduating class as this year; and so it is wherever high standards have been adopted. The explanation is not difficult; students want the best; it costs them no more in the end and serves them much more satisfactorily in their early struggle for recognition and professional favor,

as well as in maintaining a high position in later years.

It was made apparent at our meeting last year that the examiners compare favorably in education and *personnel* with the professors with whom we were assembled in joint session; and I hardly think it likely that we shall again hear the challenge, given probably more to cover a retreat than a mask an advance, "Who shall examine the examiners?" The answer, were one necessary, is not difficult to find; for the self-same authority that examines the examiners will no doubt find it an agreeable duty likewise to examine the professors.

No! there is no disagreement between the college faculties and the State examining boards, for it has been clearly demonstrated that they are friends. Their interest are common and their objects one. They must not be drawn into antagonism by the indiscreet utterances of a few misguided though well meaning persons. Each is working in separate yet contiguous fields and all are striving for the same purpose, namely, to obtain the best possible equipment for every man and woman sent out over this broad land to practice the profession of medicine.

There is then less occasion for extended remark now than heretofore, as I have already intimated; hence I shall address myself to the discussion of a single topic; one, however, of paramount importance.

INTERSTATE EXCHANGE OF LICENSES.—THE PROBLEM.

There are at this moment two questions pertaining to State control of medical practice that seem to tower above all others in the minds of many physicians, which demand our most careful attention and challenge our deliberate judgment. The two are, however, so inseparable that in reality they may be considered as integral parts of one subject and discussed together. I refer to, 1, minimum standards of requirements to enter upon the study of, acquire a diploma in, and obtain a State license for the practice of medicine; and 2, to the interstate indorsement or recognition of licenses so that, under prescribed rules, a licensee of one State may be permitted to practice in any other State in which he may seek a temporary or permanent residence.

It goes without saying that an exchange of these official courtesies between the States "is a consummation most devoutly to be wished" by every friend of State control in medicine. It is one of the principal objects that this Confederation is laboring to accomplish. It is at the same time one of the most difficult problems thrust upon us for solution. No one can deny the fact that it is pleasant to contemplate a time—I trust in the near future—when we may have a National registration bureau where every legally qualified reputable physician may be recorded, and when all physicians whose names appear on this register and whose licenses are properly indorsed by the registrar, may pass from one State to another in the practice of their profession and in the enjoyment of all the privileges thereto appertaining. But how is this to be established with celerity and with justice to all concerned? The ideologues who were chiefly interested in the agitation of the question of reciprocity of licensure, assert that unless an interstate exchange is arranged, and that speedily, the whole system of State control in medicine will go to the wall. Whether this is given out in the nature of a threat or a prediction I know not, but there are indications that lead me to

suspect the former. These men I believe are, for the most part, specialists who spend the vacation months at summer resorts, watering places, or on comfortable farms that their plethoric purses have secured in States more or less remote from their homes. They expect to make a snug sum from consultations and office patients during the vacation season, but do not relish the idea of being compelled to "undergo the nuisance of examinations" as they characterize it, in the States they have chosen for their holiday practice. They are frequently men of influence who seek to prejudice their medical friends against the system, by pointing out what they are pleased to term the injustice of applying the State laws in their cases, and then proceed to air their grievances in the columns of medical journals as a court of last resort. While I have no doubt that the denial of reciprocity now and then works hardship to deserving men who perchance must change their residences, but can ill afford to spare the time and money to take a new examination, I yet fail to see wherein the class of men first above referred to and who prate the loudest about it are deserving of special sympathy. They can well afford to submit to an examination in the States where they pass a profitable and easy summer; moreover, I am unable to discover any injustice in compelling them to comply with existing laws. Shall a State require of its own citizens a compliance with its practice laws and at the same time grant to the well-to-do summer specialist exemption from their operation? As the State laws, for the most part, forbid discrimination against the inhabitants of each, there is both a moral and a legal bar to such exemptions.

EQUALITY OF STANDARD A BASIS FOR RECIPROCITY; THE OBSTACLES.

The only equitable basis upon which reciprocity can be established that appears both feasible and practicable, is that of equality of standards for admission to the study and practice of medicine. This implies an equalization of the preliminary requirements of medical students and a uniformity of applying the tests; a uniform period of collegiate training including uniformity of methods of teaching; and, finally, an absolute similarity in the methods of conducting State examinations and granting licenses. A minimum standard of preliminary qualifications is important to agree upon. This ought to be done in a uniform manner by all the States for the sake of the good name of our profession even if there were no other cogent reasons demanding it. American medicine ought not to be disgraced any longer by illiterate physicians; hence illiterate students ought not to be admitted to our medical schools. If we can not agree upon any other question we ought to demand this much as a united profession.

What, then, shall be the minimum limit of education below which a student of medicine shall not be accepted? No more important question awaits answer but it is one on which, I am sorry to say, there is much diversity of opinion. If a man's mind has not already been disciplined to the extent of acquiring a good English education before he takes up the study of medicine, it presents a sorry foundation upon which to engraft a knowledge of such a multiform science and art. It is far more important, in my view, to agree upon a reasonably conservative standard of minimum requirements than it is to insist upon extending the terms of medical teaching to four years;

since it is better to teach three years of medicine to a well-trained mind than to demand four years' training of an illiterate student. I hope this cardinal principle can be definitely settled to the satisfaction of all the States at an early day.

But let us pass to the next topic, namely, uniform periods of collegiate training. Here, fortunately, there is less diversity of opinion, thanks to the good work of the Association of American Medical Colleges. Under the stimulating influence of the American Academy of Medicine, well seconded as I believe by this Confederation, we find a public sentiment fast settling to the conclusion that four years is quite short time enough in which to acquire the proper training and knowledge to fit one for the doctorate degree. It must be remembered that it is required nowadays of the undergraduates to pursue courses in anatomic, physiologic, chemic, biologic, pathologic and bacteriologic laboratories, and to undergo training in medical, surgical and obstetric clinics. Add to this the necessary didactic and recitative courses besides training in special techniques—microscopy, ophthalmoscopy, laryngoscopy and the like. With all these, besides much other information that must be acquired, and who shall say that four years is too long a time to devote to college work? It would be interesting in this relation to trace the progress that has been made in the last quarter century in the various departments of medicine; but this is as familiar to you as to me. You know how the complexity of the present age with its rapid transit and instantaneous methods of communication, has correspondingly increased the assaults by the enemies of health that are multiplying with such marvelous rapidity. To meet this complexity requires a mind more deeply and broadly cultivated; preparations for receiving and utilizing medical instruction must be increased and lengthened. As our cultivation develops our immunity from disease lessens, hence our vigilance and efficiency must be greater, our period of preparation longer, and our training increased in length, depth and breadth. It is therefore, with pleasure that we observe and heartily approve the good work of the Association of American Medical Colleges that is arranging the curricula in such a manner as will be adapted to the environment of the present day. In this relation it would also appear essential that methods of teaching should be reduced to a degree of uniformity that heretofore has not been attained. With a universal establishment of four years' courses in American medical colleges, it will become appropriate for them to grade their curricula to as near a common level as may be consistent with surrounding conditions. Methods of teaching in all the laboratory departments could easily be conducted on a scale of similarity that would make them practically uniform in all colleges.

The third condition to be standardized is one that immediately concerns this Confederation and it becomes us to deal with it in a most thorough-going manner. The first step toward equalizing methods of applying the separate examination for license in the several States, it seems to me, is to bring the examiners together on the subject. If they can be made to agree upon questions concerning their all-important function, then we have gone a long way toward establishing uniform methods. If, however, they differ in opinion as to the application of the principle in the several States, then the prospect for speedy adjustment presents a more discouraging view. The first

point that offers itself is so plain that I am sure no one will attempt to dispute it. The foundation principle of a separate examination for license to practice, is that it shall be applied to all with absolute impartiality; there must be no exceptions to the rule—no exemptions. While it is true that a law on this subject can not be made retro-active and that all legal practitioners at the date of its passage must continue to be so recognized, yet all others must be examined; and so the work must continue from year to year. Another inflexible rule that ought to prevail is that a diploma from a registered school should be demanded as a passport to the State examination. The logical conclusion is that a State examination is supplemental and consecutive to that of the schools, and that it should be refused in all cases where applicants are not holders of legally obtained diplomas from registered and recognized colleges. If this rule were scrupulously enforced it would deprive medical college faculties of grounds for any further opposition to State control. If, on the other hand, any of the State examining boards are permitted to examine undergraduates for license, it enables them to set up a standard of their own, which is antagonistic to the underlying principle of State control and, I fear, subversive to the best interests of reform in medical education. When the duties of medical examiners are reduced to the mere question of determining the qualifications of such individuals as legally constituted schools shall turn over to them with M.D. degrees, they will have served the whole purpose for which they have been created. It is understood that there must be a uniform system of recognizing and registering the medical schools in the several States.

With the foregoing principle once settled the minor details of standardizing State medical examinations for license could be more easily arranged. A uniform system of propounding and marking questions becomes desirable. For instance, if it could be agreed that ten questions in each department or topic should be asked and that each answer should have a possible value of ten points; and, further, that the total possibilities of the examination should be fixed at 100 points maximum and 75 points minimum in each topic, we could easily approach uniformity in this part of our work. The only remaining important question would be as to the valuation of the answers. This necessarily will always vary in degree, since the personal equation of the examiner enters somewhat largely into its outcome. It is a well-known fact that some examiners are inclined to a high, others to a medium, and still others to a low valuation; but with experience and an interchange of opinion on the subject this factor would soon be reduced to an exiguity that would render it comparatively unimportant.

LEGISLATIVE ENACTMENTS.—THE SOLUTION.

These, then, are the essential steps toward reciprocity; these are the obstacles to be overcome before it can be accomplished. The remedies lie in legislative enactments and these, speaking generally, are of slow development. Nevertheless, with a healthy public opinion once aroused on the subject legislative bodies will soon take heed and adopt adequate measures to overcome defects. The newer States are likely to fall into the front line sooner than the older ones that already have imperfect laws. Public opinion moves faster, and I had almost said in a sounder fashion, as we travel toward the Occident. This in some respects

is no doubt true. Montana, for instance, stands at the forefront in all of its requirements for State license. Minnesota, too, has been a pioneer in the movement for advanced standards and has one of the best laws. Moreover, we may expect those States east or west, north or south, that as yet have no laws relating to medical practice, taking heed of the necessities arising under present conditions and profiting by the experience of those States that have preceded them in relation to State licensure, will soon enact laws that will meet all the conditions of the present day and which will satisfy the most idealogistic views.

At present twenty-seven States demand separate examination for license to practice medicine. In fifteen of these a legally obtained and possessed diploma is the first condition imposed; without it a candidate can not be admitted to the examination. It only remains for these States by statutory enactments to bring their preliminary requirements to a common level, and then for their several examining boards to agree upon uniformity of methods, when, lo, the question of reciprocity is solved! A license granted by one of these States will then be valid in all others of this class, upon proving identity, character and the payment of whatever fee may be imposed. With reciprocity once accomplished between these States, the others one by one will soon afterward establish themselves on the reciprocity basis in self-defense, if for no other or better reason.

Those who most loudly and persistently demand interstate indorsement aim their criticisms at the examining boards, holding them responsible for all their woes; whereas, as a matter of fact, the examiners have nothing whatever to do with the question. They are simply agents of the States to administer the laws as they find them and can not change the practice in regard to reciprocal interchange of registration. The statutes in every instance with which I am familiar merely permit the acceptance and registration of licenses issued by other States where the standards are at least equal in all respects to those of the State issuing the license. This means, if it has any significance whatever, that in all preliminary requirements, in collegiate training, and in State examinations, one and all, there must be an equality and a uniformity of standards before licenses can be accepted for registration in a reciprocal manner.

The precise language of the New York statute on this subject is as follows: "Applicants examined and licensed by other State examining boards registered by the regents as maintaining standards not lower than those provided by this article . . . may without further examination, on payment of \$10 to the regents and on submitting such evidence as they may require, receive from them an indorsement of their licenses or diplomas conferring all rights and privileges of a regent's license issued after examination." This principle was reaffirmed in an amendment to the practice law passed March 21, 1896, in the following terms: "New York medical schools and New York medical students shall not be discriminated against by the registration of any medical school out of the State, whose minimum graduation standard is less than that fixed by statute for New York medical schools."

As many other States have enacted statutes fashioned after that of New York, containing this particular proviso, and as still other States hold to the same provision in effect, it is easy to understand how pow-

erless the examiners are in the premises. These demands of the restless and migratory doctors must be taken to the State legislative halls and there made known if relief is expected. Meanwhile, the members of this Confederation may assist in bringing the matter about more speedily by acquainting the legislatures with the difficulties to be overcome and by urgently recommending the adoption of such amendments to existing laws as will meet and remove the present defects.

My object in discussing this subject in detail is to place the examiners right before the country in regard to it and to divert further criticism against the delay of reciprocity into the proper channel.

PROGRESS DURING THE YEAR.

During the past year attempts have been made in nine States and Territories to establish medical examining boards, in four of which efforts have been successful. Those that have joined the list with practice laws are: The District of Columbia, Idaho, Indiana and New Hampshire. The laws of New Hampshire, District of Columbia and Idaho make a diploma from a registered school a requisite to enter the examination. In Indiana the law is modeled somewhat after that of Ohio and is a substantial beginning in a State that has sadly needed protection from charlatans and medical pretenders. So in the academic year just now about to close there has been substantial gain in the direction of State control, even if some important States have fallen "just outside the breastworks." These no doubt will re-form their lines and come to the attack another year with full promise of success. If four States and Territories are added to the list each year, in a short time we shall be able to rejoice in a professional rehabilitation that will compel the admission of the American licentiate to the best medical standing wherever civilization exists.

It seems important in view of the present condition of State control that the committee on minimum standards appointed last year shall be continued as a standing committee of this Confederation, with enlarged powers that shall include the question of reciprocity. I desire to invite your attention to the publication of a brochure entitled "State Requirements for the Practice of Medicine; a Guide to the Qualifications and Methods of Procedure to enter upon the Practice of Medicine in the United States," by Dr. Charles McIntire of Easton, Pa. It constitutes the Bulletin of the American Academy of Medicine for February, 1897, and is by far the most complete publication on the subject yet issued. If secretaries of boards had paid more attention to requests for information the book would have been absolutely accurate up to the date of its issue; as it is, it is surprising how much Dr. McIntire has been able to furnish of value. Every State examiner and especially every secretary should be supplied with this guide and it should be placed on file in all public libraries.

QUESTIONS OF PUBLIC HEALTH ARE INVOLVED.

To return for a moment and finally to the special subject matter of this paper, permit me to say that in any event and under all circumstances the honest and earnest friends of reciprocity may be sure of the active and zealous coöperation of this Confederation in all reasonable efforts to establish it. In most of the States where State license is now required the struggle to obtain even imperfect laws has been prolonged

and the contest has been exasperating as well as fatiguing. Every possible influence has been brought to bear on legislatures to prevent even a conservative recognition of the principle. Nor is this all; after laws have been passed making a good start in the direction of this reform the State medical societies, through whose influence, speaking generally, the measures have been adopted, have been kept constantly on the defensive at legislative hearings and otherwise to prevent amendments to existing statutes that would weaken or tend to destroy their usefulness.

These proposed amendments generally have their origin in spite, malice, caprice or vengeance, and should always be regarded with suspicion by legislative bodies. It will be a happy day for the friends of State license when legislatures can be persuaded to turn a deaf ear to all amendments that are proposed outside of State medical societies or State boards of medical examiners. This would save much time to members of legislative bodies and give security of feeling to the medical profession. If legislators could be made to appreciate the fact that public health interests are involved in the question of State license; that every attempt to weaken the principle is a blow at public sanitation, and that higher standards of medical education mean better health for the people, then perhaps it would be easier to obtain and maintain the necessary laws to protect the commonwealth against that kind of ignorance, superstition or super-refinement that always lurks in the environment of quackery.

Traveling and advertising quacks, christian-science and faith healers, clairvoyant and spiritualistic mountebanks—these and every other kind of pretender that panders to the ignorance and superstition of the people, leeching their money and sapping their vital force, ought to be no longer tolerated by enlightened communities; and if legislatures would lend a willing hand these villainous enemies of public and individual health and prosperity may soon be disposed of in a fashion becoming an intelligent and progressive age.

284 Franklin Street.

HAS THE MILK LABORATORY COME TO STAY?

Address of the Chairman delivered in the Section on Diseases of
Children at the Forty seventh Annual Meeting of the
American Medical Association, held at Atlanta,
Ga., May 5-8, 1896.

BY A. C. COTTON, A.M., M.D.
CHICAGO, ILL.

Probably at no time in the world's history has the subject of infant feeding received so much attention as at present. The results of bacteriologic research and experimentation have of late given direction to the observations of some of the brightest minds of the profession, and the recent revival of interest in pediatrics has been due to the suggestions of the *preventability* of the disorders of the digestive tract of infants and children. It is not strange, then, that our recent literature teems with contributions on the subject of infant feeding. Some of our would-be teachers are dogmatic and precise in the presentation of their methods, while others are satisfied with the assumption of a merely suggestive attitude toward the subject, while still others present the plea of empiricism and point to results which they do not attempt to explain except upon the ground

of experience. But amid all these conflicting theories and opinions, whether based upon chemic, physiologic, natural or empiric reasons, each new theory or procedure is met with the assertion, "I told you so long years ago," which simply goes to verify the old adage, "There is nothing new under the sun," even in regard to the feeding of infants. Meanwhile statistics show, with here and there an exception, perhaps due to our more modern ideas of hygiene, that the high rate of infant mortality still exists as of yore: "the voice of wailing and lamentation is heard throughout the land—Rachel weeping for her children and refusing to be comforted, because they were not." Among the many conflicting statements of the learned physiologist, the expert chemist, the trained bacteriologist and the experienced empiricist, a cursory glance reveals *three* quite well defined classes of infant feeders, viz.: 1, those who regard the early infant as belonging to the carnivora; 2, those who would place the nursling of the human species among the grammivora, and 3, those wise old experimenters, who seeing in the early young the same dietetic requirements universally attributed to his adult progenitors, place him beyond question in the omnivorous class.

"Follow the teachings of nature," says one; "the sustenance drawn from the maternal font is purely animal food, and when that font is prematurely dried the substitute must be obtained from animal sources, preferably the elaborated product of a lactiferous gland, those being preferred which in the constituents of their product most nearly resemble that furnished by nature." The mother's milk is analyzed, the percentages of fat, lactose and proteids determined, and the dogmatic assertion proclaimed that as cow's milk somewhat closely resembled breast milk, cow's milk alone shall be recognized as containing the necessary constituents for infant food. Immediately some sage rises in his place and solemnly says, "I told you so," and echo catching up the words, they reverberate back along the vista of history until it dies away in the old legend of "Romulus and Remus" suckled by a wolf before the days of ancient Rome. Meanwhile the infants die. The bacteriologist comes to our relief, with his demonstration of myriads of *microorganisms* with which the *cow's* milk swarms, and informs us that heat will *kill* the disease germs and we must *sterilize* our milk. Again the voice, "I told you so. I boiled my milk long years ago." Up springs the chemist and says by boiling you lessen the food value of the milk by coagulation of its lact-albumen and the devitalization of its most absorbable portion. The bacteriologist upon appeal shows us how to rid the emulsion of its active pathogenic bacteria by submitting it to a temperature *below* the boiling point. But still the infants die and the curdy stools persist and stimulate the chemist to show us not only the excess of the indigestible casein in cow's milk but its peculiar tendency to the formation of *dense curds* under the action of gastric acids. Then comes the physiologist with his *predigestants*; and the extra-gastric peptonization of the offending caseous constituents is in vogue. Once more the echo, "I told you so long years ago," even crossing the Atlantic from the realms of the Sultan, pointing to the fermented preparation of matzoon; from the steppes of Russia with its kumyss, and from the plains of Tartary with their kaffir grains. Next comes the swarm of *cerealists*, who, while admitting the indigestibil-

ity of amylaceous substances in the infant stomach, claim that by partial conversion (by the malting process or by heat) of the starch of cereals into sugar we can furnish the baby with proper alimentation for all the requirements for his full development. Grains are plenty and flour is cheap and commercial instinct eager for gain and the land is flooded with "baby foods" as the best substitutes for mother's milk. Again "I told you so" is heard echoing until we learn that from the beginning of history *parched cereals*, powdered and in the form of decoctions, have been used under the name of "baby pap."

"Cane sugar is a poison to infants," declares the physiologist. In refutation of which statement the matron of every Southern and Western cabin points to the lusty nursling contentedly mumbling his "sugar tit" while developing strength and stature like the mammoth weeds of the generous prairies. Still in the crowded districts of the metropolis the infant mortality repeats its figures with sickening regularity and the persistent anemias and mal-nutrition of the puny rachitic or scorbutic progeny is charged to the use of the exclusive vegetable or animal diet.

Then clinical experimentation in infant diet, with all its variations and alternations between cow's milk, animal extracts, vegetable decoctions and cereal jellies is inaugurated, and the hoary headed rises up among us and gravely claims "It was thus I did cons and cons ago." Says one theorist, "raw milk is poison;" says another, "boiled milk is indigestible;" says another, "starch is indigestible;" still another, "cereals are unnatural;" again, "cows milk even if freed from its pathogenic bacteria is ill adapted to the stomach of the human infant because its constituents do not bear the same proportion to each other of similar constituents of breast milk." Then are we told to so regulate the relative proportions of the constituent parts of the natural emulsion of the cow's mammary gland as to most nearly approximate the relative proportions of the normal constituents of the product of the maternal breast. "It is as plain as day," said he, "for chemic analysis shows us the average composition of cow's milk to be, sugar 4.50, fat 3.75, albuminoid 3.76 (casein 3.00, albumin 0.76); while the average composition of mother's milk is, sugar 6.50, fat 4.13, albuminoid 2.00 (casein 1.00, albumin 0.55)." The difference is seen in this that cow's milk is acid while mother's milk is alkaline, that cow's milk contains less fat, less sugar and more albuminoid substance than mother's milk. We will regulate cow's milk by rendering it alkaline—a voice from out the solemn past murmurs, "I used lime water years ago." We will add more sugar—the same voice, "We have always sweetened the baby's food." We must diminish the percentage of the proteid substance to get rid of the offending casein. The ancient practitioner mournfully suggests, "I have always diluted the milk with three parts water the first two months, two parts water the next two months, with one part water for the fifth or sixth months, and out of the distant past comes the hollow murmur of "wine whey, rennet whey, cream and water, and the mortality was just the same."

Next, science declares we will separate this cow's milk emulsion into its constituent parts and then we will *reassemble* them in definite and exact proportions, so that our *new* emulsion shall resemble a good average breast-milk, and we will patent the process and call it a "milk laboratory." Then says the old prac-

titioner, "For many long years have I employed that procedure by allowing my cow's milk to stand for hours in a deep, narrow jar until gravity should cause the casein to precipitate and the fat to rise; then carefully skimming the cream, I have with delicacy siphoned off the upper one-third of the milk. With this cream, this upper one-third, plenty of milk sugar, an equal quantity of sterilized water, some aqua calcii and perhaps a pinch of salt have I attempted to approximate mother-milk, but I neglected to patent the process, and the infants died, or their teeth developed slowly or their bones softened and their stools were still curdy."

But, says science, the idea of the milk laboratory is not to secure a uniform product which shall most resemble the average breast-milk, but to furnish different emulsions to meet the *especial requirements of individual cases*. The old practitioner replies, "there is nothing new in this idea; from my youth up I have practiced these precepts. I have increased the fat to attenuate the curds, increased the sugar to correct constipation, also the fat for the same purpose, decreased the solids by addition of water and added cereals to *harden* the bones." What, then, fellow-workers, is the benefit to be derived from the milk laboratory since it brings with it no *new ideas*?

I believe the advantages lie in the direction of *more exact manipulation, greater precision, greater accuracy in the keeping of records*. In fact, the milk laboratory already begins to assume the same relation to the dietitian that the well equipped pharmacy has so long borne to the therapist. The busy pediatrician of today can no more depend upon nurses and mothers for the regulation of the infant's food than for the preparation of therapeutic agents from the crude drugs. A definite prescription for the regulation of the necessary constituents of a liquid food to be compounded by a competent manipulator aided by all the requisite paraphernalia for carrying out the physician's idea in the *demand of the hour*. I believe the *milk laboratory* has come to stay. As far as I can learn all my Chicago brethren who have used our milk laboratories are agreed upon this subject.

The brilliant successes recorded by Dr. Rotch, obtained with modified milk through the Walker Gordon Laboratory of Boston, have stimulated the profession and given a new impetus to the study of infant feeding. We are securing through the milk laboratories at Chicago very gratifying results, of which, I trust, the profession will hear more at an early day. The facility for exact experimentation stimulates closer observation in our efforts to perfect nutrition in the infant. And although one may say nothing new has yet come of it, I believe the future is full of promise. That the efforts of the practitioner through the milk laboratory must be confined to the manipulation and regulation of cow's milk alone, is a mistaken idea that in some way has been associated with the early discussion of this subject. On the contrary, in the milk laboratory the advocates of the employment of cereal products in infant feeding find their best facilities for testing and demonstrating the value of their theories. It was my intention to present two lines of experimentation which have interested me of late at the Chicago Laboratory, but as this paper is already long I will merely mention them, trusting that at a later day they will meet with a worthy exposition.

Your former chairman, Dr. Christopher; and your

present representative, have of late been incorporating in some of their prescriptions for milk mixtures definite quantities of cereal jellies as expressed by percentage of starch. The ingenious experiments of Dr. Leeds of Hoboken, demonstrating the difference in coagulability of the casein between cow's milk and mother's milk, have stimulated our efforts to still further eliminate the casein without reducing the percentage of proteid substances. This we are attempting to do by replacing a large part of the rejected cow proteid with egg albumin. It has been claimed that egg albumin rendered the mixture unstable and that it could not be protected by Pasteurization because of its ready coagulability. We have not found these obstacles to the use of egg albumin to be insuperable, and are today employing the egg to replace the lact-albumin with satisfactory results. At my suggestion, our prescription blanks have been arranged for the addition of egg albuminoids when deemed advisable.

The milk laboratory, I believe, has come to stay.

ORIGINAL ARTICLES.

THE RELATION OF DISEASES OF THE SKIN TO GENERAL CONDITIONS.

Read before the New York Academy of Medicine, April 1, 1897.

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The modern division of the practice of medicine and surgery into many specialties has been a natural and legitimate sequence to the marvelous development of the science and the art of healing which has been made in late years. The sum total of medical knowledge in various lines has now become so great and extended that few if any can hope to compass and apply it to all satisfactorily in a lifetime; and the development of specialism in the medical profession (as in many other branches of science) has both contributed to this development and has facilitated the practical application of knowledge and experience along many lines. The advances which have been made in connection with medicine and surgery, largely by specialization of work, compare favorably with those obtained in other lines of human activity, even in this age of steam and electricity.

But, on the other hand, all thoughtful men must recognize that in this minute subdivision of thought and practice, and in the enormous aggregation of medical knowledge there is a lack of coördination in its practical application which at times results disadvantageously to the patient. Minute and concentrated attention to separate and individual lines of thought and practice has too frequently resulted in a narrowness of thought and practice, which has prevented the physician from properly recognizing, appreciating and applying many of the broader principles of medicine, which are so often of the utmost importance.

This is especially apt to be the case in connection with diseases of the skin, and yet in almost no branch of medicine is the error more serious; and the error has unfortunately spread from the specialist to the general practitioner, until lesions on the skin are now too often regarded as special and local affairs, quite unconnected with disorders of the general system.

The reasons for the neglect of internal conditions of the system in the practice of dermatology are not

difficult to discover. Much of the work in this branch has, of late years, been done by those who have devoted themselves to it exclusively, almost from their first graduation; they have had little or no practical experience in general medicine, and as their interest and study has been largely concentrated on the lesions visible on the skin, other broader relations of medicine have naturally become less distinct. The feeling that the skin affection is a local one is also largely shared and fostered by patients, who constantly urge that they are in perfect health, and only desire the removal of the local disease which gives them annoyance. Thus, it happens that more and more attention is localized on the portion of the body that gives offense, and varied local applications are used with more or less satisfactory results, and subsequently recommended to others. The profession is thus taught to look upon local measures as the only important feature of treatment.

It must be granted, however, that clinical experience often seems to give considerable support to the errors thus begun. For undoubtedly, very much can often be accomplished by correct and proper local treatment, and the cessation of this or that eruption under local applications does often seem to warrant belief in their great efficacy. On the other hand there is certainly often danger of error in this judgment. For it is possible, and indeed probable that very frequently the local or other exciting cause which produced the eruption has passed away, and thus the local lesion which was left yields readily to local treatment while the general systemic condition which predisposed thereto still remains; the skin then readily succumbs to a renewed irritant and the eruption recurs again and again, until the conditions of system at the bottom of it are removed. This is well illustrated by syphilis, where local mercurial or other treatment may be successful in removing local lesions, which will reappear again and again until the actual disease is overcome by proper constitutional treatment. In certain instances, as in herpes zoster, the eruption is quite self-limited, and so naturally ceases under any proper local application. How readily could a perfectly ignorant person be deceived on seeing the rash of scarlet fever, measles, chicken pox or variola cease after local treatment; the same error could occur in regard to eruptions excited by certain drugs, as quinin, belladonna, copaiba, etc., after the administration had been suspended.

But belief in a general local pathology and treatment for all diseases of the skin finds a still further support in the fact that there are certain lesions of the skin which are of a purely local nature, and yield readily to local measures alone. Such, for instance, are certain hypertrophic and atrophic diseases, and some new growths, as also the lesions caused by various local irritants and those produced by animal and vegetable parasites. But even in many of these very careful medical study will determine features or elements where the broad principles of general medicine should be applied. A striking illustration of this is found in ringworm in children, which will persist and luxuriate in those of weak constitution or exhausted by mal-nutrition, and yield much more readily when proper internal measures are instituted.

Finally, recent science has been claiming for the class of microbes an important place in the local causation of skin lesions. But it is more than ques-

tionable if, in many instances which have been claimed, they are more than accidental elements, or even the result, instead of the cause of the diseased process. In some instances, at least, it seems highly probable that the parasites generate and operate only because the soil is suitable and has been previously rendered so by other causes which can and should be removed.

I can not more forcibly illustrate my conception of the relations between local pathology and general causes than by reference to some facts in nature. For a long time it was unknown as to what was the real cause of a certain condition or disease in peach trees called "yellows." It is a disease which attacks the leaves, causing them to become yellow and fall off; the life of the tree is thus impaired, no fruit is produced, and before long the tree itself may die. Careful study finally demonstrated that the disease was caused by a fungus parasite invading the leaves, and thus arresting their vital action. Many and varied local remedies were thereupon advised, and much ingenuity expended upon methods of spraying the trees with various solutions destructive to the parasitic growth. While these means are all effective for a time in some cases, in other instances they fail to save the trees, while in many if not most trees the disease recurs again and again, requiring repeated and frequent applications. Finding local treatment to be but temporary and often ineffective, attention was then paid to other and more general points relating to the life and nutrition of the trees, and now, at the present time the best authorities advise, not the local treatment to the leaves, but improved nutrition to the tree, especially in the way of phosphates to the roots, even though it is yet recognized that the disease on the leaves is parasitic. The increased vitality of the tree enables it to resist the inroads of the parasites which, attacking first the leaves, finally destroyed the life of the tree itself.

At my country home I have a large *virgouleuse* pear tree which each year has borne a very great number of pears. But when about half grown the fruit becomes attacked by a fungus which thickens and hardens the skin of each pear, and they soon crack and dry up, so that hitherto for many years there has never been a single good pear ripened; the fruit is hardened with deep fissures, and never more than half grown. Finally, I began to systematically reduce the number of pears which were allowed to remain on the tree, removing a third or half of them when they were the size of a walnut, and before showing much signs of the parasite. The result was remarkable. A very great improvement occurred in the remaining fruit, which resisted the parasite very markedly, some of the pears attaining large size and ripening without being cracked and split as formerly. Another year I shall carry the process still further, removing a larger portion of the fruit very early, and the resulting vigor in the remaining portion will enable those that are left to resist the parasite still better. Thus we see the fruit yielding to the attack of the parasite when the strength of the tree was weak from overbearing and resisting it when a lessened quantity of fruit allowed greater vigor to be expended upon each pear.

One more illustration. On a very bad, hilly and stony field on my farm, which had run entirely to red sorrel and brambles, my farmer sprinkled a considerable quantity of wood ashes thickly across one corner.

In the following spring this portion was covered with a beautiful carpet of white clover, it forming a striking contrast with the rest of the field, although no clover seed was sown. This clover was reproduced for several years until the fertilizer was exhausted, when the weeds again gained the ascendancy and have remained in possession of the spot. We see here that with proper nourishment the clover seeds, which are everywhere present, grow luxuriantly, while with impoverished soil plants of a lower order assert themselves. All are familiar with the growth of moss, both upon dead and dying trees and upon those in poor damp ground, and shut in from sunlight, and how it disappears when the best conditions of life are secured; the mistletoe on the oak flourishes when the soil is damp and on the highest branches, where vitality is least.

Illustrations could be multiplied indefinitely to show the resisting power of health over the germs of disease, and yet the principle seems to be applied very little in diseases of the skin. They seem to be regarded on all sides as something peculiar and distinct from other maladies and subject to different pathologic laws. My plea is that the specialist and general practitioner should look at them more as other diseases are considered, namely as being largely evidences of lowered vitality and connected with faulty metabolic processes in the system. Time and space forbid me to develop the matter to its fullest extent. But this I do urge: That the patient should be studied in all aspects and treated more on the broad principles of general medicine than simply by the various local measures at the time in vogue, commonly with the addition of arsenic internally. It would surprise the profession could they but know how universally this remedy is given by the general practitioner when anything whatever is wrong on the skin, and it would be even a greater surprise to know to what a very slight extent arsenic enters into the treatment employed by those best acquainted with and most successful in the practice of dermatology.

Much could be written on the evils of narrowness of thought and practice in this branch of medicine, and many illustrations could be given of the harm resulting from not studying cases thoroughly and then treating the patient in the directions indicated thereby, instead of by local applications alone.

As well might the neurologist give temporary relief to headache or sleeplessness by sedatives or hypnotics without searching out and removing the cause; as well might the oculist seek to improve the eyesight by glasses alone when syphilis had altered the deeper structures; as well might the laryngologist only relieve a tuberculous laryngitis by topical applications without seeking to overcome the cause by hygiene and proper remedies; as well might the orthopedist only support a lateral curvature by braces and expect satisfactory results, without employing means to strengthen the weakened muscles on which the condition depended; as well might the gynecologist expect to get good results by local treatment in a leucorrhoea which was dependent upon debility and constipation without relieving the underlying causes.

The proper treatment of certain diseases of the skin often involves the most extended knowledge and practice of general medicine; and he but poorly serves his patient who prescribes only a local treatment without fully going into the case and rectifying, as far as may be, the systemic errors which often play a great part in its production and continuance.

It would lead us far beyond the proper limits of this paper to treat fully of all the possibilities which might be presented in connection with the subject under discussion. But I may be pardoned, even if I traverse ground well known to many, in pointing out some of the more common aspects of the subject, as they are presented to me in daily practice. I will, therefore, briefly indicate the lines on which investigation and therapy should be directed in connection with many of the patients presenting diseases of the skin.

How large a proportion of the ordinary run of cases may require general constitutional treatment can be judged from the fact that out of 10,000 miscellaneous skin cases in the writer's private practice, recently analyzed, over 6,000 or more than three-fifths of all belonged to five of the more common inflammatory diseases of the skin, all requiring more or less of general treatment; while there were even less than 1,000, or not 10 per cent. belonging to the three classes of new growths, hypertrophies and atrophies, and only about 10 per cent. of syphilis and parasitic diseases together.

To correctly understand and properly treat a large proportion of the general run of skin cases, therefore, there is need of the physician considering the patient, briefly though it may be, in reference to the action of his entire system. Some of the points to be regarded we will consider under the following heads:

1. Digestive system.
2. Renal system.
3. Cutaneous system.
4. Nervous system.
5. Circulatory system.
6. Respiratory system.
7. Sexual system.
8. Anemia, gout, rheumatism, syphilis, malaria.

1. *Digestive system.*—It is hardly necessary for me to dwell much on the importance of attending to the digestive system in skin patients, for all will immediately recall the intimate relations which every one must have observed between digestive derangements and the skin; and the subject of auto-intoxication from the products of mal-assimilation has received much attention lately at the hands of Bouchard and others, and merits the most serious consideration.

Urticaria and acne furnish, perhaps, the most striking examples of auto-toxic skin disorder, as they are constantly seen to follow promptly upon digestive disturbances. But the same may often be observed in eczema, while psoriasis will frequently be seen to be more active when these occur, and the itching of pruritus is always augmented thereby; falling of the hair may continually be observed to occur with each attack of dyspepsia and even syphilitic skin lesions will frequently appear aggravated when the digestive functions are disturbed. In many cases, however, the connection may not be very apparent at first sight, and it will sometimes require considerable persistence to establish the digestive derangement which is at the bottom of the difficulty.

Primary digestion, either atonic or fermentative, often due to errors in diet and hygiene, is not very infrequent in these patients, but secondary and intestinal indigestion is more common. It is almost needless to remark that the condition of the tongue often affords a most valuable guide in regard to these disorders, and should always be studied, even when the necessity of regarding this aspect of the patient's condition does not seem apparent at first sight.

Constipation in a varying degree is perhaps the most frequent derangement, and is often the source of incalculable mischief in skin cases. But even this may not be easily discernible, for many patients are ignorant of what should be the normal action of the bowels, or are too careless or unobservant to report correctly at first in regard to this function: the affirmative answer so often given to the routine question "Do the bowels act regularly?" will not infrequently be found to be a long way from the actual truth, medically; that is, if it is desired to determine thereby whether the bowels are performing their excretory function in a perfect manner. Far too little attention has commonly been paid to the character and quantity of this excretion, and it is well recognized that there may even be a daily discharge from the bowels while the most extreme state of constipation exists, with vast amounts of concretions past which fecal matter may find exit. Time and space forbid entering more fully into this portion of the subject, which, however, is of the utmost importance in connection with many cases of skin disease.

Liver disturbance plays an important part in many skin disorders, as it does in those of other portions of the system, and should always be considered and treated in this connection. The great value of small and repeated doses of calomel and of nitric acid in many conditions of the skin needs only to be seen to appreciate this point.

2. *Renal system.*—Next to the exhalation from the lungs, that of the kidneys is the most important of all the excretions, as far as relates to the life of the patient. Its total suspension for a day is fraught with great danger, for a much longer period it is death. Its derangement is both a cause and a sign of disease. At the present writing no account is taken of organic disease of the kidney, for practically this is not very often found among skin patients. But functional disorder of the urinary secretion is a most common occurrence among those presenting diseases of the skin, and will often prove to be a very important element in their treatment; careful investigation of this function should never be neglected in skin cases of any importance.

It is not possible to enter here largely into the consideration of all the changes which may be found, and their significance in different cases, for many pages would not suffice to cover the subject, and a few hints must suffice.

Not only may transient albuminuria and glycosuria be of importance, and the grosser appearance of the urates, uric acid and the oxalates and phosphates have their significance, but the bile salts and pigments and indican may point to disorders requiring correction, while the percentage of urea is always an item worthy of consideration. This latter constituent of the urine, urea, suggests what is perhaps the most important element to consider in this connection, namely, the total quantity of the kidney secretion in the twenty-four hours, not only as relates to the watery element, but mainly as to the total solids, or excrementitious products which are thus eliminated, for it has been shown that urea bears only a certain relation to the other solids and to the toxicity of the urine.¹

While the acidity and specific gravity of separate specimens of urine are often of some value in the guidance of the case, the true indications of the workings of the kidneys can only be obtained from a

knowledge of the total amount excreted in the entire day and the estimate thereupon of the solid excreta. When thus tested it will be found that many patients presenting obstinate affections of the skin suffer from an insufficient kidney excretion, either as to its watery or solid constituents, or both, the relief of which will prove of the utmost advantage in managing the eruption on the surface. The researches of Haig and others have shown also, I think, conclusively that the relations of uric acid to the system are of the greatest importance, and have much to do with the production of disease in the skin, as well as in other organs; although few will entirely agree with all that author has claimed in this direction.

3. *Cutaneous system.*—The importance of the skin as an emunctory organ and as a regulator of the heat of the body should never be forgotten, and its general condition should always be inquired into and appreciated in connection with skin cases. It is well known that many general diseases have their origin in a chilling of the surface, or check of perspiration, and the relations between the excretion from the skin and that of the kidneys is well recognized.

Therefore the general condition of the skin, its harshness or dryness, the tendency or not to active perspiration with heat or exercise, are all elements which have much to do with the general health, as well as with special eruptions on the skin. It is not at all uncommon for skin patients to present some of these departures from health in the general expanse of the skin.

With these may be mentioned the general appearance as to sallowness or vascular derangement of the skin. The condition of the subcutaneous and adipose tissues is also important, with which may be mentioned the weight of the patient, whether there has been loss or gain, etc. It may thus be remarked incidentally that the weight of the patient is an element to be taken into consideration in connection with the dosage of internal remedies, even as age is to be considered in the therapeutics of childhood.

4. *Nervous system.*—Many observations of most careful clinicians have demonstrated beyond question the intimate connection between many affections of the skin and the nervous system, and even in many eruptions which are not distinctly recognized as "neurotic" great benefit may result from a proper attention to this feature of the case.

Sleep is one of the most important elements to consider in connection with many diseases of the skin, for without proper and refreshing sleep it will often be impossible to effect much permanent benefit. As the writer has recently discussed this subject at length² it will not be necessary to enter upon it very fully on the present occasion. Suffice to say, that while in certain instances the disturbance of sleep, as by itching or pain, will be a marked feature calling for relief; in a far larger number of instances the faulty character of the sleep will only be learned after some patient investigation. Very often it will be found to be dependent upon errors of assimilation and occasionally upon circulatory disturbance; sometimes it is purely psychic, and it may be that even external causes can be found, which, by preventing full and refreshing sleep, have contributed largely to the continuance of the eruption. A case has recently occurred to me where the prolonged illness of a child so disturbed the father's sleep that this formed an

important element in the continuance of a neurotic eczema on the backs of the hands.

Headaches are a very common symptom in those coming for the treatment of skin affections, being often closely related to the disease itself, and should always receive solicitous attention from the physician.

Neurasthenia, or a general nervous debility, is also very frequently met with in these subjects, and must be overcome, as far as possible, in order to obtain satisfactory results in many cases. There are many points in this connection which could be easily and profitably enlarged upon, but time and space forbid. In approaching a rebellious skin affection, however, due consideration should always be given to the condition of the nervous system.

5. *Circulatory system.*—While this may seem of less importance than some of the other portions of the subject, its bearing in certain cases is often very marked. Digitalis and aconite, as representing the therapeutics of two very opposite conditions of the circulatory system, may often, with other kindred drugs, play a very important part in the treatment of some skin affections. Palpitation and flushing of the head and extremities, as well as cold and clammy hands and feet, are constantly met with in connection with many diseases of the skin, and must receive attention, either as indications of other disorders or on their own account. Purpura is an affection where blood vessel disease is strikingly exhibited.

The indications afforded by the pulse are most important in many patients affected with disease of the skin, and the time-honored practice of judging of the patient's general condition by the character of the pulse should never be neglected in this class of cases.

6. *Respiratory system.*—While relatively little is known as to the variations in the performance of the work done by the lungs, or their effect on the general system or special diseases, there are often features relating to the respiratory system which may be of much importance in connection with some skin cases. The most notable illustration is the occurrence of tuberculosis, in the patient or family, in connection with which we find lupus, tuberculosis cutis, and forms of scrofulous eczema, etc.

But certain other conditions of the respiratory tract are also not infrequently found to be associated with or even related to diseases of the skin; such are asthma, hay fever, bronchitis, catarrh, etc., and in certain instances their existence and continuance may have a very important bearing on the case. The occasional alternations of asthma or bronchitis with attacks of eczema and psoriasis is sometimes very striking.

Chronic catarrhal conditions of the upper air passages may be observed in a very considerable share of patients with eczema and aene, and the continuance of this causing (as well as indicating) disturbance of the digestive tract will aid in making the case rebellious. In this connection may be mentioned the breath, which by its varied and often offensive odor may indicate various deranged conditions both of the upper respiratory passages and of the alimentary canal.

7. *Sexual system.*—The common observation of the development of acne at the period of puberty in both sexes, as well as the increase of the eruption at each menstrual epoch in females, especially in those exhibiting any disorders of this function, call attention to the fact of the relation between the skin and

² The Medical Record, New York, Nov. 20, 1895.

the sexual system. Instances are also multiplying in literature where other eruptions have been found to be distinctly dependent upon such relationship, and the present writer is constantly meeting these in practice. Perhaps the most striking example of all is found in what is known as "herpes gestationis," where, with each recurring pregnancy an acute, intensely irritating papulo-vesicular eruption appears, vanishing abruptly after the uterus is emptied of its contents.

The condition of the menstruation is, therefore, a very important one to consider in connection with many diseases of the skin, and the various disorders of it will often be found to improve greatly with the carrying out of wholly proper treatment for the latter.

Not only should the character of the menses be known and appreciated, but often physical or other changes in the female generative organs may have their influences in diseases of the skin, and should be rectified. Leucorrhea is also always of great importance, both as a sign and cause of weakness, and its existence should always be known and the trouble remedied. Also in certain females there may be an amount of pruritus vulvæ, perhaps dependent upon the leucorrhea, which may so depress the patient and prevent sleep to such an extent, as to prove a hindrance to the cure of the skin affection.

The occurrence of acne at puberty in the male, as already mentioned, shows that the sexual organs in this sex also have some, though less, influence on the skin. But the connection between stricture of the urethra and herpes genitalis and pruritus ani is also well recognized; and undoubtedly masturbation can cause rebellious acne. Sexual excess can likewise influence unfavorably many eruptions.

8. There remain yet several more general matters requiring consideration in patients with diseases of the skin. These are: 1, *anemia*; 2, *gout and rheumatism*; 3, *syphilis*, and 4, *malaria*.

1. *Anemia* is a fertile cause of many skin complaints, as it is constantly observed that many eruptions return whenever this state recurs; it should, therefore, always be recognized and treated when present. It is, of course, not infrequently associated with, or dependent upon derangements of some of the systems of the body which have been already considered, but very often it is due largely to erroneous diet and hygiene; the latter should always be very closely looked into and cared for in patients with diseases of the skin.

2. *Gout and rheumatism*.—These, as well as certain diseases of the skin, are often only the expression or result of some of the systemic disturbances which have been already considered; but as they may be such definite and commonly well-marked conditions, and represent such a well-recognized train of systemic changes, it is well always to know whether they have been present in the patient or his ancestors. Much has been written in regard to the part played by uric acid in many diseases, and it is certain that the recognition of the lithemic state, or *uricacidemia*, is of very great importance in connection with certain diseases of the skin. Whether we are to look upon the uric acid itself as the real cause of any of these troubles is still somewhat of an open question: certain it is, however, that it forms one link in the chain, or one easily demonstrable sign of the faulty metabolic process which may result in gout and rheu-

matism. Hence these diseases are important to recognize and treat in connection with many diseases of the skin. The beneficial results from the internal administration of salicylate of soda in some of them points strongly to a connection of this nature.

3. *Syphilis*.—This great poison has reached out until it has influenced countless lives, and today is represented by nearly 10 per cent. of all cases which come to public skin clinics, or appear in private dermatologic practice. It should, therefore, always be considered in all its possible bearings on this class of cases; although, fortunately by practice its features can generally be recognized without much mental effort and without much interrogation of the patient. But, on the other hand, caution is necessary not to suspect this cause too strongly in skin cases, for, as remarked, less than one-tenth of all cases are of this nature. When present, and properly treated, the results in this class of patients is most satisfactory, whereas, if unrecognized, but little benefit can result from local or wrong internal treatment.

4. *Malaria* is regarded by some as productive of many skin diseases, and certain cases of urticaria are unquestionably of this nature, and cured only by quinin in efficient doses. It is certain also that by its depressing effect and by the liver and other disturbances which it may cause, it can act prejudicially in many diseases of the skin. It should always be looked for and treated when present.

There is very much more which could be said with advantage, both in connection with the points already considered and with many other items pertaining to the general medical relations of diseases of the skin. But already this paper has probably far exceeded what many would have expected from the subject. Enough has been said, however, to show that dermatology is an important study, not only because of the great interest which the varied conditions of the skin may present, but also on account of the very many vital relations which they may bear to other disorders of the economy.

It is quite probable that much that has been said is entirely familiar to many present, but, unless I am much mistaken, these principles are not universally put in practice in connection with the ordinary treatment of diseases of the skin. As remarked at the opening, local therapeutics has been so much advocated and arsenic is so universally believed to be "good for diseases of the skin," that the former are too often pushed to an unreasonable extent and the latter is too wholly relied on. In many, many instances, as my notes of cases abundantly show, Fowler's solution has been the only internal remedy which had been previously prescribed, even when proper investigation showed the most palpable departures from health, which were of the greatest causative importance to the eruption.

To be a good specialist in dermatology, or in any other specialty, one must be a good general practitioner. The specialist who confines his study and thought only and exclusively to his own branch, and can not or does not embrace the entire field of general medicine, can never succeed in the highest degree, and certainly can not serve his patients in the best manner possible.

I beg to assure my hearers that all this has not been written in any captious spirit, nor from any theoretical standpoint. All that has been said comes from the practical experience of over a quarter of a century

contact with just such conditions as have been mentioned, and all is written from a profound feeling and belief that only by proper attention to the matters here indicated can the most good be done to those coming under our care with many of the diseases of the skin.

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DIABETIC COMA AND THE TREATMENT OF DIABETES MELLITUS.

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The disease diabetes mellitus has long furnished the science of medicine with some of its most difficult and obscure problems, one of the most interesting of which is that symptom-complex called diabetic coma, which in many instances brings this affection to a fatal termination. It was at first believed that this condition was induced by an effusion of serum into the arachnoid but later investigations failed to confirm this theory. The idea was then advanced that the phenomena of diabetic coma were due to the action of some toxic body on the organism and a large number of substances have from time to time been considered as the essential factors in the production of this condition. Urea was long believed to play an important part in this as in other affections characterized by marked nervous and cerebral symptoms. Repeated experiments have shown, however, that if free diuresis is maintained, as is the case in diabetes, it is almost impossible to produce any untoward symptoms by the injection or ingestion of this body. It has been repeatedly shown that urea, under such conditions, is no more toxic than common salt. Frerichs then advanced the theory, on observing the presence of large quantities of ammonia in the urine previous to or during the occurrence of coma, that coma was produced by a so-called ammonemia, the ammonia being produced from the uræa by an abnormal ferment by which it is broken up in the production of ammonium carbonate. Experiments on animals, however, showed that enormous quantities of alkalies could be tolerated by the system without the production of any severe symptoms, although it was possible to produce convulsions by the continued injection of large amounts of alkalies. About the same time Petters (*Prager Vierteljahrsschrift*, 1857, III, S. 81) noticed the occurrence of acetone in the urine of certain cases of diabetes and believed that this body was the cause of the peculiar odor of the breath and urine in certain cases of this affection. Acetone, however, is by no means present in a large proportion of cases of diabetic coma and is symptomatic rather of the early stages of diabetes. It was soon shown by Kussmaul that doses of from 4 to 6 grams continuously administered had no harmful effects whatever. Experiments by the writer showed that single doses reaching as high as 36 gm. had but slightly stimulant and intoxicant effect upon the system.

Gerhardt (*Wiener Medicin. Presse*, 1868, No. 28) then discovered a reaction which he believed to be due to the presence of ethyl aceto-acetate, a body which was soon shown to possess no toxic properties whatever. It was then advanced that ethyl aceto-acetate was toxic from the free acetone which it yielded in its decomposition, but the harmlessness of the latter body in the system was soon after demonstrated,

while later proof that ethyl aceto-acetate did not exist in diabetic urine showed the entire falsity of this theory. Diacetic acid, the body which gives the well known reaction with ferric chlorid in the urine of these cases, was soon after discovered by Tollens and more completely investigated by Jaksch ("Ueber Acetonurie und Diaceturie," Berlin, 1885), who in almost every case of diabetic coma was able to demonstrate its presence in the urine. He believed that it was formed in the intestine by the union of acetone and formic acid and attributed to it the production of diabetic coma, in what way he was unable to state. Experiments on animals and men, however, made by Frerichs and Kussmaul (*Deutsch. Arch. für klin. Med.*, 1874, S. 11) have shown that 10 to 20 gm. of this acid could be given in health without the production of any grave toxic symptoms and that it therefore possesses no poisonous properties in itself. It is interesting to note that after the administration of such large doses of this acid none whatever appeared in the urine although considerable amounts of acetone were present, thus showing that in the healthy organism a higher oxidation of this acid takes place.

"About this time investigations made by Coranda and Halleworden proved that the ammonia in the system fulfills two functions: 1, to contribute to the formation of urea, and 2, to neutralize all acids introduced into the system or produced there in the metabolism of the organism. It was also demonstrated by them that the ammonia excretion furnished an exact estimation of the acid out-put. On extending these researches to various morbid processes it was found that in certain fevers, etc., there was a great increase in the ammonia excretion, the patients becoming carnivorous by feeding upon the albumins of their own systems. In diabetes especially very large ammonia excretions were noticed, showing that in such cases there was a great excess of acid produced in the system which was neutralized by the available ammonia of the organism. At this point Stadelman, Minkowski and Külz discovered in the urine of diabetics with a large ammonia excretion an acid heretofore unknown, which was found to be identical with beta-oxybutyric acid. It was noticed that patients with a large ammonia excretion were especially liable to die of coma and this suggested to Stadelman his theory that diabetic coma is an auto-intoxication, produced by an excess of acids within the body. So he at once began a series of experiments upon the introduction of acids into the circulation, using only those which could be potent through their affinity to alkalies and which in themselves possessed no toxic properties. The moment such an acid enters the circulation it attacks the first alkali available. In the case of man and the carnivora this will be the ammonia, in combination with which it becomes inert and is thus carried out of the system. Herbivorous animals, however, have no such ammonia production and the acid must at once attack the sodium and potassium of the blood and tissues. By such injections it has been found that symptoms identically resembling those of diabetic coma can thus be produced in those animals and that a prompt neutralization of this acid by a further injection of alkalies will at once restore consciousness. It has been therefore believed that after the production of the acid bodies in diabetes for a certain time they are neutralized by the available ammonia. At last, however, there comes a time when the production of ammonia can not keep pace with

the acid production, the fixed alkalies are attacked and diabetic coma due to acid toxemia is the result" (Graves, in *Proc. of Conn. Med. Soc.*, 1889).

This theory of the origin of diabetic coma is undoubtedly in the main correct, but diacetic acid as well as oxybutyric acid is to be regarded as a co-agent in the production of coma. In a specimen of diabetic urine examined by the writer 76 gm. of diacetic acid was found by the method given in a previous paper. This amount of acid was excreted during a period of only six hours and it is readily seen that the twenty-four hours excretion might easily reach 125-150 gm. When it is remembered that this quantity of acid is equal in acidity to about 70 gm. of concentrated sulphuric acid it is understood what an enormous amount of ammonia would be necessary to render it inert. As was stated in a former paper, over 16 gm. of ammonia was present in the six hour sample of urine which showed this remarkable acidity and it is evident that the production of such extraordinary quantities of ammonia could not be long maintained. The patient passing this sample of urine died from pneumonia about 48 hours afterward. In regard to cerebral symptoms, it was often noticed in the case mentioned that they varied directly with the intensity of the ferric chlorid reaction; that they appeared synchronously with the appearance of this reaction and almost disappeared upon the ferric chlorid test becoming greatly diminished while under a mixed diet. The cessation of the intense cerebral symptoms, on allowing carbohydrates in moderation and accompanying the decrease in the excretion of diacetic acid, was most marked. From a condition bordering on coma the patient within a few hours regained the use of faculties entirely, while his headache, vertigo, neuralgia, etc., either disappeared or greatly improved.

While it is believed by the writer that the theory that diabetic coma is due to an acid intoxication is correct, there are various bodies and processes which must also receive consideration. The great tissue oxidation in diabetes is closely allied to, and resembles, the katabolic changes in certain high and exhausting fevers. In fact, from their close resemblance in this respect, diabetes is essentially a fever without temperature. The urines of such affections, besides containing acetone and diacetic acid in quantities which in general are not sufficiently great to induce coma, contain various alkaloids which have been shown to possess exceedingly toxic properties. In diabetes, the leucomain creatinin has been found to be greatly increased in amount and it is believed that an excessive production of toxic alkaloidal bodies may contribute to the production of diabetic coma. The shock to an already depressed nervous system, caused by an excessive metabolism and the presence in the blood of large amounts of effete material must also be taken into account. Coma diabeticum, therefore, should be regarded as directly caused by a toxemia resulting from an abnormally excessive decomposition of albumin, both systemic and ingested, and its occurrence should therefore be retarded or prevented by limiting such albumin decomposition as far as possible.

In the treatment of simple glycosuria all exciting and predisposing causes should be discovered and removed. All nervous excitement should be carefully avoided and a tonic treatment combined with plenty of sleep, moderate exercise and hygienic living, should be instituted. There need be no exclusion of carbohydrates from the diet under any circumstances.

The treatment of diabetes mellitus, it can not be too strongly insisted, should not be directed toward the elimination of the sugar present in the urine, but rather toward the abnormal metabolic changes by which this sugar is produced. As should be most evident, the mere presence of glucose in the urine does not constitute the disease but rather the morbid conditions under which the excessive production and consequent presence in the blood of this abnormal quantity of sugar is rendered possible. What the writer believes these conditions to be has been detailed in a previous article. The severity of a diabetes is not therefore to be estimated according to the quantity of glucose excreted but rather by the rapidity of metabolism, digestive disorders, abnormal and toxic constituents of the urine and finally, of the greatest clinical importance, the cerebral and nervous symptoms. It must be remembered that the sugar excreted is only a symptom of the tissue katabolism going on within the organism, provided the patient is ingesting considerable quantities of carbohydrates. If on a proteid diet, he may still be diabetic and yet for a time excrete no sugar, it being produced from albumin within the capacity of the system to completely oxidize it. If ingesting carbohydrates and excreting no sugar the patient can not be diabetic. It has been shown in a former paper that the asthenic and toxemic condition of the diabetic is due to an excessive metabolism, partly induced in the natural course of the disease and furthered by artificial conditions of diet. Such being the case the treatment of diabetes will have one great indication—to retard and prevent as far as possible any excessive oxidation of albumins, either ingested or systemic.

In regard to diet, as has been shown, a strictly proteid diet, instead of removing, may even increase the dyscrasia of a true diabetes, nor, in advanced cases, will it be efficacious in its only object, the disappearance of sugar from the urine. As the effects of a rigid proteid diet have been detailed in a previous paper, it will only be necessary in this connection to state that a purely proteid diet should under no circumstances be employed. Foods of all varieties, provided they be nutritious and wholesome, should be allowed, although of course no excesses in eating should be permitted. Moderate amounts of carbohydrates in the form of bread, oatmeal, or rice should be by all means encouraged. Alcohol in moderation should be given, both on account of its stimulant and supporting properties as well as its well known power of retarding tissue metabolism. Moderate exercise should be directed and cheerful society insisted on to prevent the patient, as far as possible, from falling into that condition of melancholia and nervous depression which so frequently accompanies this affection. Sleep should be induced, if necessary, by hypnotics. The bowels should be kept open by laxatives or enemata, and any treatment having the slightest tendency toward depressing the system should be most carefully avoided. As for medication, since diabetes is essentially an affection due to an exhausted and depressed nervous system, tonic doses of phosphorus would be indicated. Strychnin from its well-known action of promoting metabolism, should be avoided. All drugs which have been shown to retard metabolism are indicated. Among these are antipyrin, codeia and arsenic. An advanced case of diabetes, however, should in our present knowledge be looked on as an incurable affection and the attention given to conserving the strength

and resources of the patient, delaying tissue waste and as far as possible lessening the liability to coma.

With regard to diabetic coma the writer does not hesitate to state his belief that an exclusive meat diet is in many cases entirely responsible for the occurrence of coma and that in a large majority of cases a fatal ending by coma is hastened by artificial and abnormal dietetic conditions. The treatment of coma, therefore, should be prophylactic and identical with that directed toward a retardation of albumin decomposition, since it only occurs through the action of the toxic by-products resulting from an excessive metabolism. Should, however, the coma be threatening or actually induced it has been recommended by Stadelman and Kirstein (*Wochenschrift für prak. Med.*, 1889) to employ at once large intravenous injections of alkaline solution, say 30 gm. of sodium carbonate in one liter of distilled water. This treatment has two objects, first, to neutralize any free acid which may be present and, secondly, to keep the blood in a normal condition of fluidity and dilute, so to speak, any toxic agents present. This injection should be slowly continued as long as the pulse of the patient shows toleration or until the urine excreted becomes alkaline. If necessary it should be repeated. This treatment should be employed as early in the coma as possible, since the chances of success decrease progressively with the length of time during which the coma has existed and consequently the length of time in which the oxy-acids and other toxic bodies have acted. This treatment of coma has been tried in a number of cases with only a small proportion of permanent recoveries but with general improvement and returning consciousness in nearly all these cases, the consciousness in many instances continuing for as much as 48 hours. These patients, after regaining the entire control of their faculties, again relapsed into coma and so died. This was explained by Minkowski (*Deutsch. med. Woch.*, Nov. 1889) on the ground that an almost irreparable damage had been done to the nervous centers upon the induction of coma. He advocates this treatment in all cases in which there are severe cerebral symptoms.

Intercurrent affections should be considered without reference, in most cases, to the existing diabetes and should be treated according to the complications and indications which may arise. Diabetes brings in its wake no secondary affections except such as may be induced in any exhausted and non-resistant organism.

SURGERY ONE HUNDRED YEARS AGO.

AN HISTORICAL STUDY

BY DR. GEORGE FISCHER.

DEDICATED TO THE GERMAN SURGICAL ASSOCIATION.

TRANSLATED FOR THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION
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VII.—THE RISE OF GERMAN SURGERY UNDER AUGUST
GOTTLIEB RICHTER.

(Continued from page 1025.)

Göttingen at this time was full of animation. Heine was summoned from Saxony to follow out Winkelmann's ideas regarding ancient literature. By studying the same he wished to cultivate the heart and the mind and awaken a taste for all that is beautiful and good. As one of the first men, Germany owed him a renewal of the literary studies and a coterie at Göttingen, who upon German education exercised an immense influence. Moreover, there were

the bright sparks of humor scattered by the highly talented Litchenberg, who, of Richter's age, was a professor since 1770. There was also the Göttingen alliance formed about this time (1772), who lay a certain amount of claim to the resurrection of the national literature. That Richter showed an interest in the poetical effusions of Voss, the two Stollbergs, Bürger and others, and that he was a friend of the poets, like his colleague, Kästner, the mathematician, nothing is said. Nor that he was also a friend of the king's sons and of the Dukes of Cumberland, Cambridge and Sussex, who studied in Göttingen from 1786 to 1791. Soon a great literary activity was displayed among the entire medical faculty of Göttingen. Besides Vogel and Richter, Murray, Baldinger and Blumenbach began the publication of their journals for specialists.

Gradually Richter's lectures covered more ground, also that of medicine, and during the years of 1770-1790, when he had obtained his prime of life, his courses were on the following topics: 1. Special therapeutics every day for half a year, that is, during the winter term on acute, during the summer term on chronic diseases, at first making use of Gaubius' theories. 2. Surgery, on which he lectured daily for half a year at the hospital; in winter on medical and in summer operative surgery, "so that he practically demonstrated the same." 3. Ophthalmology daily, sometimes privately, sometimes publicly. 4. Diseases of the bones, during the winter session twice every week, open to the public. 5. General therapeutics. 6. Semiology. 7. Dietetics, publicly. 8. On directions given daily in the hospital for clinical, practical exercises. Now and then, during the first few years of his courses he lectured on several chapters of physiology and guided examinations in surgery. When more advanced in age Richter continued principally his medical lectures and discontinued those on surgery, held for six months at a time, and only occasionally gave a lecture on ophthalmology; hence Arneemann delivered lectures on parts of surgery, of instruction in operations and instruments, of syphilis and of diseases of women and children; and Wardenburg lectured on instruction in bandaging and surgical medicines, pharmacology and on legal medicine. Himly taught special pathology, ophthalmology, also medical surgery. C. M. Langenbeck, anatomy, instruction in operating and bandaging, ophthalmology, on diseases of the bones and directed courses in operating on cadavers. This subdivision of the lecture courses, as well as the establishment of various clinics, lessened the professorial duties of Richter as he grew older. His success as general practitioner grew day by day; those who were given up by others came to him as a last resort. Patients from distant lands, and even princes sought his advice. He was especially noted for his gentleness of touch in operations.

In the summer of 1786 he undertook a trip to Switzerland and France. While in Paris he attended the meetings of the surgeons. He arrived in Vienna in the month of September, 1802, and was present at the sessions of the Joseph's Academy.

When Richter became a regular professor he married the very beautiful daughter of a ship-captain, Hoop, and lived very happily in the corner house on Jüden- and Kupfergasse, with his dear Jettie, who was very fond of wearing a string of real pearls in her hair above her forehead. She was unedu-

cated, fighting a continual battle with foreign words; furthermore, she was penurious, although she entertained much and put on great style. She died in Göttingen in the summer of 1833. Three children were born to them: Augusta Louise in 1772, Christiana in 1775 and George August in 1778. The latter became professor of medicine in Berlin and Königsberg, where he died in 1832.¹

The daughter, Augusta Louise, married, on Christmas, 1792, the Crown Prince of Saxony-Weimar's privy counselor, body physician and medical science professor of Jena, Justus Christian Loder.²

Of Richter's personality we know but little. His portrait,³ which was taken in his 54th year, and which was presented to him by his pupils, shows a powerful face with marked features, having a pleasant, good-natured expression. His friendly countenance, as well as his agreeable and polished way of speaking greatly captivated his patients. Goethe, who met him in Pymont in 1801 in the company of Prince Sanguszko, who was suffering with sore eyes, described him as, "Always being in the most amiable mood, full of dry humor, teasing and bantering, now ironical and paradoxical in his remarks, then again deep and sincere." The sunny side of his more advanced years is also shown in the following humorous letter:

GÖTTINGEN, Aug. 25, 1807.

My Dear Mr. Counselor Runde:—With pleasure I accept your invitation to assist in the coming operation of the "driving out" of his Satanic Majesty and the "driving in" of the Holy Ghost into your recently born daughter, and I will not be found wanting, in case his majesty should show a disposition to defend himself. For this operation you could not have chosen a better assistant, for you are aware of my religious spirit and know that I am somewhat experienced in operating. But I do not as yet know whither we will chase Satan, for he must have an abode somewhere, as we are not capable of depriving him of his existence. To send him, in the usual way, to the herd of swine, we do not dare, because they might become rabid and plunge into the water where they would drown and we would have to pay for them—unfortunately the times are too hard just now for such extravagance.

Yet you have a good sturdy baptizer. For in the end he must be excellent when called upon to bear the brunt. To say that I felt good about the matter I would have to lie about it. The girl is to be named Lenore, and I do not know how it is, but the name Lenore always makes me shudder a little. The Devil seems to especially approve of the Lenores.

For the rest I heartily congratulate you on the increase of your family and am delighted to hear that Hanchen is so well.

Here, we do not know ourselves how we are. Today Martens and Blumenbach go to Paris as representatives of the Academy to make their obeisance to the King of Westphalia. My wife sends her best regards. Your obedient servant,

A. G. RICHTER.

¹ George August was educated under his father's strict supervision for the medical profession and in the year 1800 received from him his doctor's degree. He was then sent on a journey for five years, his father's fame procuring the warmest welcome for him everywhere. Much of his time he spent in Vienna with P. Frank and in Paris with Dupuytren, who was then beginning his brilliant career. Returning home, he complied with his father's wishes and went to Prussia, passed the state examination in Berlin, where he settled as practical physician in 1805. A few years later when the university was established he received the appointment to deliver lectures on general and special therapeutics, etc. In 1813 he enlisted as military physician in the war against France, directed the hospitals at Torgau during the following year, and after the close of the war became regular professor in Berlin. Then he accepted a similar situation in Königsberg. In 1821, where he established a medical polyclinic, which he conducted for eight years at his own expense, until he obtained a subsidy. He died of apoplexy. His quiet but persevering activity, his uninterrupted diligence, enabling him to publish a work of several volumes in a short time, deserve special mention. His daughter, Frau von Hannecken, lives in Berlin at the present time.

² It is said that this union with the widower was an unhappy one, for when Loder, who was rather extravagant, went to Russia, Augusta Louise's parents forbade her from going with him and protected her property by a deed of feoffment. Mrs. Loder never saw her husband again, and afterward lived with her mother in Göttingen. Her daughter Bertha married a Herr von Lützow in Schwerin; her son August died in 1813.

³ Drawn by Schulz and engraved in copper by Lips. Other portraits of him are found on the frontispiece of his fifty-second volume of the "Allgemeine Deutsche Bibliothek" and of his "Manual for Physicians," which appeared in 1783, and one was done by Schwenkerley in 1792.

Richter was a trifle egotistical and was wont to estimate everything according to the advantage to be derived therefrom; being naturally rather self-conscious, he was gratified with his own art. Yet he never mentioned his achievements for German surgery, nor spoke of his brilliant cures, a very common practice among lesser lights. If the reader is not fond of anecdotes, he may pass over the following trivial occurrences: When Professor Hegewisch of Kiel, afterward counselor of the University there, attended Richter's lectures and told the same where he was from, his teacher answered that in passing through that region on his way to Sleswick (to attend to a cataract operation at the court of the Landgrave of Karl von Hessen) he found it to be a dreary and barren tract of country. Hegewisch replied that the rear of the Duke's estates was, indeed, only prairie, but along the coast the land was very fertile and the scenery of various portions grand. Thereupon Richter replied: "Like an old coat with laces." About the year 1780 the well-known physician, Olbers of Bremen, received a letter from him, "written in the usual rude style, concerning nothing but an intended cataract operation." There are eight specimen letters of but little importance in the Göttingen library; the following written by Richter when a young professor, was a complaint made to the rector of the University against Surgeon Tolle for his bungling cure and improper conduct, of which he himself had been accused:

GÖTTINGEN, Feb. 29, 1768.

Magnificæ Academicæ Prorektor:—Your excellency will kindly permit me to communicate a case which seems to demand your attention. Three weeks ago I was summoned by a woman whose name is Kayserin and who had the previous day fallen heavily on her left arm. She had immediately called in Surgeon Tolle, who, after having looked at the arm, told the patient that it was broken in three places, whereupon she was terribly frightened. Then he put a thick compress lengthwise on the inner side of the arm and a similar one on the outside, and around these tightly wound a bandage at least eight yards long. Soon after this dressing the pains increased, the arm stiffened and, especially the hand swelled so that it turned blue, and Mrs. Kayserin was compelled to send again for Surgeon Tolle the same evening to change the bandage and relieve her pains. But he did not come until she had sent for him two or three times, and then did nothing more than loosen the same a little. The following day the patient summoned me: found the arm in the condition mentioned above and the hand still very much swollen. After a careful examination I told her that the dressing was wrong and harmful, that the bone had not been fractured. This statement gave her courage and confidence and she requested me to undertake the cure, which I promised to do. Mr. Tolle did not visit her, but sent word that he ought to know best when the arm needed bandaging. On the third or fourth day the patient notified Surgeon Tolle that his services were no longer required. On hearing this Tolle hastened to her home and entered her room so boisterously, keeping up such a tirade and stamping with his feet for an hour that the poor woman, who is consumptive, trembled from head to foot with fright. Among other things he said she treated him like a boy. When she told him I had assured her that her arm was not broken he said: "If it were broken, could I not cure it as well as Professor Richter?" He had to be a professor, too, some day. A few of the bandages which I had loosened and thrown onto the table he snatched up and hurled them out of the window on the street. Yes; even those which the patient had around her arm, he wanted to tear off and throw them out. Seeing a prescription which I had written for her on the table he asked who wrote it. The patient replied, "Professor Richter." He took the recipe, put it into his pocket and said she should get his compounded. To say nothing of his improper language; that he behaved unmanly to the patient and other people in the house will bear witness to. The honorable body physician, Vogel, and his students, to who I presented my patient a few days ago, can testify that the arm was neither broken nor sprained. I believe that this case should have your excellency's attention, for not only did Surgeon Tolle frighten and deceive his patient with his incorrect statement of an existing fracture, but also

increased the harm done to her arm by his unskilful bandaging. Furthermore, through his boisterous actions he caused the patient's condition to become very critical a few days afterward, when she suffered with fever, sleeplessness, sweats and other afflictions; so that I had considerable trouble to bring her about again. Besides, I believe I have good reasons to demand satisfaction from Surgeon Tolle on account of his disgraceful language and behavior toward me, and all the more, inasmuch as this is not the first time that I have caught Tolle with such improper conduct. I leave him to your judgment, your excellency, and remain your excellency's obedient servant,
AUGUST GOTTLIEB RICHTER.

Until he grew quite old Richter enjoyed sound health, with the exception of a few attacks of gout. During his activity at the hospital he became very sick with spotted fever by infection and attributed his recovery to purgatives alone. Podagra he declares to have had at least fifteen times in *optima forma* contracted by cold or fright, usually in the joint of his big toe; yet he did not consider himself gouty. Ever a poor pedestrian, his feet pained him after short tours. After a serious inflammation of the joint of the middle finger, the same always remained thick and stiff. The attacks of gout were often so painful that, when he traveled to Cassel to attend a patient, he had to be lifted out of the vehicle, but taking a few glassfuls of strong, old wine, he was able to walk with ease to his patient's home an hour and a half later.

His fame spreading more and more, his honors grew apace. Several times he was elected prorector; in 1770 he became an associate and in 1776 an active member of the Royal Society of Sciences. In 1780 he was appointed body physician and two years later from the Palace of St. James he received a patent from George III. as follows: "We certify and acknowledge that We, in behalf of the learnedness and other good qualities Our body physician and professor medicine of Our University Göttingen, August Gottlieb Richter, commended to Us, have shown him the grace of bestowing upon him the designation of Our Privy Councillor." He had the title of consulting physician of the king of Westphalia, which honor he shared with unimportant men and hence was no honor. Several of the learned men dictated their works to him; for instance, Privy Councillor Nicolai, the first volume of his "Theoretical and Practical Treatises"; Wardenburg dedicated a portion of his translation of the Desault bequests, published by Bichat, and in no friendlier and more sincere way could he have expressed his gratitude to his dearest teacher. Abroad, Richter was the best known German surgeon. Perusing the first pages of Samuel Cooper's "Dictionary" we can see how often his name appears in connection with various articles. This frequency was also caused by the translation of several of his works. From the years 1775, 1777 and 1792 on we find him recorded as a member of the Royal Swedish Academy and the medical societies in Copenhagen and Edinburgh. To show his gratitude he dedicated the first volume of his "Medical and Surgical Remarks." In 1806 he became a member of the Society of Medicine in Paris.

His prominent position brought him in contact with the best contemporaries. At Göttingen the most friendly relations existed between him and Blumenbach, living together almost forty years. The dedications of his works disclose to us with what men he was on intimate terms. They were: A. V. Haller, Acrel, Theden, C. C. Von Siebold, Voitus, Leber, Starke, Rougemont, Bilguer, Weidmann, Morenheim, Hartenkeil, Goerike, Brüninghausen, Plenk and

Stoll. Although his life in general was very peaceful and flowed along without any great and shocking events to disturb it, he, too, had to learn that dogs bark at him who rides fast. But what man of talent has no enemies? We smile at him who follows in the path of science only at a distance; he who walks apace is looked at repugnantly and he who outstrips the others is despised. During the first years of his professorship Richter could not get along with Baldinger, who became regular professor of medicine in Göttingen in 1773 and was Richter's colleague for nine years. Also as a critic, he was not spared the petty literary attacks. These began with the first volume of the *Surgical Quarterly* by Professor Henckel of Berlin, whom Richter took to task, saying that the first part of his treatise on "Surgical Operations" had been carelessly written and with too little consideration, regardless of arrangement and connection. The second part he found executed in the same manner as the first; then passed a similar judgment on the third, and of the fourth he simply said: "It is the same old story." These disparaging criticisms from the pen of a young surgeon, which were severe yet always genteel, the old gentleman, Henckel, did not wish to stand and defended himself with a sledge hammer:

"The learned Professor Richter, the only one who censured me! Gently, gently. Professor! I honor you as a learned man! also as a surgeon; but *quantum est quod nescimus*. How can a learned man write so ungentlemanly! You live at one of the most famous universities and are daily surrounded by the most learned and most famous men! What will these gentlemen think of your great babble? Were you not a member of the same and did I not deem it a disgrace to myself, I would pay you back in your own coin. My dear Professor, I honor you on account of your numerous achievements. Do away with such baseness and vengeance! They do not improve the sciences. Drop all nonsense of that kind. Had I insulted you in my writings, you might have quoted those parts and published my superficiality in science whereby you would have obtained the greatest satisfaction from the learned profession; but you should do it in a wise way, that is for irrefutable reasons in honor of the profession and for the good of science. *Hic Rhodus, hic salta*. But I was amazed to find that you dared write such remarks about me. Do you know who I am? (Pardon this question.) Do you know what once happened to that newspaper editor? But I will here leave the matter and assure you that you will not have cause to fear anything further from me regarding the above. (Treatise on Surgical Operations—Part 4, 1772.) "Your friend."

It is a noble trait of Richter's character, that a few years later, after Henckel's demise he wrote the following magnanimous laudation: "This is the last writing of a very active, skilful and learned practical surgeon, of an experienced man, well read and full of enthusiasm for his profession, who, regardless of the lack of a few literary talents, achieved much for German surgery and whose memory I cherish and recommend to my readers, unmindful of the few literary disagreements Henckel and I had."

Another opponent who would not endure Richter's criticism was Professor Alix of Erfurt, who insulted him in the most vulgar fashion. But the young Göttingen professor did not allow himself to be disturbed thereby. Later he once more became involved in a violent quarrel, which his enraged opponent carried on with intense coarseness. In 1793, when the fourteen year old Prince von Wied had dysentery and was treated by the court physician, Hartung, with opium, he nevertheless grew so much worse that the court physicians Brüning and Wendelstädt of Wetzlar, were consulted. Both greatly opposed to opium, could not agree with the family physician, and believed that the sleep which had set in was due to the 100 grains of opium administered by Hartung and calumniated him as a poisoner throughout the city. Hartung appealed to Richter, who had recommended the use of opium

in cases of dysentery in his "Medico-Surgical Remarks," only a little while before this occurrence. Hartung acquainted him with the facts and begged his advice. Richter approved of Hartung's course, whereupon the latter very indiscreetly published his letter without his knowledge or consulting his wishes. This so enraged Wendelstädt that he wrote Richter a series of six letters, so immoral and so indecent that they were left unanswered. In 1794 Brüning published this filth in his work on the injuriousness of poppy juice in dysentery. He deserves that his name be blotted out entirely and it is sufficient for us to know that Richter came out victorious, having, as always, conducted the strife with great moderation. Unfortunately, this incident resulted in Richter, whose works had always been received with great enthusiasm, ceasing all publications henceforth. That he allowed himself to be discouraged and that he wrote no more, was weakness on his part, in spite of the great wrong done him; for he was only 51 years old.

His son admits that the bitter controversy, which his recommendation of opium, in cases of dysentery, had occasioned was the cause that the second volume of his "Medico-Surgical Remarks" did not follow the first directly. During the latter years of his life, the old gentleman loved peace; this is probably the reason that we have not heard of his interference in the frequent strifes among the students which took place at Göttingen during the period of 1790 to 1808. He disliked nothing more than literary strifes that afterward became personal onslaughts. Repeatedly his son begged him for the manuscript of the second volume until 1811, when his father finally yielded and sent him the same to Berlin accompanied by the following lines: "These matters were really intended for the second part of my 'Medico-Surgical Remarks'; however, I no longer have a desire to publish books and look upon my literary course as closed. Now-a-days if one wishes to please as an author, he must write in high-flown language; clearness and distinctness are no longer liked; but I can not do so and care not to learn it in my old age; thereby most physicians wear the spectacles of their theory on their noses, do not believe what they can not explain in their studies, but believe absolutely everything that belongs to their system; they are deaf to all carefully considered experiences. I therefore present you with this manuscript and permit you, in compliance with your wish to have the shorter treatises published in the 'Journal' of your friend, Professor Wolfart." When a year after the death of his father, the son faithfully published this part without any additions whatever, the book was universally considered invaluable throughout Germany. Richter became prematurely old. Had Richter been able to follow out the great ideas which threatened to overthrow all the old ones in England, then he would not have permitted his activity to be stayed by the younger, but unimportant surgeons, like Arnemann and Wardenburg, nor by the rising Langenbeck. Thus it was that in his more advanced age, he was more physician than surgeon.

Although over 70 years of age he was still very active and almost over anxious about the care of his health. Having suddenly taken ill with a severe attack of hepatitis expodagra retropulsa, he died within a few days, on the morning of July 23, 1812. For forty-six years he had been a professor at Göttingen. With the words "festively buried," found in the church registry of July 26, ended the story of his

earthly career. Where his grave is, is uncertain. Just so much recollection remains of it as Hamlet's grave-digger had of Yorick, the king's jester, whose skull he recognized after twenty-three years, and the two grave-diggers at Göttingen would at least know whether the monument with the inscription, "Privy Councillor Richter," placed in the Albin Cemetery a few years ago, marked the true resting place, or whether the burial in the family vault in the St. Johannis Cemetery was really that of Richter's body. On August 22, for the departed one, Professor Mitscherlich, in the name of the Akademie, held memorial services, which he accompanied with Latin verses composed by himself (Piis manibus A. G. Richteri pia Acad. Georgia Augusta). A meeting was called for October 24 by the Society of Sciences expressly in memory of the deceased members, Heine and Richter; the latter's friend, Blumenbach delivered the memorial address.

Surgery in Germany owes its elevation and progress to Richter. Yet those who are anxious to see great discoveries by which the territory of science has been extended or guided into a new channel, seek in vain, for Richter's researches did but little to promote surgery. His achievements lie scattered throughout various fields and are, therefore, less sharply brought to light.

Richter was the first German to assimilate the ideas of French and English surgery and bring German surgery abreast with the times. In that respect he was an exception to the field surgeons' methods, which then still clung to the German surgeon and from which even C. C. von Siebold, Theden, Schmucker, Langenbeck and Brünninghausen could not be exempted. He rose far above these and became a model for Germany. He comprehended all that had been accomplished by the Parisian Académie de Chirurgie, but also much that had been suppressed in the bud. Richter knew of the great rise England owed to the founding of the Royal Society, to Wren, Newton and Stephen Hales: he was familiar with the best everywhere, with one exception. He did not appreciate John Hunter. This was a weakness of his. After Haller's astonishing works, he ought to have achieved more; outside of a scissors, he did not invent or discover much, but he combined and completed what others invented and discovered and transplanted it on German soil. This was his great work, of value only to Germany, but which earned for him a most honorable position. His sound and pointed judgment, his thorough but modest critique, combined with the spirit of truth and the freedom of science, were the means by which Richter exerted such vast influence over the scientific world of Germany. But before the shapeless, yet giant hand of a John Hunter, and even before the reforming spirit of a Desault, whom Richter himself acknowledged as the greatest of the then living surgeons, he had to withdraw.

Richter simplified operations.—While Heister had recommended a chaos of ill-shaped and useless instruments, Richter considered this outfit mere display, and thought it greater skill to perform the various operations with the scalpel alone. But he was ever ready to accept a new good instrument, and bade his colleagues and scholars to purchase for him anything truly useful which they might come across in their travels. He added nothing new of any consequence, for his were only modifications of other instruments. To these belong his angular bandage scissors, a pair

of nippers for polyps, an improved tracheotome, an amputating knife, a cystitome, a herniotome, an artery hook and others. How well German surgery was equipped with instruments, is shown by Tilly's "Catalogue," published in 1764 in Berlin, which contained 523 illustrations. Richter believed that at least 400 of them were useless and dispensable. Although the English instruments were considered the best, there were also a few German manufactures, for instance those of the mechanician Lütz of Würzburg, which were very fine. Most of the younger surgeons interested themselves almost exclusively for operative surgery, and thus greatly neglected the cure of many diseases by medicine. To be able to name all sorts of instruments, especially the most modern discovered by some one in France but scarcely known in Germany, to know every operative method, was all that was required for a young skilful surgeon of the times. Richter greatly opposed this tendency. When he informed Morand that the latter's rupture knife was pictured in various German text-books, he was astonished to find that this youthful invention of his was valued in Germany. Richter demanded a thorough knowledge of the origin, nature and course of a disease, matters about which few concerned themselves, without in the least underrating the operative ability of the surgeon. But he deemed it important, yes, even more so, to avoid operations and cure injuries without them if possible. How little knowledge was necessary for some operations, he said was proven by the wandering oculists, rupture surgeons and lithotomists, who seldom possessed more than their mechanical skill, knowing little of the anatomy of the case in hand, but nevertheless successfully performed some of the most serious operations. Every blockhead, he thought, could trepan and amputate, but to diagnose head injuries, heal complicated fractures of the leg without an amputation, or to discover the causes of or relieve an ugly ulcer, could only be accomplished by the profound, deep-thinking surgeon. The proper application of surgical medicines requires by far more ingenuity and knowledge than the art of operating. Inasmuch as surgical pathology was being neglected in the largest hospitals, he feared a decline of true surgery, if this rushing blindly into an operation continued among the surgeons.

As an author Richter was unsurpassed; he wrote in a very choice literary style. This was a great thing at a time when all the physicians were discussing the point whether the Latin or their mother tongue be the most appropriate for scientific works. Did he study Lessing's works, the "Literary Letters," "Laokoön" and "Dramaturgie," which appeared shortly before the beginning of his literary career, read them and make this classic prose his prototype? No other German physician's style compares with Richter's.

(To be continued.)

SOCIETY PROCEEDINGS.

Illinois State Medical Society.

Abstract of the Proceedings of the Forty-seventh annual meeting, held at East St. Louis, May 18, 19 and 20, 1897.

FIRST DAY—MORNING SESSION.

The society met in the Music Hall, and was called to order at 10 o'clock by the President, Dr. A. C. CORR, of Carlinville.

Prayer was offered by the Rev. J. J. READER, of East St. Louis.

An Address of Welcome was delivered by the Hon. M. M.

STEPHENS, Mayor of East St. Louis, which was responded to by President CORR.

After the reports of the Executive Committee, Committee of Arrangements, and Committee on Registration had been presented, the reading of papers were taken up.

SECTION ONE—FIRST SESSION.

Chairman, Dr. JAMES B. HERRICK, Chicago.

Secretary, Dr. J. O. DE COURCY, St. Libory.

Dr. R. B. PREBLE, of Chicago, read a paper entitled

ARTERIO-SCLEROSIS AS IT AFFECTS THE HEART,

and exhibited specimens. The vascular cardiac changes may be conveniently classified in three groups; 1, those in which the coronaries are diseased; 2, those in which the valves of the heart are affected by the process; 3, those in which the heart is hypertrophied, but otherwise unchanged. In the first group we find the areas of anemic infarction of the myocardium due to thrombosis of the fine twigs of the coronaries. Death may result, but more often the infarcts are replaced by scar tissue giving rise to the chronic fibrous myocarditis. The scars may yield and an aneurysm of the heart result. These and other effects were illustrated by specimens furnished by Dr. Hektoen from the Rush Medical College Museum.

Clinically the cases of atheroma of the coronary arteries may be arranged in groups according to the systems most prominent in the course. In one group the angina pectoris with its radiating pains is the marked feature. It is necessary to distinguish the true angina from the pseudo angina seen in nervous cases, in intoxication especially with tobacco, and reflexly from diseases of the stomach, liver and other organs.

A second group are characterized by attacks of acute pulmonary congestion with dyspnea. A third group by suddenly or slowly developed signs of cardiac insufficiency. In still another group, rapid or slow or irregular heart's action, either constant or paroxysmal, is the marked feature.

There is no sharp line of separation between these various groups, for they merge into each other, and usually almost every case will show something of each group of symptoms.

Brief reference was then made to some points of difference between the valvular lesions due to arterio sclerosis of the valves and those due to endocarditis.

Dr. FRANK P. NORBURY of Jacksonville, followed with a paper on

ARTERIO-SCLEROSIS AS IT AFFECTS THE BRAIN AND SPINAL CORD.

The author said that arterio-sclerosis was by no means a rare disease, but it had only been within recent years that it had received the clinical attention it deserved. Thayer of the Johns Hopkins Hospital had informed us that it was seldom that an individual over 40 or 45 years of age was free from some evidence of the existence of this disease; also, that in the negro race it was a more common disorder than in the white.

The etiology of arterio sclerosis was not always clear, but we know that it may originate from the natural widespread fibrosis and degeneration or old age, from alcoholism, syphilis, tuberculosis, gout, rheumatism and diabetes, and further that inherited arterial degeneration may be a factor. Also purely local conditions may cause it, such as undue strain upon the vessels or from constant mental worry and anxiety, and even neurasthenic states may engender it.

Little reports two cases of cerebral degeneration with calcareous formations, following anxiety and mental effort. The author believes that arterio-sclerosis is usually a fundamental condition in such cases.

He next dwelt upon the pathology of the disease and considered it at some length.

A characteristic case was reported as follows: Patient, a male, aged 60, was for a number of years an inebriate. No syphilis. About two years ago he first complained of headaches, later dizziness, and then his friends noticed lapses of memory. Important business engagements were forgotten and papers misplaced. Later ataxic aphasia (transitory) appeared; also a slight glossoplegia; next slight facial monoplegia, which still exists; then profound vertiginous attacks followed by syncope. Then mental confusion, then delusions of suspicion, and finally some violence. He was then admitted to an insane hospital where he believed he was imprisoned for an imagined crime that he had committed. He became very emotional, slept poorly and was very restless. The motorial agitation together with other psychical symptoms leads Dr. Norbury to believe that the lesion especially embraces the motor and frontal regions. So called senile dementia is really chronic cerebral atrophy.

Dr. E. J. BROWN of Decatur read a paper on

ARTERIO-SCLEROSIS AS IT AFFECTS THE KIDNEY,

in which he said that most observers now agree that the kid-

ney changes accompanying a general arterio sclerosis are secondary to the latter disease. Some, however, still hold to the theory that all sclerotic changes in the blood vessels are secondary to a primary fibrous change in the kidneys; that the latter organs share with the heart, the brain and the liver most serious pathologic changes in most cases of general arterio-sclerosis. Bright himself noticed that chronic renal disease is often associated with hypertrophy of the left ventricle, and all subsequent investigators have confirmed his observations. Granger Stewart found cardiac hypertrophy in 46 per cent. of the cases of granular contracted kidney, Loomis in 60 per cent., Dickinson in 74 per cent. and Gallabin in 80 per cent. Strimpe is inclined to regard the effect of a general arterio-sclerosis upon the kidneys as much less important than the effect of that disease upon the heart and brain, and he mentions only the "granulated senile kidney" as being due largely to atrophy of the renal arteries. In fact, in speaking of the etiology of arterio-sclerosis he ranks chronic nephritis with alcohol, syphilis, rheumatism, gout and lead poisoning as causes of that disease. Whether the kidney lesion is primary or secondary, there is no doubt but that renal symptoms occur sooner or later in the majority of cases of general arterio-sclerosis. In nearly all of the cases coming to autopsy, according to Osler, there is seen a sclerosis, patchy or diffuse, a condition practically that of contracted kidney. It is seen in a typical manner in the senile form, and not infrequently develops early in life as a direct sequence of the diffuse variety. He further states that it is difficult to decide clinically whether the arterial or the renal disease has been primary. We may be suspicious of a renal disease in every case where we have the four signs of a general arterio-sclerosis which are regarded as pathognomonic, namely, increased arterial tension, palpable thickening of the arteries, hypertrophy of left ventricle and accentuated aortic sound.

With reference to the prognosis, it depends upon the age of the patient, the etiologic factors in the disease, and especially upon the stage of the process affecting the renal tissues.

He then reported two cases illustrating two forms of general arterio-sclerosis, in one of which there was a predominance of renal symptoms, and the other with prominent renal symptoms, but with a fatal termination due to circulatory changes.

Dr. HENRY B. FAVILL of Chicago contributed a paper on

TREATMENT OF ARTERIO-SCLEROSIS,

which was read by Dr. Preble in the absence of the author. All treatment must find its reason in the consideration of three general factors: 1, the cell and its natural endowment. 2, the character of the supply from which the tissue derives its support; 3, the controlling influence which determines its nutrition and functional activity.

The common factor in the various types appears to be defective food metabolism. The active agency inducing this defect varies. We find it in the over-fed and in the under-fed, in the inactive and in the over-active, in the young, middle-aged and old. In its earlier stages it is usually associated with good digestion, rarely with dyspepsia. It is a post-digestive development. The most constant factor in a series of cases is evidence of incomplete disposal of nitrogenized material. Chemically we determine this by the short excretion of urea. This means short manufacture of urea, or defective separation of urea, or both. Clinically we detect the condition in symptoms of nitrogenic intoxication, the so-called uric acid manifestations. It is by these that our attention is primarily attracted, and in the analysis of these that we are enabled to demonstrate early arterial change. That the true toxin is uric acid is doubtful; that the toxic agents generated in this way are several is highly probable. These facts are not asserted as ultimate. Unless lightly held as provisional data, they are likely to mislead. They do, however, furnish the clinical characteristics, more or less demonstrable, which serve as a basis for the conclusion that the essential agent in this process is toxic, and for the most part auto-toxic.

The treatment of this stage of the disease is essentially hygienic. The initial proposition is, how to adapt the individual to his environment. In general the elements of food and physical expenditure are at fault. The food should be adequately introduced and thoroughly eliminated when no longer useful. Decided failure in either direction is destructive. For any given individual, "is his food adapted to his work?" should be asked. To meet this query, what do you demand? That his eliminating organs yield the proper representation of his ingesta. Clinically we have well recognized evidences of toxemia by which to measure the condition. Believing that the toxic agents are nitrogenous, we have approximate means in the estimation of urea and total nitrogens excreted in the urine. Marked departure of these from the standard average of health

demands explanation and correction. Given a good digestion, a mixed diet may be right or wrong according to its amount. Clinically we encounter, as a rule, the necessity to diminish the nitrogenous food, or to change the form of its use. That the struggle against this gradual toxemia is better accomplished by attention to this line of procedure, the speaker had not the least doubt. Practically it amounts to the gradual adoption of a mixed milk and vegetable diet, and experience fully warrants the advocacy thereof.

THE INDIRECT TREATMENT OF DISEASED HEARTS.

This was the title of a paper by Dr. ROBERT H. BABCOCK of Chicago, in which he reported the following instructive case: During the past winter a lady of 50 was placed under his charge with a history of having been treated for years for a weak heart. Upon one occasion last fall, while shopping, she had succumbed to an attack thought to be heart failure, dyspnea, cyanosis, etc. His examination revealed a slight enlargement of the heart transversely with rather feeble sounds, but no murmur. The pulse was regular, slightly accelerated and moderately tense. The patient was somewhat corpulent and the abdomen was flabby and pendulous. She gave no symptoms of abdominal or pelvic disorder. Urinalysis was negative: blood examination showed a mild chlorosis, hemoglobin 72 per cent. After careful consideration of the history, symptoms and result of examination, Dr. Babcock decided that this was a case in which the heart required no direct treatment, but that efforts should be directed to improving the general health and lessening the work put upon the heart. Consequently he sent her to a rest cure where she was given forced feeding, massage and rest in bed. After two weeks her pulse became intermittent and she complained of vague precordial discomfort. Examination of the heart disclosed no cause for the condition, but there was infra mammary tenderness in the areas shown by Head to indicate gastric disturbance, and analysis of the urine showed uric acid crystals in abundance. The colon was flushed two or three times, the patient ordered to drink large quantities of water, and a few drops of tincture of digitalis twice or thrice a day were given in the hope of regulating the pulse. This failed, however, and was discontinued after a few days. With this exception the patient received no heart tonics. After three weeks of treatment, examination of the blood showed an improvement in the hemoglobin of only 3 per cent., and treatment was continued for two weeks longer. At this time her pulse was still somewhat irregular, but she felt well. Although no symptoms of pelvic disease had ever been acknowledged further than great weariness upon walking, exploration of the pelvic viscera was considered advisable in the expectation of its throwing some light on the patient's condition. Accordingly, a gynecologist reported perineal and cervical laceration with subinvolution of the uterus, and advised a reparative operation. This was done without delay, and since her convalescence from the operation the patient's condition has been highly satisfactory so far as the heart is concerned. Without any further treatment, she is now able to ascend stairs and enjoy long walks without dyspnea or other discomfort.

Here was a patient who, without very positive evidences of cardiac disease, suffered from symptoms of weak heart, and for years had supposed that was her only complaint. Yet without therapeutic measures directed to this organ, except physical rest and the small amount of digitalis previously stated, the pulse lost its irregularity and the heart its potential weakness so soon as relieved from the reflex disturbance proceeding from the pelvis. Without wishing to ignore the influence of rest in this case, the author yet believes the reinstatement of cardiac vigor must be attributed in large measure, if not wholly, to the surgical interference.

Finally, when a diseased heart which has hitherto performed its work satisfactorily, suddenly displays vagaries of action, it should not be taken unreservedly for a sign of failing compensation. Efforts should be made to discover the cause, since the correction of injurious habits, or the removal of reflex disturbances, may set the heart to rights before serious damage ensues. Should the derangement of the cardiac action threaten to produce or actually cause dilatation, then digitalis and strychnia are indicated, but so long as compensation is intact, digitalis and allied remedies should be withheld.

DISCUSSION.

Dr. D. R. BROWER of Chicago said arterio sclerosis was a very common affection, and, speaking from personal experience, it was a condition very frequently overlooked, it being the foundation of many nervous diseases. As to its etiology, when it occurs in persons under 40 years of age, it is probably due to one of three factors—alcohol, interstitial nephritis or syphilis. He believes that in persons under the age mentioned, syphilis is the most important etiologic factor of arterial degeneration, par-

ticularly in the absence of evidence of interstitial nephritis and alcoholism. Relative to the treatment, he endorsed the suggestions of Dr. Favill as to food, and freedom from care and over-exercise. While calomel was a great alterative, the chlorid of gold and sodium was in his opinion much better, in that it had a greater effect not only upon interstitial degeneration in arteries, but elsewhere throughout the body.

Dr. ARTHUR R. EDWARDS of Chicago directed attention to the frequent confusion of the results of changes in the coronary arteries with cerebral disease. Especially was this true when the cases were seen in the last stages of the disease. Many cases are stricken down where a diagnosis of apoplexy is made, and in private practice the practitioner is frequently unable to either confirm or refute the diagnosis. Furthermore, the changes in the arteries of the heart muscle may produce insufficiency of the muscle and clinically a relaxation or dilatation of the left ventricle. With this relaxation of the left heart there is frequently found associated with it a systolic murmur. These cases coming under observation are frequently diagnosed as valvular diseases, are called cases of mitral insufficiency, and yet, when followed out on postmortem the lesion is found not to be due to any valvular disease *per se*, but due to a lesion existing solely in the heart muscle.

With reference to treatment, diligent search must be made to ascertain the cause of the disease, as no treatment could be based on rational grounds that did not inquire into the cause and remove it when found.

Dr. J. B. MAXWELL of Mt. Carmel commended the remarks of Dr. Babcock relative to the indirect treatment of heart disease, in that they coincided with the speaker's experience. Physicians ought to be exceedingly careful in telling patients that they have serious heart trouble when they are consulted by them.

Dr. C. B. HORRELL of Colchester reported a case that he saw a few months ago in consultation. The patient had an extremely purple face with conjunctivitis. There was some blurring of vision. On examination he found a severe case of tachycardia with arterio-sclerosis. The patient was put upon a course of treatment similar to that indicated in the papers, and following it the patient began to complain of pain in the lower extremities, which at first simulated articular rheumatism, and finally multiple neuritis. He was satisfied that in this case the cord was involved rather than the cerebrum as a result of the sclerosis. Notwithstanding dietary measures and the administration of such remedies as had been mentioned, the patient gradually grows worse, and the prognosis is unfavorable.

Dr. HUGH T. PATRICK of Chicago said that cerebral hemorrhage practically never occurs, except by the rupture of a miliary aneurysm. Of course, there are exceptions to all rules, but this was a rule with few exceptions. Another point: Before the artery reaches the stage at which miliary aneurysm forms, there has been a thickening of the coats, a loss of elasticity and a diminution in the caliber of the artery; consequently many of the symptoms of cerebral trouble due to arterio-sclerosis are attributable more to the effect upon the entire artery than to miliary aneurysm.

In the treatment of arterio-sclerosis, Dr. Patrick recommended very highly tetra nitrate of erythrol, which he says dilates the arterioles equally as well as nitroglycerin, and its effects were more lasting.

Dr. A. R. COLE of Kewanee said it has been his special privilege to see a number of cases of heart trouble in an apparently dying condition that rapidly recovered under the use of the old remedy—calomel. He especially recommended its use to the younger members of the profession.

Dr. JAMES B. HERRICK of Chicago spoke of venesection as a method of treatment in cases of myocarditis where there is extreme dilatation. This was brought forcibly home to him within the last year by seeing three cases that came into the Cook County Hospital with extreme dyspnea, amounting to orthopnea, with edema of the lungs, feeble pulse, marked cyanosis and the physical signs of extreme dilatation of the heart, without the findings that would convince one there was valvular disease. From the sclerotic condition of the radial arteries, the cases were looked upon as cases of fibrous myocarditis consequent upon arterio-sclerosis, where the musculature of the heart had become insufficient and extreme dilatation had occurred. It was considered more rational to relieve the extreme work of the heart than to stimulate the organ, and in these cases the greatest benefit was derived from abstracting from the veins from 8 to 16 ounces of blood. The rapid improvement that was apparent not only to the patient, but to the physicians who witnessed the operation, would convince any one that in some cases of dilatation of the heart venesection is of benefit. Dr. Herrick mentioned this in connection with the

subject of arterio-sclerosis, as perhaps there was nowadays a tendency to discard venesection where in certain cases, at least, it is of benefit.

The discussion was then closed by the various essayists.

FIRST DAY—AFTERNOON SESSION.

Dr. ARTHUR R. EDWARDS of Chicago read a paper on

THE DIAGNOSIS OF MALARIA.

The diagnosis and the pathogenesis of malaria have a scientific life of scarcely two decades. In this time extreme views have been held by the profession. The skepticism greeting Laveran's discovery has given way to equally great credulity.

1. *Diagnosis of the existence of malaria.*—a. Positive blood findings establish the existence of malaria, the disease being always caused by the parasite, the parasite being practically always found in malaria and in malaria only. It must not be forgotten that malaria may occur simultaneously with other diseases, *e. g.*, ulcerative endocarditis, pulmonary tuberculosis, chronic nephritis, but never with typhoid. Atypical fevers, associated with chills and sweatings, which have few or dubious local findings and are hence difficult of diagnosis, can at least be differentiated from malaria, *e. g.*, anomalous typhoid fever, septic-pyemia occulta, generalized miliary tuberculosis, febrile gastritis, ulcerative endocarditis, suppurative cholecystitis, central pneumonia, deep-seated sarcomatosis, etc. b. Negative blood findings are not definitive from one examination. While suggestive, a single negative finding is far from conclusive. The parasites may be indistinguishable in the first few days of the disease; in certain forms and stages they swarm in internal organs only, and lastly, in recurrent and chronic types they are found with great difficulty only. c. Fallacies. Deformities in the red blood discs are often mistaken for plasmodia, *e. g.*, crenations, poikilocytosis, vacuole formation, plastic conditions of the hemocyte, which are more frequent than is usually recognized, melaniferous leucocytes, blood plaques, the small bodies, microcytes, frequently seen in anemia, etc.

2. *Diagnostic technique.*—Direct examination of the freshly drawn unstained blood is best, using forceps to avoid corpuscular alteration by the finger's heat and moisture, and only touching the drop of blood lest pressure cause precipitate drying of the preparation. Eosin staining, with methylene blue, is the best stain. Fresh preparations are best, since the dyes stain blood plaques and various artefacts, act as protoplasmic poisons, abolish the ameboid movement and pigment vibration.

3. Not only the fact but the type of malaria can be diagnosed. Determination of species not merely establishes the diagnosis, but declares the prognosis, as in pernicious types, and designates the treatment, as arsenic in tropical malaria. Crescents augur relapse. Segmentation forms predict an imminent or incipient paroxysm, etc. The various forms are distinguished from each other by differences in mobility, pigment, size, sporulation, changes in the red blood discs, protoplasm of the parasite by crescent formation and flagella.

4. *Diagnosis of individual malarial symptoms.*—The symptoms are not only immediate sequences of the malarial infection, but are beautifully explained by the life cycle, life activity and metabolism of the parasite, *e. g.*, the fever, melanemia, splenic tumor, hemorrhages, etc. The anemia is more rapidly induced than in any other disease. The triad of symptoms, fever, chills, sweating, are a "protozoan sepsis."

5. *The diagnosis jurantibus.*—Simulating diseases may recover under quinin or without it. Malaria exhibits great tendencies toward spontaneous recovery, *e. g.*, by phagocytosis, action of the fever, etc. Quinin cures certain malaria with rapidity and certainty. Hence a diagnosis (at least of benign tertian malaria, our sole endogenous form) of malaria is disproven by failure of treatment.

Dr. C. W. HALL of Kewanee, read a paper entitled

THE SEQUELÆ OF TYPHOID FEVER.

He had learned the frequency of such sequelæ and their importance from a medico-legal aspect. The physician should always be on the alert for sequelæ and when he suspects the presence of one he should enlighten the family, ask for counsel and transfer the responsibility from his shoulders to theirs, and thus save trouble, if nothing else.

Dr. DANIEL R. BROWER of Chicago then read a paper entitled

AUTO-INFECTION IN ITS RELATIONS TO DISEASES OF THE NERVOUS SYSTEM,

in which he drew the following conclusions:

1. Some of the nervous diseases are the product of auto-intoxication.
2. That this autotoxis produces a parenchymatous degeneration of the nervous system, acute or chronic, that may result in the destructions of the structure and function of the nerve cells. (Van Gieson and Andriezen.)

3. The peculiar arrangement of the lymph channels in the nervous system makes auto-intoxication of the brain possible by the blocking of these channels.

4. The principal factors in this autotoxis are a disordered gastro-intestinal tract.

5. Gastrectasis, intestinal dyspepsia and coprostasis are ordinary conditions producing gastro intestinal intoxication.

6. The diagnosis is to be made by *a*, regional examination: *b*, by examination of the gastric juice and contents, and *c*, by examination of the urine.

7. The urines will show increased amount of indican, diminished total sulphates, but an increase in the amount of ethereal or conjugate sulphates.

8. There will also be found usually in consequence of this autotoxis a diminished hemoglobin record and a diminished number of red blood corpuscles.

9. The treatment should consist of lavage, enteroclysis, gastric and intestinal antiseptics, laxatives and hematinics.

Dr. HUGH T. PATRICK of Chicago read a paper entitled

REMARKS ON SPINAL IRRITATION.

He said that the term spinal irritation should be irrevocably banished from medical nomenclature. The pain and tenderness along the spine, generally known by this name, have nothing to do with the spinal cord or membranes or vertebrae or any other structure in this vicinity. He showed first that a normal person is unable to locate accurately a spot on the back previously touched, and secondly, that tender spots in so-called spinal irritation are located with the same inaccuracy; that is, the examiner having found where the tender spot is, five or ten minutes later it will have shifted one to two inches. From this the following conclusions were drawn: 1, in so-called spinal irritation, there are always tender points along the spine; 2, these may be definitely located; 3, they may be shown to absolutely shift in position within five or ten minutes; 4, such rapid shifting demonstrates that the tender points are the result of purely functional disease, which disease is located not lower than the cerebral cortex.

(To be continued.)

Chicago Pathological Society.

Regular meeting, Feb. 8, 1897.

Dr. JAMES B. HERRICK, President, in the chair.

Drs. M. L. HARRIS AND MAXIMILIAN HERZOG presented a paper on

SOLID MESENTERIC TUMORS, WITH A REPORT OF A CASE.

The new case reported is that of a boy 5 years old, who came under the treatment of one of the reporters (Dr. Harris) in April, 1896. A large tumor, easily palpable, was found to fill the greater portion of the abdominal cavity; its surface was smooth, though somewhat irregular, the entire mass was as movable as the closely fitting abdominal walls would permit. From the relation of the tumor to the abdominal organs, especially to the colon, and from other data, a clinical diagnosis of solid tumor of the mesentery was made and an operation performed on April 13, 1896. The tumor was found as expected; it appeared to have started in the mesentery; a loop of intestine (jejunum) passing over it was attached to it and had to be removed with it (about 51 cm. long). The ends of the divided intestine were united and to end by the operator's (Harris') method. The patient's condition when removed from the table was quite critical, but he rallied and made an uninterrupted recovery. Ten months after the operation he was in excellent health and without any signs of recurrence.

The tumor, the pathology of which was studied by one of the reporters of the case (Herzog), is egg-shaped in its general outlines, the periphery of its longest axis measuring 57 cm. Histologically the growth proved to be a lympho sarcoma with extensive colloid degeneration. A remarkable histologic feature was the presence of colloid material found in the lumen of blood vessels. Sections of the growth had been embedded in celloidin as well as in paraffin, and had been stained with hematoxylin and eosin, orcein, and according to Van Gieson's methods.

DISCUSSION.

Dr. EMIL RIES I wish to ask Dr. Herzog one or two questions. Were these specimens imbedded in celloidin?

Dr. HERZOG—Some.

Dr. RIES—Have sections been made from the fresh material?

Dr. HERZOG—No.

Dr. RIES—When I looked at the specimens just now, it struck me as remarkable that colloid masses formed in the arteries. The reason why I asked the question, whether sections were made from fresh material, was because I could not distinguish in the microscopic specimen the colloid mass from the celloidin.

With regard to the observation of vacuoles in colloid masses I wish to state that vacuoles can be found in celloidin. When the ether evaporates from the solution of celloidin unequally under different degrees of heat, the formation of vacuoles occurs. I do not doubt the presence of colloid masses in the cells and in other parts, but just this one mass in an artery is remarkable. I would like to ask Dr. Herzog how he thinks the mass got into an otherwise normal artery?

With regard to the case itself, I wish to add a few words concerning an observation of my own which belongs to this class of cases, although it is not a primary tumor of the mesentery. I observed a case of large sarcoma of the uterus, for which abdominal hysterectomy was made. Some thirteen tumors of various sizes were found in the mesentery besides the uterine tumor. Microscopic examination showed that it was a fibrosarcoma. In a few of the tumors of the mesentery remnants of mesenteric glands could be found, so that the glands could be recognized as the seat of the metastatic tumors. The patient made a good recovery, but returned about eight months after the operation with a recurrence from which she died. I understand the patient of Dr. Harris is still alive, and I wish to congratulate him on the result.

Dr. MAXIMILIAN HERZOG—You may see exhibited under the microscope some specimens containing vessels, the middle coat of which shows signs of a homogeneous degeneration; you can not see any nuclei, nor are the fibers themselves distinct in their outlines. Concerning the histology of the tumor under discussion, I reported to you what I found; among other things, I found in some of the vessels a homogeneous material, exactly like the material found elsewhere in the tumor. I have called this material colloid because it answers, as far as I can see, in every detail to the description of colloid material. How this material was formed in the vessels or how it got there, I am not prepared to explain in detail today. That the masses in the vessels are not thrombi is evident.

Dr. HEKTOEN—I think some further microchemic tests ought to be made before we are justified in speaking of this material as colloid, that is, if we use the term as we apply it, for instance, to the material found in the thyroid and other epithelial structures. If we use the term colloid as meaning any homogeneous material, then there is colloid material in these arteries and elsewhere. I have observed such substances in the vessels of tissues hardened in Müller's fluid, and I have thought that such colloid-like material might be a pure artefact.

Dr. HERZOG—There is a good deal of controversy today as to the limitation of the term, "colloid." Virchow discards the term entirely, and calls certain materials, which others call colloid, "gallertig." Recklinghausen classes what others call colloid with "hyaline degeneration." Ziegler and others describe as colloid, a degeneration which seemed to me to answer to the degeneration which I found in the tumor of the mesentery exhibited here tonight.

FOCAL OR INSULAR NECROSES PRODUCED BY THE BACILLUS OF TUBERCULOSIS.

Dr. E. R. LeCOUNT read a paper with above title, of which the following is an abstract.

Focal necroses have been observed in consequence of various causes and in various organs. The substances abrin and ricin the former from the jequirity bean, the latter from the castor bean, the toxins produced by the diphtheria bacillus, the micrococcus lanceolatus, the typhoid bacillus or its toxins and the bacillus malleus, all may cause necroses as their initial lesions. They have also been observed in consequence of the injection of the blood serum of dogs into rabbits and in puerperal eclampsia.

These necroses occur mainly in the spleen, lymph glands and liver, but also in the intestinal epithelium, the peritoneum and in other viscera. Most instances of focal necroses as produced by the substances mentioned, are caused by the action of some harmful material circulating in the body fluids; less frequently they are caused by bacteria acting *in loco*.

These lesions are as a rule minute and frequently only to be found in the course of a routine microscopic examination. They are characterized by a degeneration of the fixed cells of the organ or tissue in which they occur and then affect as a rule mainly the essential cells. In some instances simply loss of staining capacities (karyolysis), is found to form the only change in the nuclei of the cells, in other instances karyorhexis fragmentation of the nucleus results, and again these are frequently found associated in the same area of necrosis.

With these changes in the nuclei, fibrin is frequently formed as the result, in part at least, of exudation (coagulation necrosis). In certain instances the necrotic area is invaded by polymorphonuclear leucocytes as in the so-called lymphoid nodules seen in the liver in typhoid fever.

Nuclear fragmentation results in the accumulation of numerous ball like granules of chromatin which stain intensely with nuclear dyes. Necroses of this variety have been observed by R. Kockel in experimental tuberculosis of guinea-pigs, but the areas observed by this author in the liver were ascribed by him to ischemia. Pilliet also described necroses in the liver in tuberculosis in animals, but did not believe them to be due in any respect to the direct action of the bacillus of tuberculosis. Leredde in an article upon acute and subacute human tuberculosis, has depicted visceral necroses which have apparently resulted from venous hyperemia, which resulted from interference with the pulmonic circulation.

Case 1. A case of chronic ulcerative tuberculosis of the lungs, showed in the spleen and liver, areas visible only with the microscope which corresponded in all respects histologically, to other forms of focal necrosis observed in diphtheria, a brin poisoning, etc. They were on an average, the size of a normal glomerulus in the kidney of an adult, and were made up of necrotic cells, nuclear fragments and fibrin and in them the bacillus of tuberculosis was invariably present in small numbers. No leucocytic invasion had occurred into the area, no giant cells were present, no other bacteria could be demonstrated nor were any changes present in the adjacent small arterioles or capillaries, such as thrombosis. Consequently these areas differed histologically from tubercles.

Case 2. A case of chronic peritoneal tuberculosis in which exactly similar areas were found in the spleen. In the liver, however, typical microscopic tubercles were present.

Case 3.—A case of tuberculosis of the retroperitoneal lymph glands which anatomically simulated the enlarged lymph glands seen in lymphatic leukemia. No caseation was visible to the naked eye, but microscopically irregular confluent areas of necrosis were found present, mainly affecting the peripheral parts of the gland and these also contained the tubercle bacilli. From the resemblance of the areas of focal necrosis in these three cases to all other described instances of focal necrosis and the fact that they contained within them the bacillus of tuberculosis and no other bacteria, it was concluded that the action of the bacillus of tuberculosis upon the tissues is not such as to invariably produce that combination of proliferative and exudative changes which is called a tubercle. The absence of proliferative changes which are by most authorities accepted as phenomena of tissue resistance or reaction was in direct accord with the marasmus present in all three cases.

DISCUSSION.

PROFESSOR KLEBS—These necrotic processes in cases of tuberculosis are interesting, and I am quite familiar with them in guinea pigs. Necrotic areas occur in the liver and form cirrhosis of the liver. I have not seen these necrotic processes so frequently in man. I remember to have seen cases in which there were necrotic areas in the spinal cord, the brain and the kidneys. I have almost always found that necrotic processes in tuberculosis were not caused primarily by the toxins of tuberculosis, but by obstruction of the vessels. There is a great difference between the toxins of tubercle bacilli and those of other diseases. Large necrotic areas are observed in bacterial processes. These necrotic processes develop in the kidney sometimes in a comparatively short time, and we have an enormous quantity of the toxins thrown out by the diphtheria bacilli, the cholera vibrio, etc. The most extensive toxic necrosis I have described in the kidneys of Asiatic cholera. As to the distribution of the toxins in bacteria, there are very great differences. In typhoid bacilli there are considerable quantities of toxic substance contained in the bodies of the microbes, but not so in tuberculosis.

I have done considerable work toward finding out the composition of the tubercle bacilli and I have tried to prepare toxins from their bodies but I have not had any results. All the toxins are in storage in the fluid culture; there they are to be considered as secretion products. The quantity of the toxins in the bodies of the tubercle bacilli is not quite a fourth of that in the whole culture formed by four to five grains of dry tubercle bacilli in five or six weeks. So the quantity of toxin formed in a few tubercle bacilli must be very small. From this cause I do not think they are formed in such quantity that the necrosis is produced directly by them in the same way as it is in diphtheria or cholera. I have always held the opinion that necrosis in tuberculosis was formed by obstruction of vessels. Wherever tubercle bacilli are deposited, there we first observe obstruction of vessels, also in dissemination of the tubercle bacilli in the blood, particularly in cases of miliary tuberculosis. It is shown by Roux and Yersin and myself that by injecting living tubercle bacilli in the blood, the greatest part of them is killed in the blood. Otherwise obstruction of vessels is an important factor

in the formation of necrotic masses. I would remark also that this necrosis, if I understood Dr. Le Count rightly, is found mostly in the spleen, and, secondly, in the liver. Those are the organs in which obstruction of vessels is of frequent occurrence. In the spleen we have very extensive capillary circulation, the blood current is slow, and obstruction likely to occur. In tuberculosis of the spleen wedge-shaped, yellow infiltrations occur as well as in the liver of guinea pigs. I have frequently found in tuberculosis of the kidneys, occurring in older persons, very small atrophic spots on the surface of the organ, which were perhaps the consequence of necrotic processes. I have seen similar atrophies in the brain and spinal cord.

I think the fibrinous matter that is found in the necrotic parts points toward obstruction of the vessel. It is not necessary that this obstruction should be caused by thrombi. It may be due to stasis in the vessels as it is found in the diphtheritic mucous membranes. We can have obstruction of the vessels by other substances than thrombi; as if the vessels are enormously dilated and filled up with red blood corpuscles compressed against one another, or there are formed thrombi of blood plates after the injection of Koch's tuberculin. The presence of the fibrinous matter in the necrotic parts would favor the opinion of obstruction in the vessels.

DR. LE COUNT—The idea that these areas of necrosis might be due to obstruction to the circulation was not neglected; a careful search was made for thrombotic processes in the vessels and at the same time the relation the areas bore to the vessels was thoroughly examined by means of serial sections. Any reasons for ascribing the necrosis to interference with the circulation could not be found; nor were thrombosed capillaries found. The additional facts that tubercle bacilli were invariably present in the areas of necrosis, that these lesions were present in cases of well marked cachexia and that in the spleen they were diffusely scattered throughout, not located near the capsule as areas of ischemic necrosis are liable to do, seem to support the position taken.

We likewise can not overlook the researches of Abtl, who injected tubercle bacilli into the trachea of rabbits and found twenty-four later small whitish isolated areas in the bronchi and lung alveoli which proved microscopically to be areas of necrosis, in which proliferative changes occurred two days later. Concerning the action of toxins which Professor Klebs refers to, there is a marked difference between the lesions at present described in the literature as "focal necrosis" and the changes produced in the kidney either by diphtheria or cholera toxins, in that the latter do not occur in foci, indeed the necroses produced in diphtheria and described under the term focal do not include those which are found in the kidney.

In conclusion I wish to state that it is my firm belief that the bacillus of tuberculosis in exceptional instances can produce necrosis as a primary effect upon the tissues, as seems to be demonstrated in these specimens, but that in the majority of instances the effect as Baumgarten has stated is to cause primarily proliferative and exudative phenomena.

SPECIMENS.

DR. E. R. LE COUNT—I have here two specimens which were removed today from the same body. They are not without interest and also show well on account of their fresh condition. The first is a *calculus* imbedded in the substance of the kidney. As you can see, it is L-shaped, half as large as the little finger, and lies apparently in a dilated calyx.

The second is a *mesentery* for the gall bladder, forming a pendulous gall bladder. The "mesentery" measures one inch in breadth at its widest portion and gradually narrows as the cystic duct is approached. One and one-half inches of the cystic duct are also suspended in the "mesentery." There is entire absence of the furrow for the gall bladder, so that the lobus quadratus is directly continuous on the right side with the right lobe of the liver. There is also absence of the notch which occasionally forms the termination of the groove for the gall bladder. Both of these specimens came from the body of an old man who died of empyema and purulent bronchitis.

DR. JAMES B. HERRICK—I present a specimen of *aneurysm* of the right auricular appendix. I am indebted to Dr. Hektoen for the privilege of exhibiting it. There is nothing known of the clinical history, the heart having been obtained by the coroner's physician.

The pericardium shows no change. The heart is rather large in size and shows left and right ventricular hypertrophy. The coronaries are sclerotic. The valves of the heart show slight thickening, but nothing can be proven to have resulted in a clinical valvular lesion. The aorta shows some calcareous plaques. The point of interest is that at the tip of the right auricular appendix there is a sac-like projection,

the long diameter of which is about 2 cm. and the walls of which are perfectly translucent, and which is wholly made up of endocardium and epicardium. We have, therefore, an aneurysm of the right auricle. A similar one, though smaller, is found in the left auricle. There is no evidence of inflammation of the pericardium, endocardium or auricular myocardium. We can scarcely look upon this as an aneurysm the result of myocarditis, which is the common cause of aneurysm. It would rather seem to be due to a separation of the muscular fibers in the auricle, either through congenital or acquired weakness, and a hernial protrusion of the endocardium. It can readily be seen that this point of weakness is also a point of danger, and that a rupture of such a hernia of the endocardium would be followed by the most serious consequence in the shape of hemorrhage. The auricle itself is comparatively rarely the seat of an aneurysm; the commonest place being the left ventricle, particularly near the apex; the septum, particularly near the membranous portion; the right ventricle, and lastly the auricle.

Dr. KARL F. M. SANDBERG—This specimen of *extra-uterine pregnancy* was removed this morning from a woman who has had three children and one abortion. She menstruated the last time on November 12. On December 29 she had a spasmodic pain in the lower part of the pelvis, and during January of this year she had a repetition of the same pain three or four times. There was an irregular loss of blood through the vagina at different times. She consulted her family physician, Dr. A. B. Oyen, who promptly made the diagnosis and referred the case to me. The specimen shows a pregnancy in the distal two-thirds of the right tube with the ovary located posteriorly, the fimbriated extremity of the tube attached to the same. The specimen was removed entire without having been ruptured or opened. It was located in the cul-de-sac of Douglas and universally adherent with the exception of about one square inch of the top part. The lowest portion is apparently the softest part, the easiest to rupture, and in this case a rupture would not have occurred into the broad ligament, but into the peritoneal cavity, remaining separated from the general peritoneal cavity by the adhesions. The pregnancy after rupture would very likely have gone on, the adhesions gradually moving up higher and higher, and the fetus developing in the cul-de-sac of Douglas, gradually pressing higher up, and in this way the woman might have had a good chance of going to full term. I will pass the specimen around without opening it.

The Medical Society of the County of New York.

Report to the Medical Society of the County of New York of its Committee on the Abuse of Medical Charity.
Transmitted May 24, 1897.

Mr. President and Gentlemen:—In accordance with a resolution acted upon at a meeting of this Society held in October last a committee of eleven members was appointed to devise means for the control or correction of the abuse of medical charity now existing in this city. This committee was made up as follows: J. H. Burtenshaw (Chairman), A. B. Ball, Hermann J. Boldt, E. S. Bullock, Henry D. Chapin, Carter S. Cole, Alexander Hadden, William M. Polk, W. Washburn, W. H. Weston, and F. H. Wiggin.

At the first meeting of this committee two steps were decided upon: 1, to ascertain the sentiment of the governing boards of the different dispensaries regarding the proposed effort to check indiscriminate dispensing of medical aid, and 2, to communicate with the Charity Organization Society of the City of New York with the object of ascertaining if a system might be devised whereby the worthiness of applicants for dispensary treatment might be investigated and reported, and if its coöperation might be relied upon to this end.

As a result of the last named resolution the fact was made known that the Charity Organization Society would willingly coöperate with this Society along the lines proposed, and that it would place its general offices and staff of assistants at the service of the County Medical Society free of cost, provided the extra expense attendant upon the proposed investigations was met by contributions from other sources.

In order to determine to what extent the coöperation of the dispensaries might be relied upon a copy of the following letter was sent to the president, secretary or physician in charge of each of the ninety-five dispensaries located in this city.

[COPY.]

NEW YORK, Feb. 13, 1897.

Dear Sir:—The committee recently appointed by the Medical Society of the County of New York to devise means to correct the abuses of medical charity now existing in this city, respectfully asks for answers from you, in your official capacity as an officer of one of the free medical dispensaries, to the subjoined questions:

1. Does the governing board of the Dispensary approve of the movement to abolish or regulate the abuse of medical charity?

2. Will the governing board coöperate with the committee of the Medical Society of the County of New York and endeavor to dispense free medical treatment only to those applicants that are deserving and unable to pay a physician for such services?

3. Will the governing board agree, at such time as called upon, to display in conspicuous places in the Dispensary a placard reading somewhat as follows: "On and after [date] the case of every patient applying for free medical treatment at this Dispensary will be investigated, to determine if the applicant is deserving of free medical service," provided such agreement is not to be construed as binding the Dispensary to make such investigations on its own account?

[Signed] On behalf of _____ Dispensary.

Replies to this letter have been received from seventy-six dispensaries. Of the nineteen dispensaries ignoring the first circular letter, and a duplicate sent out on the April 1, five are homeopathic, two are under the supervision of the Department of Charities, and the remaining five are either private or church institutions at which but a small number of patients living in the immediate vicinity are treated. These replies were affirmative, or conditionally affirmative, to all three questions, with the exception of those received from the Dispensary of St. Mary's Free Hospital for Children, located at 435 and 437 Ninth Avenue, and the Out-Patient Department of the New York Hospital, 21 West 15th Street.

The Dispensary of St. Mary's Free Hospital for Children treated 7,101 patients during the year 1896, and during the same time the Out-Patient Department of the New York Hospital treated 9,803 new patients, who made 45,838 visits to the dispensary, a majority, it is understood, being required to pay one dollar per month for the treatment received regardless of financial condition.

At a succeeding meeting of your committee it was made known that a committee having in view the same object as its own had been appointed by the County Medical Association, and that an organization known as the New York Medical Society for the advancement of the Practice of Medicine had been formed and on March 22 had caused to be introduced in the Legislature of the State a bill embodying certain reforms in the management of dispensaries in this city. It was the opinion of your committee that certain features of this bill were of too radical a nature to allow of its becoming a law at the present time; that any enactment designed for the control of dispensaries should apply to the entire State rather than to the City of New York alone; that, in the former case, the supervision and control of dispensaries should be placed in the hands of the State Board of Charities; and finally, that as far as practicable, the efforts of the different committees formed for the same purpose should be directed along the same lines. Your committee feels that great credit is due the members of the New York Society for the Advancement of the Practice of Medicine and the members of the committee of the County Medical Association for their efforts toward the control of the charity abuse and thanks for their hearty coöperations with your committee toward this end.

The bill introduced in the Legislature by the first named organization was ultimately amended so that its provisions read as follows:

SECTION 1. By this act a dispensary is defined to be any institution, agency or place, society or association whose actual or alleged purpose it is to furnish gratuitously or at a nominal price to indigent, needy or other persons not resident therein, medical or surgical relief, advice or treatment, medicine or orthopedic or other appliances.

SEC. 2. On or after the first day of October, 1897, it shall not be lawful for any one to establish, conduct or manage at any place in this State a dispensary not duly incorporated as such under the laws of this State, or not connected with another corporation and licensed by the laws of the State Board of Charities.

SEC. 3. In no case shall a dispensary be established, carried on or conducted in any place in this State commonly known as a drug store, nor in any place or building in the

State defined by law or by an ordinance of a board of health as a tenement house.

SEC. 4. It shall not be lawful for any person or persons to display the word "dispensary" or to cause the same to be published in any form or in any manner in order to attract any indigent, needy or other person to any dispensary not duly incorporated or licensed as provided in Section 2 of this act.

SEC. 5. Any person who shall by means of any wilful false representation on his or her part obtain at any dispensary medical or surgical relief, advice or treatment, medicines or orthopedic or other appliances, or any person who shall wilfully violate any of the provisions of this act shall be guilty of a misdemeanor, and upon conviction shall be required to pay a fine of not less than \$50 nor more than \$250.

SEC. 6. The State Board of Charities is hereby empowered to make rules and regulations and to alter and amend the same when in its opinion necessary, in accordance with which indigent, needy or other persons shall be given medical or surgical relief, advice or treatment, medicines and orthopedic or other like appliances by such duly incorporated or licensed dispensaries, and the said Board is empowered, a chance for a hearing having been given, to annul the corporation or suspend the operations or to revoke the license of any dispensary for wilful neglect or failure on the part of its managers, trustees, officers or employes to comply with the rules and regulations so established by said Board, but nothing in this act contained shall be considered to mean that said Board shall have power to determine the particular school of medicine under which the dispensary shall be conducted.

SEC. 7. All acts or parts of acts inconsistent with the provisions of this act are hereby repealed.

SEC. 8. This act shall take effect on the first day of October, 1897.

This bill has passed without a dissenting vote by both Senate and Assembly on April 14, last, but up to the present time has not received the signature of the Governor. This fact is peculiarly unfortunate as, according to the law of the State, all bills that do not receive the approval of the Governor within thirty days of the adjournment of the Legislature, lapse and become void, and in the present instance this time limit expires at twelve o'clock tonight. This failure on the part of the Governor to approve the bill can perhaps be attributed only to the pressure of official business, as at the date of adjournment of the Legislature on April 24, there were more than 700 enactments awaiting his signature.

The president of this society, your committee, the president of the County Medical Association and the members of its committee and the members of the Society for the Advancement of the Practice of Medicine have thoroughly appreciated the importance of this bill and the necessity of its becoming a law, and every influence at their command has been brought to bear toward this end. As no opposition was made to the passage of the bill in either branch of the Legislature, and as the profession, not only in this city but throughout the State, is practically unanimous in commending its main features, the sense of disappointment is the more keen at the failure of the Governor to stamp the measure with the seal of his approval.

In anticipation of the bill being signed, the State Board of Charities, at a meeting held April 14, last, appointed a committee of three of its members to hold public meetings immediately after the bill became a law for the purpose of receiving suggestions regarding the promulgation of rules for the management of dispensaries, and it was the intention of your committee to ask for authority from this Society to represent it before that body. In view of the failure of the Dispensaries Bill to become a law, your committee is in a position only to recommend that the Committee on the Abuse of Medical Charity be continued indefinitely, and that it be empowered to take such steps as may appear to it advisable toward obtaining future legislation in the direction of correcting or controlling the medical charity abuse.

* * * * *

In conclusion, your committee expresses the conviction that there is no species of charity so beneficent, so far-reaching or so generously bestowed as true medical charity, and that nothing could be further removed from its wish than that it should be curtailed or kept from the reach of the deserving poor; but it has been so conclusively demonstrated that there exists such gross and unpardonable abuse of that charity on the part of those who are not entitled to it that it has become imperative to adopt radical measures for the suppression of that abuse and at once.

Respectfully submitted,

[Signed] JAMES HAWLEY BURTENSHAW, Chairman.
EARL SPRAGUE BULLOCK, Secretary.

Committee: H. J. Boldt, Henry D. Chapin, F. H. Wiggin, A. B. Ball, W. M. Polk, Alexander Hadden, Carter S. Cole, W. Washburn, W. H. Weston.

PRACTICAL NOTES.

Uterine Fibroma. It is a familiar fact that fibrous tumors of the uterus sometimes grow in size during pregnancy and then decrease, afterward undergoing an involution similar to that of the uterus, especially if the woman nurses her child a long while. Howitz of Copenhagen draws the conclusion that pregnancy and prolonged nursing should be recommended to patients suffering with fibromas of the uterus. As pregnancy under these circumstances, however, is not devoid of danger, he proposes to substitute artificial stimulation of the mammary secretion by aspirations of the nipples morning and night, for five to ten minutes. Three cases thus treated have found the fibroma diminish in volume, in others there has not been any perceptible change, but the period of treatment has been too brief to be conclusive. Milk appeared in abundance in one case, and in four others after one or two months of the aspirations. He states that he has seen more than once a flow of milk, even in a virgin, the day after interuterine injections, which shows the close connection between the uterus and the mammary glands.—*Ann. de Policl. de Toulouse*, February.

Treatment of Fractures with Massage Exclusively.—Woolsey's prognostications of the future of this method of treatment (see the JOURNAL, May 1) are strikingly confirmed by the remarkable results obtained by Lucas-Championnière in fractures of the clavicle treated exclusively with massage, as shown by four men he exhibited recently at the Académie de Médecine (*Bulletin*, April 6), who could move their arms in every direction without pain, on the eighteenth, nineteenth and thirtieth days respectively. All were serious fractures from falling from a bicycle going at full speed, etc. A light sling had been used to rest the arm for a few days. One, a mechanic, had been able almost from the very first to resume his work. The pain disappears very rapidly with the massage, and the bone is solid at a period when no one would venture to look for solidification with the usual treatment. The formation of the callous is at least as rapid, if not more so, than with an immobilized bone. The perfect suppleness of the region, the normal play of all the muscles of the arm and shoulder, and the final absence of riding, important in the rare female cases, leads him to recommend the method to all. He has now an experience of thirty-one fractures of the clavicle thus treated, and states that even before the solidification is complete, the patient can wait upon himself and continue his daily occupation to a certain extent without difficulty.

Sympathetic Amblyopia.—Besides iridocyclitis and optic neuritis, there is another sympathetic complication of injuries to one eye, which may possess legal importance and yet be mistaken by many practitioners. Professor Nuel has observed sixteen cases of it in his practice in an industrial town where injuries from flying scraps of metal are frequent. It is a severe affection, tending to blindness, but has always yielded readily to appropriate treatment. The noticeable points are its tardy manifestation and the absence of ophthalmoscopic signs. It may not appear until six months or a year, or even two, after the original accident. The sight varies from good to bad, at intervals; there is sometimes frontal or temporal pain, and a heavy feeling in the head, while the visual acuity is reduced. After a while these symptoms pass away and the sight seems normal, but the improvement is only transient and the amblyopia continues its progress. Slowly the sight is decreased to 5-36 or 5-60 by the end of a year or so; sometimes the patient can only count fingers at a meter or less. The maximal restriction of the field of vision was 10 to 15 degrees in his cases, and he has never seen amaurosis ensue. By the end of two years the optic nerve is more or less atrophied and sclerosed, but the ophthalmoscopic degenerations are very secondary and tardy. Mercurial frictions and smoked glasses, with functional rest, produce great improvement, but the industrial capacity of the patient is diminished and possibly abolished. The sight may still be good, but close application may bring on absolute blindness. The possibility of this affection should therefore be borne in mind by the medical adviser, as the damages from the primary accident may have long been settled before it appears.—*Ann. de la Soc. Méd. Chir. de Liège*, January.

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It would greatly facilitate the prompt delivery of the JOURNAL to those members of the Association living in large cities, if they would kindly furnish this office with their street address in those cases where it is omitted from the wrapper of their JOURNAL, as we have been notified by the postmasters of the larger cities that second-class mail matter not having street address, would be placed in the general delivery to await call.

SATURDAY, JUNE 5, 1897.

MEDICAL EDUCATION.

A strong impression exists among many persons that medical teaching and education today is most faulty and imperfect; also that the great universities of this country and Europe have reached a degree of perfection that would make them models for all educators.

Many persons are convinced that only a classic training in the university colleges can properly fit a man for the study of medicine. Now we are told by the deans of some of these colleges, that their system of training is very imperfect and crude in its methods; also that they are anxiously looking around for improvements and trying to break away from the prestige and old-time forms of teaching.

There is something very refreshing in this awakening of educators in the higher centers of learning. The dogmatic egotism which has centered around some of the great universities of this country is lifting and we begin to realize that educational methods in its highest forms are still very crude. While medical training and the standards of medical colleges are very far from the ideals which have been marked out, there is a restless movement and struggle upward which promises much for the future.

The literary colleges and great universities still more are apathetic and the same studies are taught in the same way as half a century ago. Science schools and new departments of learning must of course go on

without prestige and follow new lines of presentation, but even here the obvious imperfections of teaching methods are clearly recognized. The medical men who urge so strenuously that a classic training in a literary college is an absolute essential as a foundation for a medical training are very often good examples of the folly of such training. Men with literary degrees from the best colleges are very often poor, weak medical men. The prize and honor men of the great literary colleges are rarely heard of in after-life in any department of human activity. Literally the high classic training demanded as a requisite to enter upon the study of medicine is often a most serious obstacle to all future success. This is clear in the fatal egotism of the college graduate, who has been taught that his studies of the languages has raised him above the level of others and made success a greater certainty in any direction. Where this follows, in all after-life he is crippled and fails to attain the level of a student and original worker.

The fault is in the college methods, they have literally unfitted the man for close, hard work and broad reasoning. They have cultivated a strong personal bias in his capacity and superiority that is fatal to good work afterward.

Fortunately this does not occur in all cases. Many college graduates rise above the narrowness of so-called culture and make a culture and acquire an independent knowledge for themselves.

We do not wish to discourage a thorough preliminary training before entering upon the study of medicine; but the idea that a degree from any college is evidence of such training is not true in many cases. While the medical colleges are extending their courses and requiring more thorough preparation before entering, they can not reach the end sought for in a thoroughly educated profession by accepting the diplomas of colleges without question or examination. While we all recognize that graduates of the leading medical colleges may be very scantily equipped for the practice of medicine, it is a notorious fact that men with diplomas from the most famous institutions in this country are often very weak and uncultured. This is true the world over, the English or German student who has spent ten or more years at the great seats of learning may not have acquired the first principles of culture.

Evidently a great revolution is beginning in this direction, from the common school up to the highest universities and technical colleges. Men must be trained up to do the work along the lines of natural adaptability and not trained down opposed by constitutional and physiologic conditions of the organism. A leading college president said, "We are constantly making the mistake of training men out of their natural capacities, teaching them facts that are useless rubbish in all after life." The idea can not be repeated

too often, that no training can make a medical man who has not some constitutional adaptability and tact for the work. No colleges can graduate educated, cultivated men by the present indiscriminate methods applied to all, without regard to ability or personality. What will be required in the future will be some test of the character and capacity of the student for the life-work he would engage in; then training becomes exact and development and culture positive and certain.

IDIOT SAVANTS, ARTISTS AND MUSICIANS.

One of the prominent features of the co-eval discussion of the relation of genius to degeneracy is the discovery of idiot savants, artists and musicians. These result from the phenomenon of degeneracy removing that check on expression of ideas which results from timidity and also checks which have existed on the expression of "unconsciously assimilated" ideas. In ordinary life, as well as to a less extent among the idiots and insane, much is unconsciously assimilated by the mind, but remains without association with the daily life of the assimilator. Dr. LANGDON DOWN (*Alienist and Neurologist*, Vol. viii) applies the term "idiot savants" to children who, while feeble-minded, exhibit special faculties which are capable of being cultivated to a very great extent. One youth was under DOWN's care who could build exquisite model ships from drawings, and carve with a great deal of skill, yet could not understand a sentence, had to have his food cut up for him and when writing to his mother, copied verbatim a letter from "The Life of Captain HEDLEY VICARS," by MISS MARSH, although it had not the slightest appropriateness in word or sentiment. Another under his care could draw in crayons with marvelous skill and feeling but in whom nevertheless there was a comparative blank in all the higher faculties of mind. Extraordinary memory is often met with, associated with very great defect of reasoning power. A boy came under DOWN's observation who, having once read a book, could evermore remember it. He would recite all the answers in "Magnall's Questions" without an error, giving in detail the numbers in the astronomical divisions with the greatest accuracy. This, however, was simply a process of verbal adhesion. DOWN once gave him GIBBON's "Rise and Fall of the Roman Empire," to read. This he did, but on reading the third page he skipped a line, found out his mistake and retraced his steps. Ever after, when reciting from memory the stately periods of GIBBON, he would on coming to the third page, skip the line, go back and correct the error with as much regularity as if it had been part of the regular text. Later on, his memory for recent reading became less tenacious but his recollection of his earlier readings never failed him. Another boy told the tune, words and number of nearly every hymn in

"Hymns Ancient and Modern." Often memory takes the form of remembering dates and past events. Several children under DOWN's observation have had this faculty in an extraordinary degree. One boy never failed to be able to tell the name and address of every confectioner's shop that he had visited in London, and they had been numerous, and could readily tell the date of each visit. Another could tell the time of arrival of all children at the institution, and could supply accurate records in relation to it if needed. Another knew the home address of every resident who came under his observation and they were by no means few. The faculty of number is usually slightly developed with feeble-minded children, while memory is fairly well developed. There are cases where the power of mental arithmetic existed to an astonishing extent. One boy about twelve years of age who could multiply any three figures by three figures with perfect accuracy, and as quickly as DOWN could write the six figures on paper, yet so low mentally was he that although having been for two and a half years in the almost daily habit of seeing and talking to DOWN he could not tell his name. Another boy under DOWN's observation could multiply two figures by two figures and a short time since could multiply three figures by three figures, but, since an epileptiform attack, has lost this faculty to some extent. None of them can explain how they do it. When by rare chances they have made a mistake and some hesitation has arisen the plan has been to clear off the multiplication of the higher figures, first.

Improvisation is an occasional faculty. A boy under DOWN's care who could take up a book, pretending to read, an art he had not acquired, and improvise stories of all kinds with a great deal of skill and in variety to suit the supposed tastes of his author. Memory of tune is a very common faculty among the feeble minded; they readily acquire simple airs and rarely forget them. One boy if he went to an opera would carry away a recollection of all the airs and would hum or sing them correctly. In none of his cases of "idiot savants" has DOWN been able to trace any history of a like faculty in the parents or in the brothers and sisters. He has had an opportunity of making a necropsy only in one instance. This was in the case of a boy who had a very unusual faculty, the perfect appreciation of past or passing time. He was 17 years of age, and although not understanding, could gather the use of a clock face, could tell the time to a minute at any part of the day and in any situation. Although DOWN tried him on numberless occasions he always answered with an amount of precision truly remarkable. Gradually his response became less ready. His health became enfeebled and the faculty departed. On necropsy DOWN found that there was no difference in the cerebrum from an ordinary brain except that he had two well-marked and

distinct soft commissures. All these cases of "idiot savants" were males. Down has never met with a female. The most remarkable instance of the idiot musician in the United States is that of "Blind Tom," who is now about 60 years of age and who, like the cases mentioned by LANGDON DOWN, could play from memory any tune or modification of a tune which he had once heard. After making thousands of dollars for the master who once owned him, he was placed under a conservator, the daughter-in-law of his owner. When placed under her charge he was practically penniless, despite the hundreds of thousands of dollars he had earned in a quarter of a century's musical work for his master. In a few years after being placed under guardianship, sufficient money was obtained to warrant the temporary withdrawal of "Blind Tom" from the amusement world, so that he might recuperate his health and at the same time familiarize himself with modern musical composition.

Tom enjoys his long rest after so many years of incessant travel and work. He does very little visiting among his neighbors and receives few callers at his cottage. He passes hours at a time at the piano playing his old pieces and practicing new ones. Occasionally he attempts improvisation, but even then the imitative faculty predominates, as the notes he picks out are usually the reproduction of sounds that he has heard.

When not at the piano, Tom amuses himself by imitating the small talk of ladies and other visitors, to which he is a silent listener. He holds imaginary receptions at which the weather, new styles in dresses and like topics are discussed by the imaginary visitors, as imitated by Tom, in a way that is very comical. This he will not do if he knows there is any one listening to him. In spite of his advanced years and his reserved, formal demeanor in company, Tom is merely an overgrown child and has to be carefully watched by the male nurse especially hired for that purpose. He has all the selfishness of a spoiled child and is jealous of any attention paid to any one else in his presence. He has little natural affection and cares only for those around him who minister directly to his wants. He is willing that his mother should be taken care of out of the money he has earned, but he does not wish to have her or his brothers and sisters near him, for fear that they may annoy him or prevent his being the sole object of attention to those around him. With the exception of this child-like selfishness, "Blind Tom" is extremely religious in his habits and disposition. He never eats without first offering prayer, and on Sundays will play only church music on his piano. Soon after Tom was placed under guardianship, his mother met him for the first time since his infancy, but after the novelty of the reunion had passed away, it was evident that their tastes and temperaments were so utterly antagonistic

that there was little hope of their living happily together.

Art and music were very early acquirements of the race, hence it is not astonishing that atavistic returns to soundness in the idiot, imbecile, paranoiac and degenerate should take these particular directions.

THE CRIMINAL RESPONSIBILITY OF THE INSANE.

The legal standard of responsibility given in the famous answer of the judges to the House of Lords in connection with the celebrated MCNAUGHTON case which still stands in the laws of England and many at least of its dependencies, and which has been to a certain extent adopted in this country, has always from the first had the disapproval of competent alienists, those who of all men, are best qualified to estimate the responsibility of the mentally defective. They have used every argument against it, have proved that it is a false criterion in almost every possible way, have shown clinically and pathologically its incorrectness, but have not as yet been able to thoroughly eradicate the belief in its validity from the legal mind. Even in this country where we are in no way bound legally by this utterance, given out at a time of great popular excitement comparable to that which existed while the GUITEAU trial was in progress, judges still charge juries and juries convict lunatics on the ground that knowing the nature of their acts they are responsible and fit subjects for the fullest punishment the law allows for their crimes. That this is not done universally in England, that judges often evade the doctrine, and where they do not do this juries sometimes "take the bit in their teeth," as an English magistrate has expressed it, and acquit a lunatic against the judicial charge and interpretation of the law, is a sign that the world does move in spite of legal conservatism. It is not an equally good indication that the English doctrine should have here the weight it so often seems to have, and that this irrational barbarism, in spite of many better precedents still enters to any extent whatever into our judge-made laws.

In Canada, where the principle of the answer of the judges is incorporated into the criminal code, they are worse off than we, and judicial murders would seem to be legally necessitated in a large proportion of the cases where lunatics are tried for capital offenses. In view of this condition of affairs, and seeing the hopelessness of ordinary argument or theoretical demonstrations in amending the situation, one of the leading asylum superintendents, Dr. R. M. BUCKE, in his late annual report, gives the result of a careful canvass of the capacity for moral judgments of the inmates of a large asylum, with special reference to their legal responsibility under the Canadian law. He finds, and there is no reason to doubt his ability to correctly estimate their capacity for moral judgments, that out

of a total number of 1,034 inmates of the London Asylum no less than 763 were perfectly capable of realizing and appreciating such an act as homicide in its moral and legal relations. Of the remaining 271 inmates 121 were intellectually able to express an opinion but were apparently morally obtuse and disclaimed any repulsion to the act or knowledge of its wrongfulness. Only 150 out of the whole number were unable on account of their mental condition to intelligently answer the questions or give any index to their moral perceptions.

In other words, nearly three-quarters of all the inmates of the asylum were responsible and fit subjects for capital punishment under the criminal law as it exists today in Canada. At the same time, as asylum inmates they were civilly incapacitated from making the most unimportant valid contract, criminally responsible and civilly irresponsible, a paradox that seems to give no solicitude to Canadian lawmakers and lawyers. It is true as, Dr. BUCKE admits, that the fact itself of their being inmates of an insane asylum would be taken as *prima facie* evidence of their irresponsibility and that an asylum inmate would not suffer the penalties of the law for criminal acts committed as such, whatever might be his status under the strict wording of the code. But he points out the fact that there are many just as insane outside of the public institutions, and that the mere fact of having been thus sequestered or otherwise, does not morally and should not legally affect the question when insanity actually exists. As an instance of the working of the Canadian law, Dr. BUCKE refers to a recent case where the prisoner was not merely proven insane, but was a recognized imbecile, but the fact that he was capable of appreciating the wrongfulness of the act he had done according to the judgment of the court and jury insured his conviction and sentence. As a similar instance in this country, and a very prominent one, the conviction and execution of the imbecile paranoiac, PRENDERGAST, may be cited; but in his case, as in that of GUITEAU, the popular excitement and temper must be held largely responsible for the result, not the requirements of the law. In Canada, it would appear, three-quarters of the acknowledged lunatics are legally capable of suffering capital punishment and are liable to it, at least when not actually asylum inmates.

It is a curious fact, and one that shows the irrational nature of the distinctions made by the English judges that according to it the morally insane, the most dubious and dangerous of all lunatics, could legally escape the penalties of the law, in being incapable of appreciating moral distinctions and therefore unable to apply any moral judgments whatever as to the nature of their acts. The nearer the lunatic is assimilated to the criminal, by this rule, the less is his criminal responsibility, his pathologic normal obtuseness is his salvation from the law.

Dr. BUCKE has done a real service by his statistical contribution to the question of the moral capacity and responsibility of the insane. His facts, of course, are not novel to alienists, but, as stated they have the advantage of a direct object lesson that ought to have weight and influence with those to whom the only conception of a lunatic is that of a raving maniac or an absolute dement. Without any doubt similar findings could be obtained by a like inquiry by competent observers in any large asylum or hospital for the insane, and considering the need of enlightenment on the part of the public and the legal profession it might be well if such researches were multiplied and published. It would be a good thing also to do away with the legal fiction that there is any real difference between a lunatic in an asylum and one as yet uncommitted, as regards their real responsibility for criminal acts, and might be a step toward the greatly needed recognition of the many dangerous lunatics at large.

THE CORPUS DELICTI IN MEDICAL JURISPRUDENCE.

The LUETGERT case recently under investigation in Chicago has once more raised the question of the absolute necessity of proof of commission of a homicide or of finding of a dead body ere conviction of murder should occur. Even two centuries ago so many judicial murders had been committed because of neglect of precautions on the part of the prosecution as to evidence of a homicide or as to the existence of a dead body obviously the victim of homicide, that Chief Justice HALE (2 Hale P. C. 290) remarked that he "would never convict any person of murder or manslaughter unless the fact were proved to be done or at least the body found dead." Two very striking cases of this kind have occurred in the United States, one in Vermont and the other in Illinois. In the last, ABRAHAM LINCOLN was the attorney for the defense. The Vermont case was as follows (WHARTON and STILLÉ, "Medical Jurisprudence" Vol. I., p. 79 a): Two brothers, named BOORN, had an altercation with a brother-in-law, named COLVIN, an errand lunatic. He fled to New Jersey. Several years afterward suspicion was excited by a dream of an uncle of the supposed murderers. In this dream he was told that COLVIN had been murdered and that his remains would be found in a spot that was pointed out. The dream was repeated three times, until at last the place was searched and some articles of clothing were found which were identified as COLVIN'S. Then a spaniel, connected in some way with the COLVIN family, was seen snuffing uneasily about the spot close by, calling attention to it by his importunities. It, too, was examined, and a cluster of bones were drawn up by the dog's paw. That these were COLVIN'S and that these almost miraculous interpositions were designed to bring the murder out, there were none in the com-

munity who doubted. Other circumstances led to the arrest of the BOORNS. They were conscious of guilt, and it is no wonder that these prosecutors, who after so long an interval had united by means so extraordinary to ferret out their guilt should have impressed them with the belief that it was vain to fight against what seemed to be divine vengeance. So one of them confessed an assault, and went on further to state how in order to evade detection, the body had been partially burned and the clothes destroyed. The first part of the story was true; the last was a fabrication, the result either of delusion, or of desperation, or of that impulse to complete a story with which the imagination is sometimes seized. That the actual death was indeed false was shown by the subsequent appearance of COLVIN himself in time to intercept the execution of at least one of his supposed murderers. In this case prosecution and "expert" evidence played a part. The bones were examined by irregular "physicians" who declared them human. One physician, however, thought otherwise and was able to demonstrate his position. The bones were in a degree pulverized, but some pieces were in a tolerable state of preservation. Suspicions were excited that the body was burned and some parts not consumed cast into the stump, and other bones put among them for deception. Some time after the departure of COLVIN a barn belonging to Mr. BARNA BOORN was accidentally consumed by fire. It was conjectured that the body was taken up and concealed under the barn and mostly consumed. About that time a log-heap was burned by the BOORNS, near the place where the body was supposed to be deposited; it was thought by some that it was consumed there.

Of the Illinois case LINCOLN gives a decidedly humorous account in a letter to SPEED (LAMONT'S *Life of ABRAHAM LINCOLN*). The case occurred in 1841. Three brothers named TRAILOR were arrested on the charge of murdering a man named FISHER, who, when last seen, had been in their company. Strong circumstantial evidence was adduced, inclusive of the testimony of an "expert," as to human hair cut from whiskers in a struggle, at a spot where other evidences were found and where the crime was alleged to have been committed. The case was fortified (WHARTON and STILLÉ) by expressions alleged to have been subsequently used by one of the brothers as to his having become a legatee of the deceased. The examination had scarcely been finished before one of the defendants made a confession detailing circumstantially the whole transaction showing the previous combination and ending with a direct statement under oath of the homicide. The defense produced Dr. MERRYMAN, who swore that he had treated the victim of the homicide for insanity due to traumatism, that he was given to wandering tendencies consequent on this insanity and that he had been under observation two

days subsequent to the date of the alleged homicide and that he would shortly be produced before the investigating justice. To the astonishment of the whole country, however, the "deceased" made his appearance in just time enough to intercept a conviction. The only way of accounting for the confession which had been produced was, that the party who made it, in the desperation of impending conviction, took this method of cutting short suspense. In view of the practically unanimous testimony of the medical experts for both prosecution and defense in the CRONIN case it seems a little absurd at this date to claim that from the casual observation of a few hairs and a few stains that human blood and human hair can be identified beyond a doubt. The elements of error in such investigations were so thoroughly outlined by the medical experts on both sides that it would only be a simple precaution for the prosecution to avoid them at the outset of a criminal case, lest criminals evade justice through the difficulty of proving unjustifiably strong counts in an indictment. Such counts endanger on the one hand the innocent, while in the resulting reaction they tend to protect the guilty. In view of the admittedly large number of judicial murders due to the absence of a dead body or corpus delicti the greatest possible use of the fundamental legal principle of the presumption of innocence (which requires that all circumstances which can be interpreted in accordance with innocence should be so interpreted) should be made. The function of the medical expert here is not to play the detective, but, as elsewhere, to determine scientific truth. This is his duty both as a physician and as a law-abiding citizen.

CORRESPONDENCE.

Foreign Patented Articles.

NEW YORK, May 25, 1897.

To the Editor:—Our attention was recently called to a letter, which appeared in the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION of March 13, 1897, signed "An American Manufacturer." Since the writer of that letter relates to foreign products which are protected by United States patent, and of which we, ourselves, control a few, we would state that the notice is not only misleading but also an offence to respectable firms. We can not believe that any of the large chemical houses of Germany act in the manner stated in your journal, i.e., "make their own statements and attribute them to some doctor with a foreign name." As far as patents are concerned, would say that comparatively very few chemical products are patentable, since a distinct new result must be shown, and this is not an easy matter. Of all the so-called patent medicines, very few are really patented, but they are supposed to be, and mostly are of unknown and secret composition. The manufacturer who wrote the article in question is evidently preparing mechanical mixtures and is unable to produce scientific chemical compounds. Protection by patenting involves disclosure of their composition and this is the last thing their proprietors would think of. It is such secrecy that is opposed to every fundamental principle of medical ethics. Every scientific chemical product that is patented is protected only for seventeen

years and after the elapse of that time any one can prepare it, since in the patent a plain and reliable method of making the products must be given, or else the patent is worthless. In this connection, we would state that we have introduced many years ago salicylic acid and chloral hydrate, the patents of which have expired, and now every one has the right to make the same, but these articles are at the present time so much reduced in price that it would not pay any one to start a new factory for the same.

You will see from the above that the term patent is grossly misapplied in the case of anything secret. A thing patented is a thing divulged.

Many of the American manufacturers of pharmaceuticals, etc., coin a new word for their preparation, and if they do not have it registered as a trade mark, they know that they are protected under the common law forever, hence a trade mark really affords much longer protection than a patent.

In a leading article entitled, "The Ethics and Economics of Proprietary Preparations," published in the *New York Medical Journal* of May 22, 1897, the views of Dr. Charles Rice, member of the committee of revision of the United States Pharmacopeia, are clearly defined, respecting patents for scientific chemical products and secret nostrums. Dr. Rice says:

"A patent not only does away with all secrecy, which is usually considered the objectionable feature of a proprietary article, but it commonly acts also as a sort of guarantee of the uniformity of the product in composition, strength and purity." All of our chemicals are of known composition and properties, hence there is no secret whatever about them.

We remain, yours truly, SCHERING & GLATZ.

Some Untoward Effects from Trional.

MEMPHIS, TENN., May 24, 1897.

To the Editor:—Some months ago a patient of mine took a dose of 20 grains of trional at 10 P.M., for insomnia with peculiar results cited below.

Shortly after having taking it he went to sleep and did not awaken until he was aroused the next morning for breakfast. Not feeling very well, he had a cup of coffee brought to his bed. After a short while he arose and went to his office, but feeling very bad he returned home about 10:30 A.M. and again lay down and went to sleep. On being aroused for dinner by the servant, his wife being away, he responded that he would be down in a few minutes, but instead he went to his club for dinner.

While at the club he must have felt ill as he went into the lounging room and slept until 7:30 P.M., when he was awakened by a porter.

He felt completely dazed and as if he had awakened from a horrible dream. It was some time before he could collect himself and realize that he was at the club. He was very much surprised to find himself there, as he had absolutely no recollection of having gone there, or eaten dinner or slept there. His mind was a blank from the time he returned from his office in the morning at 10:30 A.M. until 7:30 P.M., having remembered nothing he had done during that time and reporting this effect from hearsay. During this time he met several friends who say he talked and acted rationally, but complained of a severe headache.

I report this case, as it was of much interest to me, inasmuch as I have always held that many of these hypnotics are given too freely and that there is a certain amount of danger connected with all of them.

K. B. HERMAN, M.D.

PUBLIC HEALTH.

Progress of the Bubonic Plague. A report from Paris, May 10, is to the effect that the Tonkin officials on the Chinese frontier

and just within the boundaries of the colony, have discovered several cases of the plague. Special precautions have been taken.

Rations for Shipwrecked Mariners, Etc.—Langlois, chief of the Phys. Lab. of the Paris Faculté de Méd., comments on the terrible sufferings and insanity of the shipwrecked crew of the *Saint Nazaire* (who had six hours for their preparations before abandoning the ship), by urging a reform in the boats carried on board ship. Something is radically wrong, he states, when these boats are swamped and destroyed the moment they touch the water, as so often happens. He suggests the following ration for such cases, combining the maximum of calories utilized with the minimum of bulk: Dutch cheese (100 grams = 350 calories utilized); sugar (60 grams = 200 c.u.); crackers (600 grams = 1000 c.u.); meat and fish pastes (300 grams = 600 c.u.) with sardines, etc., as convenient, and especially condensed milk (100 grams = 350 calories utilized), which makes a very nutritious and palatable drink diluted with sea water, as salt improves it for most persons. Two pounds apiece of this ration, or a total of half a ton for twenty-five men, would be ample to sustain life and enable the crew to resist cold and exposure for ten days, with a half ton of water. The boats should be built to carry this amount and protect it from the elements. He disapproves theoretically of alcohol, but adds that the moral effect of a little wine or diluted brandy should not be ignored.—*Presse Méd.*, April 17.

SOCIETY NEWS.

Twelfth International Medical Congress.—The following is the program of the proceedings of Section on Laryngeal and Nasal Diseases:

1. Suppurations of the Nasal Accessory Sinuses (except the maxillary), their diagnosis and treatment, Dr. E. Moure, Bordeaux; Dr. M. Hajek, Vienna.
2. Cancer of the Larynx, its diagnosis and treatment, Prof. O. Chiari, Vienna; Dr. G. Catti, Fiume.
3. The Causes and Treatment of Loss of Voice in Singers, Prof. H. Krause, Berlin; Dr. M. Lermoyez, Paris.
4. The Progress Made in the Treatment of Laryngeal Tuberculosis since the Last International Congress, Dr. Ruault, Paris; Dr. J. W. Gleitsmann, New York.
5. Laryngo-Stroboscopy, Prof. Simanowsky, St. Petersburg.
6. The Use of the X-rays in Laryngo-Rhinology, Dr. I. Macintyre, Glasgow; Dr. Mount-Bleyer, New York.
7. Esophagoscopy, Prof. V. Hacker, Innsbruck.
8. The Adaptation of Photography to Laryngology, Dr. I. R. French, Brooklyn; Dr. Flatau, Berlin.

Besides the above it is proposed to arrange a joint meeting with the other Sections on the question of Serum Treatment of Diphtheria.

The committee ventures to hope that you will consent to communicate the results of your observations and investigations as regards the subjects mentioned above as well as any other subjects pertaining to our special branch.

We beg you to furnish us, not later than June 1 (No. 8) with the titles of your intended communications with a detailed résumé of their contents, in order that both may be got out of the printer's hands in good time.

We remain, sir, yours respectfully,

E. STEPANOFF.

A. BELAYEFF.

Congress of the Surgeons of Germany.—The twenty-sixth annual congress was held at Berlin in April. The first address was from the standpoint of internal medicine—a delicate compliment from the surgeon to the physician—v. Leube spoke from an experience of over a thousand cases in the last ten years on the "Surgical Treatment of Ulcer of the Stomach." His treatment is absolute repose for ten days, with cataplasms on the epigastric region, as hot as possible, renewed every ten to fifteen minutes and replaced at night and after the first ten days with Priesnitz compresses. He first covers the skin with a compress of boricated vaselin to prevent blistering, over which the cataplasms are applied. They are continued until five days have passed without pain. A quarter of a

liter of tepid Carlsbad water is given at the same time, not hot, with some effervescent mineral water as a beverage. He rejects opium and prescribes nothing but small doses of sodium bicarbonate, especially at first. Milk, concentrated bouillon and a few crackers are all the food he allows during the first ten days. After this, relative repose, with eggs and a gradual return to the usual diet by the ninth week. He reports with this treatment of 556 cases, 75 per cent. completely cured, marked improvement in 21 per cent. and a mortality of 2.2 per cent., or 12 deaths in all, six of which were the result of perforation, and the others of hemorrhage. Surgical treatment is demanded when internal medication fails, and the patient's life is in danger, especially when there is constantly recurring slight hemorrhage, which leads almost certainly to anemia and death. Violent hemorrhage is a relative indication, as in some cases it seems to be the precursor of recovery, while in others death ensues before an operation is possible. In locating the ulcer for an operation the pain is very deceptive. Violent pains and persistent vomiting he ascribes to an imperfectly healed ulcer, and instead of an operation advises recommencing the course of medical treatment, with rectal alimentation if necessary. If this fails he recommends gastro-enterostomy. Perigastritis is the third indication for operating, but he ascribes these adhesions and scattered abscesses to a still persisting ulcer, which should be cured if possible before resorting to an operation. Perforation, subdiaphragmatic abscess and the presence of a tumor formed by the thickened gastric wall and its adhesions to the abdominal wall, are all indications for immediate operation, which statistics show is successful in 25 per cent. of the cases.

Mikulicz, the "corapporteur," mentioned that the average mortality from gastric ulcer is from 13 to 50 per cent., much higher than Leube's figures. He stated that the results obtained in Billroth's clinic, Czerny's and his own, with resection of the stomach, gastro-enterostomy and pyloroplasty were before 1891, a mortality of 39.3 per cent. with the first; 43.5 per cent. with the second, and 23.8 per cent. with the third. Since 1891 the mortality with resection has been 27.8 per cent., with gastro-enterostomy, 16 per cent.; and with pyloroplasty, 13.2 per cent. These figures should encourage surgeons to operate cases that resist medical treatment. His own observations have convinced him that gastric ulcers can be cured by restoring the permeability of the pylorus, whether the stenosis of the pyloric stenosis is of a cicatricial or spasmodic character. He is even tempted to accept the theory that the pathologic syndrome of simple ulcer of the stomach is due solely to the stricture of the pylorus. Circular resection should be reserved exclusively for cancer. He used to prefer gastro-enterostomy to pyloro-plasty, but now he prefers the latter, unless it is counter-indicated by adhesions or much thickening of the gastric wall. If gastro-enterostomy is selected, it should be completed with an entero-anastomosis between the two ends of the intestinal loop, in contact with the gastric wall, in every case when there is reason to fear regurgitation of the contents of the intestines from atony of the walls of the stomach. In operating, the shock should be reduced as much as possible by using the Schleich method of anesthesia, instead of general. Perigastritis requires prompt intervention. He added that epigastric hernia simulates all the symptoms of gastric ulcer, and warned against the deceptive gastralgias of neurasthenic subjects.

Alsberg related a case of ulcer adherent also to the liver, impossible to extirpate, which he enclosed with deep sutures, and a sero-serosa suture with the complete recovery of the patient. Braun also described one case in which the stomach wall was so friable that he could not suture it, but completed the operation successfully by suturing a piece of the omentum over the stomach wall.

Israel, Sonnenburg and König proclaimed the advantages of

large openings into the abdomen, and Lennander stated that if the operating table is warmed, with intravenous injections of salt solution, and ether alone used, there is no need to fear operative shock, while rapid elimination of the noxious matters after perforation is the best means of combatting it. Heidenhahn has abandoned the use of wet compresses around the intestines drawn out during the course of an operation, having found that they caused a decided loss of heat, and now uses dry sterilized compresses exclusively. He always evacuates the fecal matters in such a case through a small incision, and administers a dose of castor oil at once after the operation. He reports 14 recoveries in 30 cases of intestinal occlusion for various causes.

The statistics of anesthetics for the last seven years are 134 deaths in 327,599 narcoses, or 1 in 2,444. With chloroform, 1 death in 2,039; with Billroth's mixed anesthesia (morphin, chloroform and alcohol), 1 in 3,807; with ether, 1 in 5,090; with ethyl bromid, 1 in 5,228; with chloroform and ether combined, 1 in 7,594.

Helferich's address was on, "Surgical Treatment of Hypertrophied Prostate." He stated that in four-fifths of the cases treated with castration, the gland was diminished in size and the subjective symptoms usually disappeared. These results are about the same as the statistics in regard to section of the vas deferens collected by Köhler. He considers these operations indicated in serious cases when catheterism is insufficient, with preference for the latter as more simple and benign, while fully as efficacious. Both he and Socin, who followed his address, consider the hypertrophy of the prostate merely one symptom of a more general affection of the entire genito-urinary system, due possibly to arterio-sclerosis, which should be carefully studied and treated as indicated, before resorting to surgical intervention. Socin classifies these patients as: 1, those without cystitis, with good functions of the bladder. These should have the bladder systematically catheterized and the diet regulated, which frequently puts an end to all the urinary troubles for years; 2, those with a median lobe to the prostate, which requires extirpation by epicystotomy, and 3, those with serious lesions of the bladder. Regular catheterism should be tried first, and if this is not enough, perineal prostaticotomy. While he does not deny that castration or section of the vas deferens can be employed in these cases, he still thinks that the same results can be obtained without operating. Even after these interventions, the bladder is never completely emptied. The prostate grows smaller immediately after the operation, which proves that merely deturgescence of the organ and not atrophy has been attained, and this could have been secured just as well by mere massage of the prostate.

NECROLOGY.

LYMAN MOORE TUTTLE, M.D., Albany, N. Y., 1859, of Holyoke, Mass., died there April 26. He was an assistant surgeon of the 6th Vermont Infantry and served as such until Dec. 26, 1862. As one of the founders of the City Hospital he gave liberally of his time and means until his death. His age was 60 years.

WILLIAM CLINTON THOMPSON, M.D., Ohio Medical College, 1839, and one of the founders of the Indiana State Medical Society, died April 19 in Indianapolis, Iowa, where he had been in practice since 1847.

JOHN F. KIMBLEY, M.D., Jefferson, 1849, died May 24, from apoplexy, at his home in Owensborough, Ky. During the war he served as surgeon of the 11th Kentucky Infantry, U. S. V., for the period of three years, and afterward became a surgeon-general of his residential State.

JOHN J. LOBAUGH, M.D., Farmington, Ill., May 18, aged 68 years.—J. C. Jordan, M.D., Richmond, Va., May 21, aged 61

years.—W. W. Virdin, M.D., Lapidum, Md., May 20, aged 68 years.—Walter A. Boor, M.D., New Castle, Ind., May 24, aged 48 years, at one time a member of the State Medical Society and the AMERICAN MEDICAL ASSOCIATION.—W. S. Schultze, M.D., Louisville, Ky., May 24, aged 35 years.—Anthony Eugene Stoker, M.D., May 23, Philadelphia, aged 76 years. During the civil war he was surgeon on General Meade's staff, and after the close of the war was, for many years, surgeon at the Pennsylvania Hospital, and the Blind Asylum.—L. M. Lochman, M.D., York, Pa., May 21, aged 68 years.—Patrick O'Riley, M.D., Greenville, Pa., May 21, aged 58 years.—F. G. Coffin, M.D., Brockwayville, Pa., May 23, aged 43 years.—George R. Taylor, M.D., Waupaca, Wis., May 26, aged 75 years.—W. T. Aikins, M.D. Toronto, Canada, May 26.

MISCELLANY.

President George M. Sternberg.—As we go to press we are advised of the election of Surgeon-General GEORGE M. STERNBERG, U. S. A., to the presidency of the AMERICAN MEDICAL ASSOCIATION. His record as a surgeon on the battlefield, his rank as a sanitarian and his eminence in bacteriologic investigation, make this selection an admirable one and adds crowning luster to the Golden Jubilee.

The Journal Special Train.—A large number of members of the ASSOCIATION availed themselves of the opportunity to go to the meeting on this train. The officials of the company surpassed all former efforts to provide for the comfort of the travelers, and as a result the equipment was the finest ever run under the auspices of the JOURNAL.

The number was augmented at various points along the line and the trip was made without a hitch. The party arrived in Philadelphia half an hour ahead of the schedule time.

Among those present from Chicago and the northwest were:

Frederick Menge, Hugh T. Patrick, T. J. Murray, Christian Jonsson, J. P. Lord and wife, W. C. Wendell, F. C. Greene, J. V. R. Lyman, Wm. H. Mackey, J. W. Chamberlin, E. J. Radcliffe, R. W. Petty, J. F. Fulton, W. S. Cossar, *Chicago Times-Herald*, J. Takamine, J. W. Cokenhour, Wm. Eastman, E. J. Brown and wife, W. A. Jayne, E. S. Antisdale, Liston H. Montgomery and wife, J. W. Freeman, John B. Hamilton, E. J. Senn, C. C. Gratiot, G. E. J. Brown, J. H. Martindale, Wm. H. Harsha, C. S. Bacon, B. F. Whitmore, E. W. Lee, F. C. Hotz, Casey A. Wood, H. V. Würdemann, W. K. Jaques, W. A. Batchellor, G. W. Cox, Chas. Denison, W. VanWerden, William E. Quine, H. Ash, W. H. Palmer, C. H. Ludor and wife, J. T. Priestley, A. B. Spach, J. A. Gates, Frank Allport, A. R. Reynolds, H. Cradle, W. R. Fringer, C. M. Hobby, A. E. Prince, G. E. Crawford, H. S. Patrick, J. S. Love.

Diplomas Non-valid.—In a recent decision (May 27) Judge Neelan, Milwaukee, rules that physicians practicing medicine in that city, under diplomas granted by the Eclectic Medical College, are doing so without authority of law.

A New Publication.—The *X-Ray Journal*, Vol. I., No. 1, May 1897, has appeared. The purpose of this new monthly is "to give a faithful résumé of all X-ray work done in any portion of the globe." The subscription price is \$1 per year; the editor, Dr. Heber Roberts, St. Louis, Mo.

Prevention of the Rusting of Instruments.—After an experimental investigation as to the rusting of instruments, it has been found that the process is due to carbonic acid contained in water, and that it is not absolutely prevented by the addition of carbonate of soda, as recommended by some. It was, however, found that rusting can be greatly lessened by first boiling the water before placing instruments in it, since thus the greater part of the carbonic acid is expelled. The most efficient means is to add to the boiled water 0.25 per cent. of sodium hydrate, pure, containing no sulphur. During an operation the instrument should lie in the solution thus prepared. Sharp knives placed

in this preparation do not lose their edge in the faintest degree.—*American Practitioner and News.*

A Check Needed.—Governor Black of New York, who seems to be a man of mettle, has given out his decision that the expenditure of the State after the next legislative session will be still further reduced without the aid of a graduated inheritance tax. This measure failed to become a law. So far he has cut out \$950,145.92 from the bills on which he has just acted, \$789,195 from miscellaneous measures, \$138,720.92 from the supply bill and \$22,230 from the supplemental supply bill. "There ought to be," says the Governor, "some check applied, and applied at once, on the scale of expenditures for the State's charitable and penal institutions."

Chronic Cocainism from Catarrh Snuff.—A woman was received recently at a Montreal hospital with the trembling hands, staggering gait, insomnia, dyspepsia, loss of appetite, etc., of alcoholism, also visual hallucinations, dilatation of the pupils, mental dullness and pronounced moral depravity. She had always been a person of quiet, modest tastes, and her husband asserted that she never took liquor. Asked whether she took any drug, he went home to investigate and returned with a bottle of Agnew's catarrh powder, a patent remedy which she had been using as a snuff for four or five months, consuming three bottles a week. The bottle held 80 grains and contained 1.75 per cent. cocain. The therapeutic dose is $\frac{1}{4}$ to 1 grain.—*Un. Méd. du Canada*, April.

Constitutionality of Law Regulating Sale of Opium.—Section 3874 of the Revised Statutes of Missouri of 1889 provides that every person who shall set up, maintain, open, or keep any house, room or place to be used for the purpose of smoking opium, hasheesh or any other deadly drug, shall be deemed the keeper of an opium den, and, on conviction, be adjudged guilty of a misdemeanor and fined not less than \$100 and not exceeding \$1,000. This law, the supreme court of Missouri holds, in *State v. Lee*, Jan. 19, 1897, constitutional, and declares can not be considered class legislation, because prohibiting the keeping of an opium den comes within the police power of the State, under which the legislature has the power to regulate or prohibit such occupation in the advancement of public morals, health and the safety of its citizens. It is true, continues the court, that opium is often used as a medicine. So is whisky, but the right of the State, under its police powers, to prevent its sale altogether, except for medicinal purpose, is indisputable. Nor is the foregoing law in restraint of trade. It does not prohibit the disposition of opium as a commercial agent, but prohibits its use as a kind of intoxicant. And it does not deny to any person equal protection with other citizens, is not unreasonable or oppressive; nor does it, concludes the court, in any way infringe upon any rights guaranteed by the constitution.

The Starch Habit.—Dr. L. Kahn of Leadville, in the *American Therapist*, May, reports a case of so-called starch-eating habit. A female, aged 20, unmarried, had been in invalid condition for ten years subsequent to an attack by enteric fever, with slow convalescence. Suffered greatly with rheumatism, which probably caused a severe cystic inflammation which she had at the same time. Considerable heart trouble, which she could not fully describe but which caused her to faint on slightest excitement without any premonition. She stated she had fainted five or six times in twenty-four hours. The history for the past eighteen months was particularly interesting. She started her peculiar habit by taking lumps or pieces of starch from the box as she passed it three or four times daily; this gradually increased till she was using it regularly every few hours with a teaspoon. Her mother noticed the disappearance of the starch and watched for the cause; discovering her daughter's habit, she stopped the supply. The starch habit lasted about six months. Now that the starch was no longer obtainable, she started on flour, first using a teaspoonful twice

or thrice daily, gradually increasing till she used two teaspoonfuls every hour when awake. Condition: weight, 92 pounds; very anemic and pale; eyes dull, patient loth to move, heart sounds normal but beats intermittent, pulse about 120, respiration, 25; lungs normal; skin, very dry and harsh; urine, sp. gr. 1030; no albumin or sugar, but excess of phosphates; tongue coated whitish-yellow; bowels constipated; nights sleepless; absolutely no appetite. Treatment: Externally, liberal use of didactic English in reference to the habit. Internally, strychnia in doses of the one-sixtieth of a grain feruginous tonic and laxative. The results were favorable and progressive; patient's weight is twenty pounds more than two years ago, and the functions are in normal operation.

Lime Water as a Disinfectant for Linen and Cotton Fabrics.—Beyer has tested different methods employed for the disinfection of bed linen and underclothing. The ordinary methods by boiling are not suited to these articles, as the presence of blood, pus and feces causes an ineradicable stain if a high temperature is used. Soaking the garments in solutions of various soaps for one or two days failed in every instance to kill cholera, typhoid and pyogenic organisms which were mixed with the feces with which the garments were smeared. In some cases the germs were killed when the solution containing the linen was kept at 50 degrees C. for a few hours. With lime water the results were much better. Sample garments which were soaked in this solution for twenty-four hours were found to be sterilized. An equally good result was obtained in a hospital where about one-half a cubic meter of soiled linen was soaked in lime water for forty-eight hours, or for twenty-four hours if the clothing was first rinsed with lime water and then placed in a fresh solution. The lime water does not injure linen or cotton goods, but shrinks woolen to such an extent as to prevent its use.—*Fortschritte der Medicin*.

Intermediary Types.—The European edition of the New York *Herald* of late date states that an experiment in catacombs near the Jardin des Plantes of Paris has been instituted for the purpose of reproducing the intermediary types of cave dwellers. The underground passages employed were discovered only last year and are of Roman build. A number of steps lead down to a curious round chamber overtopped by a roof supported in the center by an enormous column of stone. Here bats, pigs, and all kinds of fish are to be kept in darkness for the minute study of transformations—the atrophy of certain senses and the hypertrophy of others. It has long been claimed that the eye under such conditions has been replaced by antennae or feelers. Already the subjects of the present experiments are frightened by the dim light of the candles and scurry into the obscure corners. Only very occasionally will an official descend into these underground passages with a red lamp to take food for the animals, and more rarely still will M. Armand Viré and his colleagues visit the laboratory.

Liability for Maliciously Filing Information Charging Insanity.—The supreme court of Iowa affirms, in the case of Comfort v. Young, Jan. 22, 1897, a judgment of \$750 for the plaintiff, who sued to recover damages for an alleged libelous publication that consisted of an information, filed by the defendant with the board of insane commissioners, charging that the plaintiff was insane and a fit subject for custody and treatment in the insane hospital of the State. The defense was made that the information was a privileged communication. Persons have the undoubted right, says the supreme court, to file such informations as the one in question, when made in good faith and in the honest belief that the statements therein made are true. But one can not use such instrumentalities for the express purpose of gratifying his malice or indulging his passions without making himself answerable to the law. It is for the trial judge to determine whether the publication complained of was privileged or not, and, if privileged, whether absolute or condi-

tional; but it is for the jury to find whether the proceeding was instituted through malice.

Undulation of the Nervous System.—Broco and Richet have demonstrated the existence of rhythmic undulations in the nervous system, obeying the general laws of synchronization of oscillating bodies, with a negative period and rhythmic responses to one in two, and one in four stimuli. They have experimented with electric excitation of the brain, and also, more recently, with the hyperexcitability to the reflexes produced by chloralose, and found the "refractory" or negative period the same in both forms of excitation, and also in normal and choreic dogs. They conclude that these facts signify that all these stimuli, electric, reflex or pathologic, can be substituted for each other, and that all have one property in common, viz., the undulation proper of the nervous system.—*Semaine Méd.*, March 31.

Aseptic Traumatic Fever.—Pillon ascribes this condition to the absorption of pyretogenic substances evolved: 1, in the traumatic effusion; 2, in the products of necrobiosis of the mechanically injured cells; 3, products evolved by the anatomic elements disturbed in their vitality; 4, products secreted by the migrating white corpuscles. He obtained a constant and progressive hyperthermia in guinea pigs by injections of salt solutions holding living white corpuscles in suspension. His experiments are described in the *Presse Méd.*, of March 27 and demonstrate that the secretions of living or necrobiotic migrating cells play an active part in the genesis of hyperthermia; but it is still unknown whether this is due to the fibrin ferment, uric acid or nuclein. (Ewald, Schnitzler.) He adds that a certain proportion of the elevation of the temperature is due to the sensitive nervous element.

Resection of the Liver to Remove a Multilocular Hydatid Cyst.—This is the first case of the kind on record in which the abdominal cavity was closed after the tumor was removed. The patient had complained of a dull pain in the hepatic region and a tumor was palpated, moving with the liver in respiration. Through an incision parallel with the right costal arch, P. Bruns resected the tumor, the size of a man's fist, after liberating the adherent gall bladder. The hemorrhage was slight, requiring only the ligation of two arteries. The lips of the wound in the hepatic tissue were united with a deep suture of strong catgut and a superficial suture with fine catgut. The abdominal wound was sutured by layers. The wound healed rapidly and the patient left the hospital in three weeks.—*From Beiträge z. Klin. Chir.*, xvii, 1, in the *Sem. Méd.*, January 27.

New Method of Making a Permanent Pancreatic Fistula.—The *Chl. f. Phys.*, of February 20, refers to Fodera's new method as "deserving of the greatest attention." It accomplishes the purpose completely, while the pancreas remains macroscopically and microscopically sound, and its normal secretions can be thoroughly studied. The duodenum and the pancreas are left intact and the arrangement of the intestines undisturbed. The pancreatic duct is located through an incision in the line of the umbilicus, and a small opening made into it, 3 or 4 millimeters from the duodenum. An ingeniously contrived arrangement of small silver tubes connects with one that communicates with the outer world as it projects from the wound, or it can be tucked into the hypochondrium. The outer end is closed at first, but in 8 or 10 days the receptacle is attached. The tubes heal into the tissues rapidly and thoroughly. For complete details see Moleschott's *Untersuchungen zur Naturlehre*, xvi.

Glycogenesis in Neoplasms.—The histologic resemblance in certain respects, between the tissues of the embryo and tumors, and the known presence of glycogen in the former, suggested to Dr. A. Brault the query whether glycogen could not also be found in neoplasms. He now announces as the result of his investigations that glycogenesis is an important

factor in the evolution of neoplasms, intimately connected with their nutrition and growth. Glycogen is fixed and stored in the cells of an invading tumor, in direct proportion to its rate of development, and hence his discovery is of great importance in determining the prognosis of neoplasms, and confirming the diagnosis. The location of the tumor does not seem to affect the glycogenesis, which depends solely upon the energy of its growth. The older, indurated zones of the tumor contain little or no glycogen; it is accumulated in the cells of the new invading zones, which show a glycogenesis surpassing that of the liver itself. Tested with iodine, the glycogen shows as small irregular mahogany brown drops, always inside the cells, never between them. It is especially interesting to observe the glycogenesis in neoplasms of the liver, contrasted side by side with the glycogenesis of the normal hepatic tissue.—*Presse Méd.*, April 3 from *Arch. des Sc. Méd.*, pp. 232, 301 and 419, 1896.

Another Medical Poet.—The production of a volume of Dr. Frederick Petersen's verses in the court room where the author was giving expert testimony in a recent murder trial, was an interesting incident of a highly melodramatic case. Whenever a medical man writes poetry it is viewed with some suspicion; the example of Dr. Oliver Wendell Holmes to the contrary notwithstanding. But Dr. Petersen, like Dr. Weir Mitchell, has wooed the muse to some purpose, and his verses are distinctly good. The volume in question was the second he had produced, each of them containing a number of charming lyrics and some clever translations from the Swedish. The author is about 36 years old, and already a distinguished alienist. His volume of verses, "In the Shade of Ygdrasil," was published by the Putnams.—*Leslie's Weekly*.

Dr. Rizal, the Revolutionist of the Philippines.—Jose Rizal Mercado y Alonzo is spoken of as a wealthy doctor of medicine and a man of remarkable ability. He is said to be a doctor of law, as well as of medicine, holding German degrees as well as Spanish, and he has also attended post-graduate instruction at the Paris University. He is an author of note in Spain, two of his books which treat of political and social subjects in a novel and uncompromising manner having long since procured him the attention of the Philippine government and his banishment and imprisonment in a distant island, where it was thought his seclusion would be perfect. Yet he managed to keep in constant touch, during his banishment, with the other leaders of the revolutionary party and directed the successive developments of their propaganda as well as if he were free. Rizal ordered the adoption of the *pacto sanguinis*, or bond of blood, by which the members of the *catapuin* were bound together, well knowing that the Malay race could only be successfully aroused to fanaticism by an appeal of this kind. The influence of nearly four centuries of Christianity has largely changed the outward seeming of the people, but at heart they are the same, as Rizal well knew; hence his suggestion of surviving the bloody compact among the brotherhood of the revolution, who have been largely held together by this bond, made with the most impressive rites. He is above the average height and has the characteristic snake-like expression of so many men of Philippine birth, but mixed Mongolian and Malay blood. It is a very repulsive face, immobile, yellow, passive, showing no change or sign of the thoughts passing through the brain, except for an occasional very unpleasant, half-closed, sidelong glance of the narrow eyes, when the owner steals a rapid and furtive glance at any object.

Longevity at a Higher Rate in Temperate Climates.—The official figures of a recent census report show that climate determines longevity; that is to say that within the temperate zone, the duration of life is higher than in warmer or semi-tropical countries. To quote conclusions: The average number of persons over 60 years old in 1,000 inhabitants in the United Kingdom is 77, and in the German empire, the climate of which is similar,

it is the same. In Holland it is also 77; in Denmark 84; in Sweden 88, and in Norway 90. In Russia the longevity of the inhabitants is greatest in the northern provinces and lowest in the southern ones. The average of European countries in the north temperate zones, England, Germany and Holland—77 a thousand—falls to 71 in Austria and in Portugal. In Spain, where the climate is generally milder than in Portugal, the number of persons over 60 years of age in a thousand is 58 only, and in Greece it is 56. In the East Indies, as far as there are any authentic figures, the average is only 40 in a thousand inhabitants. In South America the average is about 50, though there are, of course, many exceptional cases. During 1896 the death of 188 persons over 90 years—14 of whom were actually over 100—was recorded in Great Britain—the average longevity rating in the following order, Ireland, Scotland, England. Of a thousand persons, men, women and children, resident in England, the average number over 60 years of age is 72, or somewhat more than 7 per cent. In Scotland the proportion over 60 years of age is 7.7 per cent. and in Ireland it is 10.5 per cent. Ireland follows after France as regards respective age, the proportion of adults over 60 years being 127 out of each 1,000 inhabitants. The United States do not stand very high in the scale of the elderly, the law seeming to be that life is longer in old than in new countries. Unexpectedly this census reveals the fact that the birth rate is the greatest in England and the least in Ireland.

Appendicitis; Hysteric, Lithiasic, Primary or Secondary.—The clinical picture of acute appendicitis has been observed in several cases of hysteria lately, and the special symptoms were relieved by ablation of the appendix, although it was found only slightly affected. It is evident that a comparatively insignificant appendicular congestion, in a hysteric subject, may simulate a severe appendicitis or peritonitis. Talamon, Hayem, Rendu and Brissaud relate deceptive cases of apparent acute appendicitis and peritonitis, the only means of differentiation the non-exact location of McBurney's point and the presence of hysteric stigmata. Debove has seen hysteric phantom tumors simulating an appendicular abscess disappear under the influence of chloroform. Much discussion has been elicited by the acceptance of "intestinal lithiasis" as a common occurrence and cause of appendicitis. Reclus and Lucas-Championnière consider appendicitis usually the consequence of muco-membranous enterocolitis, and seldom a primary affection. Dieulafoy disputes this, and has collected 800 observations of chronic muco-membranous or lithiasic enterocolitis without one being accompanied by appendicitis. The former reply that most of the observations date from pre-appendicitis days, and are therefore unreliable. Dieulafoy advocates the term, entero-typhlo-colitis, as more exact, and others go still further and suggest entero-typhlo-appendico-colitis. Bacteriologic examination of the purulent exudation in 20 recent cases resulted in finding the coli bacillus alone in 7 cases; associated with the streptococcus in 5; with the pneumococcus in 5; with the staphyl. alb. in 1; with the strept. and staphyl. in 1; with various saprophytes in 2; streptococcus and aerogen. bac. in 1; staphyl. aur. in 1; undetermined bacillus in 1.—*Presse Méd.*, March 27.

The Bacillus of Syphilis.—Van Niessen replies at some length to the critics of his book on the syphilis bacillus, and adduces further evidence in support of his views. His later work has been carried on mainly in two directions: 1, the comparison of microorganisms stained in syphilitic tissues with those observed in pure cultures; and 2, the cultivation of the specific bacillus from the affected tissues. He has especially investigated syphilitic lesions of the brain and spinal cord. Sections of these were stained by Gram's method or cultivations made by imbedding little pieces in gelatin, so that one surface was left exposed to the light. On this numerous colonies soon devel-

oped, which were employed in further researches. The author claims to have infected eight rabbits in various ways, so as to produce secondary syphilitic lesions, but he has not yet succeeded in inducing the primary lesion upon the genitals. Owing to the great difficulty of excluding other causes, such as infection by tubercle and coccidia, his researches in these directions are not yet ripe for publication. He has, however, been able to demonstrate the "syphilococcus" in an excised primary sore of the prepuce, and also to cultivate it in gelatin mixed with the blood taken from the wound produced by the excision. The cocci were present throughout the tissues removed, but were particularly abundant, often forming emboli, in the deeper layers. Van Niessen is therefore convinced of the diagnostic value of the organism in primary affections, and although the result with later syphilitic lesions of the central nervous system are not as yet equally consistent, he is convinced that further improvements in investigation will render them equally available for diagnosis. His inoculation experiments are very striking. A pure culture of the organism, from the primary sore above mentioned, on veal broth was injected two months later into three rabbits, a goat, a guinea-pig and a pigeon. In several of the animals typical hard sores developed, which in the pigeon took on a phagedenic course, while in the goat and one of the rabbits gummata developed. The syphilis thus produced in animals was characterized by slow and protracted symptoms, by a marked tendency to cell proliferation in the form of a tumor with necrotic centers, and by involvement of the capillaries and lymphatics. The author claims to have proved that his syphilococcus when injected in pure culture into animals will produce both the typical primary affection and gummatus tumors.—*British Medical Journal*.

Insanity and Evidence.—Only a little more than a year ago, the JOURNAL called attention to a very important decision rendered by the supreme court of the United States in the case of Davis v. United States, on the "Burden of Proof as to Sanity." (Vol. xxvi, page 343.) After a second trial and sentence to hanging, appeal was again taken to the same court, which handed down its second decision, Feb. 15, 1897, affirming the judgment of the circuit court, and reiterating its opinion that, while it is true that every man is presumed to be sane, yet whenever, by the testimony, the question of insanity is raised, then the fact of sanity, as any other essential fact in the case, must be established to the satisfaction of the jury beyond a reasonable doubt. Here the supreme court also approves, as under the circumstances, in no degree prejudicial to the rights of the accused, the charge given the jury that "the term 'insanity,' as used in this defense, means such a perverted and deranged condition of the mental and moral faculties as to render a person incapable of distinguishing between right and wrong, or unconscious at the time of the nature of the act he is committing, or where, though unconscious of it, and able to distinguish between right and wrong, and know that the act is wrong, yet his will by which I mean the governing power of his mind—has been otherwise than voluntarily so completely destroyed that his actions are not subject to it, but are beyond his control." After a witness has once qualified himself as an expert, and given his own professional opinion in reference to that which he has seen or heard, or upon hypothetical questions, the court further holds that then it is ordinarily opening the door to too wide an inquiry to interrogate him as to what other scientific men have said upon such matters, or in respect to the general teachings of science thereon, or to permit books of science to be offered in evidence. At any rate, it insists, the trial court must have some discretion as to the limit to be placed in any given case upon the extent to which the expert testimony may be carried; and when, upon direct examination, the opinion of the witness is fully disclosed, it can not be said that the court erred in declining to permit on the same direct examination an inquiry into what is in some aspects both collateral and hearsay. Again, the supreme court holds that it was clearly within the proper limits of cross-examination to ask a medical expert: "You think, from your conversation with him, that he killed the man because he threatened his life?" and to receive the answer: "Well, in part; and because he thought his own life was in danger, and because he thought he had the right to destroy this menace to his own life."

New York.

GOVERNOR BLACK'S VETOES.—Governor Black has refused to sanction an expenditure of \$200,000 for the Eastern Reformatory. He states that this institution "was put in about the most inaccessible part of Ulster County, and then a plan for its construction was adopted which it will take \$1,000,000 out of the State to execute. There are to be accommodations for 500 boys or young men, who are to be reformed, if possible. Think of it! One million dollars for the housing of 500 persons!" He further claims that it would be more economical to entirely abandon this building and erect another for about \$300,000. "Convicts should not be housed in luxurious hotels, for the support of which farmers and working men are to pay taxes." Among the bills carrying appropriations which the Governor vetoed were the following: An act to provide for the construction of certain buildings on Swinburne Island for the use of the quarantine establishment, \$75,000; appropriating money for the construction of additional buildings for the New York State Woman's Relief Corps Home, \$30,000; and many others which he suspected of having a flavor of special legislation. It is evident that the bills which failed to receive executive approval would have entailed on the State an expenditure far in excess of \$1,000,000. Thus the Governor's failure to sign instead of vetoing a bill to discipline the hospitals and dispensaries is hardly to be regarded as a snub of the profession.

Washington.

DR. FORD APPOINTED ASSISTANT.—The vacancy of assistant to the superintendent of Garfield Memorial Hospital, recently caused by Dr. Heller's resignation, has been filled by the appointment thereto of Dr. J. H. Ford. Dr. Ford graduated a few weeks ago from Columbian Medical School, taking the honors in the practice of medicine and surgery. He has been associated with the hospital for several months past, and his promotion is accepted as one of the evidences of appreciation of his work in the institution.

ENFORCING QUARANTINE REGULATIONS.—Passed Assistant Surgeon M. J. Roseman of the Marine Hospital Service has been assigned to duty as quarantine officer at the port of San Francisco to enforce the national regulations for preventing the introduction of infectious and contagious diseases.

NEW HEALTH REGULATION IN THE DISTRICT.—It will now cost \$10 to spit in a street car or a public building under the control of the District Government.

CONGRESS PROPOUNDS QUESTIONS.—The congressional joint select committee to investigate charities and reformatory institutions in the District of Columbia has addressed a letter to the mayors of about seventy-five principal cities throughout the country requesting answers to the following series of questions: 1. Whether any charitable institution in the city of which you are mayor receives the whole or a part of its maintenance from municipal or State moneys? 2. Are any public moneys appropriated to aid charitable institutions under the care or control of any religious denomination? 3. Are any public moneys appropriated to aid charitable institutions controlled by private corporations, whether sectarian or unsectarian? 4. In case public moneys are appropriated, please give the names of the institutions and the amounts of the annual appropriations.

WASHINGTON OBSTETRICAL AND GYNECOLOGICAL SOCIETY.—At the 246th meeting of the Society, held on the 21st ult., Dr. G. Wythe read a very valuable paper on "Membranous Dysmenorrhea." A case was reported with several casts from the uterus and a full report on the same by Dr. Reed, U. S. A., and Dr. Gray. The paper brought out a very full and valuable discussion.

Colleges.

WOMAN'S MEDICAL COLLEGE.—The twenty-ninth commencement of the Woman's Medical College of the New York Infirmary for Women and Children, was held May 27. Sixteen

received their degrees, of whom eleven were from New York State. The college building, totally ruined by fire on April 22, is soon to be replaced by a structure better adapted for "the growing needs." This year the college registry shows 106 students.

THE FACULTY APPOINTMENTS OF THE CONSOLIDATED COLLEGES.—The New York University Council with eighteen members present held a special meeting May 25 and elected to full professorships in the University-Bellevue Hospital College Dr. E. G. Janeway and Dr. Frederick S. Dennis. Dr. Austin Flint, Jr., was made adjunct professor of obstetrics, and Dr. G. B. Stewart, adjunct professor of anatomy. The roll of the governing faculty now numbers twenty-one members, while the clinical, emeritus and assistant professors are twenty-five.

PARK RICHTER, M.D., has been appointed Dean of the Medical Department of the Minnesota State University. The library of the late Dean Millard is to become the property of the College of Medicine.

The commencement of Rush Medical College, Chicago, was held May 26. The graduating class numbered about two hundred and sixty.

The commencement at the Johns Hopkins Medical School, will be held June 15. The graduating class numbers seventeen and is the first class to graduate from the Medical School, which is now four years old. Among the graduates is one woman.

Hospitals.

OAKLAND, California, is to receive \$600,000 for the establishment of a hospital. The bequest is one made by Mrs. Catherine Garcelon, who died December, 1891. Litigation having prevented its utilization until a recent decision of the United States Supreme Court ruled in favor of Oakland.—A recent report from the Toledo (Ohio) State Hospital shows 1,266 patients, April 10, 1897, as compared with 1,223 April 10, 1896.—The Hospital of the Insane, Middletown, Conn., is to have some new buildings this summer.

Societies.

THE PHYSICIANS of the counties of Knox, Davies, Pike and Gibson, Indiana, met at Vincennes, and organized a society to be known as the White River District Society. They will meet biennially. The following officers were elected: President, W. W. Blair, Princeton; vice-president, J. L. Moore, Washington; secretary, J. T. Smith, Petersburg; treasurer, L. M. Becker, Vincennes. It was in Vincennes, several years ago, that what is now known as the Mississippi Valley Medical Association was organized, and the future of this new society is equally as promising.—The forty-eighth annual meeting of the Indiana State Medical Society was held at Terre Haute, May 20.—William H. Humiston, M.D., Cleveland, has been chosen president of the Ohio State Medical Society, and J. Geiger, M.D., of St. Joseph, president of the Missouri State Medical Society.—The new president of the Pennsylvania State Medical Society is W. Murray Weidman, M.D., of Reading, Pa.—The State Medical Society of New Hampshire, met at Concord, May 24.—The New York State Medical Association meets at Norwich, June 8.—Other gatherings noted are: Windham County Medical Society, Hartford, Conn., May 26-27; Georges Creek Medical Association, Frostburg, Md., May 20; Baltimore County Medical Society, Towson, Md., May 20; White River Medical Society, White River Junction, Vt., May 18; West Virginia State Medical Society, Wheeling, May 20; Newport Medical Society, Newport, R. I., May 19; American Academy of Medicine, Philadelphia, May 29 and 31.—The Queens County Medical Society held their ninety-first semi-annual meeting at Mineola, L. I., May 25.—The physicians of Temple, Texas, organized the Temple Medical Association, May 22.—The fourteenth semi-annual session of the East Tennessee Medical Society, was held at Newport, Tenn., May 28-29.—The Lincoln (Neb.) Medical Society met May 25.—The Scandinavian physicians of the Northwest, especially of the States of Minnesota, Iowa, Wisconsin, North and South Dakota, have formed an organization. The officers are:

President, Dr. Chr. Hirsch of New Ulm, Minn.; secretary, Dr. J. E. Engstad, Grand Forks, N. D.; treasurer, Dr. Olaf Hegge, Austin, Minn.; vice-presidents Drs. Oscar A. Fliesburg, Minneapolis; F. Fosse Mohn, Decorah, Iowa, and John J. Ecklund, Duluth. The next annual meeting will be held in May, 1898, in St. Paul.—The North Dakota Medical Association convened at Grand Forks, May 26.

A Washington Physician has forwarded his dues in currency to the treasurer, Dr. H. P. Newman, Chicago, without a letter of transmittal, thus making it impossible to properly credit him on the books, or to send a receipt.

THE PUBLIC SERVICES.

Army Changes. Official List of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from May 22 to 28, 1897.

First Lieut. William F. Lewis, Asst. Surgeon (Ft. Apache, Ariz.), is granted leave of absence for one month.

Major Henry McElderry, Surgeon (Ft. Leavenworth, Kan.), is granted leave of absence for one month, to take effect on or about June 24, 1897.

Major Edwin F. Gardner, Surgeon (Ft. Grant, Ariz.), is granted leave of absence for three months, to take effect on or about June 15, 1897.

Capt. Isaac P. Ware, Asst. Surgeon, is relieved from duty at Madison Bks., N. Y., and ordered to Ft. Grant, Ariz., for duty.

Capt. Champe C. McCulloch, Jr., Asst. Surgeon (Army and Navy General Hospital, Hot Springs, Ark.), is granted leave of absence for three months, to take effect on or about June 1, 1897.

Navy Changes. Changes in the Medical Corps of the U. S. Navy for the week ending May 22, 1897.

Surgeon H. G. Beyer, ordered to the Naval Museum of Hygiene for temporary duty in connection with the preparation of new microscopic outfits for ships and hospitals.

CHANGE OF ADDRESS.

Barber, W. M., from West Sunbury, Pa., to Birmingham, Ohio.
Burch, L. A. W., from Chicago to Morrison, Ill.
Beller, O. B., from Chicago to Vinton, Iowa.
Barrett, Fred, from Chicago to Tower, Minn.
Carroll, C. C., from New York city to Liberty, Sullivan Co., N. Y.
Chesire, M. N., from Chicago to Anamosa, Iowa.
Cox, F. P., from Chicago to Kenney, Ill.
Clark, J. E., from Chicago to Angola, Ind.
Demaree, T. E., from Chicago to Rossville, Ill.
Devine, G. C., from Chicago to Oregon, Wis.
Evans, W. A., from 4313 Calumet Av. to 116 43d St., Chicago.
Frick, Lewis, from Chicago to Hilbert Junction, Wis.
Grove, W. W., from Chicago to Ligonier, Pa.
Hoelcher, J. H., from 298 Webster Av. to 284 Belden Av., Chicago.
Johnson, J. E., from Chicago to Marion, Ind.
Klempner, J. C., from Cerro Gordo, Ill., to Union, Ohio.
Lilientcrantz, A., from San Francisco to 359 Telegraph Av., Oakland Cal.
Lensen, C. T., from Chicago to Mt. Airy, Iowa.
Lehan, J. W., from Chicago to Dunlap, Iowa.
Proctor, C. M., from Chicago to Harvard, Ill.
Roler, A. H., from 2330 to 2843 Indiana Av., Chicago.
Riley, E. A., from Chicago to Huron, Kan.
Smith, F. F., from St. Augustine, Fla., to Bar Harbor, Mich.
Shaw, Carl A., from Chicago to South McAllister, Ind. Ter.
Scott, R. G., from Chicago to Sandwich, Ill.
Sweet, H. L., from Chicago to Mt. Etna, Iowa.
Synon, G. C., from 12th St. and Sawyer Av. to 900 W. 12th St., Chicago.
Schjelderup, N. H., from Chicago to Granite Falls, Minn.
Schulze, W. C., from Chicago to Lonura, Wis.
Schultz, E. F., from Chicago to Reedsburg, Wis.
Van Nuys, J. C., from Chicago to Franklin, Texas.

LETTERS RECEIVED.

Atlanta Medical College, Atlanta, Ga.
Brown, F. F., Advertising Agency, New York; Beckes, L. M., Vincennes, Ind.; Baruch, Simon, New York; Bush, F. W., Hannibal, Mo.; Bates-Whitman Company, The, New York; Burford, G. H., New York.
Chicago College of Dental Surgery, Chicago; Consumers Company, The, Chicago; College of Physicians and Surgeons of Baltimore, Baltimore, Md.; College of Medicine Syracuse University, Syracuse, N. Y.; Crawford, A. Miles, Iowa; Colorado, The, Sanitarium, Boulder, Colo.
Edwards, John M., Chicago.
Forman, H. M., Bradford, Ohio; Fessenden Mfg. Co., The, Pittsburg, Pa.; Ferguson & Goodnow, Chicago.
Gessner, H. B., New Orleans, La.; Gotwald, D. K., Springfield, Ohio.
Hummel, A. L., Advertising Agency, New York; Houghton, E. M., Detroit, Mich.; Haldenstein, I., New York.
Jackson, James H., Dansville, N. Y.
Kress & Owen Company, New York; Koechl, Victor, & Co., New York.
Loeb, H. W., St. Louis, Mo.; Long Island Bottling Co., Brooklyn, N. Y.; Langdon, F. W., Cincinnati, Ohio.
Miliken, Jno. T. & Co., St. Louis, Mo.; Marchand, Chas., New York; McNicholl, T. A., Sea Cliff, L. I., N. Y.; Mather, E., Paterson, N. J.; Medical Dept. University of Nashville, Nashville, Tenn.; Medical College of Georgia, Augusta, Ga.; Morse, J. F., New York; McCreight, S. L., Chicago; Moore, N. W., Milford, Ky.; Marlon-Sims College of Medicine, St. Louis, Mo.
Procter & Collier Co., Cincinnati, Ohio.
Rochester Radiator Co., The, Rochester, N. Y.; Raymond, J. H., Brooklyn, N. Y.
Sanitarium, The, Battle Creek, Mich.; Spencer, D. O., Fowlerville, Ind. Ter.
Tyree, J. S., Washington, D. C.; Taraena Food Co. (2), St. Joseph, Mich.
Williams, N. A., Dade City, Fla.; Woodbridge, J. E., Cleveland, Ohio; Wilson, M. C., Lafayette, Ind.; Wampole & Co. H. K., Philadelphia, Pa.

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No. 24

ADDRESSES.

STERCORIN AND CHOLESTEREMIA.

Address on Medicine delivered at the Semi-centennial Anniversary of the American Medical Association, at Philadelphia, June 2, 1897.

BY AUSTIN FLINT, M.D., LL.D.

PROFESSOR OF PHYSIOLOGY IN THE BELLEVUE HOSPITAL MEDICAL COLLEGE OF THE CITY OF NEW YORK.

Looking far into the future, it seems possible that our successors may fix upon the month of May, 1946, as the true centennial of the AMERICAN MEDICAL ASSOCIATION, dating the origin of this body from May, 1846, when a convention of representatives of our profession, held in New York, proposed the formation of a National association, which was formally organized in 1847. If your orator of today finds it impossible to do justice to this occasion, how much more difficult will it be to present, in a single address, an adequate picture of a full century of medical progress! The year 1946 will be the centennial of the application of anesthesia to surgery. It will be the third jubilee of the crowning glory of the eighteenth century, the completion of the discovery of vaccination, when the terrible scourge, smallpox, which had been more destructive to human life than war or famine, was virtually subdued. At the Jenner Centenary, held in Berlin in May, 1894, Virchow stated, as an ethnologic fact, that "all peoples that had not been reached by vaccination, or that had not accepted it, had disappeared from the face of the earth, destroyed by smallpox." Will the orator of 1947 be able to point to a triumph of American medicine equal to the application of anesthesia a hundred years before or to the beginning of an era in preventive medicine, like that inaugurated by the immortal Jenner? Looking into the future, it is possible that in fifty years smallpox will have disappeared from the face of the earth, like the peoples it has destroyed. But who can say, in the light of what has been accomplished within our own recollection, what may not be done within the next half century! In the single line of preventive medicine, is it not possible that we may be able to secure immunity from tuberculosis, typhus and typhoid fevers, scarlatina, diphtheria and other infectious maladies, and that these diseases may disappear? As it is now, even with a not inconsiderable popular prejudice against vaccination, many successive years have passed in the city of New York without a single case of smallpox; and medical knowledge is becoming daily more progressive and more generally accepted by the laity.

It is not too much to say that the Convention of May, 1846, marked an era in the history of medical organization in the United States. It had become necessary that the medical profession should be unified and separated from those practicing under sectarian designations, particularly as at least one sect was beginning to secure the confidence of men other-

wise intelligent, and assumed to practice medicine on a scientific basis. Nearly coincident with the organization of this ASSOCIATION was the discovery to which I have already alluded, which marked a grand epoch in the history of American medicine. On Oct. 17, 1846, practically the first surgical operation was performed under the influence of an anesthetic administered by inhalation. Its semi-centennial has recently been most impressively celebrated at the Massachusetts General Hospital in Boston. There are few who remember the horrors of severe surgical operations and the agonies of difficult childbirth before anesthesia, as there are few remaining who participated in the convention which organized what is now the AMERICAN MEDICAL ASSOCIATION; but all can realize what surgery would be without artificial insensibility to pain, and what the medical profession would be without a National association.

The status of medicine forty years ago is quite within my recollection. Medicine is not, never was and never will be an exact science; but it always has been progressive, and never more so than at the present time. Fifty years ago, perhaps medicine merited the reproach of being the least exact of all sciences; but its progress within the last fifteen years has been so prodigious that it is now in advance of them all. The Abbé illuminating apparatus made the study of bacteria possible; and this, with the wonderful apochromatic lenses, as it now appears to us, have rendered nearly perfect our technical means of histologic and bacteriologic research. We no longer differentiate and separate structures by the coarse methods of actual dissection alone, but with the delicate and precise instruments used in cutting thin sections and by staining, we have come to an exact knowledge of physiologic and pathologic histology, which, fifty years ago seemed unattainable. Without staining fluids, the physiologic and pathologic histology of the present day would be impossible. Fifty years ago skill in the diagnosis of certain diseases was acquired only by long practice and large experience. With our present methods, properly employed, it is impossible to make an error in the diagnosis of many of the diseases which formerly presented difficulties, such as typhoid fever, tuberculosis, diphtheria, cholera and most of the neoplasms. To say that pathology has been revolutionized within the last ten or fifteen years is not enough—a new pathology has been created, and with it has come an intelligent hygiene, prevention and therapeutics, based upon exact scientific knowledge.

Eleven years ago the great physician whose name I bear, and who still lives in the memory of this ASSOCIATION, wrote an address which was to have been delivered before the British Medical Association, entitled "Medicine of the Future." This classic legacy to the profession he so loved and adorned, embodied recollections of a half century of medical observation,

with a prophetic view of the possibilities of medicine within the succeeding half century. It was difficult for this wise physician to restrain his predictions within the bounds of reasonable enthusiasm. The epoch-making discovery of the bacillus tuberculosis, announced by Koch in 1882 and graphically described by Dr. Belfield before this ASSOCIATION at the meeting of 1883, made a most profound impression upon his mind and imagination, which found expression in an elaborate paper on the subject read in January, 1884. His predictions of possibilities in medicine before 1936 are now more than verified. It was predicted "that before the lapse of another half century there will be another era in organic chemistry, and that light will penetrate dark recesses which histology can not reach." If "light" be taken in its literal sense, is this not more than realized by Roentgen's marvelous discovery, in which a hitherto unknown light is made to penetrate opaque matter and disclose the invisible? In 1886, he wrote: "Moreover, there are present intimations of important discoveries respecting inoculation with attenuated viruses and contagia in order to forestall the development of infectious diseases. Here open up to the imagination the future triumphs of preventive medicine in respect to all classes of disease." Now, little more than ten years later, serum therapy has taken a permanent place in practice, and we stand on the threshold of a full knowledge of immunity, natural and acquired.

As no human imagination fifty years ago could have pictured the condition of the medicine of today, so it today seems impossible to imagine the process of another half century. Never, since medicine became a science, has medical history been made so fast as now. Between the time of writing and delivering this address, scientific labor may give birth to a discovery destined to revolutionize some department, as Pasteur, Koch and their followers have revolutionized therapeutics, and as Lister has created a new surgery.

The reasonable limits of an anniversary address do not permit even an enumeration of the greatest of the advances in the science of medicine since the organization of this ASSOCIATION, much less their discussion. Your orator on surgery will find it impossible adequately to describe the progress of the last half century in a single address; your orator on State medicine can hardly compass the wonderful advances made even in the single line of prevention of disease; and I certainly can not hope to be more successful.

It is a matter of congratulation that the name of this body was early changed from National to AMERICAN MEDICAL ASSOCIATION. We have good reason to be proud of American medicine, and our great representative association may properly claim a distinctive title. When one is able to call up at random the discoveries in gastric digestion, anesthesia in surgery and obstetrics, the successful deligation of the arteria innominata, the operation for vesico-vaginal fistula, ovariectomy, and intestinal anastomosis, to say nothing of minor advances in medicine and surgery, can we not claim a distinctive place for American medicine? It is in the United States that advances in the science of medicine find the most ready acceptance and appreciation. The American physician is the most intelligent and judicious therapist; and in the United States is the best and safest surgery and gynecology.

I hope to see, beginning with the second half century of the AMERICAN MEDICAL ASSOCIATION, a more complete unity of the profession, through its author-

ity and influence. In the matter of general professional welfare, there seems to me nothing more important than uniformity in medical legislation, and, so far as possible, in educational requirements preliminary to the study of medicine and for license to practice after graduation. Admitting the proposition that the profession is crowded, it is evident that this condition is most serious in the large cities; but overcrowding can not be prevented by legislative enactment, except in so far as unqualified men are excluded. Uniformity of legal qualifications to practice medicine in the different States can best be secured by making every State society actually, as well as nominally, a branch of the AMERICAN MEDICAL ASSOCIATION, with permanent committees from each State organization together to constitute a central legislative body. The object of this central body should be to secure uniform medical laws in all the States, making any State license valid for all, and a matriculation certificate for one State good for matriculation in all schools represented in the Association of American Medical Colleges. A certain kind of medical instruction must be concentrated in large cities, where clinical material is abundant; and absolute uniformity of curriculum can not exist in all colleges; but certainly the legal requirements for practice, as determined by examination by State boards, can be made practically identical for all the States. While this would not prevent ambitious young men from trying their fortunes in large cities, it would distribute well-qualified physicians more equally in the country at large and tend to raise the standard of qualifications and usefulness of the average country doctor.

It is the prerogative of the presiding officer of this ASSOCIATION to make recommendations, and this is not the province of one appointed simply to give an anniversary discourse. At the jubilee meeting to be held later in the session, it is hoped that the four surviving members of the Convention of 1846 will be present. From at least one of these you may expect a more accurate and complete account of the past work of the ASSOCIATION and a more intelligent view of its probable future than I am able to give. What I have had the honor to present I well know is entirely inadequate to the occasion, and it has been given merely as an introduction to addresses by others which will be much more suitable and interesting. The remainder of the time that has been placed at my disposal I shall venture to occupy with a subject which I hope may not prove entirely unworthy of your attention.

Stercorin and cholesteremia.—While the presentation, on this occasion, of researches made thirty-five years ago—viewing the question from a physiologic standpoint—calls for an explanation and perhaps an apology, none is required if their great importance in relation to the pathology of the liver be considered, especially as cholesteremia is by no means accepted as a distinct pathologic condition. Were it not that stercorin has just been rediscovered in Germany by two eminent physiologic chemists, who make no mention of its full description in 1862, and have even called it by another name, I probably should not have repeated and extended my original observations. As it is, however, I feel that I may properly, as an American investigator, make my reclamation before the AMERICAN MEDICAL ASSOCIATION. Although my paper, published in the *American Journal of the Medical Sciences* in October, 1862, received an "honorable men-

tion" and substantial recognition from the Institute of France, and my observations have been verified and extended by French and German investigators, many writers on physiology and pathology, even the most recent, fail to recognize such a substance as stercorin and, in treating of cholesterol, speak of its functions as obscure or unknown.¹ In "An American Text-book of Physiology," Philadelphia, 1896, cholesterol is described as a constant constituent of the bile, very widely distributed in the body, and eliminated by the liver cells from the blood. "That it is an excretion is indicated by the fact that it is eliminated unchanged in the feces." Stercorin is not mentioned. As a matter of fact, cholesterol does not occur in the human feces in health, and its presence in this situation is exceptional.

In Hoppe-Seyler's *Zeitschrift für Physiologische Chemie*, Strassburg, 1896, is a paper by Bondzynski and Humnicki entitled "The Destination of Cholesterol in the Animal Organism." The authors claim to have discovered a new constituent of the human feces, which they call "koprosterin." This substance is identical with stercorin, fully described in 1862. The reading of this article led me to repeat the original researches of 1862, carrying them out by the methods then employed, at the same time repeating the observations of Bondzynski and Humnicki with the methods and appliances used in their work. It is mainly an account of these new observations that I now give. The chemic manipulations were done by Dr. H. A. Haubold, assistant to the chair of physiology in the Bellevue Hospital Medical College, and J. A. Mandel, assistant in the department of chemistry in the College of the City of New York and to the chair of chemistry in the Bellevue Hospital Medical College. To these two skilful assistants I am indebted for most painstaking and accurate work extending over a period of several months.

The original stercorin, of which specimens obtained in 1862 are in my possession, was extracted from the human feces by the following process: The dried and pulverized feces were extracted with ether. The ethereal extract was passed through animal charcoal and afterward evaporated. The residue was then extracted with boiling alcohol. The alcoholic extract was treated with potassium hydrate solution at a temperature near the boiling point of water, in order to remove the fats by saponification, which were washed out with water until the filtrate was neutral and perfectly clear. The filter was dried, extracted with ether, and the ethereal extract evaporated to dryness and extracted with boiling alcohol. The stercorin was obtained from the alcoholic extract by repeated crystallization.

This process was exactly repeated in our recent observations, and, at the same time, stercorin was extracted by the process described by Bondzynski and Humnicki. Normal human feces were obtained to the amount of about fifty pounds. After drying, the feces were divided. Two analyses each were made by Haubold and Mandel, each one extracting stercorin in one portion by the original method, and in the other by the new method. All the extracts obtained were identical in their composition, reactions and the form of crystals. It was fortunate that I had for comparison a fairly large specimen of stercorin extracted in 1862, and a microscopic slide bearing the date of June, 1862, in which the crystals were perfect. The

product obtained by my process was a little more abundant and crystallized rather more readily than that obtained by the later method.

In the process employed by Bondzynski and Humnicki, the dried feces were extracted with ether, using Soxhlet's extraction apparatus. The fats were saponified with sodium alcoholate. No animal charcoal was used. The substance was purified by repeated crystallizations. These variations from the original method are unimportant, except in so far as they expedite the process of extraction. The form of the crystals and the reactions were identical with those which I obtained for stercorin in 1862. Analyses of the products obtained by us, full details of which are given in a paper sent to *Hoppe-Seyler's Zeitschrift*, gave, for stercorin, the formula, $C_{27}H_{48}O$, the formula found for cholesterol being $C_{27}H_{46}O$. The change of cholesterol into stercorin is effected by the addition to the former of two atoms of hydrogen. A close comparison of the results of our ultimate analyses with those obtained by Bondzynski and Humnicki shows conclusively that "koprosterin" and stercorin are identical, and that stercorin is not an impure cholesterol, as is held by some eminent investigators, as Hoppe-Seyler, K. B. Hofmann and others. Stercorin crystallizes in long, fine needles which radiate from a center forming tufts, and which can not be confounded with the characteristic crystals of cholesterol. In a chloroform solution, stercorin gives, with an equal volume of concentrated sulphuric acid, first a yellow color and then a gradual change to orange, red and finally dark red. Treated in the same way, cholesterol promptly gives a blood-red reaction without these intermediate tints.

The opinion expressed by Hoppe-Seyler, Hofmann and indeed many others, that stercorin simply is impure cholesterol, can not have been based upon a practical knowledge of this substance. Stercorin has a well-defined formula— $C_{27}H_{48}O$ —which has been calculated and verified by the formation of esters. Its crystals are quite different from crystals of cholesterol and are invariable in form, arrangement and color. It was extracted by methods practically the same as those used in the extraction of cholesterol. In view of these facts, to assume that stercorin is an impure substance one must deny a positive scientific basis to organic chemistry.

In the recent, as well as in the original observations, it was clearly shown that cholesterol is changed into stercorin in passing down the intestinal canal. I found that this change involved processes incidental to intestinal digestion. Cholesterol and no stercorin was found in the feces of fasting animals and in the meconium. Bondzynski and Humnicki found an increased proportion of "koprosterin" in human feces after the ingestion of a certain quantity of cholesterol. They also showed that cholesterol unites readily with bromin, while "koprosterin" forms no such combination; and, indeed, by the use of bromin, these two substances may be separated when they exist together. They confirmed the empirical formula for their product by the formation of a number of esters.

In 1862, I wrote: "What the discovery of the function of urea has done for diseases which now come under the head of uremia, the discovery of the function of cholesterol may do for the obscure diseases which may hereafter be classed under the head of cholesteremia."

It is now generally admitted that the bile in addi-

¹ Foster: A Text-book of Physiology, New York and London, 1895, p. 356.



FIG. 1. - Cholesterin, 1897.

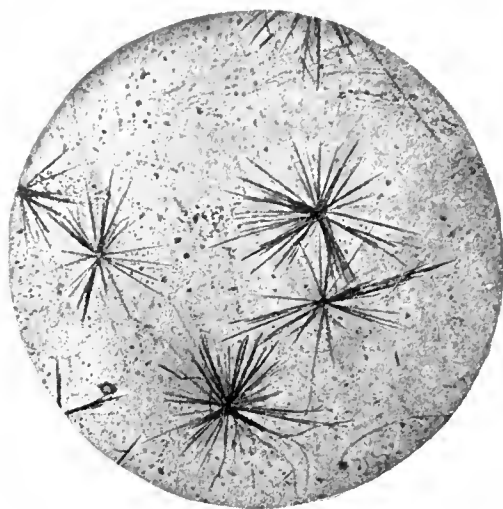


FIG. 2. - Stercorin, Flint, 1897.

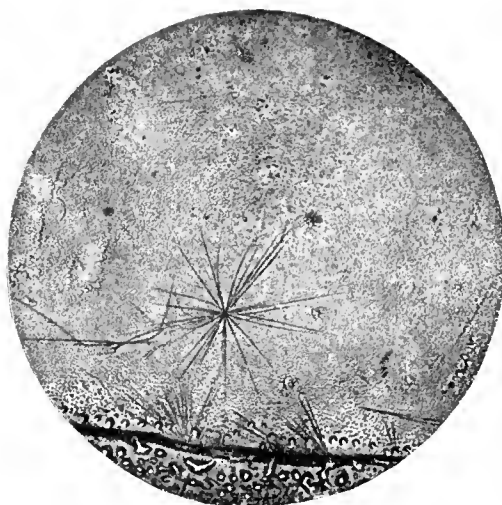


FIG. 3. - Stercorin, B. and H., 1897.

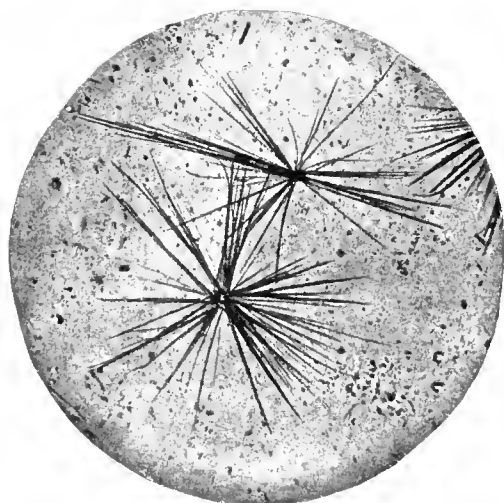


FIG. 4. - Stercorin, Flint, 1862, recrystallized in 1897.



FIG. 5. - Stercorin, Flint, original slide of 1862.

tion to its function connected with digestion, contains one or more excrementitious matters. Taking into consideration the various ingredients of the bile, there seems to be but one which can logically be compared to urea. Cholesterin is found in many of the tissues and organs of the body and exists in the blood. Likening it to urea, it becomes a question whether it is formed in the liver and discharged in the bile or is merely separated from the blood by the liver and excreted. As it is constantly found in notable quantity in the nervous tissue, in the proportion of eight to twelve parts per thousand, it occurred to examine the blood of the internal jugular and compare the proportion of cholesterin with that found in arterial blood. In one experiment on a dog, the blood being taken without using an anesthetic, I found an increase in the jugular over the carotid of nearly sixty per cent. In an etherized animal the increase was only about three and a half per cent. In another dog, not etherized, the increase was about twenty-three per cent. There was also an increase of from four to six per cent. in the blood of the femoral vein over arterial blood. In three cases of hemiplegia, the blood from the arm of the sound side contained about the normal proportion of cholesterin, while blood from the affected side contained no cholesterin.

In an experiment on a dog it was found that the arterial blood lost about twenty-three per cent. and the portal blood about four and a half per cent. in passing through the liver, comparing these two kinds of blood with blood taken from the hepatic vein.

These experiments led to an examination of the feces to determine the quantity of cholesterin discharged; but in a number of careful examinations of many different specimens of feces I was unable to find cholesterin. I found, however, what appeared to be a non-saponifiable fatty substance in considerable quantity. Examining this substance daily with the microscope, after five or six days I saw crystals beginning to form, which finally presented the appearances I have already described as characteristic of stercorin. I found the daily discharge of stercorin to be 0.7 gram, about equal to the estimated quantity of cholesterin discharged into the intestine in the bile in the twenty-four hours. In but one examination of feces of the dog did I find cholesterin, and this was in a fasting animal, a small quantity of cholesterin being found with stercorin. In a specimen of meconium, I found a hundred and sixty parts per thousand of cholesterin and no stercorin. In clay-colored feces from a patient with jaundice from obstruction, neither cholesterin nor stercorin was found. In the feces of the same patient, which were normal in color and obtained fifteen days after the first examination, stercorin was found and no cholesterin. These experimental facts seemed to show that the stercorin of the feces is derived from the cholesterin of the bile, and that the change of cholesterin into stercorin is incidental to the processes of intestinal digestion. In no case was I able to detect in the feces any trace of the biliary salts.

Passing from these observations to the pathologic relations of cholesterin, after examining three specimens of normal blood and finding the proportion of cholesterin from 0.445 to 0.751 of a part per thousand, examinations were made of the blood of patients with simple jaundice and those with what is called icterus gravis, the cases terminating fatally with grave nervous symptoms. In a case of simple jaun-

dice, terminating in recovery at the end of about four weeks, the blood contained 0.508 of a part per thousand, well within the limits in normal blood. In case of jaundice with cirrhosis, terminating fatally with serious nervous disturbance, the blood taken six days before death contained 1.850 part per thousand of cholesterin, an immense increase over the normal proportion. In this case, on postmortem, the liver was found contracted, and the gall bladder was shrunken, containing about seven cubic centimeters of bile.

The question of cholesteremia has been much discussed since 1862, for the most part with scant approval or without acceptance. However, Picot,² in 1872, reported a fatal case of "grave jaundice" in which he determined a grave increase in the proportion of cholesterin in the blood, 1.804 part per thousand. Many attempts have been made, also, to produce toxic effects by injecting cholesterin into the blood, but most of them have been unsuccessful on account of mechanical obstruction of the blood vessels. In 1873, however, Koloman Müller³ succeeded by injecting cholesterin rubbed with glycerin and mixed with soap and water. In five experiments on dogs, injecting in each 0.045 gram of cholesterin, he produced a complete representation of the phenomena of "grave jaundice."

In repeating the original researches of 1862, the observations, as regards analysis of feces, etc., were somewhat extended. With modern apparatus, the manipulations may be freed from many disagreeable features which heretofore, probably, have interfered with this line of investigation. In extracting stercorin, various volatile fatty acids and other substances were removed, the constitution and relations of which are unknown. We studied, in this connection, some of the products of bacterial action, obtaining, by the action of fecal bacteria on proteids, skatol and indol, both substances containing nitrogen. It is well known that phenol and cresol also exist in the feces. These nitrogenized matters are putrefactive products; nothing is known of their physiologic or pathologic relations, and up to this time stercorin is the only excrementitious matter yet found in the feces, the origin and relations of which are at all understood. Our knowledge, indeed, of the physiologic chemistry of the feces is only just begun; and we may look to future investigations for much that will be most important as well as interesting. The same may be said, in a measure, of the bile and of the true pathology of certain functional and structural diseases of the liver. How long shall we continue to speak of biliousness, congestion or torpor of the liver, the classic "liver complaint" *et id genus omne*, using terms which have no scientific meaning? Undoubtedly there are general disturbances, dependent upon some disorder in the functions of the liver, which occur without jaundice, and this fact has long been recognized. In a cirrhosis with considerable constitutional disturbance but no jaundice, the blood was found to contain an excess of cholesterin, 0.922 of a part per thousand. In what is termed acholia, there may be grave nervous symptoms without jaundice, and the pathology of such cases is unknown. The biliary salts are not found in the blood, and the symptoms can not be accounted for by disturbances in digestion. It is possible that light will be shed upon their pathology if it be admitted that there is a condi-

² Journal de l'anatomie, Paris, 1872, tome VIII, p. 216 et seq.

³ Ueber Cholesterämie. Archiv für experimentelle Pathologie und Pharmakologie, Leipzig, 1873, Bd. I, S. 213 et seq.

tion called cholesteremia. As yet this is but speculation; but if the theory of cholesteremia be accepted, a wide field of inquiry is opened in this direction, and ere long we may speak of "biliousness" and "liver complaint" with some definite ideas of their pathology.

It must be remembered that the liver is by far the largest gland in the body; that it secretes a fluid which is known to have a double function, one connected with digestion and the other with the elimination of cholesterin; that the blood from the digestive tract all passes through this organ, where it undergoes certain changes; that it probably stores up the products of amylolytic digestion in the form of glycogen; that it arrests certain poisons, and that it is the chief organ concerned in the production of urea, which is discharged by the kidneys. It may have other uses in what is now called internal secretion, in addition to that of destruction of blood corpuscles and the change of hemoglobin into bilirubin. With all these varied uses of the liver, however, the pathology of hepatic diseases is most obscure. We do not know even the cause and mechanism of the formation of gallstones, which are often composed almost entirely of cholesterin.

The term, acholia, as used in pathology, now means very little and conveys no distinct idea of the causes of the nervous symptoms which attend this condition. The term cholemia is generally regarded as almost synonymous with jaundice. If cholesteremia be recognized as a distinct pathologic condition, with symptoms due either to the accumulation of cholesterin in the blood, acting as a toxic substance, or to imperfect separation of cholesterin from the nervous tissue, a positive advance will be made in our knowledge of the pathology of many obscure liver disorders.

The quantitative estimation of cholesterin in the blood is not difficult, and it does not require more than from four to six or eight grams of blood. The only tedious manipulations are the drying, saponification and weighing; and these are readily done in a well-appointed laboratory. Some process may be devised which will expedite this extraction. If examinations of the blood were to be made in cases of obscure nervous disturbance, in epilepsy and other disorders of this nature, it is possible that cholesterin may be found to play an important part in their pathology. The fact that bromin readily combines with cholesterin, taken in connection with the wide use of the bromids in diseases of the nervous system, is very suggestive. May not the bromids promote the elimination of cholesterin, a substance which is so insoluble and which forms few combinations? These points seem well worthy of the consideration of pathologists and therapeutists. Certainly the physiologic and pathologic relations of cholesterin offer a wide and perhaps fruitful field for further observation.

With this paper I present photographs of cholesterin, stercorin extracted by the original method and stercorin extracted by the method of Bondzynski and Humnicki, all in 1897, with a photograph of crystals obtained in 1897 from a specimen of stercorin extracted in 1862.

I have added, for comparison with the recent crystallization from the specimen of 1862, a photograph from a slide marked June, 1862. These crystals, which are from the same specimen of 1862, have been mounted for thirty-five years and are much more abundant and beautiful than those obtained by recrystallization in 1897.

ADDRESS IN SURGERY.

Delivered at the Semi-Centennial Meeting of the American Medical Association at Philadelphia, Pa., June 3, 1897.

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Mr. President and Gentlemen of the American Medical Association:—It is always proper to acknowledge an honor, but when it comes unsolicited from so large and distinguished a body of men, representative of the entire profession in the United States, and on an exceptional occasion, I feel it a double honor to have been chosen to deliver the semi-centennial address in surgery. I beg to return you my very hearty thanks for your extreme kindness.

As we celebrate on this occasion the semi-centennial of the organization of the AMERICAN MEDICAL ASSOCIATION, in this city, in 1847, it is very natural and proper, that the Address in Surgery should be a review of the work done in the last fifty years, and by contrasting the state of surgery and of surgical teaching in 1847 with that which exists in 1897, to see what progress has been made. To recount what has been achieved in these "fifty years of science" far better than a "cycle of Cathay" is not only a pleasure, but it is an immense incentive, since by the progress made in the last fifty years we can in some measure anticipate the enormous, and probably even still greater progress, that will be made in the next half century.

The time, also, is opportune. Last year was celebrated the centennial of vaccination and the semi-centennial of the first public administration of ether. Sydney Smith's bitter query in 1820, "In the four quarters of the globe, who reads an American book, what does the world yet owe to American physicians or surgeons?" was answered a quarter of a century later and made all these "four quarters of the globe," our grateful and everlasting debtors for the gift of anesthesia. The discovery of an American dentist; first used by an American surgeon; christened by an American physician and litterateur; the recent celebration awakened throughout the world the interest not only of the profession, but also of the entire public; and the strains of our still living poet, novelist, physiologist and, as we all best love to remember him, neurologist, Dr. S. Weir Mitchell—*nihil tetigit quod non ornavit*—as he sung of the "Birth and Death of Pain," have scarce died away before we begin anew our round of celebrations in the anniversary of this now almost venerable ASSOCIATION.

A most important factor in the improvement not only in surgery but also in all departments of medicine, has been the immense advance made in medical teaching. The educational plane of the profession has been steadily elevated. If the teachers of fifty years ago were to revisit the scenes of their early labors they would scarcely recognize the medical colleges, in which, in their day and generation, and with the meagre appliances then at their command, they did what we must still recognize as yeoman's work in education. Apparently, at that time, the entire instruction consisted in lectures, no text-books even being advised. In reply to a letter addressed to the deans of the Jefferson Medical College and of the Medical Departments of the University of Pennsylvania, Harvard University and Columbia University,

¹ The names of American surgeons are printed in italics, to point out more distinctly some of those Americans who have aided in the development of surgery. The limits of the address only allowed me to name a few, and I must apologize for all the necessary omissions.

I am told that no lists of text-books whatever appear on the catalogues of fifty years ago. In the "catalogue" of the Jefferson, for 1857—a mere catalogue of names of the faculty and students, instead of the present elaborate "Announcement"—for the first time appears a list of "Books of Reference," and the Dean of Harvard, states that there, "the first mention whatever made of text-books appears in the announcement of the summer session, beginning March 12, 1866," four years after I graduated! At first the text-books generally recommended on surgery were Drewitt and Erichsen; Malgaigne and *Pancoast*, on "Operative Surgery," and, for collateral reading, Bordie and Holmes.

The course of didactic lectures then began on the second Monday of October and ended soon after the middle of February, and if we take out the holidays, and remember that not a few made up for coming late by leaving early, it was quite a possibility for a man to receive his authorization to practice, a diploma which alleged him to be "*Virum probum in arte medica, acque ac chirurgica . . . dignum amplissimis honoribus academicis*," after practically only two sessions of three months each! The examination was a farce and the diploma a falsehood. Even so late as 1860, when I began the study of medicine, there were no laboratories, except that of anatomy—the dissecting room. I doubt whether of the two hundred and odd men who graduated with me in 1862, 10 per cent. had ever looked through a microscope or handled a test-tube, palpated a tumor or auscultated a chest. There were no recitations; neither were there ward classes nor other means for actual contact of the student with disease. We can but wonder that any of us who graduated in the first twenty years of the half century we are celebrating ever learned enough to prevent some from being rivals to Saul, who had slain his thousands, and the more nimble from rivalling David, who slew his ten thousands. That we have become respectable practitioners, or possibly more than respectable, is due not so much to our early opportunities as to later incessant midnight labors.

Now we may congratulate ourselves that the majority of the Medical Schools of the country have a graded course of four years, each covering not less than six, and often eight months: not only lectures, but in many instances constant and searching recitations; almost a score of laboratories in which each student actually does the work of observation and experiment: ward classes in which every man is obliged to train his eyes, his ears, his fingers and his judgment, in the examination of patients in every department of medicine: to ferret out the history of the cases brought before him, ascertain symptoms, seek for physical signs, reach a diagnosis, determine the treatment, and often actually to prescribe and to assist at operations.

Not only, however, is the advance marked in our medical schools, whose diploma now really means, almost what it says, but also all over the land since 1847 there have been established, partly from philanthropic motives and partly for the purpose of medical teaching, an enormous number of hospitals, in which a very large proportion of the young men, after receiving their diplomas, spend a year or more in the actual practice of their profession, under the eye of accomplished teachers. It is impossible to describe the immense benefit thus obtained by large numbers of nascent practitioners, from such familiarity with all the phases of disease which they will

meet in their after lives. Not a few of them also, by being brought in contact with energetic, enthusiastic, and wise teachers, receive their first stimulus, both literary and scientific, a stimulus which will influence their entire future course, and is of far more value than any amount of mere scientific knowledge they may acquire.

What untold good these hospitals do, not only to the patients who are cured and the internes who are taught, but equally to the older medical staff who are still further trained and educated by them! Not only in great metropolitan centers, but in small towns, and sometimes even in rural communities, this growth of hospitals has been within the last twenty years one of the striking features of our civilization. It is not too much to say, that every city or town establishing a hospital, is repaid a hundred fold in the immediate improvement of its medical men, from these opportunities for experience and exact study. No one can visit a modern hospital without being struck by the immense improvements of the last few years. The noisome hotbeds of contagion, of fever, of suppuratation, of erysipelas, of blood poisoning and of "hospital" gangrene—could irony wield a sharper weapon than such a name?—have given way to neat and trim wards, the home of cleanliness itself with iron bedsteads, glass topped tables, cement or marble, tiled or tessellated floors and walls, with trained nurses whose jaunty caps and pretty uniforms and often winsome faces almost make one half wish to be sick, and when one is sick half loth to be well.

I mentioned a moment ago the text-books in use forty years ago. Except *Pancoast's* "Operative Surgery," every one of them it will be observed was the work of a European. *Gross's* "System of Surgery," which has probably had a wider influence in educating the profession than any other general surgical text-book issued up to the present time—a monument of surgical knowledge and indefatigable labor—was first published in 1859. This was far in advance of most of the surgical text-books then in use. The literary labors of American surgeons consisted chiefly in translating foreign surgeries, or in annotating American editions of English text-books.

Within the last two decades, and especially the last, we all know, without my undertaking the invidious task of naming them, how many distinctly American surgeries have been written, and we may say without undue national vanity that they are the equals of any similar European works. This literary and scientific activity, however, has not been limited to text-books or systems of surgery alone, but our forward strides in education have been marked by the appearance of not a few monographs of original research which do credit not only to their authors but to all American surgeons.

On more than one occasion I have had to call attention to the difference between American surgery and that of Europe. While in the department of the practice of surgery, after a full acquaintance and observation with European men and methods, I can state my deliberate conclusion that the best American surgeons are the peers of the best European surgeons; yet in the department of original research and especially of laboratory work, we must confess our very evident shortcomings. I do not say that we should be ashamed of them, for we must remember that we are but little more than a century old as a nation; that the practical needs of everyday life must first be met; that oppor-

tunities must be created by the construction and endowment of laboratories, and especially by the growth of that literary and scientific spirit which only develops in any community or profession in the course of long years and with accumulated wealth, and which has had little opportunity for growth in this country until within the last twenty years. The genius of our institutions is such that we can never look for government or State endowments of such laboratories, but must depend on the far sighted and broad minded liberality of our wealthy fellow-citizens for the establishment of such laboratories and the consequent opportunities for investigation and discovery. Nor do I believe in the long run we shall suffer by reason of this difference. As a people we are not apt to be left behind in the race, and the stimulus of a somewhat exceptional distinction in science or literature will meet with a responsive chord in the breast of many a young man now beginning his studies.

To attempt to impress upon the members of the AMERICAN MEDICAL ASSOCIATION the need for such original research in this country is a work of supererogation, but I may with propriety urge you with all the ardent and intense conviction I feel, that as we leave this festal meeting and go to our homes, every one of us as occasion offers will urge upon our wealthy liberal-minded fellow-citizens the duty and also the privilege of founding in connection with every medical school laboratories of research, the good influence and beneficent results of which can never be estimated in paltry dollars and cents. Yet tried even by this commercial standard science pays. The early recognition of the germs of cholera at the port of New York some years ago by preventing the entrance of such a commerce-destroying epidemic, leaving wholly out of consideration the saving of human life, saved to the citizens of the metropolis more millions of dollars than are represented many times over by the cost of all the laboratories now existing in this country. Our merchants should be made to understand, therefore, that even from a financial point of view, to say nothing of the humanitarian standpoint, the cheapest means of preventing the enormous business losses which occur from epidemics is by such scientific and hygienic measures as the laboratory makes possible.

Allied to medical teaching and the most important adjunct to medical literature is the establishment of extensive medical libraries. In this, as an American, I am proud of my own country. No foreign nation can point with equal pride to any such medical libraries as the last thirty years have developed in this country. Foremost, not only among American libraries, but in the world, is that of the Surgeon-General's Office of the United States Army in Washington. Not only has it gathered thousands of medical books and eleven hundred medical journals (the estimate of Dr. Fletcher) from all over the world, but the entire library is managed with a liberality which makes it the admiration and the envy of foreigners. Its treasures are freely at the service of the entire profession of the country, and the publication (under the editorship of *Dr. John S. Billings*) of its magnificent "Index Catalogue," has made the whole world debtors to America. We trust that a more liberal congress may see that if even the small amounts thus far given to it have made it of such immense value, still larger and more generous appropriations would keep it ever in the van.

In addition to this, the libraries of the College of Physicians of Philadelphia, of the New York Academy of Medicine, and of the Boston Medical Library Association are only surpassed by those of the faculties of medicine in Paris, of the Royal College of Surgeons of London, and of the Military Medical Institute of St. Petersburg; while those of the Newberry Library in Chicago (thanks to our honored and liberal president), of the New York Hospital, and of the Pennsylvania Hospital rank well with the best European libraries. With such literary opportunities, therefore, if we had equally good scientific laboratories the possibilities of American medicine and surgery would be almost unbounded.

The scientific progress of this half-century of surgery has separated us from the past as by a great gulf. Great theologians, such as a Calvin or a Jonathan Edwards, were they recalled to life, could discourse as learnedly as ever of Predestination and Free Will; great preachers, as a Beecher or a Spurgeon, could stir our souls and warm our hearts as of old; great jurists, as a Justinian or a Marshall, could expound the same principles of law which hold good for all time; great forensic orators, as a Burke or a Webster, could convince us by the same arguments and arouse us by the same invectives or the same eloquence that made our fathers willing captives to their silver tongues. But today, so rapid has been our surgical progress, a Velpeau, a Sir William Ferguson, or a *Pancoast*, all of whom have died within the last thirty years, could not teach modern surgical principles nor perform a modern surgical operation. Even our every-day surgical vocabulary—staphylococcus, streptococcus, infection, immunity, antiseptics and aseptics, toxin and antitoxin—would be unintelligible jargon to him; and our modern operations on the brain, the chest, the abdomen and the pelvis would make him wonder whether we had not lost our senses, until seeing the almost uniform and almost painless recoveries, he would thank God for the magnificent progress of the last half-century, which had vouchsafed such magical, nay such almost divine power to the modern surgeon.

The splendid Index Catalogue of the library of the Surgeon-General's office teaches another lesson. In law, the jurist or attorney deals with statutes and precedents, and to some extent with principles which are for the most part local. An American lawyer could not plead a case in Germany, nor a German lawyer in Russia, nor a Russian lawyer in Italy. Laws and customs differ from country to country. An American or an English divine would be an alien in language and religion in Hindostan; a Hindoo, equally an alien in China; a Chinaman, in Africa. But surgery is one and the same the world over. Whether in the frozen north or under the equator, in civilized America or barbaric Africa, be the patient white Caucasian, swarthy Negro, red Indian or yellow Malay, the same accidents and diseases assail him, the same remedies save him, identical operations cure him: a new remedy discovered in Japan is equally efficacious in Philadelphia; a new operation devised in America is equally applicable in Egypt. The Index Catalogue, which is a catalogue not for one country, but for all nations and all tongues, contains them all. This, with our noble stand as a profession against patenting any instrument, any operation or any method of treatment, makes every sick or injured man my brother, and makes me his keeper, under every sky, and clothed in any skin. Heaven bless such a divine profession,

such a noble array of generous men battling for the life and health of all mankind, the world over, in one serried phalanx of unselfish heroes!

The development of modern surgery, apart from surgical teaching, libraries and laboratories, is dependent on several noteworthy factors. These have to do partly with the discovery and development of surgical principles, and partly with the development of surgical practice. Now the one and now the other is in advance. Each is the handmaid of the other. In Listerism we see surgical practice outstripping surgical principles, for of Lister it might truly be said, that by the "scientific use of the imagination" he saw the germs, "when as yet there were none of them." His surgical insight convinced him of the existence of the germs of suppuration years before Ogston's and Rosenbaum's discovery of the pyogenic organisms. On the other hand, the moment that the scientist discovered these germs, the laboratory enabled him to discover many others, and the discovery of the bacillus of tetanus, of the tubercle bacillus, of the streptococcus of erysipelas, of the gonococcus, of the bacillus of malignant edema, the bacillus mallei, etc., illustrate the converse—science forging ahead of practice, and pointing the way to new achievements in the healing art.

Foremost among the important studies which the past fifty years have seen established on a firm foundation, is that of *Pathology and Pathological Anatomy*. It is not a little credit to America that the first pathology written in the English language was written by a young American doctor, in a then small western town, as early as 1839. In spite of Gross's book, however, pathology and pathological anatomy were almost unknown sciences in 1847. The Pathological Society of Dublin was founded in 1839, that of New York in 1844, that of London in 1846 and that of Philadelphia in 1857. The microscope, and especially microscopical methods of staining, section cutting and the like were in their infancy, or may indeed be said scarcely to have existed. No accurate views of pathology could be entertained without these aids. What is now the heritage of every first year student was beyond the possibilities of the most advanced teacher of fifty years ago.

Second. — *Affiliated sciences* have been put under tribute to surgery. In physics the discovery of the *Röntgen rays* is so recent as to require only mention. This discovery, as well as the enormous advances of *Electricity*, as seen in the electric head-light, the cystoscope, the gastroduodenoscopy, and other means of diagnosis, engenders the hope that other forces and other means of investigation quite as surprising and quite as marvelous, are certainly to be expected within the next fifty years.

It is due, however, especially to the development of *Embryology and Comparative Anatomy*, in combination with pathology, that our views of the nature of disease have become so much more accurate. Perhaps the book which influenced surgical views and surgical practice more than any other, was Chelius's "Surgery," of which a translation by South was republished in Philadelphia in 1847. It had passed through six editions, and had appeared in eight languages. It may be taken, therefore, as the type of the most advanced continental surgery of that day. How curiously vague his ideas of pathology were, may be seen in his classifying together false joints, old rupture of the female perineum, harelip and cleft palate,

as "old" in contradistinction to "recent," "solutions of continuity which do not suppurate." Though he speaks of the last two as "original vices," yet so far as concerned embryology, which has shown the cause for hare-lip and cleft palate, he is absolutely silent. Stenosis of the esophagus, of the rectum, of the prepuce, urethra and vagina, were all classed together under "diseases of unnatural adhesions of parts." The existence of neoplasms as a cause of the stenosis, was not clearly differentiated from other causes. All his ideas as to tumors were vague, and, as we now know, wholly unscientific. There is no chapter on tumors in the modern sense, though there is one on "diseases which consist in the degeneration of organic parts, or in the production of new structures;" but even in this, enlarged clitoris, goitre, warts, bunions, fungus of the dura mater, fatty swellings, encysted swellings and loose bodies in the joints are grouped with polyps, sarcoma, cancer, and other new growths. Ranula, retention of urine, and retention of the fetus are classed together as "Foreign Bodies formed in our organism by the retention of natural products," and hernia cerebri is treated in connection with all other forms of hernia. Greater disregard of their pathology or etiology, of their origin and significance, can hardly be imagined.

Though John Hunter had dissected over five hundred varieties of animals a half century before the AMERICAN MEDICAL ASSOCIATION was organized, yet the solidarity of the animal kingdom from man down to the lowest form of life was not recognized. Evolution and, therefore, reversion to animal types, was not recognized, and hence not used to explain many abnormal developments. For instance, abnormalities in the arch of the aorta and its branches, which we now recognize as variations of a general plan running through the entire animal kingdom, were then mere curiosities of structure without any meaning.

Third.—The year before the AMERICAN MEDICAL ASSOCIATION was organized the world was startled and surgery revolutionized by the introduction of *Anesthesia*: first of ether, in America, in the year 1846; and of chloroform, in Edinburgh, in the following year. What this has done for the amelioration of the horrors of pre-anesthetic surgery, very few now living can appreciate. Instead of shrieks, and cries, and groans, and a needful celerity which sometimes became dangerous haste, everything now proceeds with that quiet and leisure which is essential to the performance of many, if not most, of our modern, elaborate and prolonged surgical operations. Now "the fierce extremity of suffering has been steeped in the waters of oblivion, and the deepest furrow in the knotted brow of agony has been smoothed away forever." (Holmes.) Who could possibly endure the tortures of an operation lasting for one, two, or it may be even three hours, when every minute seemed an eternity of agony? I would rather be the discoverer of anesthesia than have won an Austerlitz or a Waterloo.

The old motto, "*tuto cito et jucunde*," is now changed by the omission of "*cito*." In fact, as has been pointed out by Cheever and a few others, the leisurely performance of operations which is made possible by ether is in danger of leading us to a dilatory method of operating which has its own dangers. Some of our most successful modern surgeons owe not a little of their lessened mortality, I am sure, to their swiftness.

The ideal anesthetic has not yet been obtained. No one who reads the journals from week to week, and

sees the sad headings "Death from Anesthetics," and especially "Death from Chloroform," can fail to see that both ether and chloroform, and also a few others which occasionally replace them, have very real dangers. The ideal anesthetic will not be one which will abolish pain without abolishing consciousness. To have the patient aware of surgical emergencies which test even a veteran operator's skill and resources to the utmost, would frequently invite death by the terror which it might occasion. The ideal anesthetic will abolish pain by the abolition of consciousness, *but without danger to life*. That it will be found, is as certain, as that experiment and progress are our watchwords.

Besides general anesthesia, several forms of local anesthesia have been devised, within the last few years, by freezing with salt and ice, rhigolin or chlorid of ethyl, by cocaine, eucaïn, Schleich's infiltration method, etc., methods which have a distinct sphere of usefulness, especially in minor operations.

Fourth. *Antiseptic surgery*.—While the exact date of the revolution in surgery due to anesthesia can be fixed, a later revolution in our surgical methods came in so gradually that one can not name any special day, or even year, when it was introduced. But, while the day or year can not be given, the one man to whom this great revolution in modern surgery is due is well known. The name of Lister, *primus inter pares*, is honored throughout the entire surgical world, and his recent distinction, as the first medical peer of the United Kingdom, is an honor conferred not upon Lord Lister alone, but upon the entire Profession, and worthily marks a new departure in the recognition of medical science by the queen.

So far as this country is concerned, the introduction of antiseptic surgery may be said to date from the visit of Mr. Lister to this same city of Brotherly Love, at the Centennial International Congress of 1876. Derided at first as a "fad" or as "nothing more than surgical cleanliness," it has now won its way over the whole world. A few laggards in the surgical army there are who even yet do not practice modern antiseptic or aseptic surgery, but the overwhelming majority of the profession recognize that the world owes a debt to Lord Lister, which no honors can pay. His service to humanity will never be forgotten, and probably never will be surpassed, in its wide-reaching beneficent influence. Anesthesia abolished pain; antiseptics has almost abolished suppuration, erysipelas, tetanus and the various forms of blood poisoning; in other words, nine-tenths of the dangers of surgical operations. Malgaigne, from 1836 to 1840, lost 126 amputations of the thigh, out of 201, a mortality of nearly 63 per cent. (Mütter's Liston, p 425). *Erdman* (*Annals of Surgery*, xxii, 1895, p. 358) has shown, that in nine New York hospitals, from 1882 to 1894, the mortality in 223 amputations of the thigh was 21.5 per cent. Heimann (*Arch. klin. Chir.*, 1897, liv, 223) reports in Germany, in 1894, 475 cases with a mortality of 21.7 per cent. Page (*Lancet*, 1894, i, 1439) of Newcastle-upon-Tyne has shown that, from 1876 to 1893, of 230 amputations of the thigh, the mortality was only 11.3 per cent., and *Estes* (*N. Y. Med. Rec.*, Nov. 3, 1894) of 77 such amputations lost only 8, a mortality of but 10.4 per cent.

Without anesthesia and antiseptics, modern surgery would be an impossibility. It is to me an inspiring and encouraging thought that the world owes the three greatest discoveries of modern medicine—Vaccination,

Anesthesia and Antisepsis—to England and America. Long may they be joined in such scientific brotherhood! Never may they be sundered by fratricidal strife!

Fifth.—As an outgrowth from the practical development of antiseptic surgery has arisen a wholly new science, and a wholly new method of practice, which bid fair to revolutionize our modern therapeutics—*Bacteriology and Orrhothrapy*. Like the antiseptic method, they have been a gradual outgrowth. Modern laboratory research has verified the crude suspicions and shrewd guesses of thirty years ago, and transformed them into the certainties of modern science. The discovery of the anthrax bacillus by Pötlender, in 1855; the epoch-making discovery of the pyogenic organisms, in 1881, by Ogston and Rosenbaum; of the tubercle bacillus by Koch, in 1882; of the tetanus bacillus by Nicolaier, in 1887, will illustrate how recent is this scientific knowledge. The splendid results which have been achieved in medicine, by the use of Behring's and Roux's diphtheritic antitoxin, seem to promise that some form of anti-streptococcic serum will do as much for surgery, and that your orator fifty years from now will be able to trace the history of the probably soon to be realized method of battling with infection, of which at present we have only a premonition. Bacteriology and orrhothrapy are so recent that it is dangerous to prophesy what may occur, but it is not venturing far to predict that fifty years from now we shall be able not only to easily convert infected into non-infected wounds, but also, by some means as yet undiscovered, we shall be able successfully to combat the infection, and prevent the dire ravages of tuberculosis, of syphilis, of cancer, of sarcoma, and possibly even the occurrence of benign tumors. That will be indeed the surgical "Golden Age," when surgery will be robbed of nearly all its terrors, when a peaceful victory will abolish our present instruments and the majority of our present operations.

Sixth.—*Animal experimentation* has had also a very large share in the development of modern surgery. The whole question of the introduction of animal ligatures was begun in America by *Physick*, who used buckskin; his follower, *Dorsey*, who used kid, and cut both ends short; *Hartshorne*, who used parchment, and *Bellenger* and *Eve*, the tendon of the deer; and this has been solved principally by experiments upon animals, in order to determine accurately the behavior of such ligatures in the tissues. Only professional readers can appreciate what a boon to humanity this single achievement has been. Modern cerebral surgery also owes its exactness and success almost wholly to cerebral localization and antiseptics, both of which were first studied by experiment upon animals, and later by the application of the knowledge so gained to man. *Bacteriology would not now exist as a science, nor would accurate modern surgery and a large part of modern medicine be possible, had experiments upon animals been prohibited, as some zoöphilous men and women who love dogs better than men and women, and even little children, desire.*

Seventh.—The developments of modern surgery has naturally been on two lines: First. That of scientific progress based especially on pathology, bacteriology, embryology and comparative anatomy. Our present views of tumors, of malformations, of the theory of immunity, of septicemia and pyemia, of thrombosis and embolism, have been the result of the studies by physi-

ologists and pathologists, which have most profoundly helped our practice and influenced our results. Secondly. Within the last twenty-five years, especially, there has come what might be called preëminently the era of the *operative surgeon*, due more especially to the introduction of anesthesia and later of antiseptics. By making it possible to perform an operation without pain, and almost without danger, organ after organ of the body has been made accessible to the modern surgeon with almost invariable success. Scarcely twenty years ago even Erichsen, in a public address, declared that surgery had nearly reached its final limits, and that the brain, the heart and the lungs must ever remain inaccessible to the surgeon's knife! But now these organs are so constantly operated on and even removed that I have about reached the conclusion that, with the exception perhaps of the heart, all of our internal organs are strictly to be classed as luxuries—and we even know some heartless people. From this safety and painlessness there has been born an audacity unknown to the men of a former generation. Diseases then thought to be incurable are now vanquished every day in our clinics, and organs thought to be inaccessible are attacked with an impunity which is perfectly marvelous. Indeed, the danger is not slight, that we may go to the other extreme and we may well heed the warning of *Weir Mitchell*, that, perhaps, "surgery has lost much of that keen sense of responsibility which grew out of the larger mortality of other days."

Modern instruments of precision, such as the clinical thermometer, the cystoscope, the ophthalmoscope, the laryngoscope, the otoscope, the proctoscope, the aspirator, etc., without which accurate diagnosis and proper treatment are often impossible; instruments accessory to operation, such as retractors, hemostatic forceps, transfusion apparatus, etc., without which the modern surgeon would be hampered and hindered beyond measure, were wholly unknown thirty years ago.

Time will not permit me to trace chronologically the introduction of one operation after another. We can best, perhaps, obtain a notion of the difference between the surgery of 1847 and that of 1897, by noting what operations were performed at the former date and contrasting them with present possibilities. Among the operations performed a half century ago may be included—

- Amputations;
- The ligation of the most important arteries;
- Occasionally excision of joints;
- The removal of tumors;
- Lithotomy;
- Lithotrity;
- Colostomy;
- Herniotomy;
- Tracheotomy;

Tenotomy (the subcutaneous performance of which, together with the difference in the danger of open and closed fractures, long before the day of Lister, should have pointed out the road to antiseptic surgery); and

Trephining, which, though formerly very frequent, had almost fallen into desuetude. South says in 1847, "the less done as regards fractures of the skull the better. They should never be interfered with except compression be present." The barbarous *écraseur* and the equally barbarous *Jarvis's adjuster*, were then in frequent use.

Ovariectomy was more than looked at askance. In

1846, *Mütter*, in commending Liston (*Mütter's Liston*, p. 442) for protesting against ovariectomy says: "It is certainly hazarding but little to assert that in a very few years the measure will be assigned to the oblivion it so richly merits," and so late as 1862, the year that I graduated, I heard the then professor of obstetrics (*Meigs*) in the Jefferson College, in his last course of lectures, declare with a warmth which did more credit to his humanity than to his science, "that the men who go about the country ripping open women's bellies should be indicted for murder." The first ovariectomy in England was performed in 1836; the first in France in 1844; but for Europe ovariectomy "was not fully established as a surgical procedure until after 1858, when Wells took it up" (*Heath's Hunterian Oration*, 1897); and in this country, where it had originated in 1809, at about the same date when the brothers *Atlee* suffered, one may say even persecution, because of their adherence to their belief that ovariectomy was a justifiable operation. Now, a number of surgeons can each count more than one thousand ovariectomies, perhaps some even two thousand, with a mortality in their later results as low as 3 per cent. In his first thousand ovariectomies, on the basis of the annuity tables of life insurance companies after deducting the years lost by the fatal cases, it was estimated that Sir Spencer Wells alone had added twenty thousand years of happy useful life. With our modern antiseptic methods it would be no exaggeration to say that a thousand similar cases today would add thirty or possibly even thirty-five thousand years of human life. What that means to the hundreds of homes, to the hundreds of husbands and thousands of children in those homes, who can say?

It is impossible in the time allotted me, to do more than make a very brief survey of the surgery of 1897, as contrasted with that of 1847, but even a hasty glance will give us some idea of how far we have gone on the road of progress.

One of the most striking departments in which progress has been made is in that of the nervous system. In this *Mitchell*, though not a surgeon, has suggested many surgical advances. I have already quoted South's dictum as to fractures of the skull—a dictum which is now violated with the happiest results by almost every surgeon in the land. In addition to this, a very large number of tumors of the brain have been successfully removed, tumors which before 1884 were considered as wholly outside the domain of surgery. To our English brethren, *Godlee*, *Horsley* and *Macewen*, above all others, is due the credit of establishing cerebral surgery on a firm basis of right principles and successful technique.

In abscess of the brain we have a lesion, which is still more amenable to treatment, and the number of recoveries now mounts even into the hundreds. We have recognized that these abscesses very frequently arise from chronic disease of the middle ear, and, thanks to the otologist, we can now, by proper treatment, in many cases do better than operate on these abscesses—we can prevent them. The papers of *Arbuthnot Lane*, *Ballance* and *Macewen* have taught us that even so formidable a disease as thrombosis of the sinuses, especially of the sigmoid sinus, can be dealt with successfully. Even the ventricles of the brain have been successfully invaded, drained, packed with gauze and washed out from side to side.

Tumors of the spine, since Mr. *Horsley's* brilliant paper, in 1888, have been proved accessible to the

modern surgeon. Though *Abbe's* division of the posterior nerve roots, in cases of intractable neuralgia, has not been followed by all the success we could wish, it has proved that the operation is a practicable one. While, in the words of the hymn, we have not yet "stretched every nerve," we have almost realized that pious exhortation. Section of nerves by accident or deliberately, in the removal of tumors, was formerly followed by permanent paralysis, but now nerve suture has rescued many a poor sufferer and restored the junction of the divided nerve, even after months of separation. Facial neuralgia, once the bane of the surgeon and the sufferer, has now been cured in a number of cases, not only by the removal of the rebellious nerve, but as was suggested by *Mears* in 1884 (*Trs. Amer. Surg. Assoc.*, 1884, p. 482-3), even the Gasserian ganglion itself has been removed in more than a hundred cases. In this department the names of our American brethren, *Carnochan*, *Pan-coast* and *Hartley* stand preëminent.

In disease of the organs of locomotion—the bones and the muscles—the expansion of modern surgical technique has been very marked. The plastic surgery of the bones seems scarcely to have any limit. Osteotomy is so safe that in 1884 *Macewen* reported 1,267 operations, on 704 patients, with only 5 deaths, and they were chiefly due to other causes than the operation. Tenotomy and transplantation of tendons have assumed a new field of usefulness undreamed of a few years ago. In fractures and dislocations the progress has been equally extraordinary. *Jarvis's* adjuster has given way to the method of manipulation first introduced by *Reid*, and reduced to a science by *Bigelow* and *Allis*, for the hip, and *Kocher*, for the shoulder, and in a combination of fracture with dislocation, the ingenious hook of *McBurney* has enabled the surgeon, in many cases, to accomplish that which manipulation alone could not have done. The splints of *Nathan R. Smith* and *Hodgen*, and the introduction of adhesive plaster by *Gross*, and the subsequent application by this means of the weight and pulley by *Buck*, have supplanted the clumsy splint of *Desault*. Even so simple a means of treatment as that by plaster of Paris, together with the thorough disinfection of compound fractures, has enabled us to obtain results, either by the recumbent or the ambulatory treatment, which, but a few years ago, were impossible. Compound fractures, then among the most serious accidents of the human frame, with a mortality of about two out of every three, have so lost all their dangers that the mortality is hardly more than two out of every hundred.

Tumors, once too formidable either by reason of their size, their location, their adhesions, or the hemorrhage which attended their removal, have been made wholly amenable to treatment. We have been taught largely by the labors of the younger *Gross* and *Hallstedt* that even cancer no longer necessarily entails death by recurrence, but that if we remove the growth early and thoroughly, we can obtain a cure, which in the hands of *Mr. Cheyne* (*Lancet*, 1896, 1, p. 397) has recently reached the extraordinary result of 57 per cent. of permanent cure in cancer of the breast.

Not only has the exterior of the chest been invaded, but the ribs and the sternum are now resected, and when necessary the entire chest wall, over a large area, is removed with impunity.

Few of us, excepting the older living members of the profession, can remember the immense advance

which paracentesis of the chest made, by reason of the persistent and fruitful researches of *Bowditch* and *Wyman*, about 1850, out of which have grown *Estlander's* and *Schede's* heroic and successful operations. Not only have accumulations within the pleura been evacuated, but *Roberts* was among the pioneers in the operation of paracentesis pericardii, while the surgery of the lung is now only taking its first tentative steps. The pericardium has also been sutured, and even the heart itself has twice been sutured, with one complete recovery (*Farina, Rev. de Chir.*, 1897, 335—*Rehn, Lancet*, 1897, 1, 1306).

We were taught by the younger *Gross* that the great veins could be successfully tied, and recently they have been successfully sutured—even the lateral sinus. The recent researches of *Abbe* (*N. Y. Med. Rec.*, Jan. 13, 1894, 39), and *Murphy* (*N. Y. Med. Rec.*, Jan. 16, 1897, 73), may open a new chapter in the surgery of the arteries by substituting suture with preservation of their lumen for occlusion by the ligature.

Quite as fruitful has been the surgery of the digestive tract. Foreign bodies in the esophagus which were very inefficiently dealt with fifty years ago, thanks to the Roentgen rays and modern surgical methods, are now in the large majority of cases successfully removed. In non-malignant stricture of the esophagus, *Abbe's* bowstring method has been a credit to American surgery.

I can do scarcely more than allude to the surgery of the stomach; to the value of gastroenterostomy, to pylorotomy, to pyloroplasty, to dilated stomach in which a tuck has been taken both by European and American surgeons, or hour-glass contraction of the stomach, which *Weir* and *Watson* have successfully remedied by operative procedures, to gastrotomy in stricture of the esophagus or *Richardson's* gastrotomy for the extraction of foreign bodies in the esophagus. In the surgery of the entire intestinal tract, America, it can be safely said, has led the world. To no one laborer in this field is more credit due than to the distinguished President of the AMERICAN MEDICAL ASSOCIATION (*Senn*), to whose irrepressible labor, genius and skill we owe most of our means and methods of dealing with such diseases. He first showed us the most successful methods of making intestinal anastomosis, from which have arisen all of our modern methods of treatment of cancer of the large and small intestines, and many allied conditions. From these fruitful labors also have arisen our modern methods of the treatment of intestinal and fecal fistulæ, even in some cases reaching so far as the total exclusion of a considerable portion of the bowel. The modern, wonderfully successful treatment of wounds, whether stab wounds, gunshot wounds or others of the stomach, intestine or bladder, owe their success largely to the labors of the elder *Gross*, *Parkes*, *Senn*, *Bull*, *Murphy* and other Americans.

Cancer of the rectum, which, until about ten years ago, was almost inoperable, has now taken its place among the formal and justifiable operations of modern surgery, so that as much as twelve inches of the rectum have been resected by *Kraske's* method. The mortality has been reduced to 20 per cent., and permanent cure of such a formerly fatal disease has been attained in over one-third of the cases which recovered. (*Therap. Gaz.*, April and May, 1897.)

The other accessory organs in the abdomen have been conquered by the modern surgeon. Fifty-seven

tumors of the liver have been removed with a mortality as low as 13.5 per cent. (Transactions Pennsylvania State Med. Soc., 1897.) The world owes to America the operation of cholecystotomy, since it was first done by *Bobbs* in 1867, and was popularized by the powerful influence of *Sims* in 1870. Pancreatic cysts, chiefly through the labors of *Senn*, are now amenable to treatment, while the spleen has been extirpated many times.

The appendix, that meagre but most troublesome ancestral vestige, which with the bicycle has been the faithful friend of the surgeon through the past few years of commercial depression, has been recognized within the last few years as the real origin of the so frequent abscess in the right iliac fossa. Beginning with *Willard Parker's* paper, in 1867 (*N. Y. Med. Rec.*, 1867, ii, 25), and *Fitz's* memorable paper, in 1886 (*Trans. Assoc. Amer. Phys.*), the treatment of appendicitis, and even its much abused name, are distinctly of American origin, and an immense credit to American surgery.

Until *Simon's* classical experiments on dogs, in 1870 (*Deutsche Klinik*, xxii, 137) the kidney was a practically inaccessible organ, but now, when it wanders, we secure it by sutures; when there is a stone in it, we open it fearlessly and remove the stone; when it is distended with pus or urine we drain it, and if it is past hope of recovery we extirpate it, all with most remarkable success. Even stones in a ureter or a divided ureter, *Cabot*, *Fenger*, *Kelly* and *Van Hook* have shown us, can be successfully dealt with.

The treatment of stone in the bladder has undergone an extraordinary revolution since the introduction of *Bigelow's* litholapaxy. Its introduction as a surgical procedure was dependent on the prior researches of *Otis* and other Americans, who showed us that the caliber of the urethra was much greater than we had supposed, and permitted, therefore, the introduction of instruments of much larger diameter than before had been deemed allowable. The reintroduction of supra-pubic cystotomy, due largely to *Dulles's* paper, in 1875 (*Am. Jour. Med. Sci.*, lxx, 39), has permitted us to deal not only with large stones, but also with ulcers and tumors of the bladder; even large portions of the wall of the bladder have been removed successfully. The enlarged prostate is now, though always a serious danger, far less a menace to comfort and life since the introduction of *McGill's* and other methods of prostatectomy, and of *White's* operation of orchidectomy or the resection of the vas deferens.

The surgery of the pelvic organs has, one may say, been created since 1847, but its triumphs are so many that time allows only a word. *Sims's* treatment of vesico-vaginal fistula and his introduction of silver wire in 1852 was distinctly an American triumph, while the labors of the *Allees*, *Kimball*, *Peasley*, *Goodell*, *Thomas*, *Emmett*, *Batley*, *Kelly*, household names to all of us, have made pelvic surgery so successful that the danger is that it may be overdone. Many an ovary or womb, in the words of the witty toast, "absent from the body but present in the spirit," would far better have been left in possession of their owner.

The radical cure of hernia has been the product of the last twenty years, and the operations of *Halsled*, *Bassini* and *Macewen*, not to mention the many others, have taken a permanent place in the practice of the profession within the last ten years. When we

can report, as *Coley* has recently done (*Annals of Surg.*, March, 1897, 270), 360 cases, with only one death and seven recurrences, or as *Degarmo* has reported at this very meeting, 250 cases unmarred by a single death, the question of the propriety of operating for the radical cure of hernia even in children, is settled once for all.

Goiter fifty years ago was simply allowed to run its course, since hemorrhage destroyed nearly all those operated on: but two years ago *Kocher* (*Beilage z. Centralbl. f. Chir.*, 1895, 66) reported a series of a thousand operations, with a mortality of but 1 per cent., in non-malignant cases.

Extirpation of the larynx for malignant growths has taken its place among the justifiable and formal operative procedures. Acute intestinal obstruction, whether from bands, volvulus, intussusception or other conditions, is now dealt with as it ought to be, surgically, and, if promptly done, with the happiest results.

A hasty and very imperfect review, such as has been above given of the improvements in surgery within the last fifty years, does much more than show us the adroitness, audacity and success, of the modern surgeon. That is the thing which strikes us most as surgeons, but we must regard all this progress also from the standpoint of the patient and the community, and see what it means. It means a prolongation of life by operations, which, while not without pain and suffering during recovery, have been robbed of all their primary terrors by anesthesia, and most of their subsequent pain and suffering and danger by antiseptics; it means that patients who in 1847 were hopelessly consigned to the grave after weeks and months of suffering, are now, in the vast majority of cases, rescued from death; it means that families formerly bereft of husband and wife, parent or child, and left to spend years of sorrow, of suffering and, in many cases, of poverty, because the breadwinners were taken away, have now restored to them, their loved ones, in health and strength and usefulness; it means that the hecatombs of a Caesar, an Alexander, a Napoleon, are offset by the beneficent labors of a Morton, a Warren, a Lister, who are, and for all time will be, blessed by many a poor patient, who never heard of them, instead of being cursed as the destroyers of nations and of homes innumerable; it means that man's inhumanity to man shall be replaced by a scientific and Christian altruism, which sheds blessings and benefits on the whole human race, seeing in the patient, whether saint or sinner, only a human being who is suffering from accident or disease, whom it is the province of the surgeon, in imitation of Him who went about doing good, to restore to health and happiness. Even where life can not be prolonged, the agonies of death itself can be soothed by his gentle hand and his fruitful skill.

What the future has in store for us we can only dream. Two diametrically opposing tendencies are prominent in modern surgery: radical interference with disease so that there is now scarcely a single organ or portion of the body, not within our reach; yet on the other hand a remarkably conservative tendency in cultivating remedial rather than radical surgery. Joints so diseased as once to require amputation, are now treated conservatively with the best results; ovaries, a portion of which can be preserved, are kept in the abdomen; kidneys once doomed to extirpation are now partially removed, and bones so destroyed that

they formerly required amputation, are now excised and the limb preserved. Experiments upon animals have recently given us wholly new views of infection and of the origin of many diseases, and also the little knowledge that we yet have as to either natural or acquired immunity, and to a consequent orrhoterapy.

It is, I believe, on these lines that our more immediate future triumphs will be achieved. We have discovered the actual cause of tetanus, tuberculosis, erysipelas, suppuration, and a host of other diseases and conditions, of the cause of which we were wholly ignorant a few years ago. The causes of many other disorders, both medical and surgical, still remain hidden from our view. We know almost nothing of the origin of benign tumors, and are groping to discover the origin of cancer, sarcoma and other malignant growths. When we have discovered the cause, we are nearly half way, or at least a long way, on the road to the discovery of the cure, and I think it not unlikely that in 1947, your then orator will be able to point to the time, when a definite knowledge of the causes of these diseases was attained, and probably to a time when their cure was first instituted.

That will be a surgical Paradise, when we can lay aside the knife, and by means of suitable toxins or anti-toxins, drugs or other methods of treatment, control inflammation, arrest suppuration, stay the ravages of tuberculosis and syphilis, abort or disperse tumors, cure cancer, and it may be, so prolong human life that all of his then audience will die either of accident or of old age. Would that you and I could be alive in 1947 to join in the glorious surgical *Te Deum!*

THE PREVENTION OF TUBERCULOSIS.

The Address in State Medicine at the Semi-Centennial Meeting of the American Medical Association at Philadelphia, June, 1897.

BY JOHN B. HAMILTON, M.D., LL.D.

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CHICAGO, ILL.

Mr. President and Colleagues:

I stand here today by appointment in the place of the late Dr. Jerome Cochran of Montgomery, Alabama, whose preëminence in the science of preventive medicine easily singled him out from among his fellows, as peculiarly fitted to deliver the annual oration in State Medicine. His vast erudition, extended experience, and long public service made him *facile princeps* in all matters relating to sanitary work. Few have spoken with better right, or with greater authority.

This is not the proper place to pronounce the eulogy of Jerome Cochran; that was done in this hall yesterday, but the world knows of his life and his work. The laws of Alabama which furnish us today the best model for Medical Legislation in other States, were largely the handiwork of Dr. Cochran, and the medical profession of that State is under enduring obligations to his memory. It was my good fortune to have known him well, and to have served by his side in trying times; and in all matters relating to the public health of the State in which he was so long State Health Officer, it is safe to say that Dr. Jerome Cochran, whether engaged in investigation of an epidemic, inspection of quarantine, or in the daily routine of office work, was master of the occasion. No weakness! No concessions! No trimming! Faithful to his trust always, loyal to his State and industrious beyond the habit

of most men, he has gone to his rest, full of years, full of honors worthily won, with the love and admiration of his immediate colleagues, and the respect of all his professional brethren throughout our country wherever located. His knowledge was encyclopedic and there are few by-paths in sanitary science which he had not explored.

In person and manner he seemed at times austere, but those that knew him knew that under that rugged exterior there dwelt a soul as full of sentiment as a woman's and a heart as tender as a child's.

Blow softly, sweet South wind, over his resting place, and disturb not this laurel leaf, we gently lay upon his tomb.

Naturally this is the occasion for reminiscence, a place to recite the triumphs of Preventive Medicine under the auspices of our famous ASSOCIATION. It is true that while the musty records of the past are gilded with the recital of the glories of the Goddess Hygeia, yet so far as records are concerned a thousand years of history are as but a day, compared with the greater progress of this restless but successful age, compressed within the period of the life of this ASSOCIATION. The formation of Boards of Health, of Cattle Commissions and Sanitary Bureaus, and the organization of official forces against epidemics and the spread of infectious diseases, belong to our time, and in this country is largely the result of the educational work of this ASSOCIATION. Until yesterday, I had thought there was such a thing as the practice of hygiene, the prevention of disease by the application of the known rules of the art, but when I listened to the matchless eloquence of our colleague, whose oration was justly the topic of praise from every tongue, I too joined in the applause we were giving Surgery through its learned and able advocate and came to the conclusion that it was *Surgery*—the handicraft of CHIRON, the Centaur; and not Hygeia and her gentler methods that year by year reduces the mortality rate.

But however attractive the field and gratifying the glimpse that might be afforded of the various reforms brought out by the influence of the ASSOCIATION, let us reflect that after all the *present* has many claims to our attention, and I shall therefore hope for your indulgence if I touch upon an important topic of today rather than recite ancient history.

Prevention of tuberculosis—Statistics.—The topic which I have selected is that of the Prevention of Tuberculosis. No more important subject could possibly be discussed, for this disease causes about one death in every seven that are recorded in the United States; about one death in every eight is caused by tuberculosis of the lungs alone. It is now known that no tissue of the body is exempt from the invasion of tubercle bacilli, and that the clinical appearances vary so much according to location, that tuberculosis is better entitled to be called the "protean" malady than syphilis, unless indeed, we shall sometimes find a closer relation between syphilis and tuberculosis than has hitherto seemed probable.

Pulmonary tuberculosis alone took 345,963 lives in the five years 1850, 1860, 1870, 1880 and 1890. These were the years in which the U. S. census was compiled.

"In the 28 largest cities of the German empire the number of deaths from consumption per 100,000 of the aggregate population during the year 1890 was 299, ranging from 453 in Nuremberg, 367 in Dortmund,

357 in Frankfort on the Main, 388 in Crefeld and 353 in Elberfeld to 236 in Königsberg, 249 in Strasburg, 239 in Halle and 247 in Chemnitz.

"The average annual number of deaths from consumption per 100,000 of inhabitants for the 10 years 1881 to 1890 was, for Paris, 463; Nuremburg 457; Dortmund, 417; Barmen, 381; Aachen, 377; Frankfort-on-the-Main, 373; Crefeld, 373; Bremen, 392 and London 206. The death rates from consumption in most of the large cities diminished during the 10 years 1881 to 1890. The differences in the mortality from consumption in the large cities of the United States depend largely upon differences in the proportion of different races in the several cities, and also, to some extent, upon the age distribution and density of population, on the depth of the level of subsoil water, and on the dryness and uniformity of temperature of the climate. As a rule, the death rate from this cause in large cities is greater than it is in the small towns and rural districts."

The following table from the ninth U. S. census shows for the 28 cities and for their aggregate the number of deaths from consumption during the census year, in the aggregate and for 3 age groups, per 100,000 of corresponding population, the cities being arranged in the order of magnitude of the aggregate death rates from this cause.

| Cities. | All Ages. |
|-------------------------------|-----------|
| Total | 268.81 |
| New York | 387.45 |
| San Francisco | 378.26 |
| Boston | 375.72 |
| Washington | 358.95 |
| New Orleans | 343.75 |
| Newark | 326.68 |
| Providence | 303.45 |
| Baltimore | 293.02 |
| Brooklyn | 288.34 |
| Indianapolis | 283.58 |
| Louisville | 281.14 |
| Cincinnati | 280.22 |
| Philadelphia | 279.57 |
| Jersey City | 271.77 |
| Denver ¹ | 240.83 |
| Rochester | 213.60 |
| Buffalo | 186.18 |
| St. Louis | 184.61 |
| Milwaukee | 183.89 |
| Kansas City | 179.33 |
| Chicago | 175.93 |
| Detroit | 162.23 |
| Cleveland | 158.79 |
| Minneapolis | 152.97 |
| Pittsburg | 149.19 |
| Allegheny | 147.22 |
| St. Paul | 125.42 |
| Omaha | 67.64 |

If we add to this enormous mortality the record of the deaths from other forms of tuberculosis we shall find that tuberculosis rolls up a frightful death record. In my opinion, excluding injuries by mechanical violence, it is safe to say that localized tuberculosis causes nearly one-third of the surgical diseases for which operation is required, and that of those crippled for life by spinal and joint diseases tuberculosis causes seven-eighths of them.

General measures of relief.—The humanitarian turns to science for relief from this "great white plague," so destructive, so elusive and so calamitous, and it is now the province of State Medicine alone to

point out the methods by which we may put this plague "upon a basis of gradual extinction."

The prevention of tuberculosis can not be accomplished in a day, but its ravages may be made less by such prompt measures on the part of our boards of health as may easily be taken, provided the laity are taken into confidence. The public must be fully educated to an understanding of the causes and method of propagation.

The demonstration that the bacillus tuberculosis is the principal cause of pulmonary consumption and the sole cause of bone tuberculosis is a fact which must be kept before agriculturists, dairymen, stock-breeders and butchers, until the coöperation between them and the health officer is complete. Let the public understand that since the discovery of the bacillus tuberculosis the disease has been added to the list of diseases that are preventable by attainable means. Let the public schoolmaster understand that he may render his healthy boys and girls immune by gymnastics and calisthenics which increase their vital resistance, for while the object of hygienic regulations is the prevention of the propagation and spread of the tubercle bacilli, yet we know that the healthy tissue cell has a demonstrable power of resistance, so by increasing vital force we may build up a nearly impenetrable barrier against bacillary invasion. Let the consumptive fully understand that he has no right to allow himself to become a center of infection by carelessness, or to marry while the subject of the disease.

Heredity.—The heredity of the disease has been established by "Baraud and Rénon, who reported to the Société de Biologie of Paris, in June 1895, that they had investigated the question of the direct transmissibility of the bacillus through the placenta to the human fetus. In five cases they took a quantity of blood from the umbilical veins, and injected it under the skin of the abdomen of guinea pigs, immediately after the birth of the child. In three of the cases the guinea pigs did not become tuberculous, while in two they did. In the first case the mother was in the third stage of phthisis, the sputa containing bacilli. There were no lesions of the placenta present, apparently. The guinea pig which was injected developed a chancreous ulcer at the point of inoculation and died with tuberculosis of the liver and spleen at the end of two months. The bacilli were found in the spleen, pulp, and in the caseous masses of the chancreous ulcer. An autopsy performed on the still-born infant gave negative results. Three guinea pigs were injected with the juice of the pulp of the lung and liver and peritoneal serum, and two of them died. In the second case, the mother had pulmonary cavities, but no examination of the sputa was made. The child died of broncho-pneumonia on the fortieth day. The placenta presented a normal appearance. At the moment of birth, blood from the umbilical vein was injected into two guinea pigs; one pig died of generalized tuberculosis, the other lived."

Solly of Colorado holds that a connection between phthisis in an individual and phthisis in the family may be exercised in one of three ways, viz.: By inheritance of bacilli, by inheritance of susceptibility, or by contagion.³

Lehman has reported a case of congenital tuberculosis where a mother died three days after the birth of the child, of tuberculous meningitis. The child

¹ The deaths upon which death rates from consumption for Denver are computed do not include 133 deaths of non-residents dying of this disease in that city during the census year. (From Ninth U. S. Census, Vital Statistics, Part 2.)

² Health, Oct. 17, 1896.

³ Gould: The American Year Book of Medicine and Surgery, p. 92.

lived but twenty-four hours. In its spleen, lungs and liver were found nodules resembling tubercles and containing tubercle bacilli in large numbers.⁴

Hahn has collected and reviewed some cases of tuberculosis where they were undoubtedly congenital. The semen may also become infected and thus transmit the disease to the fetus. Gärtner caused tuberculosis in young mice by injecting the mother with tubercle, either into the peritoneal cavity or into the blood stream.⁵

Baumgarten detected the tubercle bacillus in the ovum of a female rabbit which he artificially fecundated with tuberculous semen.⁶

Infection by milk.—There is no longer any question of the possibility of infecting the lower animals by the injection of tuberculous milk, but direct evidence of transmission of tuberculosis by milk in man by ingestion is not yet positive, except in cases of udder tuberculosis.

In cows with tubercular disease of the udder, the Royal Commission found that the milk was in every case infective and the experiments made by inoculation in every case gave positive results. As regards feeding, 27 animals were fed with varying quantities of milk from cows with tubercular udders. Of these 27 animals, 19 developed tuberculosis. The brunt of the disease in these cases fell on the abdominal organs, showing the alimentary origin, but in some cases also there was a more generalized infection. The glands about the mouth and angle of the jaw were also found sometimes tubercular. Dr. Martin, in speaking of these experiments says:

"The milk of cows with tuberculosis of the udder possesses a virulence which can only be described as extraordinary. In those cows where the tubercle bacilli were found in the milk, the feeding experiments were uniformly positive as well as the inoculation experiments. It is noticeable too, that a small dose of the milk diluted four times gave tuberculosis to all the animals fed, and that a dose of even 0.05 to 0.1 c.c. diluted with non-infective milk was sufficient to produce tuberculosis."—(T. P. C. Kirkpatrick, "The spread of Tuberculosis by the Milk Supply," *Dublin Jour. Med. Sci.*, May, 1897.)

It is well known that many cattle are affected with tuberculosis in this country, that the milk goes into the general supply and that tubercle bacilli may be found in the milk in cases of udder tuberculosis, and that rabbits inoculated with infected milk or fed upon infected milk become tuberculous. Dilution with non-infected milk attenuate the bacilli and the dishonest practice of watering is therefore not without its compensation.⁷

Dr. Gehrman, of the Chicago Health Department, after testing the milk from tuberculous cows, writes:⁸ In only one specimen of milk was it possible to demonstrate the presence of the tubercle bacillus microscopically, but in thirty-eight injections of the milk in animals we had the transmission of tuberculosis demonstrated six times.

Infection by tuberculous meat.—Tubercle bacilli have been found in the flesh of horses, cattle and swine. Birds and fowls also become infected, and when dogs and cats become infected it is said that

they become so by reason of eating flesh of tuberculous animals, but this lacks corroboration by extended experiment.

"In 1890," says Crookshank, "a Royal Commission was appointed to investigate the subject and the report was issued in 1895. Martin, on behalf of the Commission, tested the flesh of twenty-one tuberculous cows. In two cases only was evidence obtained of the presence of the bacillus by inoculation of guinea pigs. The flesh of eight cows affected with mild tuberculosis produced tubercle in one instance by inoculation, but the ingestion experiments were negative. The flesh of five cows severely affected with tubercle gave the disease in four cases, either by feeding or inoculation, but only one gave the disease both ways. Martin thought that some of the results were due to the butcher infecting the meat in the process of dressing the carcass, either by his hands or knives. Woodhead made a series of experiments to test the effects of roasting and boiling on tubercular virus in meat. It was found that in boiling and roasting experiments as ordinarily carried out in the kitchen, the temperature, however high it may be on the surface, seldom reaches 60 degrees C. in the center, except in the case of joints less than about six pounds in weight. Boiling and roasting were found insufficient to destroy tubercular virus enveloped in rolls of meat.

The committee having enumerated many obvious preventive measures, made the following suggestions regarding the extirpation of the disease: "We are of opinion that it should be included in the contagious diseases (animals) acts for the purpose of certain sections of those acts, so as to provide: *a.* For the slaughter of diseased animals, when found diseased on the owner's premises. *b.* For the payment of compensation for the slaughter of such animals. *c.* For the seizure and slaughter of diseased animals exposed in fairs, markets, etc., and during transit. *d.* For the seizure and slaughter of diseased foreign animals at the place of landing in this country."

In the tuberculin tests made in various sections of the country an enormous number of cattle have been found to be tuberculous. According to Wood and Fitz, in Massachusetts, of 4,093 cattle 1,081 reacted positively, and on being slaughtered all but two were found tubercular. In Copenhagen, of 132,294 cattle slaughtered 17.7 per cent. were found tuberculous; of 142,872 slaughtered in Berlin, 15.1 per cent. were tubercular.⁹

The review of the recent reports on this branch of the subject corroborates the former view that careful cooking of meat and boiling of milk before eating or drinking these articles will prevent them from doing positive harm, but few would relish food if it were known to be tuberculous, even if cooked by a Lucullus. An act passed this year, by the Maine Legislature, to prevent the use of diseased meat for food purposes, provides that all diseased animals killed shall have injected into the carotid artery of each animal kerosene oil in sufficient quantity to thoroughly permeate and penetrate the fleshy parts of the animal, and every carcass thus treated shall be buried within twenty-four hours thereafter to a depth of at least four feet, or within forty-eight hours be reduced by the process of manufacturing the same for fertilizers.

Sources of danger.—Our danger from tuberculous meat is not very great in comparison with the dangers that confront us in daily contact with consumptives,

⁴ Gould: loc. cit., p. 41.

⁵ Osler on "Tuberculosis" in the American System of Practical Medicine by Loomis & Thompson, 1897, p. 738.

⁶ Osler: Loc. cit.

⁷ Crookshank: "Bacteriology and Infective Disease," 4th ed., 1896.

⁸ Special Bulletin. Bovine Tuberculosis and its relation to the public health, by the Board of Live Stock Commissioners for the State of Illinois. Springfield, 1896.

⁹ The Practice of medicine, by H. C. Wood and R. H. Fitz, 1897.

notwithstanding the fact that it is not the patient himself, but his expired air and sputum that are dangerous. Bergey of Philadelphia, however, in a paper read before the American Climatological Association in 1896, asserted that numerous experiments with the collected moisture of consumptives' breath, even those with extensive cavity formations, gave negative results. The great danger is in the dried sputum. Kruger showed that the dust of a hospital ward in which patients with pulmonary consumption expectorated occasionally, contained tubercle bacilli (Sternberg). This he proved by wiping up the dust on a sterilized sponge, washing this sponge in bouillon which was subsequently injected into guinea pigs. Two of the pigs became tuberculous. More conclusive experiments were made originally by Cornet. The experiments of G. Cornet showed the absence of infectivity in the dust of rooms and hospital wards where precautions were taken against the drying of the sputa, and also proved the rapidly fatal action of sunlight on the bacilli. On the other hand, he demonstrated the insignificance of so-called predisposition compared with the influence of over-crowding, dirt, darkness, and damp, and he demonstrated the necessity of prolonged and close association with tuberculous patients for the direct infection of healthy persons. (*London Lancet*, April 3, 1897.)

These experiments were repeated by Hance (Gould, Year Book, page 32), who collected the dust from the floors and walls of the various buildings at the sanitarium for consumptives, suspending it in sterilized water and inoculating a number of guinea pigs. Of eighty-one animals used, five developed tuberculosis, being half of the number injected with the dust from a cottage in which a patient had been reported for carelessness. Four of the pigs died of other infectious diseases, while the remainder remained healthy.

To sum up it appears that the greatest danger is from the dried sputum and that other causes, while they exist, are of much less importance. The local infections that are found in the bones and internal viscera are produced by invasion through the circulation, while the infection of lymphatic glands doubtless takes place by direct absorption through the lymph channels. Every surgeon has noticed without doubt that tuberculous glands become successively affected; it is the exception to find a whole chain of glands simultaneously affected. When the tubercular lesion is found in the skin the point of invasion is an abrasion; or a center beginning in the hair follicle.

The means of prevention of the spread of tuberculosis is then sufficiently apparent after we have taken our observations on the methods of infection. The factors in successful prophylaxis are: 1. The guarding against infectious food or drink being issued to the people anywhere. 2. The prompt destruction of cattle proved to be tuberculous. 3. Proper notification to the sanitary officer of the occurrence of cases of tuberculosis, especially walking cases of pulmonary consumption, in order that the officer may in conjunction with the attending physician make sure that proper precautions shall be taken to secure thorough disinfection of sputum and bedding.

Early diagnosis.—Not only as a means of prevention, but as a curative procedure is it important to make an early diagnosis. Physical signs are not always pronounced, and the bacilli may escape observation. The tuberculin test is therefore not less valuable in man than in animals, but the dose must be carefully graduated.

There has been much discussion over a recent requirement of some of our municipal boards, by which notification of cases of pulmonary tuberculosis is made compulsory. We must admit that consumption is slowly decreasing throughout the civilized world; but that decrease is only such as results from the improved hygiene of the day, and is not so great as the present state of knowledge warrants, for modern sanitation will only be satisfied by the extirpation of the disease.

To make extirpation possible we must adopt no half-way measures: prompt notification should be the rule, whether any specific measures are to be taken by the Health Department or not. That body can at least send printed information regarding the sanitary care of the patient and his apartments. No better justification of the recent order of the New York City Board of Health can be found than in the frightful records of mortality, from a disease which as already stated, in its various forms causes one-seventh of all the deaths.

The following is the amendment to the sanitary code of New York city adopted Jan. 19, 1897:

Section 225. That pulmonary tuberculosis is hereby declared to be an infectious and communicable disease, dangerous to the public health. It shall be the duty of every physician in this city to report to the Sanitary Bureau in writing the name, age, sex, occupation and address of every person having such disease who has been attended or who has come under the observation of such physician for the first time within one week of such time.

It shall also be the duty of the commissioners or managers or the principal, superintendent or physician of each and every public or private institution or dispensary in this city to report to the Sanitary Bureau in writing, or to cause such report to be made by some proper and competent person, the name, age, sex, occupation and last address of every person afflicted with this disease who is in their care or who has come under their observation within one week of such time. It shall be the duty of every person sick with this disease and of every person in attendance upon any one sick with this disease, and of the authorities of public and private institutions or dispensaries to observe and enforce all the sanitary rules and regulations of the Board of Health for preventing the spread of pulmonary tuberculosis.

The new law renders physicians and laymen alike liable to punishment for misdemeanor when any part of the section is violated. This order is the result of a report presented to the board by Dr. Hermann M. Biggs, pathologist of the department and director of the bacteriological laboratories; Commissioner George B. Fowler and Dr. T. Mitchell Prudden, consulting pathologist. The report showed that in twelve years the mortality from tuberculosis had decreased 30 per cent. owing to the steps taken by the department to prevent its spread. It was argued that more radical measures would produce even a greater reduction of the disease, and the amendment to the code was recommended.

A feature of the new law is the isolation of patients in aggravated cases.

The next step will undoubtedly be the erection and establishment of suitable sanitariums for the reception and care of those unable to be suitably cared for at their homes. Careful observation of the general principles of hospital construction as now understood will make it comparatively easy to construct special buildings with abundance of fresh air, plenty of sunlight and capable of being kept scrupulously clean. Then with proper regulations for the government of the inmates no one of them can possibly communicate the disease to others; beside that his condition can be made infinitely more comfortable. Patients able to avail themselves of a prolonged residence in Arizona

or New Mexico, or other approved climates, if not too far advanced, may reasonably expect a cure. The most rigid observance of sanitary regulations is necessary everywhere to prevent the sanitarium itself from becoming a center of infection. Daily sponging of the walls, floors and furniture, daily changes of bed linen, daily changes of patient's body-clothing and its frequent disinfection or exposure to the sun, careful regulation of temperature of the ward or room in which the patient is kept, besides the usual therapeutic measures are the indications that should be met. These special hospitals have been doing excellent work in England, where it is asserted that the general mortality has been greatly reduced since their establishment. The same is reported as true in France and Germany. Our own are few but have done excellent service.

Should the States take up the matter of location of sanitariums it is obvious that the location should be convenient of access and not too remote from the great centers of population.

In regard to the doubt often expressed that large sanitariums often become dangerous to the neighborhood, Dr. Knopf¹⁰ has well laid that doubt at rest by citing the case of the sanitariums at Goerbersdorf and Falkenstein, the two largest in Germany where "the mortality from tuberculosis has actually decreased among the village people, being now one-third less than before the establishment of those institutions."

We should be on our guard against the frightful treatment of consumptives that prevailed a couple of centuries ago, by which patients were feared and subjected to every hardship, and shunned as if they had smallpox or cholera.

The formation of colonies for consumptives.—The climatic conditions of the different parts of each State should be thoroughly investigated by disinterested parties, and the report published in one volume under the auspices of the State Medical Society, and then with the procurement of these data colonies may be formed to the best advantage.

What shall be done with the large class of tubercular patients that can not or will not go to a sanitarium? Clearly the same rules must be applied so far as possible, the patient must not expectorate in public places if he goes out and he should burn the sputum at home, which he can easily do if he uses paper receptacles for his sputum. For bedridden patients the physician in attendance will be the best authority, and his intelligent supervision will prevent the patient from becoming a nuisance.

Marriage of Tuberculous should be opposed.—The law prevents marriage within certain degrees of consanguinity; no account is taken of the physical state of the contracting parties, although in many States, several physical causes are especially named as sufficient cause for divorce. If chronic and incurable disease be sufficient ground for separation, how much more reason is there for the prohibition of the marriage rite. The insane and incurable diseased should not be allowed to propagate their species, unless we confine our sympathy to the individual instead of the whole people. The heredity of the disease has at last been fairly proved by scientific investigation. Public opinion should now do the rest. I am fully convinced that even now matters are so well understood, that little effort will be needed. Great delicacy

is needed in the practical handling of this means of prevention, for as love laughs at locksmiths, so it does at sanitary regulations if they happen to be restrictive.

The discovery of the bacillus tuberculosis has thus resulted in making clear the means of its prevention, and able experimenters by the hundred are patiently working out a cure; some seem to have it almost within their grasp; some proclaim that they already have it, but the great body of the profession are waiting. There are too many cures on the market for us to conclude rashly that the certain specific has been found; I am aware that the subject of therapeutics of tuberculosis is not properly under discussion in this address, but as silence may be misconstrued, permit me to say that modern treatment by open air, by climate properly chosen, by education, by pulmonary gymnastics, by hydrotherapy, by mental diversions, by serum therapy and proper medication have done much to make the consumptive's life more endurable, less likely to infect his fellows and in many instances have effected a cure.

According to Dr. Rooney of California, mountain air laden with balsams and terpeninths, sea-shore air and sea air, all have their importance in different cases. Hypertrophic cases do best in mountain air, especially where hereditary, chronic pneumonia and pleurisy, apyrexia, emphysema, spinal and cerebral complications, lesions in the blood vessels and heart, liver and kidneys are found as complications. Cases in which cavities have developed with hemorrhages and general debility are benefited most by sea voyages, or prolonged residence on the sea shore. All these points should be thoroughly investigated before sending a patient to any locality, or establishing tuberculous colonies. (*Pacific Med. Jour.*, May, 1897.)

The English Royal Commission on Tuberculosis visited Germany investigating this question, in May, and afterward Denmark, whence I understand they will return to London. Professor Bang, with the sanction of the Danish government, is now conducting experiments on a large scale and we may soon have the benefit of the published results.

I have the utmost faith in the ultimate success of the great efforts now being made by sanitarians throughout the world to eradicate the tuberculosis pest—and after all, the efforts themselves are worth something and have their effect.

Richardson's "City of Hygeia," that "beautiful fabric of a vision," as one of our countrymen has said, "was blown away by the winds, but they blew it all over the earth." So the wide dissemination of correct knowledge concerning the cause and propagation of tuberculosis can not but tend to still further restrict its ravages and thus add to the sum of human happiness and the prolongation of human life.

Erb's Paralysis.—The lack of anatomic lesions in Erb's paralysis has always been a mystery. Widal and Marinesco have recently discovered marked chromatolysis in the nerve centers of the hypoglossus, motor oculi, anterior cervical gray matter, etc., from the necropsy of a typical and acute case terminating fatally in sixteen days from its first appearance. There was no trace of vascular or perivascular alteration nor of interstitial inflammatory reaction, nor were any histologic lesions to be discovered by the ordinary methods. But with Nissl's and Marchi's tests, more or less pronounced disintegration was discovered in the chromatophilous elements of the cells of the nerve centers of the region involved. The chromatolysis is described in detail, with numerous illustrations, in the *Bull. de la Soc. Méd. des Hop.*, April 15, and also in the *Presse Méd.* of April 14.

¹⁰ Knopf: *The Hygienic, Educational and Symptomatic Treatment of Pulmonary Tuberculosis*, with a Plea for the Sanitariums for the Poor. *Medical Record*, N. Y., Feb., 13, 1897.

ORIGINAL ARTICLES.

A BRIEF HISTORY OF THE ORIGIN OF
THE AMERICAN MEDICAL
ASSOCIATION.

THE PRINCIPLES ON WHICH IT WAS ORGANIZED; THE
OBJECTS IT WAS DESIGNED TO ACCOMPLISH; AND
HOW FAR THEY HAVE BEEN ATTAINED
DURING THE HALF-CENTURY
OF ITS EXISTENCE.

Read in the Semi-Centennial Meeting of the American Medical Association in Philadelphia, June 1, 1897.

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The AMERICAN MEDICAL ASSOCIATION, to the semi-centennial celebration of which we devote the present passing hour, was the first truly National organization of the medical profession, deliberately planned to represent the profession of an entire country and to promote all its general interests, together with the sanitary interests of the whole people, of which we have any knowledge.¹

The circumstances that prompted the primary steps for the organization of this AMERICAN MEDICAL ASSOCIATION were National in their scope, and pointed unerringly to the necessity for National conference and coöperation. In devising a permanent constitutional government for the union of the several States that had achieved their independence of the mother country, one of the important problems that taxed the wisdom of the statesmen of that period, was to determine what interests and institutions should be controlled by the general government and what should be left to the individual States. Strongly imbued as they were with the broad principle that only such topics as related to the regulation of commerce and intercourse with other nations and between the several States, and the common defense of the whole, should be placed under the exclusive control of the general government, they decided to leave the important subject of education and educational institutions to the regulation of individual States. Consequently the people of each State, through their State legislative bodies, established such systems of primary education, and granted charters for such academic and collegiate institutions for literary, scientific and professional education, as appeared to them most appropriate. Our educational history as an independent people commenced thus, during the last half of the last quarter of the eighteenth century, in a new and sparsely populated country, extending from Maine to Florida, with only four medical schools organized, all as departments of literary colleges or universities, and all attracting annually attendance of less than three hundred students, of whom not more than fifteen annually received the degree of Doctor of Medicine, and no two of them controlled by the laws of the same

State. And it must be noted also, that a very large majority of those who entered upon the practice of medicine at that time gained their education in the office of some established practitioner, and were licensed by the censors of medical societies, the judges of courts, or even by the certificates of their preceptor, without ever having spent a day in a medical college. But the rapid increase of population, and consequent building of new cities, and the addition of new States, that took place during the next fifty years, developed a correspondingly rapid increase in the number of medical schools. So true is this statement, that at the time of the organization of this ASSOCIATION, 1846-1847, the number of medical colleges in the United States was more than thirty, with an annual attendance of more than 3,500 students, of whom not less than 1,000 annually received the degree of Doctor of Medicine; thereby showing that the education of medical students had been transferred with equal rapidity from the preceptor's office to the medical schools. Unfortunately, this rapid evolution of collegiate medical education took place under no general supervision, nor in accordance with any uniform system of laws. On the contrary, the legislatures of the several States freely granted charters for medical schools, with authority to grant diplomas, which were accepted as a sufficient license to practice medicine, but left them all without pecuniary endowment, and therefore directly dependent upon the fees received from students for their support. This necessarily led to a most active rivalry for numbers of students. Had this rivalry been limited to efforts to see which school or college faculty would give the most complete and reliable instruction in the various branches of medicine, only good could have resulted therefrom. The making the diploma a sufficient authority to enter upon the practice of medicine, however, changed the ruling question in the minds of three-fourths of the students from, "in which medical school can I obtain the most thorough medical education," to, "in which school can I obtain the degree of Doctor of Medicine for the least expenditure of time and money?" And so potential was the latter question on the several medical schools, that although the three medical schools originally organized in Philadelphia, New York and Boston had been founded substantially on the same basis or curriculum as the University of Edinburgh, requiring a good academic education as a preliminary for entering the medical course, then from three to five years of medical study, with annual college terms of not less than six months, long before the number of our medical schools had reached thirty, all preliminary requirements had been abandoned, the term of medical study limited to a nominal three years, and the medical college instruction to two annual repetitional courses of from twelve to sixteen weeks each. Under this inadequate and unsystematic medical education, it really cost less in time and money to obtain the degree of Doctor of Medicine than it had previously cost to serve an apprenticeship in the office of a respectable practitioner and obtain a license from the censors of a local medical society. Of course, it elicited severe criticism by some of the most eminent teachers connected with the medical schools, by contributors to the medical press, and in discussions in many of the medical societies. And the one great fact that no adequate improvement could be made without either actual concert of action between the medical schools of all

¹ It is true that the British Medical Association dates its origin back to July 19, 1832, when in response to the invitation of Dr. Charles Hastings of Worcester, Eng., between fifty and sixty medical men, all from the provincial towns and cities in the south part of England, assembled in Worcester and formed a strictly "Provincial Medical and Surgical Association," which was to meet annually in some one of the provincial towns, for mutual intercourse, support and professional improvement. The membership at the end of the first year numbered only 140; but under the guidance of its founder, Dr. (afterward) Sir Charles Hastings, its membership annually increased and its annual meetings were invited to cities further north, meeting in York in 1841. It was not, however, until 1856, twenty-four years after its organization, and nearly ten years after the organization of the American Association, that it began to claim national attributes by changing its provincial name for that of British Medical Association. And it did not hold its first meeting in the metropolitan city of London until 1862, during the first great International Exhibition.

the States, or the establishing of independent boards for examining and licensing candidates for the practice of medicine in each State, became apparent to every enlightened member of the profession. The earliest attempt to procure concerted action was among the medical schools of the New England States. In 1835 the faculty of the Medical College of Georgia urged through the medical press and by correspondence with other college faculties, the holding of a National convention of delegates; and in February, 1840, the Medical Society of the State of New York adopted a preamble and resolution, offered by Dr. John McCall of Utica, recommending the holding of a convention of delegates from all the medical societies and colleges in this country in Philadelphia in May of the same year.

The sole object of all these propositions was to procure concert of action in elevating the standard of medical education in the United States; and though they failed to get even the semblance of a convention, the discussions to which they gave rise did aid in demonstrating more fully the necessity of accomplishing the grand object just stated. At the annual meeting of the Medical Society of the State of New York, in Albany, February, 1844, Dr. N. S. Davis, then a young delegate from the Broome County Medical Society, offered a series of resolutions declaring in favor of the adoption of a fair standard of general education for students before commencing the study of medicine; of lengthening the annual courses of medical college instruction to at least six months, and the grading of the curriculum of studies; and have all examinations for license to practice medicine conducted by State boards, independent of the colleges. After a brief but earnest discussion, the resolutions were laid on the table until the next annual meeting, and the committee on correspondence directed to bring them to the attention of the several county societies in that State. At the next annual meeting of the State Society, February, 1845, the resolutions were taken from the table, the committee on correspondence reported favorable action by several of the county medical societies and the whole subject was freely discussed. It was admitted by all parties that the standard of medical education was too low, but at the same time it was claimed that the standard was as high in New York as in any of the other States, and if her medical schools were compelled to elevate the standard, it would have no other effect than to turn the students from them to the schools of Pennsylvania and of the New England States. Consequently, the author of the original series of resolutions closed the discussion by offering the following preamble and resolutions:

WHEREAS, it is believed that a National Convention would be conducive to the elevation of the standard of medical education in the United States; and

WHEREAS, there is no mode of accomplishing so desirable an object without concert of action on the part of the medical societies, colleges, and institutions of all the States; therefore,

Resolved, That the New York State Medical Society earnestly recommends a National Convention of delegates from medical societies and colleges in the whole Union, to convene in the city of New York on the first Tuesday in May, 1846, for the purpose of adopting some concerted action on the subject set forth in the foregoing preamble.

Resolved, That a committee of three be appointed to carry the foregoing resolution into effect.

The preamble and resolutions were adopted, and the mover, Dr. N. S. Davis, then of Binghamton, and Drs. James McNaughton and Peter Van Buren of

Albany, N. Y., were appointed the committee to further promote the object in view. This committee, through its chairman, prosecuted an active correspondence with the officers of all the regular medical societies and medical schools in the United States, and with influential members of the profession in which no medical societies existed. Commendatory notices appeared in most of the medical periodicals; and in the *New York Journal of Medicine and Collateral Sciences*, letters were published from the chairman of the committee, and from Dr. Luther Ticknor, then President of the Connecticut State Medical Society, discussing at considerable length the advantages of making the proposed convention the occasion for organizing a permanent National Medical Association. As the result of all these influences there assembled on the morning of May 5, 1846, in the hall of the Medical Department of the New York University, about one hundred delegates representing medical societies and institutions of sixteen of the twenty-six States then constituting the United States of America.

A complete organization was effected by the election of the following officers: For President, Dr. Jonathan Knight of New Haven, Conn. For Vice-Presidents, Dr. John Bell of Philadelphia, and Dr. Edward Delafield of New York City. For Secretaries, Dr. Richard D. Arnold of Savannah, Ga., and Dr. Alfred Stillé of Philadelphia, Pa.

On motion of Dr. N. S. Davis a business committee of nine was appointed "to bring the subject of medical education before the convention, in the form of distinct propositions suitable for discussion and action." This committee reported the four following propositions with the recommendation that a committee of seven members be appointed on each subject whose duty it should be to report at a meeting to be held in Philadelphia, on the first Wednesday in May, 1847:

1. "That it is expedient for the medical profession of the United States to institute a '*National Medical Association*.'"

2. "That it is desirable that a uniform and elevated standard of requirements for the degree of M.D. should be adopted by all the medical schools in the United States."

3. "That it is desirable that young men, before being received as students of medicine, should have acquired a suitable preliminary education."

4. "That it is expedient that the medical profession in the United States should be governed by the same Code of Medical Ethics."

After a free and friendly interchange of opinions, the report of the committee was adopted, and committees of seven were appointed for the full consideration of each subject, and directed to report at another convention to be held in Philadelphia, May 5, 1847.

Two other committees of seven were appointed to report at the same place and time, viz.: One on the proposition that all licenses to practice medicine should be conferred by a single board of medical examiners in each State; and the other on the necessity of efficient laws for effecting the registration of births, marriages and deaths in all of the States, and for a nomenclature of diseases. After spending two days in thus planning the preliminary work and having filled the six committees with men of known ability and influence, a seventh committee was

appointed with the President, Dr. Jonathan Knight, as chairman, with instructions "to prepare and issue an address to the different regularly organized medical societies, and chartered medical schools in the United States, setting forth the objects of the National Medical Association, and inviting them to send delegates to the convention to be held in Philadelphia, in May, 1847. The address of this committee was soon issued and with the proceedings of the convention were published with commendatory notices in all the medical periodicals, and elicited favorable action on the part of nearly all the States and local medical societies throughout the country.

The result was, that on May 5, 1847, there assembled in the hall of the Academy of Natural Sciences in Philadelphia, Pa., about two hundred and fifty delegates, representing not less than forty medical societies and twenty-eight medical schools, constituting the organized medical institutions of twenty-two of the twenty-six States then constituting the United States.

The convention was organized by the re-election of Dr. Jonathan Knight of New Haven, Conn., for President; Drs. Alexander H. Stevens of New York, George B. Wood of Philadelphia, A. N. Buchanan of Nashville, and John Harrison of New Orleans, Vice-Presidents; and for Secretaries: Drs. Richard D. Arnold of Savannah, Alfred Stillé of Philadelphia, and F. Campbell Stewart of New York.

The first business in order was the hearing of the reports of the several committees appointed at the previous convention. A full and able report was made by each committee, which may be found in the first volume of Transactions of the ASSOCIATION. These several reports were deliberately considered and their recommendations adopted with a near approach to unanimity by the convention. The committee on a Code of Medical Ethics for the whole profession reported through its chairman, Dr. John Bell, aided by Dr. Isaac Hays, both of Philadelphia, the full and admirable code which still remains as the best exposition of medical ethics in the English language.

The committee appointed in 1846 to report a plan of organization for a permanent National Medical Association was composed of Drs. John Watson, John Stearns, F. Campbell Stewart and N. S. Davis of New York; Alfred Stillé of Philadelphia; W. H. Cogwell of New London, Conn., and E. D. Fenner of New Orleans.

This committee adopted as the basis of a National Association the county or district and State medical societies in the several States and territories, and the faculties of the medical schools; allowing to each regularly organized medical society one delegate to every ten of its members, and each medical college faculty two delegates; and limiting the privilege of voting on all questions to the delegates in attendance at the regular meetings. By adopting such a basis, it was expected to greatly increase the number and efficiency of the local or county and State societies in every part of the country, and thereby constitute the National Association a true representative body, entitled to express the wishes and guard the interests of the whole profession. To retain the interest of delegates after their office of delegate had expired, the committee made provision for them to remain as permanent members, attend all regular meetings, and participate in all work of the ASSOCIATION except the

privilege of voting, so long as they paid the annual dues and remained in good standing in the societies from which they were sent as delegates. Guided by these principles the committee reported a constitution and by-laws, prefaced by the declaration that the purposes of the ASSOCIATION are "for cultivating and advancing medical knowledge; for elevating the standard of medical education; for promoting the usefulness, honor and interests of the medical profession; for enlightening and directing public opinion in regard to the duties, responsibilities, and requirements of medical men; for exciting and encouraging emulation and concert of action in the profession; and for facilitating and fostering friendly intercourse between those engaged in it." The several sections of the Constitution were considered in detail and some amendments were offered but were rejected, and the report of the committee without amendment was adopted by a large majority vote. Having thus adopted a complete Constitution, By-laws and Code of Ethics, the convention resolved itself into the AMERICAN MEDICAL ASSOCIATION, and appointed a committee of one member from each State represented, to nominate officers for the ensuing year.

The committee soon reported, recommending the election of the following, viz.: For president, Dr. Nathaniel Chapman of Philadelphia, Pa.; for vice-presidents, Dr. Jonathan Knight of New Haven, Conn., Dr. Alexander H. Stevens of New York City, Dr. James Moultrie of Charleston, S. C., and Dr. A. H. Buchanan of Nashville, Tenn. For secretaries, Dr. Alfred Stillé of Philadelphia, and Dr. J. R. W. Dunbar of Baltimore. For treasurer, Dr. Isaac Hays of Philadelphia. The recommendations of the committee were unanimously adopted. After filling the several standing committees required by the constitution and agreeing to hold the next annual meeting in Baltimore, Md., on the first Tuesday in May, 1848, the ASSOCIATION adjourned. Such is a brief history of the *origin, objects and organization* of the AMERICAN MEDICAL ASSOCIATION, which, with the exception of the first two years of the great war for the preservation of the Union of these States, has held its regular annual meetings in all the important parts of our widely extending country, still adhering tenaciously to the fundamental principles on which it was founded. And I am most happy to add, that every leading object sought to be accomplished by its founders has been substantially obtained: That is, universal free and friendly social and professional intercourse has been established; the advancement of medical science and literature in all their relations has been promoted; and the long agitated subject of medical education has reached the solid basis of a fair academic education as preparatory, four years of medical study, attendance on four annual courses of graded medical college instruction of from six to nine months each, and licenses to practice to be granted only by State Boards of Medical Examiners. The grand citadel of our noble profession has thus been constructed on its legitimate foundations, and it only remains for those who come after us to perfect its several parts, and make them more and more efficient in preventing human suffering and prolonging human life.

The Bicyclers' Sanitary Crusade.—The bicycle clubs of France have combined and inaugurated a crusade to secure more hygienic sanitary accommodations throughout the country.

LIST OF MEMBERS OF THE

American Medical Association,

As returned by H. P. NEWMAN, M.D., Treasurer.

ALABAMA.

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|---|------|
| Atkeson, C. L. C., Columbia . . . | 1889 |
| Barnes, Ella E., Birmingham . . . | 1895 |
| Barrett, N. A., East Lake . . . | 1896 |
| Bass, J. B., Ashville . . . | 1896 |
| Bell, W. H., Oxford . . . | 1895 |
| Berry, R. A., Birmingham . . . | 1895 |
| Blair, H. W., Sheffield . . . | 1897 |
| Boroughs, Byron, Vashiti . . . | 1896 |
| Brunson, T. W., Society Hill . . . | 1896 |
| Butt, R. L., Midway . . . | 1879 |
| Caffee, S. R., Birmingham . . . | 1897 |
| Caldwell, Groves, James P. O. . . | 1889 |
| Coley, A. J., Alexander City . . . | 1896 |
| Cook, T. H. G., Stone . . . | 1896 |
| Coulbourn, Jos. T., Birmingham . . . | 1895 |
| Crampton, O. L., Mobile . . . | 1872 |
| Cunningham, W. M., Corono . . . | 1893 |
| Davis, W. E. B., Birmingham . . . | 1885 |
| Evins, T. E., Woodward . . . | 1896 |
| Foster, G. W., Stevenson . . . | 1896 |
| Franklin, C. H., Union Springs . . . | 1884 |
| Furniss, J. P., Selma . . . | 1879 |
| Gilmore, J. N., Gaston . . . | 1886 |
| Gilmore, J. A., Thomasville . . . | 1897 |
| Hamilton, W. T., Ironaten . . . | 1897 |
| Harris, S., Union Springs . . . | 1895 |
| Harrison, W. G., Talladega . . . | 1895 |
| Hatchett, Jas. R., Athens . . . | 1891 |
| Hayes, R. H., Union Springs . . . | 1890 |
| Heflin, H. T., Roanoke . . . | 1895 |
| Heflin, W., Birmingham . . . | 1895 |
| Hill, L. L., Montgomery . . . | 1897 |
| Hogan, S. M., Montgomery . . . | 1885 |
| Howard, J. W., Irondale . . . | 1897 |
| Johnston, W. H., Birmingham . . . | 1896 |
| Ketchum, Geo. A., Mobile . . . | 1880 |
| Klebs, A. C., Citronelle . . . | 1897 |
| Le Grande, J. C., Annison . . . | 1895 |
| Lowry, S. H., Huntsville . . . | 1895 |
| Luckie, J. B., Birmingham . . . | 1895 |
| McDaniel, E. D., Mobile . . . | 1896 |
| Moody, H. A., Mobile . . . | 1895 |
| Moore, R. J., Riverton . . . | 1895 |
| Morris, E. W., Birmingham . . . | 1896 |
| Murry, R. D., Mobile . . . | 1895 |
| Nicholson, E. P., Valley Head . . . | 1896 |
| Palmer, J. G., Opelika . . . | 1897 |
| Payne, John, Hillman . . . | 1896 |
| Pearson, J. E., Sylacauga . . . | 1895 |
| Pride, W. T., Madison . . . | 1896 |
| Pritchett, J. A., Hayneville . . . | 1896 |
| Redden, R. J., Sulligent . . . | 1896 |
| Riggs, E. P., Birmingham . . . | 1895 |
| Sanders, W. H., Mobile . . . | 1890 |
| Searcy, J. T., Tuscaloosa . . . | 1890 |
| Shivers, O. L., Marion . . . | 1887 |
| Talley, D. F., Birmingham . . . | 1895 |
| Taukersley, F. M. T., Highland Home . . . | 1895 |
| Toole, W. B., Tallageda . . . | 1895 |
| Ward E. B., Selma . . . | 1896 |
| Warren, B. S., Clayton . . . | 1896 |
| Watkins, J. M., Opelika . . . | 1896 |
| Whitfield, B. W., Galloway . . . | 1897 |
| Whiteside, J. M., Oxford . . . | 1895 |
| Wilkinson, D. L., Bolling . . . | 1896 |
| Wilson, C., Birmingham . . . | 1896 |
| Woodson, L. G., Birmingham . . . | 1896 |

ALASKA.

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|---------------------------|------|
| Wyman, Hugh, Juneau . . . | 1895 |
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ARIZONA.

| | |
|---------------------------------|------|
| Brockway, G. M., Florence . . . | 1896 |
| Collins, T. S., Globe . . . | 1894 |
| Cottrell, A. W., Phoenix . . . | 1896 |
| Fox, B. G., Globe . . . | 1895 |
| Gaff, John V., Benson . . . | 1895 |
| Salin, T. H., Yuma . . . | 1897 |
| Welch, J. P., Holbrook . . . | 1895 |
| Welles, F. K., Nogales . . . | 1895 |

ARKANSAS.

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| Beakley, N. P., England . . . | 1896 |
| Bentley, Edwin, Little Rock . . . | 1889 |
| Bittinger, Wm., Grady . . . | 1895 |
| Breysacher, A. L., Little Rock . . . | 1873 |
| Brooksner, W. R., Fort Smith . . . | 1897 |
| Cantrall, G. M. D., Little Rock . . . | 1896 |
| Carroll, D. C., Tillar . . . | 1895 |
| Christian, E. J., Portland . . . | 1896 |
| Christian, D., Springdale . . . | 1885 |
| Collins, S. P., Hot Springs . . . | 1895 |
| Dale, J. R., Arkadelphia . . . | 1884 |
| Davis, Chas. E., Eureka Springs . . . | 1892 |
| Dibrell, M. S., Van Buren . . . | 1895 |
| Dibrell, J. H., Jr., Little Rock . . . | 1875 |
| Drennen, C. F., Hot Springs . . . | 1896 |
| Dunavant, H. C., Little Rock . . . | 1896 |
| Dunlap, A., Winslow . . . | 1885 |
| Ewing, D. C., Batesville . . . | 1880 |
| Floyd, R. G., Eureka Springs . . . | 1877 |
| French, F. L., Little Rock . . . | 1896 |
| Gibson, L. P., Little Rock . . . | 1885 |
| Graham, Jos. S., Tuckerman . . . | 1896 |
| Gray, C. S., Little Rock . . . | 1895 |
| Hay, Eugene C., Hot Springs . . . | 1892 |
| Hodges, Robt. H., Sulphur Rock . . . | 1897 |
| Holland Thomas E., Hot Springs . . . | 1893 |
| Hooper, P. O., Little Rock . . . | 1875 |
| Horner, A. A., Helena . . . | 1893 |
| Hudson, G. W., Camden . . . | 1885 |
| Hutchinson, John H., Dewitt . . . | 1895 |
| Jeeks, L. A., McCrory . . . | 1892 |
| Jelks, Jas. T., Hot Springs . . . | 1882 |
| Jennings, R. G., Little Rock . . . | 1869 |
| Jordan, A. C., Pine Bluff . . . | 1897 |
| Keller, J. M., Hot Springs . . . | 1885 |
| Kempner, S. H., Little Rock . . . | 1895 |
| Lawrence, W. B., Batesville . . . | 1879 |
| Lenow, Jas. H., Little Rock . . . | 1895 |
| Linthicum, D. A., Helena . . . | 1873 |
| McCormick, E. G., Prairie Grove . . . | 1896 |
| McGavock, F. G., McGavock . . . | 1883 |
| Meek, E., Argenta . . . | 1884 |
| Moulton, H., Fort Smith . . . | 1891 |
| Orto, Z., Pine Bluff . . . | 1885 |
| Prather, D. J., Little Rock . . . | 1885 |
| Pry, E. T., Douglas . . . | 1897 |
| Robertson, J. J., Little Rock . . . | 1896 |
| Runyon, J. P., Pine Bluff . . . | 1895 |
| Shibley, J. S., Paris . . . | 1885 |
| Shields, W. B., St. Francis . . . | 1896 |
| Shinault, C. R., Helena . . . | 1896 |
| Short, O. J., Hot Springs . . . | 1895 |
| Scuthall, J. H., Little Rock . . . | 1893 |
| Stayton, D. H., Searcy . . . | 1895 |
| Steger, R. W., Hot Springs . . . | 1896 |
| Vance, A. J., Harrison . . . | 1885 |
| Welch, W. B., Fayetteville . . . | 1873 |
| Weny, N., Little Rock . . . | 1897 |
| Witherington, W. T., Paragould . . . | 1891 |

CALIFORNIA.

| | |
|---------------------------------------|------|
| Adams, Jno. S., Oakland . . . | 1894 |
| Adams, F. L., Oakland . . . | 1895 |
| Ayer, Washington, San Francisco . . . | 1895 |
| Ainsworth, F. K., Los Angeles . . . | 1896 |
| Allen, C. H., Centreville . . . | 1895 |
| Anderson, W., San Francisco . . . | 1890 |
| Anderson, Chas., Santa Barbara . . . | 1895 |
| Anderson, W. D., Valejo . . . | 1895 |
| Arnold, J. D., San Francisco . . . | 1892 |
| Baldwin, Wm. H., Sacramento . . . | 1887 |
| Barbat, J. H., San Francisco . . . | 1895 |
| Bard, C. L., Ventura . . . | 1894 |
| Barkan, Adolph, San Francisco . . . | 1893 |
| Bazan, F., San Francisco . . . | 1895 |
| Beche, C. E., Watsonville . . . | 1894 |
| Belknap, L. J., San Jose . . . | 1897 |
| Bellamy, B. C., Livermore . . . | 1892 |
| Bicknell, F. T., Los Angeles . . . | 1897 |
| Booth, J. P., Needles . . . | 1897 |
| Bouskey, Julius, San Francisco . . . | 1895 |

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| Brainard, H. G., Los Angeles . . . | 1895 |
| Brennan, T. F., San Francisco . . . | 1895 |
| Brinckerhoff, E., Oakland . . . | 1897 |
| Bridge, N., Pasadena . . . | 1895 |
| Briggs, W. A., Sacramento . . . | 1894 |
| Briggs, W. E., Sacramento . . . | 1894 |
| Brown, F. R., Madera . . . | 1895 |
| Brown, H. C., San Jose . . . | 1895 |
| Browning, C. C., Messina . . . | 1894 |
| Brune, A. E., San Francisco . . . | 1895 |
| Buckel, C. A., Oakland . . . | 1895 |
| Bucknall, G. J., San Francisco . . . | 1895 |
| Bull, C. G., Alameda . . . | 1897 |
| Burton, H. G., Soldiers' Home . . . | 1895 |
| Cachot, Max., San Francisco . . . | 1895 |
| Calderon, E., San Francisco . . . | 1895 |
| Cameron, Jas. S., Red Bluff . . . | 1895 |
| Carpenter, F. B., San Francisco . . . | 1895 |
| Cartwright, C. O., Sacramento . . . | 1897 |
| Casal, F. M., Santa Barbara . . . | 1880 |
| Cave, F. P., El Monte . . . | 1897 |
| Chesmore, Geo., San Francisco . . . | 1895 |
| Chipman, M. M., San Diego . . . | 1876 |
| Chieley, C. P., San Francisco . . . | 1895 |
| Choate, J. J., Los Angeles . . . | 1895 |
| Clark, Asa, Stockton . . . | 1896 |
| Clarke, B. F., San Francisco . . . | 1895 |
| Clark, Edw. S., San Francisco . . . | 1892 |
| Cleveland, W. R., Biggs . . . | 1895 |
| Clinton, C. A., San Francisco . . . | 1896 |
| Cluness, W. R., San Francisco . . . | 1871 |
| Cool, R. H., D. D. S., Oakland . . . | 1895 |
| Copper, C. N., Campbell . . . | 1880 |
| Colburn, Jno. R., Los Angeles . . . | 1895 |
| Cole, R. B., San Francisco . . . | 1895 |
| Cole, Geo. L., Los Angeles . . . | 1895 |
| Cooper, C. E., San Francisco . . . | 1895 |
| Cowan, C. S., Fort Jones . . . | 1895 |
| Cowles, J. E., Los Angeles . . . | 1894 |
| Craig, W. H., Glendora . . . | 1896 |
| Crowley, D. D., Oakland . . . | 1895 |
| Crumpton, H. Jno., Sansalits . . . | 1896 |
| Cushing, C., San Francisco . . . | 1895 |
| Davissin, J. H., Los Angeles . . . | 1887 |
| Davis, S. B., Stockton . . . | 1895 |
| Davis, G. W., San Francisco . . . | 1890 |
| Davies, W. H., San Bernardino . . . | 1895 |
| Dawson, W. J. G., St. Helena . . . | 1895 |
| Daywatt, G. W., San Francisco . . . | 1895 |
| D'Eveleyn, F. W., San Francisco . . . | 1895 |
| DeWitt, T. B., San Francisco . . . | 1895 |
| Dodge, W., Los Angeles . . . | 1894 |
| Dodge, W., San Francisco . . . | 1895 |
| Dunbar, L. L., San Francisco . . . | 1895 |
| Dwinell, G. W., Montague . . . | 1895 |
| Eaton, F. B., San Jose . . . | 1895 |
| Eidenmuller, Wm. C., San Fran. . . | 1895 |
| Ellis, H. B., Los Angeles . . . | 1893 |
| Ellinwood, C. N., San Francisco . . . | 1893 |
| Eschleman, I. S., Fresno . . . | 1895 |
| Farnum, C. E., San Francisco . . . | 1895 |
| Farmer, C. H., Napa . . . | 1895 |
| Fenn, C. M., San Diego . . . | 1885 |
| Field, Edna, San Francisco . . . | 1895 |
| Fife, John, Red Bluff . . . | 1895 |
| Fisher, J. C., Lytton Springs . . . | 1896 |
| Fitzgibbon, G. H., San Francisco . . . | 1895 |
| Fletcher, Mary, Alameda . . . | 1895 |
| Flint, Thos., San Juan . . . | 1895 |
| Follansbee, E. A., Los Angeles . . . | 1895 |
| Foot, E. N., Lockeford . . . | 1892 |
| Frink, Geo. K., San Francisco . . . | 1895 |
| Frisby, E. G., San Francisco . . . | 1895 |
| Frost, J., San Francisco . . . | 1895 |
| Fuller, G. W., San Francisco . . . | 1895 |
| Gage, M. R., Los Angeles . . . | 1895 |
| Galloway, Jno., San Francisco . . . | 1895 |
| Gallimore, E., San Jose . . . | 1897 |
| Gardner, Mathew, San Francisco . . . | 1895 |
| Gedge, D. M., San Francisco . . . | 1895 |
| Gibbons, Henry, San Francisco . . . | 1893 |
| Gill, B. M., Dunsmuir . . . | 1894 |
| Gill, C. J., Riverside . . . | 1895 |

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| Givens, Jno. W., Los Angeles | 1895 | Plummer, R. H., San Francisco | 1885 | Woolsey, M. H., San Francisco | 1895 |
| Gofer, F. P., Los Gatos | 1895 | Posey, A. C., Oakland | 1895 | Woolsey, E. H., Oakland | 1882 |
| Gordon, W. A., San Jose | 1894 | Potts, J. S., San Jose | 1895 | Wood, T. D., Stanford University | 1894 |
| Gray, R. A., Colusa | 1895 | Powers, G. H., San Francisco | 1894 | Wood, J. W., Long Beach | 1897 |
| Griffin, C. F., San Francisco | 1895 | Powell, David, Marysville | 1895 | Woodward, A. P., San Francisco | 1895 |
| Grover, W. A., Berkeley | 1895 | Price, M. F., Colton | 1895 | Wright, H. J., San Jose | 1895 |
| Gundrum, F., Sacramento | 1897 | Pritchard, M., Sierra Valley | 1897 | Wright, Jno., San Jose | 1869 |
| Hall, R. J., Santa Barbara | 1897 | Quigley, J. M., San Francisco | 1895 | Wythe, Jos. H., Oakland | 1895 |
| Hall, J. U., Jr., San Jose | 1895 | Rattan, Frank, Antioch | 1896 | | |
| Hanson, Geo. F., San Francisco | 1894 | Rechters, T., San Francisco | | CANADA. | |
| Hart, H. H., San Francisco | 1894 | Reed, R. C. S., Santa Fe Springs | 1895 | Bayard, Wm., St. Johns, N. B., | 1896 |
| Hart, A. C., San Francisco | 1895 | Regensburger, A. E., San Francisco | 1895 | Hobley, Thomas, Amherstburg, Ont. | 1892 |
| Harvey, D. M., San Francisco | 1895 | Regensburger, M., San Francisco | 1895 | Irvine, Wm. H., Borestown, N. B. | 1895 |
| Hare, G. A., Fresno | 1895 | Reynolds, G. P., Alameda | 1886 | Lawrence, J. C. H., St. George, N. B. | 1895 |
| Harris, S. M., N. San Juan | 1892 | Rhea, A. R., Calico | 1895 | Smith, A. L., Montreal | 1895 |
| Hazelet, I. W., San Bernardino | 1895 | Richmond, G. B., Salinas | 1895 | | |
| Hearne, J. C., San Diego | 1880 | Richter, E. M., San Francisco | 1894 | COLORADO. | |
| Hennessey, E. J., Napa | 1895 | Rigdon, R. L., San Francisco | 1893 | Arnold, W. W., Colorado Springs | 1883 |
| Herrick, S. S., San Francisco | 1895 | Rivas, I., San Francisco | 1895 | Ashley, W. J., Ouyay | 1895 |
| Hirshfelder, J. O., San Francisco | 1893 | Robinson, L., San Francisco | 1895 | Axtell, E. R., Denver | 1897 |
| Hitchcock, W. W., Los Angeles | 1895 | Rogers, S. J. E., Marysville | 1895 | Ball, J. T., Colorado City | 1895 |
| Holbrook, E. F., Smartsville | 1897 | Rogers, B. W., Oakland | 1897 | Bane, W. C., Denver | 1889 |
| Hopkins, W. E., San Francisco | 1894 | Rohr, S. M., Geyserville | 1897 | Beatty, J. T., Highlands | 1896 |
| Houston, I. M., San Francisco | 1895 | Rosenkrautz, N., San Francisco | 1895 | Beavis, A. J., Denver | 1897 |
| Howard, W. B., Modesto | 1895 | Rosenstein, J., San Francisco | 1894 | Bellrose, N. W., Eaton | 1897 |
| Howard, Kate I., San Francisco | 1894 | Ross, Thomas, Sacramento | 1895 | Beshoor, M., Trinidad | 1874 |
| Hudson, A. T., Stockton | 1897 | Ross, T. D., Ferndale | 1895 | Blaine, J. M., Denver | 1897 |
| Hull, Geo. S., Pasadena | 1895 | Rosson, John B., Tulare | 1895 | Bunney, S. G., Denver | 1897 |
| Hund, F. J., San Francisco | 1895 | Rucker, H. N., Oakland | 1895 | Boyd, E. T., Leadville | 1896 |
| Hund, O. H., San Francisco | | Sanderson, A. J., St. Helena | 1895 | Buchtel, W. H., Denver | 1896 |
| Huntington, T. W., Sacramento | 1891 | Sargent, J. P., Stockton | | Bucknum, A. M., Denver | 1877 |
| Huntington, Wm. D., Oakland | 1897 | Session, O. V., Hueneme | 1895 | Bulette, W. W., Pueblo | 1895 |
| Hurley, J. M., San Bernardino | 1894 | Schwalbe, C., Los Angeles | 1897 | Bull, H. R., Grand Junction | 1897 |
| Jones, A. M., Redlands | 1888 | Sharp, W. F., San Francisco | 1895 | Burns, T. M., Denver | 1896 |
| Jones, Isaac H., San Francisco | 1873 | Sherman, W. N., Merced | 1895 | Campbell, W. A., Colorado Springs | 1893 |
| Jones, P. M., San Francisco | 1895 | Sherman, H. M., San Francisco | 1894 | Carlin, P. V., Denver | |
| Joralemon, J. C., Los Angeles | 1895 | Shields, G. F., San Francisco | 1895 | Clark, J. H., Denver | 1880 |
| Keeney, J. W., San Francisco | 1895 | Shurtleff, G. A., Stockton | 1871 | Cummings, W. M., Trinidad | 1896 |
| Kelly, E. E., San Francisco | 1895 | Shugart, K. D., Riverside | 1897 | Davis, W. C., Denver | 1893 |
| Kelley, Thos., San Jose | 1895 | Sill, E. R., Oakland | 1895 | Davis, Wm. H., Denver | 1893 |
| Kengla, L. A., San Francisco | 1895 | Simonton, A. C., San Jose | 1884 | De Beque, W. A. E., De Beque | 1893 |
| Kenyon, C. G., San Francisco | 1895 | Simmons, G. L., Sacramento | 1871 | Denison, Chas., Denver | 1875 |
| Kerr, Walter, San Francisco | 1893 | Sirmons, G. C., Sacramento | | Dodge, H. O., Boulder | 1877 |
| Ketcham, L. Y., Escondido | 1896 | Simon, J. A., San Francisco | 1895 | Dorland, W. L., Pueblo | 1883 |
| King, C. L., Pasadena | 1892 | Smith, E. H., Santa Clara | 1896 | Duggins, G. G., Pueblo | 1897 |
| Kneeder, W. L., San Diego | 1895 | Sobey, A. L., San Francisco | 1895 | Dunwoody, J. A., Cripple Creek | 1889 |
| Knox, S. P. B., Santa Barbara | 1894 | Solomon, Max, San Francisco | 1895 | Elsner, Jno., Denver | 1871 |
| Kreutzman, H., San Francisco | 1894 | Somers, Geo. B., San Francisco | 1893 | Eldridge, E. F., Grand Junction | 1885 |
| Krotoszyner, M., San Francisco | 1895 | Soper, J. H., San Francisco | 1895 | Eskridge, J. T., Denver | 1893 |
| Kuhlman, C. G., San Francisco | 1895 | Southard, W. F., San Francisco | | Ferstone, J. L., Ft. Morgan | 1897 |
| Kurtz, Jos., Los Angeles | 1895 | Spencer, J. C., San Francisco | 1895 | Fisk, Sam'l A., Denver | 1897 |
| Kyle, Geo. G., Riverside | 1895 | Sprague, W. P., San Francisco | 1895 | Fleming, C. K., Denver | 1893 |
| Lane, L. C., San Francisco | 1871 | Stallard, J. H., San Francisco | 1895 | Foster, J. M., Denver | 1892 |
| Lane, Jos. R., San Francisco | 1893 | Stansbury, O., Chico | 1895 | Gallaher, T. G., Denver | 1895 |
| Lasher, G. W., Los Angeles | 1893 | Steddon, F. W., Los Angeles | 1897 | Graham, J. W., Denver | 1886 |
| Lawhead, H. D., Woodland | 1895 | Stewart, J. T., Los Angeles | 1896 | Grant, W. W., Denver | 1873 |
| Legler, H. T., Oakland | 1896 | Stillman, S., San Francisco | 1895 | Hall, J. N., Denver | 1891 |
| Lengfield, A. L., San Francisco | 1895 | Stone, C. E., Marysville | 1895 | Hamilton, Geo., La Jara | 1895 |
| Lewis, W. M., Los Angeles | 1888 | Stoneberger, A. A., San Francisco | 1895 | Hart, J. A., Colorado Springs | 1896 |
| Lewison, C. G., San Francisco | 1895 | Stuart, A. McG., Santa Rosa | 1885 | Hawes, Jesse, Greeley | 1882 |
| Lewitt, W. B., San Francisco | 1895 | Sutherland, F. B., San Francisco | 1895 | Hawkins, T. H., Denver | 1897 |
| Lillencrantz, A., San Francisco | 1895 | Swan, B. R., San Francisco | 1895 | Holmes, A. M., Denver | 1897 |
| Lindley, Walter, Los Angeles | 1892 | Taggart, T. E., Bakersfield | 1895 | Horn, Thos. G., Colorado Springs | 1890 |
| Love, Jno. H., Ventura | 1895 | Tait, F. D., San Francisco | 1895 | Hughes, T. A., Denver | 1896 |
| Lovelace, A. S., San Francisco | 1897 | Taylor, A. H., San Francisco | 1895 | Kahn, Lee, Leadville | 1896 |
| Lussen, P. M., San Jose | 1895 | Taylor, W. E., San Francisco | 1897 | Kearns, J. F., Evans | 1897 |
| MacMonagle, B., San Francisco | 1892 | Taylor, A. M., Oakland | 1892 | Kirkpatrick, M., Boulder | 1895 |
| McAllister, W. L., Pasadena | 1886 | Thayer, J. W., Gilroy | 1895 | Law, G., Greeley | 1892 |
| McDonald, J. T., San Francisco | 1895 | Thomas, E. W., San Francisco | 1895 | Lawrence, G. H., Denver | 1897 |
| McKee, J. A., Elk Grove | 1897 | Todd, F. W., Camp Capitola | 1879 | Lemon, L. E., Denver | 1897 |
| McLean, Robt. A., San Francisco | 1893 | Tooley, L. P., Willows | 1895 | Levy, Robt., Denver | 1889 |
| McNutt, W. F., San Francisco | 1882 | Trask, S., San Francisco | 1895 | Lindsey, Kate, Boulder | |
| Mahoney, T. L., San Francisco | 1895 | Truworthy, J. W., Los Angeles | 1895 | Lyman, C. B., Denver | 1895 |
| Martin, W. A., San Francisco | 1895 | Von Hoffmann, C., San Francisco | 1896 | McDermith, S. T., Denver | 1881 |
| Markill, R. S., Cloverdale | | Vivian, G., San Leandro | 1895 | McGuire, C. M., Walsenburg | 1895 |
| Maynard, H. H., Los Angeles | 1889 | Voorhies, A. H., San Francisco | 1894 | McKown, T. D., Cripple Creek | 1896 |
| Mauzy, W. P., Oakland | 1897 | Vowinkel, F. W., San Francisco | 1895 | Moore, W., Central City | 1897 |
| Mayer, O. J., San Francisco | 1895 | Wade, Wm. N., Lompoc | 1897 | Munn, W. P., Denver | 1892 |
| Medlock, J. R., Santa Ana | 1897 | Wadsworth, C. C., San Francisco | 1893 | Murrell, T. E., Denver | 1895 |
| Mennett, O. H., Los Angeles | 1895 | Wagner, H. L., San Francisco | 1892 | O'Connor, J. W., Denver | 1885 |
| Miller, R. W., Los Angeles | 1895 | Wanzer, L. M. F., San Francisco | 1895 | Parkhill, C., Denver | 1896 |
| Moody, M. W., San Francisco | 1895 | Ware, C. D., Colfax | | Peavey, J. L., Denver | 1897 |
| Morris, J. F., San Francisco | 1895 | Ward, W. H., Los Angeles | 1895 | Pennock, V. R., Silver Plume | 1897 |
| Murphy, R. W., San Francisco | 1895 | Watts, Nelson, Chico | 1895 | Perkins, I. B., Denver | 1897 |
| Nadeau, H., Los Angeles | 1895 | Weir, F. A., Pasadena | | Phillips, Geo. W., La Junta | 1896 |
| Nelson, J. A., Sacramento | 1895 | Welges, L., Woodland | 1886 | Potts, C. N., Colorado Springs | 1896 |
| Nutting, C. W., Etna | 1895 | Westlake, G. W., Red Bluff | 1895 | Powers, C. A., Denver | 1895 |
| Oliver, J. A., San Francisco | 1895 | White, Geo. A., Sacramento | 1887 | Riley, W. H., Boulder | 1897 |
| Orme, H. S., Los Angeles | 1882 | Whitewell, W. S., San Francisco | 1895 | Schenck, W. L., New Castle | 1877 |
| O'Toole, M. C., San Francisco | 1896 | Whitman, C. H., Los Angeles | 1895 | Shollenberger, C. F., Denver | 1897 |
| Painter, E. T., Redlands | 1895 | Wiard, W. F., Sacramento | 1895 | Sims, H. A., Cripple Creek | 1895 |
| Parkinson, J. H., Sacramento | 1884 | Williamson, J. W., San Francisco | 1895 | Solly, S. Edwin, Colorado Springs | 1889 |
| Paterson, E. N., Oakland | 1895 | Wilson, F. P., San Francisco | 1895 | Stedman, A., Denver | 1887 |
| Paulding, O. P., Santa Maria | 1882 | Wilson, W. L., Milpitas | 1896 | Stover, Geo. H., Fort Collins | 1895 |
| Payne, F. H., Berkeley | 1884 | Wills, Wm. L., Los Angeles | 1894 | Stowe, Bond, Glenwood Springs | 1897 |
| Pedlar, A. J., Fresno | 1895 | Winton, H. N., San Francisco | 1895 | Strickler, W. M., Colorado Springs | 1897 |
| Phelan, G. J., San Francisco | 1894 | Winslow, C. E., Los Angeles | 1895 | Waxham, F. E., Denver | 1886 |
| Pischl, Kasper, San Francisco | 1894 | Winterberg, W., San Francisco | 1895 | Wetherill, H. G., Denver | 1897 |

Wills, J. T., Erie 1897
Willard, J. J., Pueblo 1897

CONNECTICUT.

Abrams, Alva E., Hartford 1889
Alton, C. D., Hartford 1891
Bacon, Wm. T., Hartford 1893
Barber, W. L., Waterbury 1895
Barnes, L., Oxford 1883
Beckwith, F. E., New Haven 1897
Bell, N. S., Windsor 1896
Bishop, T. H., New Haven 1865
Bouton, Geo. B., Westport 1893
Braman, F. M., New London 1884
Brayton, Chas. E., Stonington 1889
Burchard, W. M., Uncasville 1896
Calef, J. Francis, Middletown 1896
Carrington, Chas., Farmington 1872
Cassidy, P., Norwich 1895
Castle, F. E., Waterbury 1880
Crothers, Thos. D., Hartford 1888
Davis, E. H., Plainfield 1884
Day, L. T., Westport
Dean, H. S., So. Coventry 1896
Douglass, E. P., Groton 1895
Dunham, M. V. B., Greenfield Hill 1891
Elliot, G., New Haven 1884
Elmer, E. O., Hartford 1897
Fox, Chas. J., Willimantic 1880
Fuller, H. S., Hartford 1884
Garlick, S. M., Bridgeport 1891
Godfrey, Chas. C., Bridgeport 1889
Gray, W. W., Bridgeport 1895
Graves, F. C., Bridgeport 1895
Graves, C. B., New London 1897
Guild, Frank E., Windham 1897
Hill, Edwin A., East Killingly 1864
Hills, T. M., Willimantic 1870
Hotchkiss, N. R., New Haven 1895
Hughes, O. J. D., Meriden 1893
Jarvis, Geo. C., Hartford 1872
Johnson, M. M., Hartford 1894
Knight, Geo. H., Lakeville 1889
Lambert, B. L., New Haven
Law, H. L., Hartford 1897
Lewis, G. F., Collinsville 1896
Lindsley, Chas. A., New Haven 1884
Lindsley, C. P., New Haven 1897
Lowe, R. W., Ridgefield 1895
Lyon, E. B., New Britain 1895
Marlhouse, M., New Haven 1895
Mayer, N., Hartford 1896
Moody, M. B., New Haven 1889
Morrell, F., Putnam 1893
Nelson, A. W., New London 1888
O'Connor, M. C., New Haven 1897
Osborn, G. W., Bridgeport 1896
Overlock, S. B., Pomfret 1896
Paddock, L. S., Norwich 1892
Porter, Geo. L., Bridgeport 1880
Randall, W. S., Derby 1896
Robinson, M. W., Colchester 1896
Robinson, Rienzi, Danielsonville 1890
Root, Jos. E., Hartford 1889
Russell, W. S., Wallingford 1896
Rutland, F. D., Westport 1896
Shelton, G. A., Shelton 1880
Sheperd, G. R., Hartford 1881
Smith, E. M., Newton 1897
Smith, F. S., Chester 1893
Smith, O. C., Hartford 1896
Stearns, H. P., Hartford 1892
Storrs, M., Hartford 1893
Swasy, B., New Britain 1880
Turner, S. W., Chester 1880
Watson, W. S., Danbury 1891
Whittemore, F. H., New Haven 1884
Williamson, A. N., New London 1895
Wilson, F. M., Bridgeport 1895
Winchell, A. E., New Haven 1897

NORTH DAKOTA.

Archibald, O. W., Jamestown 1878
Brown, J. O., Minnewaukon 1897
Carpenter, G. A., Fargo
Carr, Andrew, Northwood 1896
Coyle, W. B., Lakota 1892
DeVaux, F. H., Valley City 1896
Emanuel, H. W., Minnor 1896
Evanson, J. L., Northwood 1896
Healy, H. H., Michigan City 1896
Herrick, A. B., Lisbon 1896
Hotson, Jno. M., Grandin 1896
McConnell, J. D., Fargo 1888
McIntyre, Geo., Mayville 1896
MacLachlan, C., New Rockford 1896
Philip, W. H. M., Hope 1897
Platon, L. S., Cooperstown 1896

Rowe, H. J., Castleton 1896
Stickney, V. H., Dickinson 1896
Wean, I. N., Fargo 1886
Wheeler, H. M., Grand Forks 1895

SOUTH DAKOTA.

Bowman, A. H., Deadwood 1892
Coyne, S. J., Aberdeen 1890
Crain, F. M., Doland 1886
Dickinson, D. K., Lead 1895
Edgerton, W. E., Salem 1891
Freeman, J. W., Lead City 1885
Kutnewsky, J. T., Redfield 1890
Smith, W. G., Sturgis 1896
Spafford, F. A., Flandrew 1896
Stewart, J. L., Irene 1897
Torrence, W. W., Deadwood 1896
Tufts, A. H., Sioux Falls 1897

DELAWARE.

Elbert, S. C., Wilmington 1897
Ellegood, Robt. G., Concord 1880
Ellegood, J. A., Wilmington 1895
Hancker, W. H., Farnhurst 1896
Hopkins, J. A., Milton 1895
Marshall, Wm., Milford 1891
Orr, Jr., W. P., Lewis 1896
Richards, C. H., Georgetown 1879
Skinner, W. T., Glasgow 1895
Stubbs, H. J., Wilmington 1897
Thompson, H. M., Wilmington 1897
Wilson, Jas. H., Dover 1891

DISTRICT OF COLUMBIA.

Acker, G. N., Washington 1881
Adams, S. S., Washington 1881
Alden, C. H., Washington 1880
Ballhache, P. H., Washington 1895
Barker, H. H., Washington 1872
Barrie, G., Washington 1895
Bayne, J. W., Washington 1895
Beardsley, G. S., Washington 1891
Behrend, A., Washington 1891
Belt, E. O., Washington 1891
Berman, L., Washington 1895
Blech, G., Washington 1897
Bovee, J. Wesley, Washington 1891
Bowen, W. S., Washington 1897
Boyan, S. W., Washington 1895
Bromwell, J. R., Washington 1884
Brown, C. W., Washington 1895
Brumbaugh, G. M., Washington 1891
Bryan, J. H., Washington 1889
Bulkley, J. W., Washington 1878
Bussey, S. C., Washington 1870
Byrns, W. F., Washington 1891
Carr, W. P., Washington 1895
Chappell, J. W., Tennallytown 1893
Cook, G. W., Washington 1887
Dean, R. S., Washington 1890
Deeble, H. M., Washington 1896
Dickson, S. H., Washington 1895
Durfour, Clarence R., Washington 1896
Dye, H. S., Washington 1897
Eliot, J., Washington 1895
Eliot, L., Washington 1891
Evans, W., Washington 1870
Farnham, Robt., Washington 1897
Foster, W. W., Washington 1884
Fox, W. H., Washington 1891
Franzoni, C. W., Washington 1872
Fry, H. D., Washington 1884
Gladmon, E., Washington 1897
Gobrecht, W. H., Washington 1858
Goodling, W. W., Washington 1884
Gentsch, D. C., Washington 1897
Gunnell, F. M., Washington 1876
Hammond, T. V., Washington 1890
Hance, T. F., Washington 1891
Hausman, Theo., Washington 1891
Hawkes, W. H., Washington 1891
Hayes, H. L., Washington 1895
Heger, A., Washington 1891
Heiberger, Ida J., Washington 1895
Holden, R. T., Washington 1884
Howard, J. T., Washington 1891
Howland, G. T., Washington 1897
Hyatt, Frank, Washington 1881
Johnson, H. L. E., Washington 1895
Johnson, J. Tabor, Washington 1876
Johnston, W. W., Washington 1896
Jones, D. W., Takoma Park 1884
Keyes, C. W., Washington 1897
King, A. F. A., Washington 1881
Kinyoun, J. J., Washington 1895
Kleinschmidt, C. H. A., Wash 1895
Kober, G. M., Washington 1895
Kepilinski, Louis, Washington 1897

Kwitz, John, Washington 1892
Lamb, D. S., Washington 1893
Leech, D. O., Washington 1896
Lincoln, N. S., Washington 1876
Lovejoy, J. W. H., Washington 1864
McArdle, T. E., Washington 1884
McBride, J. H., Washington 1895
McKimmie, O. A. M., Washington 1896
McLaughlin, T. N., Washington 1895
McLain, J. S., Washington 1892
Mackal, L., Georgetown 1884
Magruder, G. L., Washington 1880
Marmion, W. V., Washington 1891
Mayfield, C., Washington 1895
Miser, F. H., Washington 1897
Moran, J. F., Washington 1890
Morgan, E. L., Washington 1895
Morgan, Jas. D., Washington 1889
Mutter, M. G., Washington 1895
Muncaster, S. B., Washington 1893
Ober, Geo. C., Washington 1888
Osman, L. C., Washington 1896
Parson, Mary, Washington 1891
Pool, B. G., Washington 1891
Prentiss, D. W., Washington 1880
Raub, J. F., Washington 1895
Reisinger, E. W., Washington 1896
Reyburn, Robt., Washington 1868
Richey, S. O., Washington 1895
Richardson, C. W., Washington 1889
Rixey, P. M., Washington 1891
Robins, W. L., Washington 1895
Robbins, H. A., Washington 1895
Shaeffer, E. N., Washington 1895
Smart, Chas., Washington 1895
Smith, T. C., Washington 1895
Sothoron, Jas. T., Washington 1889
Sowers, Z. T., Washington 1887
Stafford, J. J., Washington 1895
Stone, Isaac S., Washington 1885
Storch, A. B., Washington 1883
Stowell, C. H., Washington 1895
Strickler, M. B., Washington 1884
Suddarth, Jas. L., Washington 1893
Swain, O. A., Washington 1897
Thompson, J. F., Washington 1881
Toner, J. E., Washington 1897
Vaughan, G. T., Washington 1890
Vincent, T. N., Washington 1895
Walsh, John E., Washington 1896
Walsh, R., Washington 1896
Wellington, J. R., Washington 1896
West, G. W., Washington 1881
Wilmer, W. H., Washington 1897
Williams, D. H., Washington 1895
Winter, John T., Washington 1889
Woodward, W. C., Washington 1894
Wyman, W., Washington 1884
Yarnall, J. H., Washington 1897
Yarrow, H. C., Washington 1891
Young, J. T., Washington 1891

FLORIDA.

Altree, G. H., Port Tampa City 1897
Anderson, T. S., Carabelle 1896
Anderson, W. E., Pensacolo 1891
Bird, U. S., Tampa 1895
Burroughs, R. B., Jacksonville 1886
Caldwell, F. H., Sanford 1890
Cuzner, A. T., Gilmore 1897
DeLong, W. H., Emporia 1884
Drew, C., Jacksonville 1893
Harris, J. V., Key West 1896
Hodges, J. H., Gainesville 1895
Hughlett, W. L., Cocoa 1896
Jones, D. I., Hampton 1897
Lancaster, R. A., Gainesville 1885
Lisk, B. F., Conner 1897
McLane, J. N., DeFurniak Springs 1892
Maloney, J. B., Key West 1892
Myers, T. J., Oklawaha 1892
Newsom, W. V., Ocala 1895
Palmer, E. M., Key West 1891
Plummer, J. W. V. R., Key West 1892
Porter, J. Y., Key West 1892
Rush, W. B., Oakland 1895
Sabal, E. T., Jacksonville
Simmons, E. G., Coacoanut Grove 1897
Smith, F. F., St. Augustine 1895
Stebbins, H. H., Tampa 1897
Stringer, S., Brookville 1895
Sweeting, C. B., Key West 1896
Van Hood, E., Ocala 1897
Welch, G. E., Pallatka 1895
Williams, N. A., Dade City 1896
Worcester, O. E., Conant 1890
Worley, S. G., St. Augustine 1895
Wright, O. S., Plant City 1892

GEORGIA.

| | |
|---|------|
| Amster, L., Atlanta | 1895 |
| Armstrong, W. S., Atlanta | 1870 |
| Asher, W. T., Atlanta | 1895 |
| Avant, A. L. R., Patterson | 1896 |
| Avary, J. C., Atlanta | 1895 |
| David, J. B., Atlanta | 1897 |
| Bailey, J. W., Gainesville | 1878 |
| Baldwin, M. A., Cuthbert | 1895 |
| Bardwell, E. L., Talbotton | 1897 |
| Bell, W. J., Atlanta | 1895 |
| Bennett, Alice, Thomasville | 1895 |
| Boyd, M. L., Savannah | 1892 |
| Braserton, B. F., Gainesville | 1895 |
| Bryans, R. G., Jackson | 1895 |
| Burford, H., Brunswick | 1895 |
| Burns, J. K., Clarksville | 1895 |
| Burt, A. M., Sparta | 1895 |
| Calhoun, A. W., Atlanta | 1895 |
| Champion, W. L., Atlanta | 1895 |
| Childs, J. A., Atlanta | 1895 |
| Clark, M. A., Barnesville | 1896 |
| Cleaman, T. D., Augusta | 1895 |
| Connally, G. L., Atlanta | 1895 |
| Cooper, H. P., Atlanta | 1895 |
| Cerson, E. R., Savannah | 1896 |
| Cortelyou, P. R., Marietta | 1887 |
| Cox, R. P., Rome | 1895 |
| Crawford, J. M., Atlanta | 1895 |
| Currie, M. L., Alley | 1895 |
| Davis, Jeff, Toccoa | 1895 |
| Davis, E. C., Atlanta | 1895 |
| Davis, W. L., Albany | 1895 |
| Dean, J. G., Dawson | 1895 |
| Deater, B. R., Blakely | 1895 |
| Doughty, W. H., Augusta | 1890 |
| Dugas, G. C., Augusta | 1895 |
| Duncan, W., Savannah | 1897 |
| Duncan, J. W., Atlanta | 1895 |
| Earnest, J. G., Atlanta | 1895 |
| Elkin, W. S., Atlanta | 1891 |
| Foster, Eugene, Augusta | 1887 |
| Garlington, T. R., Rome | 1893 |
| Gaston, J. McF., Atlanta | 1886 |
| Gaston, J. McF. Jr., Atlanta | 1895 |
| Gerdine, Jno., Athens | 1896 |
| Goodrich, E. C., Augusta | 1880 |
| Goss, J. H., Athens | 1888 |
| Grandy, L. B., Atlanta | 1895 |
| Greene, C. C., Atlanta | 1895 |
| Green, Sam, Oakdale | 1895 |
| Grimes, Geo. J., Columbus | 1879 |
| Hagan, Hugh, Atlanta | 1895 |
| Hall, T. M., Milledgeville | 1895 |
| Hamilton, Chas., Rome | 1896 |
| Harris, R. B., Savannah | 1895 |
| Hardman, L. G., Harmony Grove | 1883 |
| Hardman, W. B., Harmony Grove | 1895 |
| Herrman, J. D., Eastman | 1895 |
| Hobbs, A. G., Atlanta | 1896 |
| Holmes, J. B. S., Atlanta | 1889 |
| Holliday, W. Z., Augusta | 1896 |
| Hott, Wm. F., Macon | 1879 |
| Hopkins, J. G., Thomasville | 1890 |
| Hoyt, W. D., Rome | 1879 |
| Humphries, W. C., Acworth | 1895 |
| Hunt, C. D., Atlanta | 1895 |
| Hutchins, M. B., Atlanta | 1895 |
| Izlar, R. P., Waycross | 1895 |
| Jenkins, R. H., Hogansville | 1880 |
| Jones, L. H., Atlanta | 1895 |
| Keaton, P. H., Damascus | 1895 |
| Kine, R. R., Atlanta | 1896 |
| Lane, L. P., Stillmore | 1896 |
| Lovvorn, J. L., Bowdon | 1895 |
| McCurry, I. L., Hartwell | 1895 |
| McDuffie, J. H., Columbus | 1896 |
| McHatten, H., Macon | 1884 |
| McIntosh, T. M., Thomasville | 1885 |
| McMaster, H. B., Waynesboro | 1896 |
| McRae, F. W., Atlanta | 1891 |
| Martin, J. D., Savannah | 1880 |
| Mitchell, T. E., Columbus | 1896 |
| Moore, K. P., Macon | 1895 |
| Nicholson, Wm. P., Atlanta | 1889 |
| Noble, G. H., Atlanta | 1895 |
| Nunn, R. J., Savannah | 1878 |
| O'Daniel, W., Bullard's Station | 1879 |
| Olmsted, J. C., Atlanta | 1895 |
| Parks, W. B., Atlanta | 1895 |
| Powell, B. C., Villa Rica | 1895 |
| Powell, T. O., Milledgeville | 1895 |
| Quillian, D. D., Athens | 1895 |
| Ridley, F. M., La Grange | 1895 |
| Roland, A. A., Brunswick | 1877 |
| Roy, D., Atlanta | 1895 |

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| Roy, G. G., Atlanta | 1895 |
| Rumble, S., Goggansville | 1895 |
| Scott, H. F., Atlanta | 1895 |
| Shorter, J. H., Macon | 1895 |
| Sims, F. H., Atlanta | 1895 |
| Slack, H. R., La Grange | 1895 |
| Sommerfeld, J. E., Atlanta | 1895 |
| Spears, R. S., Atlanta | 1895 |
| Spears, A. F., Farrar | 1895 |
| Spears, Wm. T., Rutledge | 1895 |
| Stephens, L. P., Atlanta | 1895 |
| Taliaferro, V. H., Atlanta | 1895 |
| Tate, W. B., Tate | 1895 |
| Terrell, H. W., Greeneville | 1895 |
| Trimble, G. C., East Point | 1896 |
| Tuten, J. G., Jesup | 1895 |
| Walker, T. D., Cochran | 1896 |
| Westmoreland, W. F., Atlanta | 1895 |
| Whetchel, J. E., Gillsville | 1895 |
| Whitehead, W. H., Atlanta | 1895 |
| Wilcox, G. A., Augusta | 1895 |
| Williams, H. J., Macon | 1897 |
| Wimberly, J. S., Sunlight | 1895 |
| Wimberly, W. C., Fort Gaines | 1895 |
| Wolff, Bernard, Atlanta | 1895 |
| Wyeth, M. C., Fort McPherson | 1895 |

IDAHO.

| | |
|---|------|
| Behle, Wm. H., Blackfoot | 1895 |
| Brown, Newell J., Hailey | 1897 |
| France H., Wardner | 1896 |
| Genoway, C. V., Wallace | 1894 |
| La Rue, F., Idaho Falls | 1897 |
| Numbers, Jos. R., Weiser | 1896 |
| Pendleton, G. W., Idaho Falls | 1895 |
| Richter, C., Hailey | 1895 |
| Smith, W. F., Mountain Home | 1897 |
| Sweet, C. L., Boise | 1896 |
| Watkins, W. W., Moscow | 1894 |

ILLINOIS.

| | |
|---|------|
| Abbott, W. C., Chicago | 1893 |
| Acres, Louise, Chicago | 1896 |
| Adams, A. L., Jacksonville | 1893 |
| Adelsberger, L., Waterloo | 1897 |
| Adolphus, P., Chicago | 1884 |
| Akins, W. T., Chicago | 1887 |
| Alderson, J. J., Chicago | 1887 |
| Alexander, H. C. B., Chicago | 1896 |
| Allen, J. F., Warrensburg | 1897 |
| Allison, W. R., Peoria | 1888 |
| Andrews, E., Chicago | 1851 |
| Andrews, W., Chicago | 1893 |
| Anderson, Bennett C., Galesburg | 1890 |
| Angear, J. J. M., Chicago | 1892 |
| Anthony, F., Sterling | 1897 |
| Auld, J. Maxwell, Chicago | 1887 |
| Babcock, Robt. H., Chicago | 1887 |
| Bacon, C. S., Chicago | 1893 |
| Bacon, J. B., Chicago | 1892 |
| Baker, L. H., Oak Park | 1873 |
| Baldwin, A. E., Chicago | 1886 |
| Bannister, H. M., Oak Park | 1894 |
| Barger, R. N., Hopedale | 1884 |
| Barrett, E. J., Chicago | 1897 |
| Bartlett, J., Chicago | 1887 |
| Barlow, C., Eaton | 1892 |
| Barlow, L. N., Chicago | 1887 |
| Barton, P. H., Danville | 1883 |
| Barnes, William, Decatur | 1896 |
| Barnes, I. N., Decatur | 1887 |
| Barr, G. W., Quincy | 1895 |
| Bassett, M. F., Quincy | 1895 |
| Baughman, J. A., Neogo | 1894 |
| Baum, W. L., Chicago | 1895 |
| Bedford, J. B., Verona | 1897 |
| Beeson, S. J., Chicago | 1895 |
| Bell, J. F., Elgin | 1897 |
| Berry, J. G., Chicago | 1887 |
| Berrhardt, Carl, Rock Island | 1895 |
| Best, J. E., Arlington Heights | 1887 |
| Besharian, J. H., Chicago | 1884 |
| Bevan, A. D., Chicago | 1894 |
| Bettman, B., Chicago | 1887 |
| Biddle, Jno., Monmouth | 1886 |
| Billings, F. S., Chicago | 1884 |
| Binkley, J. T., Chicago | 1895 |
| Bishop, S. S., Chicago | 1892 |
| Black, C. E., Jacksonville | 1897 |
| Black, J. N., Clayton | 1897 |
| Blaine, J. E., Dwight | 1894 |
| Blair, E. J., Monmouth | 1891 |
| Boal, Robt., Lacon | 1895 |
| Bondurant, A. A., Cairo | 1883 |
| Bouffeur, A. L., Chicago | 1891 |
| Boulton, W. C., Chicago | 1896 |
| Boyd, S. J., Chicago | 1897 |

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|---|------|
| Braffet, Jas. H., Paw Paw | 1891 |
| Brenton, Wash., Tuscola | 1893 |
| Breckenbridge, Stephen, Riverside | 1892 |
| Bremmer, H. A., Merritt | 1897 |
| Britton, A. L., Athens | 1895 |
| Brower, D. R., Chicago | 1897 |
| Brown, H. H., Chicago | 1892 |
| Brown, H. B., Lincoln | 1897 |
| Brown, Jas. L., Peoria | 1888 |
| Brown, E. J., Decatur | 1892 |
| Brown, S., Chicago | 1892 |
| Broughton, R., Dwight | 1892 |
| Brobeck, A. L., Wellington | 1891 |
| Brooks, H. J., Elgin | 1897 |
| Brobst, C. H., Peoria | 1896 |
| Bryan, C. H., Chicago | 1895 |
| Buchanan, W. A., Paris | 1896 |
| Buck, J. P., Chicago | 1896 |
| Buck, H. B., Springfield | 1876 |
| Burrows, T. W., Ottawa | 1896 |
| Burr, A. H., Chicago | 1892 |
| Burroughs, W. M., Chicago | 1897 |
| Bumstead, J. E., Dundee | 1887 |
| Burlingame, D. E., Elgin | 1895 |
| Burns, W. W., Polo | 1897 |
| Burnham, A. F., Ashland | 1886 |
| Burke, C. O., Atlanta | 1896 |
| Burwash, H. J., Chicago | 1895 |
| Burwash, T. N., Plainview | 1886 |
| Butler, G. F., Chicago | 1895 |
| Butterfield, F. A., Rockford | 1895 |
| Buxton, W. E., Samsville | 1896 |
| Byford, H. T., Chicago | 1874 |
| Caldwell, W. S., Freeport | 1887 |
| Campbell, J. Y., Paxton | 1882 |
| Campbell, R. R., Chicago | 1897 |
| Carter, J. M. G., Waukegan | 1882 |
| Carey, F., Chicago | 1887 |
| Carpenter, G. T., Chicago | 1896 |
| Casselberry, W. E., Chicago | 1887 |
| Catto, W. M., Decatur | 1896 |
| Catlin, E. P., Rockford | 1884 |
| Chandler, F. E., Chicago | 1897 |
| Chamberlain, G. M., Chicago | 1877 |
| Chapman, C. F., Chicago | 1897 |
| Chapman, G. H., Grand Crossing | 1887 |
| Chapman, H. W., Whitehall | 1896 |
| Chenoweth, W. J., Decatur | 1872 |
| Chew, J. H., Chicago | 1877 |
| Christopher, W. S., Chicago | 1888 |
| Church, N. H., Chicago | 1896 |
| Clark, Summer, Effingham | 1897 |
| Clarkes, W. E., Oak Park | 1895 |
| Cleveland, E. F., Dundee | 1880 |
| Colburn, J. Elliot, Chicago | 1887 |
| Cole, Samuel, Chicago | 1895 |
| Cole, W. C., Jacksonville | 1886 |
| Coleman, W. F., Chicago | 1895 |
| Colt, J. D., Litchfield | 1893 |
| Conner, J. J., Pana | 1886 |
| Cook, W. H., Coffeen | 1894 |
| Cook, E. P., Mendota | 1876 |
| Cook, J. C., Hyde Park | 1887 |
| Cooke, A. H., Chicago | 1884 |
| Coolidge, F. S., Chicago | 1893 |
| Corr, A. C., Carlinville | 1886 |
| Cory, A. L., Chicago | 1893 |
| Cotton, A. C., Chicago | 1895 |
| Cox, W. M., Mt. Sterling | 1883 |
| Cox, G. W., Chicago | 1896 |
| Cozard, Jas., Reynolds | 1876 |
| Craig, G. G., Rock Island | 1878 |
| Crawford, N. B., Eureka | 1890 |
| Crow, J. T., Carrollton | 1886 |
| Cunningham, D. H., Chicago | 1895 |
| Cunningham, T. N., Princeton | 1897 |
| Curtiss, R. M., Union | 1890 |
| Cushing, H. E., Champaign | 1897 |
| Dahl, S., Chicago | 1893 |
| Danforth, I. N., Chicago | 1886 |
| Daulton, W. B., Scottville | 1896 |
| Davis, N. S., Chicago | 1847 |
| Davis, Jr., N. S., Chicago | 1895 |
| Davis, Thomas A., Chicago | 1895 |
| Davis, Effa V., Chicago | 1897 |
| Davidson, T. W., Oneida | 1896 |
| Davidson, C., Chicago | 1896 |
| Davenport, N. S., Chicago | 1896 |
| De Lee, J. B., Chicago | 1896 |
| DeCourcy, J. O., St. Libory | 1895 |
| DeVeny, S. C., Chicago | 1884 |
| Dewey, F. J., Chicago | 1896 |
| Deus, Geo. A., Streator | 1890 |
| Dickinson, F., Chicago | 1896 |
| Dieffenbacher, P. L., Havana | 1881 |
| Dixon, J. N., Springfield | 1887 |
| Dodd, Oscar, Chicago | 1897 |

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|--|------|---|------|--|------|
| Dodds, R., Chicago | 1895 | Hale, A. B., Chicago | 1887 | Knapp, A. A., Brimfield | 1897 |
| Doering, E. J., Chicago | 1887 | Hall, J. M., Chicago | 1887 | Knight, F. C., Waukegan | 1894 |
| Doherty, D. G., Chicago | 1896 | Hall, S. C., Omaha | 1897 | Knight, Mary G., Aurora | 1886 |
| Doolittle, Wm. H., Woodstock | 1897 | Hall, C. W., Kewanee | 1894 | Knudson, F. J., Chicago | 1896 |
| Dorland, E. H., Chicago | 1895 | Hamilton, J. B., Elgin | 1873 | Kohl, Julius, Belleville | 1896 |
| Dougherty, P., Chicago | 1887 | Hammond, J. D., Chicago | 1896 | Kreider, G. N., Springfield | 1893 |
| Dougall, Wm., Joliet | 1877 | Hammon, Glenn M., Chicago | 1896 | Krusenmark, C., Chicago | 1896 |
| Doyle, M. R., East St. Louis | 1896 | Hamill, E., Chicago | 1896 | Kuflewski, W. A., Chicago | 1896 |
| Ducker, J. O., Chicago | 1895 | Hardie, T. Melville, Chicago | 1893 | Kurtz, C. E., Chicago | 1883 |
| Dudley, E. C., Chicago | 1883 | Hardy, H. T., Kaneville | 1887 | Lackenstein, M. H., Chicago | 1896 |
| Duncan, W. E., Chicago | 1896 | Harris, M. L., Chicago | 1896 | Lacount, E. R., Chicago | 1896 |
| Dulin, C. T., Raymond | 1896 | Harvey, D. S., Chicago | 1897 | Larkin, O. E., Chicago | 1896 |
| Eads, B. B., Chicago | 1894 | Harvey, L. J., Griggsville | 1892 | Latham, V. A., Rogers Park | 1893 |
| Earle, F. B., Chicago | 1887 | Harrison, D. C., Bath | 1896 | Law, D. H., Dixon | 1897 |
| Eckley, W. C., Chicago | 1891 | Harrison, Henry M., Quincy | 1884 | Leahy, M. M., Chicago | 1883 |
| Eddy, W. J., Shelbyville | 1897 | Harlan, A. W., Chicago | 1884 | Lee, Elmer, Chicago | 1886 |
| Edlin, E. A., Moline | 1897 | Harsha, W. M., Chicago | 1887 | Leeds, L. L., Lincoln | 1885 |
| Edwards, J. W., Mendota | 1897 | Hartley, J. D., Chicago | 1884 | Leonard, R. L., Chicago | 1887 |
| Edwards, A. R., Chicago | 1895 | Haskell, W. A., Alton | 1877 | Leusman, F. A., Chicago | 1895 |
| Egan, J. A., Chicago | 1896 | Haskin, H. S., Highland Park | 1892 | Lewis, Chas. J., Chicago | 1886 |
| Eisendrath, D. N., Chicago | 1895 | Hatch, H., Quincy | 1884 | Lewis, Denslow, Chicago | 1886 |
| Elliot, A. R., Chicago | 1887 | Hatfield, M. P., Chicago | 1886 | Lewis, J. Y., Quincy | 1897 |
| Engert, R. H., Chicago | 1894 | Haven, A. C., Lake Forest | 1886 | Lichty, D., Rockford | 1896 |
| Englemann, Rosa, Chicago | 1877 | Haven, Jos., Chicago | 1888 | Limmer, Geo. L., Peoria | 1896 |
| Ensign, W. O., Rutland | 1885 | Hawley, Geo. F., Chicago | 1894 | Lindsay, V. T., Springfield | 1896 |
| Etheridge, J. H., Chicago | 1897 | Hawley, C. W., Chicago | 1891 | Linnell, B. M., Chicago | 1896 |
| Evans, A. E., Chicago | 1893 | Heckard, M. O., Chicago | 1891 | Little, J., Bloomington | 1895 |
| Evans, W. A., Chicago | 1886 | Heise, Ellen H., Canton | 1897 | Littlefield, H. H., Beardstown | 1875 |
| Eysler, Geo. L., Rock Island | 1894 | Helm, W. B., Rockford | 1897 | Loomis, E. B., Chicago | 1887 |
| Farley, W. K., Waterman | 1882 | Helm, J. A., Metropolis | 1897 | Lonergan, W. D., Chicago | 1887 |
| Fenger, C., Chicago | 1895 | Henry, R. H., Peotone | 1897 | Loring, J. B., Chicago | 1896 |
| Ferguson, A. H., Chicago | 1886 | Henry, Robt. F., Princeville | 1896 | Luehr, E., Chicago | 1896 |
| Fiengenbaum, E. W., Edwardsville | 1876 | Hensley, J. W., Peoria | 1887 | Lucas, E. J., Peoria | 1896 |
| Fink, I. W., Hillsboro, | 1896 | Hequembourg, J. E., Chicago | 1893 | Lydston, G. Frank, Chicago | 1886 |
| Firebaugh, I. L., Robinson | 1896 | Herrick, Jas. B., Chicago | 1886 | Lydston, J. A., Chicago | 1887 |
| Fish, W. B., Wheaton | 1897 | Herriott, E. L., Jacksonville | 1885 | Mackenzie, W. R., Chester | 1884 |
| Fisher, W., Alton | 1897 | Hester, W. W., Chicago | 1891 | MacArthur, R. D., Chicago | 1888 |
| Fisher, C. J. C., Carlinville | 1895 | Hessert, W., Chicago | 1888 | MacNeal, A., Berwyn | 1896 |
| Fisher, W. A., Chicago | 1896 | Hess, F. A., Chicago | 1890 | McCullum, J. L., Chicago | 1892 |
| Fisher, J., Chicago | 1887 | Hillsabeck, W. F., Windsor | 1886 | McCurdy, J. G., Chicago | 1892 |
| Fiske, G. F., Chicago | 1895 | Hilton, G. V., Chicago | 1886 | McCraith, S. L., Chicago | 1895 |
| Fitch, W. M., Chicago | 1884 | Hoadley, A. E., Chicago | 1897 | McCullough, J. R., Chicago | 1896 |
| Fitch, W. H., Rockford | 1896 | Hoffman, J. A., Pesotum | 1897 | McCormick, N. K., Normal | 1896 |
| Fitts, A. A., Batavia | 1897 | Hoit, J. D. C., Elmwood | 1885 | McClanahan, W. S., Woodhull | 1887 |
| Fletcher, Jos., Mendan | 1896 | Holderness, E. P. G., Chenoa | 1888 | McClelland, R. A., Yorkville | 1897 |
| Flexer, J. R., Joliet | 1878 | Holmes, Bayard, Chicago | 1877 | McClelland, S. E., Decatur | 1893 |
| Foot, D. E., Belvidere | 1896 | Holmes, E. L., Chicago | 1897 | McFall, D. M., Mattoon | 1896 |
| Frankenthal, L. G., Chicago | 1896 | Hollenbeck, F. D., Chicago | 1873 | McIntosh, A. J., Allendale | 1891 |
| Frank, Jacob, Chicago | 1882 | Hollister, J. H., Chicago | 1892 | McKenna, H. Paris | 1876 |
| Freeman, J. A., Millington | 1891 | Holyroyd, E. E., Chicago | 1897 | McLean, Jno., Pullman | 1874 |
| Fringer, W. R., Rockford | 1897 | Hornbeck, N. B., Youngstown | 1897 | McMann, W. W., Gardner | 1886 |
| Fringer, G. W., Pana | 1896 | Horrell, C. B., Colchester | 1887 | McMillan, P. H., Shiloh Hill | 1878 |
| Frothingham, H. H., Chicago | 1888 | Hotz, F. C., Chicago | 1897 | McNary, W. H., Martinsville | 1895 |
| Frank, J., Ozark | 1878 | Howard, W. E., Kasbeer | 1897 | McPherson, C. W., Hazelhurst | 1877 |
| Foster, A. H., Chicago | 1895 | Howland, E. D., Lockport | 1897 | McWilliams, S. A., Chicago | 1891 |
| Futterer, G., Chicago | 1896 | Huan, H. J., E. St. Louis | 1892 | Maclay, A. I., Delavan | 1895 |
| Fyke, E. E., Centralia | 1892 | Huff, W. J., Findlay | 1892 | Mahoney, G. W., Chicago | 1893 |
| Gamble, W. E., Chicago | 1883 | Hughes, N. J., Waverly | 1895 | Mammen, E., Bloomington | 1897 |
| Gapen, Clark, Kankakee | 1883 | Hull, M. D., Bloomington | 1895 | Manley, P. G., Mt. Carmel | 1886 |
| Garrison, Harriet, Dixon | 1895 | Huntsinger, H. P., Pickneyville | 1897 | Marshall, S. W., Sparta | 1882 |
| Garrott, E., Chicago | 1895 | Hunter, C. T., Springerton | 1897 | Marshall, J. S., Chicago | 1886 |
| Gary, I. C., Chicago | 1895 | Hunt, F. R., Austin | 1877 | Martin, F. H., Chicago | 1896 |
| Garceau, A. A., Chicago | 1896 | Hunt, C. G., Dixon | 1896 | Martin, H. M., Chicago | 1887 |
| Gardner, C. H., Chicago | 1889 | Hunt, F. W., Chicago | 1885 | Martin, S. C., Anna | 1890 |
| Gardiner, Edwin J., Chicago | 1895 | Hurst, J. S., Chicago | 1894 | Martin, Wm. S., Tuscola | 1896 |
| Gates, W. S., Chicago | 1887 | Hutchins, W. A., Orangeville | 1897 | Mason, F. G., Chicago | 1891 |
| Gehrman, A., Chicago | 1896 | Hyde, J. N., Chicago | 1877 | Mattison, F. C. E., Chicago | 1896 |
| German, W. H., Morgan Park | 1895 | Ingraham, W. T., Murphysboro | 1877 | Mather, H. H., Chicago | 1877 |
| Getzlaff, Bruno, St. Peter | 1895 | Ingalls, E. C., Oak Park | 1877 | Mathews, J. P., Carlinville | 1896 |
| Gfroerer, G. S., Chicago | 1887 | Ingals, E. F., Chicago | 1859 | Maywit, L., Washington Heights | 1887 |
| Gillis, F. P., Duquoin | 1887 | Isham, Ralph N., Chicago | 1881 | Mayo, E. L., DeKalb | 1893 |
| Gilson, G. H., Shipman | 1881 | Jamison, Thos. H., Enfield | 1885 | Melms, R., Chicago | 1893 |
| Goble, E. T., Earlsville | 1885 | Jay, F. W., Chicago | 1894 | Mellish, E. J., Chicago | 1896 |
| Godfrey, H. T., Galena | 1888 | Jay, Milton, Chicago | 1882 | Menge, Fred, Chicago | 1887 |
| Goldspohn, A., Chicago | 1887 | Jenks, D. S., Plano | 1883 | Mercer, F. W., Chicago | 1897 |
| Goodman, T. B., Cobden | 1887 | Johnson, Stuart, Chicago | 1897 | Mergler, M. J., Chicago | 1890 |
| Goodsmith, W. P., Chicago | 1895 | Johnson, F. S., Chicago | 1886 | Mettler, L. H., Chicago | 1886 |
| Gorgas, L. W., Chicago | 1887 | Johnson, C. G., Galesburg | 1897 | Miller, De Laskie, Chicago | 1887 |
| Graham, D. W., Chicago | 1887 | Johnson, C. W., Litchfield | 1897 | Miller, R. E., Chicago | 1897 |
| Gradle, H., Chicago | 1896 | Johnson, O., Quincy | 1877 | Miller, W. E., Chicago | 1897 |
| Grayson, W. H., Madison | 1895 | Jones, J., Evanston | 1877 | Miller, T. N., Rockford | 1894 |
| Green, Earl, Mt. Vernon | 1896 | Jones, S. J., Chicago | 1883 | Miller, Katharine, Lincoln | 1886 |
| Greene, F. C., Chicago | 1896 | Jump, D. W., Plainfield | 1895 | Miller, J. H., Pana | 1886 |
| Grigsby, W. E., Blandinsville | 1896 | Kales, J. D., Chicago | 1896 | Mitchell, J. H., Mt. Vernon | 1888 |
| Grim, A., Franklin Grove | 1882 | Kanne, A. J., Peoria | 1887 | Mitchell, Orlando, Marshall | 1897 |
| Grinstead, W. F., Cairo | 1880 | Kauffmann, J. S., Blue Island | 1895 | Montgomery, E. B., Quincy | 1886 |
| Griffith, B. M., Springfield | 1893 | Kaul, Wm. M., Princeton | 1897 | Montgomery, Wm. T., Chicago | 1882 |
| Guthrie, H. R., Sparta | 1897 | Keefer, J. R., Sterling | 1896 | Montgomery, L. H., Chicago | 1895 |
| Guthrie, Wm. E., Bloomington | 1896 | Kelly, M. W., Joliet | 1872 | Moorhead, E. L., Chicago | 1874 |
| Guthrie, F. A., Alton | 1892 | Kendall, H. W., Quincy | 1894 | Moon, O. W., Lockport | 1897 |
| Hadway, C. Du., Jerseyville | 1896 | Kerrick, H. C., Brocton | 1887 | Moore, L. C., Reynolds | 1896 |
| Hagler, Elmer E., Springfield | 1887 | Kewley, J. R., Chicago | 1888 | Morgan, E. A., Decatur | 1896 |
| Hagens, G. J., Chicago | 1887 | Kiernan, J. G., Englewood | 1882 | Morton, A. J., Elmwood | 1892 |
| Haines, Geo. M., Durand | 1887 | Kilgore, J. C., Monmouth | 1897 | Morgenthau, Geo., Chicago | 1888 |
| Haines, W. S., Chicago | 1897 | Klebs, E., Chicago | 1897 | Moyer, H. N., Chicago | 1886 |
| Hairgrove, J. W., Jacksonville | 1897 | | | Mudd, W. A., Athens | 1886 |
| Hakanson, A., Chicago | | | | | |

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|---|------|--|------|---|------|
| Cook, J. W., Pendleton | 1895 | Keegan, C. J., Canal | 1888 | Smith, A. J., Wabash | 1884 |
| Cook, C. P., New Albany | 1886 | Keiper, G. F., Lafayette | 1892 | Smith, W., Delphi | 1891 |
| Cook, Geo. J., Indianapolis | 1886 | Kemper, G. W. H., Muncie | 1883 | Smith, C. H., Lebanon | 1883 |
| Cooperider, J., Madison | 1893 | Kennedy, T. C., Shelbyville | 1888 | Squires, James W., Cherubusco | 1893 |
| Copeland, Chas. C., N. Madison | 1896 | Kennedy, Sam'l, Shelbyville | | Spencer, E. V., Mt. Vernon | 1886 |
| Cox, Edgar, Kokomo | 1893 | King, W. R., Greenfield | 1884 | Spink, Mary A., Indianapolis | 1897 |
| Cox, N. D., Spencer | 1895 | King, Jas. E., Centerville | | Spooner, Jared, Peru | 1896 |
| Crapo, G. W., Terre Haute | 1878 | Knapp, Chas., Evansville | 1886 | Stewart, Charles S., Garrett | 1892 |
| Crapo, J. R., Terre Haute | 1888 | Knapp, Geo., Vincennes | 1897 | Stewart, J., Anderson | 1884 |
| Crist, D. O., Indianapolis | 1897 | Knapp, S. O., Frankfort | 1884 | Sterne, A. E., Indianapolis | 1895 |
| Culbertson, Scott, Moorfield | 1890 | Kransgrill, D., Terre Haute | 1888 | Stephenson, D. W., Richmond | |
| Culbertson, R. H., Brazil | 1881 | Lane, W. H., Angola | 1891 | Stockwell, J. S., Charlestown | 1897 |
| Cummings, S. M., Elkhart | 1896 | Lanam, J. H., Franklin | 1895 | Stockton, Sarah, Indianapolis | 1890 |
| Dancer, J., South Milford | 1887 | Lancaster, T. A., N. Manchester | 1895 | Stone, R. F., Indianapolis | 1892 |
| Darby, A. B., Waterloo | 1887 | Larkins, E. L., Terre Haute | 1895 | Sutton, Harley H., Aurora | 1888 |
| Daugherty, C. A., South Bend | 1886 | Lash, H. M., Indianapolis | 1888 | Sutcliffe, J. A., Indianapolis | 1884 |
| Davis, G. W., Miami | 1896 | Lemmon, S. W., Albion | 1887 | Swafford, B. F., Terre Haute | 1896 |
| Davis, L. N., Farmland | 1883 | Lewis, E. R., Indianapolis | 1887 | Swartz, D. J., Auburn | 1888 |
| Dayton, G. H., Lima | 1884 | Linville, D. G., Columbia City | 1874 | Swartz, W. W., Poe | 1897 |
| Defrees, H. J., Napanee | 1896 | Link, John E., Terre Haute | 1877 | Swift, E. D., Macy | 1896 |
| Donaldson, E. F., Wabash | 1884 | Litzenberger, O. P., Converse | 1896 | Thompson, J. L., Indianapolis | 1883 |
| Draper, P., Hartford City | 1882 | Lower, M. O. N., Manchester | 1886 | Thompson, D. A., Indianapolis | 1892 |
| Dunning, L. H., Indianapolis | 1876 | McAllister, E. B., Terre Haute | 1897 | Thompson, W. N., Sullivan | 1894 |
| Eastman, J., Indianapolis | 1873 | McCoy, W. A., Madison | 1892 | Thorne, J. C. F., Kokomo | 1895 |
| Eastman, T. B., Indianapolis | 1896 | McCoy, P. Y., Evansville | 1890 | Todd, L. L., Indianapolis | 1885 |
| Eberhard, E. L., South Whitley | 1896 | McCoy, G. T., Columbus | 1888 | Trent, I. N., Muncie | 1897 |
| Eckelman, F. C., Elkhart | 1887 | McFadden, W. G., Shelbyville | 1896 | Trueblood, J. C., Loogootee | 1896 |
| Edenharter, G. F., Indianapolis | 1895 | McIntyre, C. W., New Albany | 1886 | Tucker, W. W., Greencastle | 1897 |
| Eichelberg, W. C., Terre Haute | 1891 | McKinney, D. R., Cowan | 1897 | Vinnedge, W. W., Lafayette | 1873 |
| Evans, C. S., Union City | 1896 | McMahan, W. R., Huntingburgh | 1875 | Wahl, G. F., Bremen | 1888 |
| Faith, A. H., Washington | 1897 | McShane, J. T., Indianapolis | 1886 | Walker, E., Evansville | 1891 |
| Finley, Geo. W., Harmony | 1893 | Mackey, C. W., Portland | 1888 | Walker, W. O., Wolcott | 1897 |
| Fink, Henry A., South Bend | 1892 | Malsbury, J. O., Peru | 1896 | Waller, W. H., Angola | 1885 |
| Fitch, A. P., Lebanon | 1891 | Malsbury, L. O., Peru | 1896 | Wareham, J. W., Gilead | 1896 |
| Fletcher, W. B., Indianapolis | 1897 | Malone, L. A., Indianapolis | 1895 | Ward, J. O., Peru | 1896 |
| Fletcher, C. I., Indianapolis | 1887 | Mansfield, Thos. J., Royerton | 1897 | Watkins, F. H., Peru | 1896 |
| Freeman, E. D., Osgood | 1884 | Marsee, J. W., Indianapolis | 1897 | Weber, Wm., Columbia City | 1897 |
| Fritz, J. C., Deedsville | 1896 | Mason, C. H., Tell City | 1897 | Webster, J. C., Lafayette | 1880 |
| Friewood, S. M., North Grove | 1896 | Mastin, J. L., Indianapolis | 1897 | Weever, J. B., Evansville | 1884 |
| Fullinwider, C. H., Mt. Vernon | 1890 | Maughmer, G. C., Kokomo | 1896 | Weinstein, L. J., Terre Haute | 1897 |
| Furniss, S. A., Indianapolis | 1897 | Maxwell, A., Indianapolis | 1886 | Weir, H. H., Bluffton | 1895 |
| Gaddy, Orville, Paris Crossing | 1897 | Meyer, J. W. H., LaPorte | 1888 | Weist, J. R., Richmond | 1876 |
| Galbraith, T. S., Seymour | 1893 | Miller, L. A., Peru | 1896 | Wertz, T., Evansville | 1895 |
| Garver, J. J., Indianapolis | 1884 | Mock, J. W., Covington | 1888 | Wetherell, R. B., Lafayette | 1887 |
| Garrett, F. W., Liberty Center | 1895 | Moffett, E. D., Indianapolis | 1890 | Wherry, Wm. P., Fort Wayne | 1892 |
| Garber, J. B., Dunkirk | 1895 | Mooney, H. C., Laketon | 1892 | Wherry, Mary A., Fort Wayne | 1888 |
| Gatch, J. D., Lawrenceburg | 1897 | Moore, J. B., Kokomo | 1892 | Wheelock, K. K., Fort Wayne | 1895 |
| Geary, J. K., Coesse | 1895 | Moore, P. G., Wabash | 1883 | White, C. A., Danville | 1883 |
| Gerrish, M. F., Seymour | 1888 | Moore, C. V., Fairmount | 1895 | White, E. G., LaGrange | 1887 |
| Gilbert, J. L., Logansport | 1896 | Morris, J. E., Liberty | 1876 | Williams, Alice B., Columbia City | 1896 |
| Goldsberry, J. A., Bloomingdale | 1896 | Morgan, W. V., Indianapolis | 1897 | Williams, Thos. B., Angola | 1892 |
| Grant, G. H., Richmond | 1888 | Mullen, Alex. Jr., Michigan City | 1892 | Williams, L., Marion | 1895 |
| Greene, Geo. R., Muncie | 1893 | Myers, H. K., Edinburg | 1884 | Wilson, A. L., Indianapolis | 1890 |
| Green, J. W., Shelbyville | 1882 | Myers, W. H., Ft. Wayne | 1890 | Wilson, J. H., Plymouth | 1887 |
| Greenawalt, G. L., Ft. Wayne | 1883 | Nash, G. W., Indianapolis | 1895 | Wilson, W., Yankeetown | 1893 |
| Griswold, E. H., Peru | 1896 | Neel, W. A., Elkhart | 1886 | Wiles, F. M., Indianapolis | 1897 |
| Hadley, E., Indianapolis | 1888 | Nel, O. C., New Palestine | 1896 | Wishard, W. N., Indianapolis | 1884 |
| Hailey, W. H., Amboy | 1896 | Nieschang, C. C. F., Fort Wayne | 1897 | Wood, T. F., Metz | 1895 |
| Hall, W. C., Franklin | 1895 | Newell, J. W., Denver | 1896 | Wood, H. D., Angola | 1874 |
| Hamilton, S. N., Connersville | 1888 | Newcomer, M. B., Tipton | 1892 | Woolen, G. V., Indianapolis | 1884 |
| Harper, H. F., Merom | 1876 | Nussel, F., Brazil | 1897 | Woodburn, F. C., Indianapolis | 1895 |
| Harris, Robt. W., New Albany | 1893 | Oliver, J. B., Brazil | 1897 | Work, J. A., Elkhart | 1883 |
| Haughton, R. E., Richmond | 1895 | Oliver, J. H., Indianapolis | 1888 | Worrell, J. P., Terre Haute | 1895 |
| Haworth, M. C., Noblesville | 1892 | O'Neal, L., Somerset | 1883 | Worsham, L., Evansville | 1897 |
| Hayes, G. C., Hillsboro | 1880 | Owen, A. M., Evansville | 1886 | Young, S. J., Terre Haute | 1877 |
| Hays, F. W., Indianapolis | 1888 | Page, L. F., Indianapolis | 1892 | Yeunkman, A. B., Bremen | 1886 |
| Hayden, A. M., Evansville | 1886 | Pantzer, H. O., Indianapolis | 1887 | Zaring, P. A., Tampico | 1897 |
| Heath, P. C., Indianapolis | 1893 | Passage, H. V., Peru | 1896 | Zimmer, E. G., Santa Fe | 1896 |
| Heaton, Conley, Aurora | 1888 | Patterson, A. W., Indianapolis | 1875 | | |
| Helm, Chas. J., Peru | 1888 | Peters, J. B., Perrysburg | 1896 | | |
| Henley, A., Fairmount | 1877 | Pfaff, O. G., Indianapolis | 1888 | | |
| Henry, W. C., Aurora | 1883 | Pierson, A., Spencer | 1887 | | |
| Hess, J. N., New Marion | 1888 | Pirtle, G. W., Carlisle | 1895 | | |
| Hessler, R., Logansport | 1896 | Porter, M. F., Ft. Wayne | 1896 | | |
| Hewins, W. A., Chandler | 1893 | Powell, J. Z., Logansport | 1887 | | |
| Hilberd, J. F., Richmond | 1864 | Ramsey, S. G., Hooversburg | 1895 | | |
| Hickes, C., Cabrons | 1890 | Ramsey, D. C., Mt. Vernon | 1885 | | |
| Hinkle, J. R., Sullivan | 1888 | Rea, John, Newcastle | 1870 | | |
| Hodges, F. J., Anderson | 1891 | Rea, O. A., Marmont | 1890 | | |
| Hodges, E. F., Indianapolis | 1887 | Rea, C. L., Falmouth | 1897 | | |
| Hoffman, G. E., Macy | 1896 | Reed, J. H., Burnett's Creek | 1895 | | |
| Holtendorff, A. C., Plymouth | 1887 | Renner, M. E., Urbana | 1897 | | |
| Holton, W. M., New Harmony | 1879 | Reyer, E. C., Indianapolis | 1895 | | |
| Hood, T. C., Dana | 1892 | Reynard, G., Union City | 1892 | | |
| House, Geo. H. F., Indianapolis | 1895 | Ridenour, D., Chill | 1896 | | |
| House, J. W., Lawrenceburg | 1895 | Ristine, W. H., Crawfordsville | 1895 | | |
| Hurty, J. M., Indianapolis | 1897 | Rosenthal, I. M., Fort Wayne | 1895 | | |
| Irwin, L. M., Lafayette | 1884 | Ross, John H., Kokomo | 1892 | | |
| Jameson, H., Indianapolis | 1897 | Salb, J. P., Jasper | 1890 | | |
| Jenkins, W. O., Terre Haute | 1886 | Sanders, Frank E., Perryville | 1893 | | |
| Johnson, L., Bourbon | 1896 | Sawyer, F. M., South Bend | 1887 | | |
| Johnston, M. F., Richmond | 1888 | Sexton, J. C., Rushville | 1887 | | |
| Johnson, W. R., Charlottevill | 1897 | Schultz, Wm. H., Lebanon | 1893 | | |
| Jones, Geo. S., Covington | 1887 | Schaefer, C. R., Indianapolis | 1890 | | |
| Jones, Geo. E., Connersville | 1895 | Shackelford, T. J., Warsaw | 1896 | | |
| Jones, O. H., Crawfordsville | 1895 | Short, W. H., LaGrange | 1888 | | |
| Kalo, G. D., Indianapolis | 1897 | Shull, C., Montpelier | 1884 | | |

INDIAN TERRITORY.

| | |
|---|------|
| Blakemore, J. L., Muskogee | 1897 |
| Bond, Robt., Hartshorne | 1895 |
| Flte, F. B., Muskogee | 1897 |
| Fortner, B. F., Cherokee Nation | 1876 |
| Long, LeRoy, Caddo | 1897 |
| McMurtry, Milton, Purcell | 1896 |
| Rucker, G. R., Eufaula | 1897 |

IOWA.

| | |
|---|------|
| Allen, W. L., Davenport | 1895 |
| Anderson, Albert, Esterville | 1895 |
| Appleby, Geo. W., Bristow | 1892 |
| Ashby, A. A., Red Oak | 1896 |
| Baker, J. W. H., Davenport | 1895 |
| Baker, E. L., Indianola | 1883 |
| Bailey, S., Mt. Ayr | 1895 |
| Ballah, Wm. J., Washta | 1896 |
| Barnes, F. L., Oskaloosa | |
| Barnes, H. E. W., Creston | 1891 |
| Barnes, C. E., Burlington | 1891 |
| Batchelder, F. P., Lyons | 1897 |
| Bean, J. V., Fairfield | 1888 |
| Beam, W. W., Rolfe | |
| Beane, A. A., Burt | 1896 |
| Beggs, G. W., Sioux City | 1882 |
| Berry, R. P., Clermont | 1892 |
| Bergen, Andrew C., Sioux City | 1889 |
| Bierring, W. L., Iowa City | 1896 |

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| Bigelow, I. S., Dubuque | 1897 | Hughes, J. C., Keokuk | 1895 | Schooler, L., Des Moines | 1887 |
| Birney, C. C., Etherville | 1882 | Hull, F. C., Carlisle | 1895 | Scott, E. C., Maxwell | 1897 |
| Birney, E., Greene | 1893 | Hyatt, B. F., Ottumwa | 1886 | Scott, H., Paulina | 1897 |
| Blanchard, L., Edgewood | 1883 | Jackman, F. O., Mt. Pleasant | 1895 | Scott, Clifton, Des Moines | 1896 |
| Bloodgood, Chas., Clinton | 1893 | Jackson, Daniel, Pleasantville | 1893 | Scroggs, J. A., Keokuk | 1887 |
| Bond, L. L., West Side | 1887 | Jenkins, G. F., Keokuk | 1873 | Seybert, F. T., Council Bluffs | 1886 |
| Boody, Geo., Independence | 1895 | Jewell, P. M., Ossian | 1893 | Sherman, Amelia B., National | 1886 |
| Bosbyshell, C. B., Glenwood | 1896 | Johnson, F. S., Odebolt | 1897 | Sherman, J. A., Cherokee | 1886 |
| Boucher, F. H., Marshalltown | 1897 | Jonsson, Christian, Clinton | 1893 | Sherman, W. B., Manchester | 1887 |
| Bowen, A. B., Maquoketa | 1876 | Jones, Louis H., Wall Lake | 1897 | Sherman, A. W., Lamoni | 1897 |
| Bradley, Chas. C., Manchester | 1890 | Jungblut, J. B., Tripoli | 1895 | Shrader, J. C., Iowa City | 1873 |
| Braunsworth, J. S., Muscatine | 1895 | Kegley, E. A., Cedar Rapids | 1884 | Shuell, T. J., Parnell | 1887 |
| Erick, P. L., LeMars | 1895 | Kellogg, G. M., Keokuk | 1895 | Sigworth, H. W., Anamosa | 1896 |
| Brown, H. W., Waterloo | 1886 | Kempker, J. F., Valley Junction | 1894 | Skinner, G. R., Cedar Rapids | 1891 |
| Brookhausen, B. E., Lansing | 1882 | Kemmerer, C. T., Eldridge | 1889 | Sliter, C. N., West Mitchell | 1885 |
| Brown, Caleb, Sac City | 1892 | Kenefick, M. J., Algono | 1897 | Sloan, M. G., Dexter | 1885 |
| Brooks, A. L., Audubon | 1892 | Kessel, Geo., Cresco | 1897 | Smead, C. O., Newton | 1890 |
| Brookings, D. J., Woodward | 1885 | Kessler, A., Carroll | 1896 | Smith, C. H., Mason City | 1882 |
| Bundy, A. D., St. Ansgar | 1886 | Kierulff, B. F., Marshalltown | 1895 | Smith, S. J., Wellman | 1897 |
| Burt, C. I., Lake City | 1896 | Kinney, Geo., Burlington | 1896 | Smith, J. W., Charles City | 1873 |
| Burd, E., Lisbon | 1897 | King, E. H., Muscatine | 1884 | Smith, E. R., Toledo | 1886 |
| Cannon, Jas., Des Moines | 1897 | King, A. E., Blockton | 1896 | Smouse, D. W., Des Moines | 1885 |
| Carson, J., Mt. Vernon | 1884 | Kirkendall, E. E., W. Burlington | 1887 | Spillman, S. A., Ottumwa | 1882 |
| Chapman, R. U., Des Moines | 1897 | Knott, Van Buren, Sioux City | 1896 | Stanton, T. P., Chariton | 1890 |
| Charlton, J. B., Clear Lake | 1897 | Lacey, T. B., Council Bluffs | 1887 | Stanger, G. H., Boone | 1897 |
| Chatterton, A. S., Peterson | 1893 | LaForce, D. A., Ottumwa | 1886 | Starr, J. W., Chariton | 1895 |
| Clapp, E. F., Iowa City | 1884 | Landon, O. M., New Hampton | 1897 | Steinle, H. F., Burlington | 1897 |
| Clark, E. W., Grinnell | 1877 | Langan, J. C., Clinton | 1892 | Stoner, C. E., Des Moines | 1897 |
| Clarke, J. F., Fairfield | 1895 | Langan, D., Clinton | 1872 | Sugg, J. Fitz-Herbert, Clinton | 1897 |
| Cleaves, R. L., Cherokee | 1890 | Lapsley, R. M., Keokuk | 1897 | Tedron, J. B., Williams | 1891 |
| Coad, N. G. O., Hull | 1893 | Lewellen, P. W., Clarinda | 1886 | Terry, M. C., Brighton | 1897 |
| Cokenowen, J. W., Des Moines | 1895 | Llepziger, H., Burlington | 1889 | Thornton, J. H., Lansing | 1890 |
| Conniff, Robt. E., Sioux City | 1893 | Littig, L. W., Iowa City | 1891 | Thornbury, M. W., Redfield | 1896 |
| Cooling, A. A., Wilton Junction | 1896 | Little, F. H., Muscatine | 1892 | Thomas, F. S., Council Bluffs | 1886 |
| Cook, W. H., Camanche | 1897 | Love, J. S., Springville | 1877 | Townsend, D. J., Lohrville | 1890 |
| Cottle, C. C., Marshalltown | 1890 | Lovelady, J. M., Hamburg | 1896 | Treat, J. A., Stuart | 1887 |
| Crawford, G. E., Cedar Rapids | 1887 | Lytle, S. S., Iowa City | 1885 | Trizelle, C. H., Rockford | 1891 |
| Crawford, J. P., Davenport | 1895 | McAllister, Chas., Spencer | 1893 | Tuttle, Mary B., Burlington | 1891 |
| Craig, N. S., Manchester | 1887 | McClure, T. G., Douds Station | 1884 | Udell, C. N., Blakesburg | 1885 |
| Criley, B. H., Dallas Centre | 1878 | McClure, A. W., Mt. Pleasant | 1882 | Vander Naart, S., Cedar Rapids | 1892 |
| Crouse, E. A., Grundy Center | 1896 | McCleary, J. D., Indianola | 1887 | Van Werden, Des Moines | 1897 |
| Crouse, D. W., Waterloo | 1878 | McClain, W. H., Conrad Grove | 1885 | Vail, A. M., Rock Rapids | 1887 |
| Cushman, R. A., Sanborn | 1893 | McCowen, Jennie, Davenport | 1882 | Volding, M. N., Des Moines | 1892 |
| Darnall, G. D., West Union | 1882 | McDonald, O. P., Keokuk | 1882 | Wahrer, C. F., Fort Madison | 1895 |
| Dean, H. M., Muscatine | 1876 | McEaney, Jno. B., Ashton | 1897 | Waggoner, E. A., Burlington | 1886 |
| Deering, A. A., Boone | 1878 | McFarlane, D., Keoto | 1897 | Watson, Wm., Dubuque | 1876 |
| Divine, J. H., Sioux Rapids | 1886 | McKenzie, H. M., Elwood | 1884 | Weber, Lee, Davenport | 1897 |
| Dobson, G. H., LeGrande | 1897 | McMorris, J., Belle Plaine | 1893 | Welch, I. L., Humboldt | 1883 |
| Drumeler, C. M., Panora | 1897 | Macrae, D., Council Bluffs | 1886 | Whitley, F. E., Webster City | 1897 |
| Dudley, Elwin, Paulina | 1897 | Mammen, G. H., LeMars | 1897 | Wick, D. M., Cedar Falls | 1886 |
| Duffield, J. P., Marshalltown | 1897 | Maxwell, T. J., Keokuk | 1876 | Will, F. J., Eagle Grove | 1886 |
| Dunlavy, J. C., Sioux City | 1887 | Mead, F. N., Bristow | 1895 | Williams, R. R., Manning | 1884 |
| Eiskamp, G. H., Washington | 1895 | Mehler, F. C., New London | 1887 | Wilson, H. P., Ottumwa | 1897 |
| Eldridge, R. F., Jamaca | 1897 | Merritt, W. H., Pleasantville | 1897 | Williamson, F. A., Hopkinton | 1896 |
| Emmett, J., Atlantic | 1882 | Meredith, M., Vinton | 1877 | Witte, Max E., Mt. Pleasant | 1885 |
| Enfield, C., Jefferson | 1886 | Middleton, W. D., Davenport | 1887 | Worley, J., Belle Plaine | 1882 |
| Ensign, H. D., Boone | 1878 | Miller, E. C., Rockwell | 1882 | Wright, J. C., Des Moines | 1882 |
| Eschbaugh, H. C., Albia | 1887 | Minges, Geo., Dubuque | 1883 | Wright, A. L., Carroll | 1882 |
| Evans, O. E., Gowrie | 1882 | Mueller, J. A., Dyersville | 1887 | Yocum, A. L., Chariton | 1895 |
| Fairchild, D. S., Clinton | 1882 | Myers, W. H., Sheldon | 1897 | Young, H. B., Burlington | 1882 |
| Farnsworth, P. J., Clinton | 1873 | Neff, Geo. R., Farmington | 1896 | Young, J. W., Bloomfield | 1884 |
| Field, A. G., Des Moines | 1895 | Newman, M. M., Edgewood | 1887 | | |
| Finch, H. C., Lynnvile | 1897 | Newman, W. H., Grinnell | 1897 | | |
| Flinn, F. M., Spring Hill | 1897 | Nicol, Jno. H., Villisca | 1887 | | |
| Foxworthy, O. W., Weldon | 1896 | Overholt, D. W., Columbus Junction | 1876 | | |
| French, L., Davenport | 1892 | Page, J. Frank, Mystic | 1888 | | |
| Frizelle, C. H., Rockford | 1896 | Parker, C. C., Fayette | 1884 | | |
| Gamble, T. D., Wheatland | 1882 | Park, Wm., Indianola | 1880 | | |
| Gardner, Ira K., New Hampton | 1893 | Parr, T. S., Indianola | 1879 | | |
| Getz, H. L., Marshalltown | 1876 | Patterson, M. F., Des Moines | 1895 | | |
| Gilman, H. A., Mt. Pleasant | 1885 | Peters, W. T., Burt | 1897 | | |
| Gorrell, J. R., Newton | 1890 | Philpott, J. W., Ft. Madison | 1887 | | |
| Goss, E. L., Sheffield | 1895 | Pierce, S. N., Cedar Falls | 1885 | | |
| Graves, D., Gilman | 1896 | Porterfield, F. W., Atlantic | 1897 | | |
| Greene, J. H., Dubuque | 1895 | Powell, Chas. B., Albia | 1887 | | |
| Griffin, C. C., Vinton | 1877 | Preston, C. H., Davenport | 1896 | | |
| Gutch, W., Albia | 1876 | Priestly, Jas. T., Des Moines | 1886 | | |
| Hackett, C. J., LeMars | 1882 | Rawson, A. A., Corning | 1884 | | |
| Hamilton, C. H., Dubuque | 1897 | Reynolds, E. M., Centerville | 1884 | | |
| Hanna, Rebecca, Red Oak | 1895 | Reynolds, A. Clinton | 1887 | | |
| Hanawalt, G. P., Des Moines | 1878 | Reynolds, J. D., Creston | 1887 | | |
| Hart, R. J., Charter Oak | 1882 | Rice, Chas., Sioux City | 1897 | | |
| Harriman, O. B., Hampton | 1896 | Richards, W. O., Waterloo | 1885 | | |
| Hazen, E. H., Des Moines | 1872 | Ristine, H. G., Ft. Dodge | 1883 | | |
| Hedges, T. M., Grinnell | 1884 | Roberts, Jason, Osceola | 1892 | | |
| Heffernew, Jno., Cascade | 1897 | Roberts, T. St. Charles | 1892 | | |
| Herrick, J. F., Ottumwa | 1897 | Robinson, S. E., West Union | 1882 | | |
| Heustis, J. W., Dubuque | 1890 | Robertson, J. S., Council Bluffs | 1885 | | |
| Hewitt, S. R., Charles City | 1897 | Robertson, C. M., Davenport | 1884 | | |
| Hill, G. H., Independence | 1882 | Rogers, H. S., Red Oak | 1884 | | |
| Hill, Nancy M., Dubuque | 1887 | Rolfe, B. F., Stacyville | 1882 | | |
| Hobby, C. M., Iowa City | 1884 | Road, L. D., Des Moines | 1896 | | |
| Hobson, T. A., Parkersburg | 1897 | Roome, J. S., Calmar | 1884 | | |
| Hobson, R. J., Parkersburg | 1895 | Rowe, G. D., Boone | 1886 | | |
| Hobson, Abraham, Hampton | 1892 | Ruth, C. E., Keokuk | 1886 | | |
| Hoering, G. P., Walnut | 1892 | Sampson, F. E., Creston | 1895 | | |
| Holliday, J. W., Burlington | 1886 | Sawyers, J. L., Centerville | 1895 | | |
| Hornbrook, E., Cherokee | 1885 | Schoofs, J. J., Remsen | 1897 | | |

KANSAS.

| | |
|---|------|
| Bannister, J. M., Ft. Leavenworth | 1897 |
| Barker, W. E., Chanute | 1897 |
| Basham, D. W., Neal | 1897 |
| Beem, E. D., Kansas City | 1897 |
| Coldren, E. V., Topeka | 1897 |
| Comer, J. J., Wells | 1896 |
| Cunkle, L. J., Madison | 1883 |
| Daily, F. M., Beloit | 1886 |
| Daugherty, P., Junction City | 1890 |
| Deweese, Wm. B., Salina | 1890 |
| Dillon, J., Eureka | 1886 |
| Emerson, George, Winfield | 1886 |
| Feltz, J. U., Abilene | 1893 |
| Fryer, J. L., Leavenworth | 1897 |
| Fulton, A. L., Iola | 1883 |
| Gardiner, C., Emporia | 1883 |
| Gray, G. M., Kansas City | 1897 |
| Hall, Sarah C., Fort Scott | 1892 |
| Hall, W. C., Coffeyville | 1895 |
| Hamilton, E. E., Wichita | 1895 |
| Harvey, Z. T., Council Grove | 1889 |
| Harvey, W. S., Salina | 1895 |
| Hazlett, E. E., Abilene | 1893 |
| Hawthorne, E. W., New Cambria | 1897 |
| Hissem, H. Z., Ellsworth | 1892 |
| Jacobs, L. D., Emporia | 1883 |
| Kester, J. P., Topeka | 1888 |
| Lanning, S., Kingman | 1896 |
| McCarthy, Thomas L., Dodge City | 1892 |
| McKenzie, J. A., Eldorado | 1897 |
| McNary, O. C., Nat. Mil. Home | 1890 |
| Marner, G. P., Marion | 1897 |
| Minney, J. E., Topeka | 1886 |
| Miner, H. C., Topeka | 1896 |

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|---|------|
| Morse, F. D., Lawrence | 1895 |
| Munn, L. F., Topeka | 1897 |
| Newlon, C. S., Winfield | 1896 |
| De Niedman, W. F., Pittsburg | 1897 |
| Perkins, A. N., Fredonia | 1896 |
| Priest, W. R., Concordia | 1895 |
| Reynolds, L., Horton | 1892 |
| Sabine, A., Garden City | 1897 |
| Seacat, G. M., Cherry Vale | 1896 |
| Shelly, J. F., Elmdale | 1897 |
| Smolt, C. F., Nickerson | 1883 |
| Spaulding, H., Leavenworth | 1895 |
| Stewart, S. G., Topeka | 1897 |
| Tefft, H. K., Topeka | 1886 |
| Tyler, D. C., Clifton | 1897 |
| Van Eiman, W. J., Leavenworth | 1885 |
| Wachter, M. M., Axtel | 1897 |
| Ward, M. B., Topeka | 1890 |
| Wever, J. L., Leavenworth | 1896 |
| Winterbothan, W. H., Salina | 1895 |

KENTUCKY.

| | |
|---|------|
| Adamson, H. K., Maysville | 1891 |
| Anderson, T., Louisville | 1895 |
| Aitkin, C. W., Flemingsburg | 1896 |
| Bailey, Wm., Louisville | 1886 |
| Barrow, David, Lexington | 1890 |
| Bullington, Travis A., Louisville | 1895 |
| Beeler, G. W., Clinton | 1885 |
| Blaine, A. D., Dry Ridge | 1892 |
| Blue, W. R., Louisville | 1897 |
| Bodine, J. M., Louisville | 1895 |
| Boyd, Frank, Paducah | 1890 |
| Brown, H., Hustonville | 1884 |
| Brooks, J. G., Paducah | 1882 |
| Calvert, J. H., Milton | 1897 |
| Cartwright, H. P., Bowling Green | 1890 |
| Carpenter, J. G., Stanford | 1888 |
| Carson, J. O., Bowling Green | 1895 |
| Cartledge, A. M., Louisville | 1892 |
| Cheatham, W., Louisville | 1886 |
| Clarke, Frank H., Lexington | 1889 |
| Coleman, B. L., Lexington | 1879 |
| Cook, L. B., Stanford | 1897 |
| Cowan, H. J., Danville | 1888 |
| Cowgill, Warwick M., Paducah | 1890 |
| Creel, M. R., Central City | 1887 |
| Dabney, S. G., Louisville | 1891 |
| Davis, Geo. E., Lawrenceburg | 1895 |
| Damaree, O. B., Benson Depot | 1896 |
| Dixon, Arch., Henderson | 1888 |
| Dunlap, F., Danville | 1885 |
| Fallis, R. G., Louisville | 1897 |
| Farris, Alex. A., Hickman | 1890 |
| Ferguson, R. V., Hadesville | 1896 |
| Finley, F. W., Red Ash | 1897 |
| Fisher, S. K., Milton | 1892 |
| Frey, R. Wesley, Trenton | 1895 |
| Gilbert, R. B., Louisville | 1897 |
| Grant, H. H., Louisville | 1886 |
| Greenley, T. B., Meadow Lawn | 1877 |
| Guthrie, W. A., Franklin | 1895 |
| Hampton, S. E., Milton | 1890 |
| Hanna, W. M., Henderson | 1873 |
| Harwood, J. M., Shelbyville | 1895 |
| Hodge, J. A., Henderson | 1859 |
| Holloway, S. W., Louisville | 1892 |
| Hopson, Joseph, St. Matthews | 1896 |
| Howard, R. J., Pysorsburg | 1875 |
| Ingram, Julia, Louisville | 1888 |
| Insko, Mark, Bratton | 1897 |
| Irwin, J. W., Louisville | 1895 |
| Jordan, W. A., Clinton | 1887 |
| Kearns, C., Covington | 1897 |
| Kelly, J., Lebanon | 1888 |
| Kelly, C. W., Louisville | 1892 |
| Keen, W. C., Burkeville | 1889 |
| Kinnaird, J. B., Lancaster | 1892 |
| Larrabee, Jno. A., Louisville | 1890 |
| Lassing, H. C., Union | 1887 |
| Letcher, J. H., Henderson | 1896 |
| Lewis, Jno. A., Georgetown | 1896 |
| Lincoln, C. S. E., Louisville | 1895 |
| Lucas, C. G., Louisville | 1895 |
| McChord, R. C., Lebanon | 1885 |
| McCormack, J., Bowling Green | 1884 |
| McDowell, H., Cynthiana | 1885 |
| McKeel, P. W., Wingo | 1887 |
| McMasters, D. H., Pysorsburg | 1890 |
| McMurtry, L. S., Louisville | 1882 |
| McNary, H. F., Lakeland | 1875 |
| Melloy, J. L., Covington | 1895 |
| Mann, Chas., Nicholasville | 1873 |
| Martin, H. H., Ashland | 1895 |
| Morvin, J. B., Louisville | 1886 |
| Matthew, Jos. M., Louisville | 1886 |
| Meyer, J. M., Danville | 1897 |

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|---|------|
| Morris, N. G., Fulton | 1890 |
| Mutters, Jno. D., Rush | 1895 |
| O'Neal, W. S., Lancaster | 1892 |
| Ouchterlong, J. A., Louisville | 1895 |
| Owsley, Wm. T., Glasgow | 1895 |
| Peck, J. M., Arlington | 1890 |
| Perkins, Geo., Somerset | 1875 |
| Peyton, J. F., Stanford | 1888 |
| Pitman, H. S., East Bernstadt | 1896 |
| Plummer, H., Harrodsburg | 1896 |
| Pope, C., Louisville | 1896 |
| Pound, T. P. D., Wilsonville | 1896 |
| Posman, E., Paducah | 1895 |
| Price, A. D., Harrodsburg | 1884 |
| Price, J. L., Sherman | 1888 |
| Ramsey, R. T., Danville | |
| Ray, J. M., Louisville | 1897 |
| Reddish, G. M., Somerset | 1895 |
| Reddick, Jas., Paducah | 1893 |
| Reynolds, D., Louisville | 1872 |
| Reynolds, Jno. F., Louisa | 1897 |
| Richmond, W. W., Clinton | 1885 |
| Ritter, H. B., Louisville | 1897 |
| Rodman, Wm. L., Louisville | 1892 |
| Satterwhite, T. P., Louisville | 1893 |
| Scarborough, J. R., Spring Hill | 1890 |
| Seargent, A., Hopkinsville | 1886 |
| Skillman, H. M., Lexington | 1888 |
| Slaughter, S. H., Pysorsburg | 1895 |
| Smith, A. W., Richmond | 1888 |
| Stevens, E. A., Mayfield | 1890 |
| Stuckey, T. H., Louisville | 1890 |
| Stucky, J. A., Lexington | 1896 |
| Taylor, J. F., La Grange | 1897 |
| Terrell, J. C., Covington | 1897 |
| Thompson, Pinckney, Henderson | 1892 |
| Tuley, H. E., Louisville | 1896 |
| Vance, A. Morgan, Louisville | 1892 |
| Violette, J. D., Williamstown | 1888 |
| Wade, J. H., Ashland | 1897 |
| Wakefield, J. J., Bloomfield | 1895 |
| Wathen, W. H., Louisville | 1883 |
| Wells, J. E., Cynthiana | 1895 |
| Wesley, Cyrus, Science Hill | 1896 |
| Wiley, E. M., Harrodsburg | 1888 |
| Willis, S. W., Jasper, Clark Co | 1888 |
| Woody, S. E., Louisville | 1896 |
| Woodburn, Jas. T., Bremen | 1896 |
| Yager, F. J., Campbellsburg | 1895 |

LOUISIANA.

| | |
|--|------|
| Allen, Thos. J., Shreveport | 1885 |
| Archinaud, P. E., New Orleans | 1885 |
| Bickman, W. S., New Orleans | 1896 |
| Bloom, J. D., New Orleans | 1897 |
| Branch, Wm. G., Bunkie | 1896 |
| Chaille, S. E., New Orleans | 1879 |
| Charbonnet, J. M., New Orleans | 1897 |
| Czarnowski, D., New Orleans | 1885 |
| Dickson, W. L., Shreveport | 1884 |
| Egan, J. C., Shreveport | 1877 |
| Formento, F., New Orleans | 1890 |
| Fox, G. R., Plaquemine | 1885 |
| Friedrich, G. J., New Orleans | 1884 |
| Gazzo, J. B. C., Raceland | 1884 |
| Gessner, H. B., New Orleans | 1897 |
| Gray, R. A., Shreveport | 1897 |
| Harrell, R. F., Ruston | 1894 |
| Helmick, A. S., De Siard | 1897 |
| Henry, S. L., New Orleans | 1878 |
| Herman, M., New Orleans | 1897 |
| Hunt, R., Shreveport | 1897 |
| Jones, Joseph, New Orleans | 1885 |
| Jones, R. F., Houma | |
| Jones, A. W., Jones | 1896 |
| Larne, F. A., New Orleans | 1897 |
| Laurans, J., New Orleans | 1897 |
| Lewis, E. S., New Orleans | 1895 |
| McVea, Chas., Baton Rouge | 1897 |
| Matas, R., New Orleans | 1885 |
| Monette, G. N., New Orleans | 1884 |
| Mouton, G. C., Rayne | 1896 |
| Munday, J. C., Lake Charles | 1892 |
| Parham, F. W., New Orleans | 1886 |
| Parker, W. E., New Orleans | 1895 |
| Pugh, B., Napoleonville | 1885 |
| Ragan, T., Jackson | 1895 |
| Reynand, J. F., New Orleans | 1897 |
| Scheppegrell, W., New Orleans | 1896 |
| Schumpert, T. E., Shreveport | 1895 |
| Smart, S. J., Logansport | 1897 |
| Stouhon, E., New Orleans | 1885 |
| Stewart, G. S., Amite City | 1892 |
| Sutherland, W. K., Mansfield | 1889 |
| Tolson, G. R., Melville | 1896 |
| Von Seydewitz, P., New Orleans | 1885 |

MAINE.

| | |
|--|------|
| Averill, H. D., Bar Harbor | 1897 |
| Bassford, S. J., Biddeford | 1896 |
| Coe, Thomas U., Bangor | 1896 |
| DeCosta, J. F., Rumford Falls | 1896 |
| Donovan, J. A., Lewiston | 1894 |
| Ellwell, W. E., Togus | 1897 |
| Ferguson, F. B., Deer Isle | 1893 |
| Foster, C. W., Woodford | 1892 |
| Foster, T. A., Portland | 1882 |
| Fox, H., Bath | 1897 |
| Garcelon, A., Lewiston | 1873 |
| Gordon, Seth C., Portland | 1883 |
| Hanson, H. F., Bangor | 1897 |
| Hennessey, D., Bangor | 1892 |
| Hersom, Jane L., Portland | 1893 |
| Hill, C. D., Bethel | 1896 |
| Hill, J. F., Waterville | 1897 |
| Holt, E. E., Portland | 1896 |
| Hunter, Sam'l B., Machias | 1889 |
| King, A., Portland | 1895 |
| Loughton, S., Bangor | 1876 |
| Maybury, Wm. J., Saco | 1895 |
| Parsons, W. H., Damariscotta | 1893 |
| Parsons, D. E., Oakland | 1897 |
| Peaslee, C. A., Wiscasset | 1891 |
| Randall, J. A., Old Orchard | 1896 |
| Robinson, D. A., Bangor | 1892 |
| Sanger, E. F., Bangor | 1896 |
| Smith, A. R. G., N. Whitefield | 1895 |
| Smith, O. P., Portland | 1896 |
| Snow, A. P., Winthrop | 1876 |
| Thayer, A. S., Portland | 1896 |
| Thayer, F. C., Waterville | 1884 |
| Thompson, A. N., Portland | 1895 |
| Tuell, J. E., Augusta | 1896 |
| Walker, Jason, Minot | 1896 |
| Weeks, S. H., Portland | 1876 |

MARYLAND.

| | |
|---|------|
| Anderson, E., Rockville | 1891 |
| Aronsohn, A., Baltimore | 1896 |
| Ashby, T. A., Baltimore | 1884 |
| Atkinson, I. E., Baltimore | 1895 |
| Bates, J. W. P., Baltimore | 1897 |
| Batchelor, K. B., Baltimore | 1897 |
| Belt, S. J., Baltimore | 1895 |
| Bernstein, E. J., Baltimore | 1895 |
| Bevan, C. F., Baltimore | 1884 |
| Biedler, H. H., Baltimore | 1889 |
| Billingslea, M. B., Baltimore | 1895 |
| Blake, J. D., Baltimore | 1895 |
| Bolaiano, W., Baltimore | 1897 |
| Bombaugh, C. C., Baltimore | 1884 |
| Bosley, J., Baltimore | 1895 |
| Branham, J. H., Baltimore | 1895 |
| Brush, E. N., Baltimore | 1895 |
| Byrne, B. J., Ellicott City | 1895 |
| Cathell, D. W., Baltimore | 1895 |
| Chamberlain, J. E. M., Easton | 1880 |
| Chisolm, J. J., Baltimore | 1880 |
| Clarks, T. W., Baltimore | 1895 |
| Cooke, T., Baltimore | 1880 |
| Craiglier, W. J., Baltimore | 1897 |
| Cuddy, J. W. O., Baltimore | 1895 |
| Dashiell, N. S., Baltimore | 1895 |
| Dausch, P. G., Baltimore | 1896 |
| Dickinson, G. E., Upper Fairmount | 1897 |
| Eastman, L. M., Baltimore | 1877 |
| Eilau, E. W., Baltimore | 1895 |
| Farror, J. D., Baltimore | 1895 |
| Fiske, J. D., Baltimore | 1897 |
| Fleming, G. A., Baltimore | 1895 |
| Fort, S. J., Ellicott City | 1897 |
| Friedenwald, J., Baltimore | 1895 |
| Friedenwald, A., Baltimore | 1884 |
| Friedenwald, H., Baltimore | 1895 |
| Funck, J. W., Baltimore | 1897 |
| Gibb, E. C., Baltimore | 1895 |
| Giekmer, E., Baltimore | 1897 |
| Gilchrist, T. C., Baltimore | 1895 |
| Griffith, L. A., Marlboro | 1897 |
| Gundry, R. F., Catonsville | 1895 |
| Harlan, H., Baltimore | 1895 |
| Hartman, J. H., Baltimore | 1884 |
| Hartman, G. A., Baltimore | 1897 |
| Hemple, J. F., Baltimore | 1897 |
| Hemmeter, J. C., Baltimore | 1897 |
| Heyde, E. W., Parkton | 1896 |
| Hill, C. G., Baltimore | 1896 |
| Hines, W. F., Chestertown | 1895 |
| Hopkinson, B. M., Baltimore | 1897 |
| Howard, W. L., Baltimore | 1897 |
| Hundley, J. M., Baltimore | 1896 |
| Iglehart, J. D., Baltimore | 1895 |
| Jacobs, C. C., Frostburg | 1892 |
| Jarrett, H. S., Towson | 1896 |

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| Berry, H. G., Romeo | 1892 | Haughey, Wm. H., Battle Creek | 1892 | Robbins, F. W., Detroit | 1892 |
| Best, L. E., Grand Rapids | 1896 | Hazelwood, A., Grand Rapids | 1874 | Rodi, C. H., Calumet | 1895 |
| Bingham, E., Grand Rapids | 1892 | Herdman, W. J., Ann Arbor | 1883 | Rogers, Arthur S., Vassar | 1892 |
| Bliss, Lyman W., Saginaw | 1874 | Hitchcock, C. W., Detroit | 1891 | Roller, L. S., Grand Rapids | 1883 |
| Boise, Eugene, Grand Rapids | 1880 | Huber, C. G., Ann Arbor | 1890 | Root, P. S., Monroe | 1892 |
| Book, J. B., Detroit | 1870 | Huron, Florence, Detroit | 1895 | Rutherford, F. A., Grand Rapids | 1890 |
| Booth, Chas., Escanaba | 1893 | Hume, A. M., Owosso | 1892 | Ryno, W., Benton Harbor | 1892 |
| Bosman, J. W., Kalamazoo | 1892 | Ives, Augustus, Detroit | 1892 | Sabin, M., Centerville | 1875 |
| Brainard, I. M., Alma | 1890 | Ingram, A. R., Fenton | 1892 | Sample, C. H., East Saginaw | 1893 |
| Bradley, Jas. B., Eaton Rapids | 1892 | Irwin, J. L., Detroit | 1892 | Sawyer, W. H., Hillsdale | 1896 |
| Brady, Jno., Grand Rapids | 1874 | Jenks, E. W., Detroit | 1863 | Schurtz, P., Grand Rapids | 1883 |
| Brady, M., Detroit | 1892 | Jenkins, J. F., Tecumseh | 1883 | Schaberg, H. H., Kalamazoo | 1887 |
| Breakey, W. F., Ann Arbor | 1877 | Jennings, Chas. G., Detroit | 1888 | Schorr, E., Detroit | 1892 |
| Breakey, Jas. F., Ann Arbor | 1896 | Jensen, P. C., Manistee | 1891 | Scherer, O., Detroit | 1897 |
| Briggs, Thomas H., Battle Creek | 1888 | Johnston, R., Milford | 1892 | Seely, Oscar F., Climax | 1887 |
| Brodie, B. F., Detroit | 1892 | Johnson, G. K., Grand Rapids | 1873 | Shillito, Fred, Marcellus | 1890 |
| Brumme, Carl, Detroit | 1874 | Keating, J. W., Ann Arbor | 1892 | Shotwell, A. N., Mt. Clemens | 1896 |
| Bulson, A. E., Jackson | 1893 | Kimball, Amie G., Jackson | 1878 | Shurly, E. L., Detroit | 1871 |
| Burgess, J. M., Northville | 1897 | Kirkland, R. J., Grand Rapids | 1892 | Small, S. I., Saginaw | 1892 |
| Burr, C. B., Flint | 1892 | Kiefer, Hermann, Detroit | 1890 | Smart, W. N., Muskegon | 1892 |
| Burwell, A. G., Bryon Centre | 1896 | Kinne, H. J., Frankfort | 1896 | Smith, Mary C., Grand Rapids | 1896 |
| Burtless, W. E., St. Clair | 1884 | Kremers, H., Holland | 1892 | Smith, E. B., Detroit | 1892 |
| Campbell, D. S., Detroit | 1892 | Kress, D. H., Battle Creek | 1895 | Snook, J. M., Kalamazoo | 1880 |
| Campbell, Don M., Detroit | 1892 | La Crone, A., Kalamazoo | 1892 | Southworth, C. T., Monroe | 1889 |
| Campbell, Oliver B., Ovid | 1892 | Laferte, D., Detroit | 1888 | Spencer, C. E., Fort Gratiot | 1874 |
| Carrow, F., Ann Arbor | 1891 | Lamb, D. H., Owosso | 1896 | Spencer, R. H., Grand Rapids | 1892 |
| Carrier, A. E., Detroit | 1892 | Lamb, E. E., Republic | 1893 | Sprague, W. B., Detroit | 1888 |
| Carstens, J. H., Detroit | 1876 | Lang, A. B., Sault Ste. Marie | 1896 | Stearley, A. R., Charlotte | 1893 |
| Carnes, Geo. D., South Haven | 1892 | Lathrop, Henry K., Royal Oak | 1884 | Stewart, F. E., Detroit | 1895 |
| Case, H. R., Grand Blanc | 1884 | Lau, O. H., Detroit | 1897 | Stockwell, C. B., Port Huron | 1887 |
| Catlin, Jr., S., Tecumseh | 1889 | Lawbaugh, A. J., Opechee | 1896 | Stone, F., Bay City | 1893 |
| Chamberlain, G. V., Flint | 1892 | Lawrence, R. R., Hartford | 1892 | Strangways, W. F., Flint | 1896 |
| Chapman, Harvey S., Pontiac | 1892 | LeBaron, R., Pontiac | 1887 | Suylandt, C. G., Gladwin | 1895 |
| Chapman, E. A., Walled Lake | 1892 | Leonard, C. H., Detroit | 1895 | Swaney, H. N., Eagle | 1893 |
| Chapin, A. B., Mt. Clemens | 1892 | Longyear, H. W., Detroit | 1892 | Tappey, E. T., Detroit | 1892 |
| Chittick, W. R., Detroit | 1892 | Loope, G. L., Bessemer | 1896 | Taylor, James E., Ovid | 1892 |
| Chrouch, Geo. W., Shaftsbury | 1892 | Loveland, H. H., Michigamme | 1897 | Thomason, H. D., Albion | 1884 |
| Clarke, J. E., Detroit | 1892 | Lowry, G. W., Hastings | 1887 | Thuner, A., Detroit | 1892 |
| Cleland, Henry A., Detroit | 1892 | Lupinski, H., Grand Rapids | 1892 | Tibbals, F. B., Detroit | 1892 |
| Collins, A. N., Detroit | 1895 | Lynds, Jas. G., Ann Arbor | 1896 | Towsley, F. A., Midland | 1895 |
| Collier, Jas. M., Plymouth | 1892 | MacRae, John, Central Mine | 1895 | Van Horn, A. L., Otsego | 1895 |
| Connor, L., Detroit | 1874 | McColl, H., Lapeer | 1874 | Van der Laan, J., Muskegon | 1887 |
| Connery, W. S., East Saginaw | 1893 | McDonnell, Otto, Lowell | 1892 | Van Zwaluwenburg, C., Kalamazoo | 1892 |
| Cook, E. D., Detroit | 1896 | McGraw, T. A., Detroit | 1874 | Vaughan, V. C., Ann Arbor | 1883 |
| Corcoran, J., Sylvester, Ubyly | 1892 | McHench, W. J., Brighton | 1883 | Vaughan, O. M., Covert | 1887 |
| Cowles, A. C., Durand | 1892 | McKain, C. H., Vicksburg | 1895 | Wade, D. C., Holly | 1887 |
| Cree, W. J., Detroit | 1891 | McLeay, D., Prairieville | 1875 | Walker, H. O., Detroit | 1880 |
| Darling, Cyrenus G., Ann Arbor | 1892 | McLean, Angus, Detroit | 1892 | Wantz, Emma N., Grand Rapids | 1893 |
| D'Arcy, B., Mayville | 1892 | McLeod, J. A., Ironwood | 1883 | Welsh, D. E., Grand Rapids | 1884 |
| Davis, E. W., Saginaw | 1895 | McPherson, J. A., Grand Rapids | 1892 | White, John, Clinton | 1892 |
| Davis, D. M., Saginaw | 1897 | Maas, F., Detroit | 1895 | Williams, H., F. Saginaw | 1883 |
| Decamp, Wm. H., Grand Rapids | 1867 | Mabbs, Jas. A., Holland | 1896 | Wilson, W. J., Detroit | 1892 |
| Dellenbaugh, C. C., Portland | 1877 | Maclean, D., Detroit | 1895 | Willson, James C., Flint | 1892 |
| De Spelder, Elias, Drenshe | 1895 | Maire, Lewis E., Detroit | 1887 | Wilbur, C. L., Lansing | 1896 |
| De Vere, J. A., Grand Rapids | 1892 | Mann, F. W., Detroit | 1891 | Winter, James, Detroit | 1892 |
| Dewey, C. R., Mattawan | 1895 | Manton, W. P., Detroit | 1895 | Work, Samuel A., Vandalia | 1892 |
| Dock, Geo., Ann Arbor | 1890 | Martin, W. C., Detroit | 1895 | Wyman, H. C., Detroit | 1875 |
| Dodge, Wm. T., Big Rapids | 1892 | Martin, J. N., Ann Arbor | 1892 | Yates, O. E., Holland | 1897 |
| Dodge, J. R., Hudson | 1895 | Marsh, W. C., Quincy | 1892 | Yates, James, Roseville | 1890 |
| Douglas, Chas., Detroit | 1892 | Metcalf, W. F., Detroit | 1890 | Young, W. H., Nashville | 1892 |
| Deugan, W. T., Niles | 1889 | Mills, H. R., Port Huron | 1874 | | |
| Drake, A. P., Hastings | 1883 | Miner, S. G., Detroit | 1891 | | |
| Duffield, Geo., Detroit | 1892 | Moore, M. J., Richmond | 1893 | | |
| Duffield, S. B., Detroit | 1883 | Moran, Geo. W., Detroit | 1893 | | |
| Dunlap, Harley M., Battle Creek | 1888 | Morden, W. S., Macon | 1897 | | |
| Earle, G. W., Hermansville | 1878 | Mulheron, J. J., Detroit | 1887 | | |
| Ellis, E. J. C., Clayton | 1896 | Munson, J. D., Traverse City | 1878 | | |
| Elliott, J. M., Hickory Corners | 1881 | Murray, R. N., Flint | 1876 | | |
| Emerson, J. E., Detroit | 1887 | Myers, F. C., Kalamazoo | 1892 | | |
| Felch, Theo. A., Ishpeming | 1896 | Narcrede, C. B., Ann Arbor | 1891 | | |
| Florentine, F. B., Saginaw | 1886 | Neff, Irwin H., Pontiac | 1896 | | |
| Forsythe, A. H., Lake View | 1897 | Newman, R. A., Detroit | 1897 | | |
| Frank, C. P., Detroit | 1883 | North, L. C., Tecumseh | 1894 | | |
| French, S. S., Battle Creek | 1877 | Odell, R. W., Detroit | 1892 | | |
| Frothingham, G. E., Detroit | 1874 | Ostrom, Sylvester C., Saginaw | 1892 | | |
| Fuller, Wm., Grand Rapids | 1892 | Osborne, H. B., Kalamazoo | 1876 | | |
| Fuller, D. E., Hastings | 1895 | Oven, Arthur G., Petoskey | 1892 | | |
| Galbraith, F. D., Pontiac | 1895 | Palmer, E. A., Hartford | 1883 | | |
| Gambler, W. P., Stanton | 1894 | Parker, Delos L., Detroit | 1888 | | |
| Gardner, Elmer D., Davison | 1892 | Parker, D., Detroit | 1896 | | |
| Garvin, W. C., Millington | 1896 | Parker, W. R., Detroit | 1897 | | |
| Gates, W. C., Rockland | 1896 | Patterson, P. D., Charlotte | 1878 | | |
| Gibbs, Henneage, Ann Arbor | 1892 | Perkins, J., Owosso | 1882 | | |
| Gilman, R. W., Detroit | 1892 | Pettyjohn, E. S., Alma | 1893 | | |
| Godfrey, B. B., Holland | 1895 | Peterson, R., Grand Rapids | 1892 | | |
| Goodman, C. W. T., Saginaw | 1897 | Phippen, L. S. C., Owosso | 1892 | | |
| Graves, S., Grand Rapids | 1892 | Plessner, Louis, Bay City | 1893 | | |
| Greene, D. M., Grand Rapids | 1892 | Pollard, J. W., St. Johns | 1893 | | |
| Greene, G. H., Marshall | 1886 | Pomeroy, E. H., Calumet | 1892 | | |
| Green, Mary E., Charlotte | 1895 | Pratt, Foster, Kalamazoo | 1874 | | |
| Greenshields, Wm., Romeo | 1874 | Pressey, A. J., Grand Rapids | 1892 | | |
| Griswold, J. B., Grand Rapids | 1876 | Price, A., Almont | 1896 | | |
| Griswold, Leavitt S., Big Rapids | 1892 | Ranney, G. E., Lansing | 1895 | | |
| Grove, Fred, Fraser | 1892 | Randall, I. E., W. Bay City | 1895 | | |
| Groner, F. J., Grand Rapids | 1884 | Renaud, Geo. L., Detroit | 1892 | | |
| Guillot, H. C., Pontiac | 1892 | Richmond, P. E., Mt. Pleasant | 1887 | | |
| Hartz, H. J., Detroit | 1893 | Robinson, Wm. J., Lapeer | 1888 | | |

MINNESOTA.

| | |
|---|------|
| Abbott, A. W., Minneapolis | 1897 |
| Adams, W. T., Elgin | 1892 |
| Adams, Arthur S., Rochester | 1893 |
| Aldrich, A. G., Anoka | 1895 |
| Aldrich, Flora L., Anoka | 1895 |
| Allport, Frank, Minneapolis | 1893 |
| Andrews, J. W., Mankato | 1896 |
| Anderson, J. D., Minneapolis | 1897 |
| Aucker, Arthur A., St. Paul | 1891 |
| Bass, G. W., Minneapolis | 1897 |
| Bell, J. W., Minneapolis | 1897 |
| Benjamin, A. E., Minneapolis | 1897 |
| Blackmer, F. A., Albert Lea | 1884 |
| Blitz, A., Minneapolis | 1896 |
| Boeckmann, E., St. Paul | 1895 |
| Brandenberg, F. D., Mankato | 1896 |
| Brooks, D. F., St. Paul | 1876 |
| Brown, E. J., Minneapolis | 1895 |
| Chamberlin, J. W., St. Paul | 1896 |
| Chamberlin, Wm. A., St. Charles | 1893 |
| Chilton, E. Y., Howard | 1886 |
| Chilgren, G. A., St. Peter | 1895 |
| Cobb, W. F., Lyle | 1895 |
| Conley, A. T., Cannon Falls | 1883 |
| Courtenay, Walter, Brainerd | 1892 |
| Cockburn, J. C., Minneapolis | 1897 |
| Daniel, Asa W., St. Peter | 1896 |
| DuBois, J. A., Sauk Center | 1897 |
| Dunsmoor, F. A., Minneapolis | 1882 |
| Dunn, Jas. H., Minneapolis | 1895 |
| Dutton, C. E., Minneapolis | 1897 |
| Eitel, G. G., Minneapolis | 1891 |
| Elliott, J. L., Duluth | 1895 |
| Faucett, C. E., Stewartville | 1895 |
| Flinn, W. D., Red Wood Falls | 1883 |

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| Fulton, J. F., St. Paul | 1883 |
| Gates, J. A., Kenyon | 1897 |
| Geer, E. F., St. Paul | 1892 |
| Giere, E. O., Madison | 1897 |
| Gilman, A. O., St. Cloud | 1882 |
| Graham, R., Duluth | 1897 |
| Graham, D., Duluth | 1897 |
| Greene, C. L., St. Paul | 1895 |
| Grivelly, H. F., Young America | 1897 |
| Hall, W. A., Minneapolis | 1897 |
| Hand, W. R., Kensington | 1882 |
| Hewitt, C. N., Red Wing | 1882 |
| Hill, C., Pine Island | 1882 |
| Hobday, W. A., Halstad | 1883 |
| Hoftee, O. T., New London | 1896 |
| Holmes, E. A., North St. Paul | 1896 |
| Jackson, Geo. E., Wheaton | 1896 |
| Johnson, H. P., Long Prairie | 1895 |
| Jones, Talbot, St. Paul | 1888 |
| Jones, D. N., Gaylord | 1892 |
| Jones, A. W., Red Wing | 1895 |
| Keyes, E. D., Winona | 1892 |
| Kilbride, J. S., Dawson | 1895 |
| Kimball, H. H., Minneapolis | 1886 |
| Laliberte, T. L., Minneapolis | 1897 |
| Laton, W. S., Minneapolis | 1897 |
| Lewis, James B., Waseca | 1897 |
| Little, J. W., Minneapolis | 1887 |
| Lumley, W. A., Renville | 1897 |
| Lundholm, E. M., St. Paul | 1897 |
| McDavitt, T., St. Paul | 1897 |
| McEwan, S. W., Alexandria | 1895 |
| McGaughey, J. B., Winona | 1872 |
| McLaren, A., St. Paul | 1887 |
| McMurdy, R. S., Minneapolis | 1895 |
| Morton, H., McI., Minneapolis | 1897 |
| Magee, W. H., Duluth | 1897 |
| Martindale, J. H., Minneapolis | 1897 |
| Mayo, W. J., Rochester | 1897 |
| Merritt, G. F., St. Peter | 1897 |
| Miner, A. L., Ponsford | 1896 |
| Moellir, T. O. E., Fertile | 1896 |
| Moore, J. E., Minneapolis | 1897 |
| Murphy, G., Garden City | 1895 |
| Norred, C. H., Minneapolis | 1897 |
| Noyes, A. A., Minneapolis | 1874 |
| O'Brien, H. J., St. Paul | 1895 |
| Ohage, J., St. Paul | 1887 |
| Pease, G. R., Redwood Falls | 1896 |
| Phelps, R. N., Rochester | 1893 |
| Pine, O. S., St. Paul | 1882 |
| Pinault, N. J., Minneapolis | 1896 |
| Pineo, W. B., Minneapolis | 1897 |
| Porteous, W. N., Minneapolis | 1897 |
| Quinn, J. A., St. Paul | 1895 |
| Rabuck, S. H., Lyle | 1896 |
| Ranson, S. W., Dodge Center | 1882 |
| Robertson, J. B., Cottonwood | 1895 |
| Robbins, C. P., Winona | 1897 |
| Rochford, W. E., Minneapolis | 1897 |
| Rogers, A. C., Faribault | 1897 |
| Ross, J. C., Grand Rapids | 1882 |
| Rowe, W. H., St. James | 1896 |
| Schwytzer, A., St. Paul | 1897 |
| Schadle, J. E., St. Paul | 1889 |
| Scott, J. W., St. Charles | 1890 |
| Senkler, A. E., St. Paul | 1886 |
| Shipman, C. G., Ely | 1897 |
| Slagle, C. G., Minneapolis | 1896 |
| Smart, G. J., Blue Earth City | 1896 |
| Smith, W. S., St. Clair | 1895 |
| Soderlind, A., Marine Mills | 1896 |
| Sohlberg, O., St. Paul | 1897 |
| Staples, Franklin, Winona | 1871 |
| Stewart, J. C., Minneapolis | 1895 |
| Stewart, C. A., Duluth | 1897 |
| Stewart, A. B., Owatonna | 1897 |
| Stone, A. J., St. Paul | 1881 |
| Strout, E. S., Minneapolis | 1897 |
| Taylor, H. L., St. Paul | 1895 |
| Tefft, N. S., Plain View | 1896 |
| Tietlin, A. J., Harris | 1896 |
| Tillier, F., Blue Earth City | 1896 |
| Tilton, H. R., St. Paul | 1895 |
| Tomlinson, H. A., St. Peter | 1892 |
| Vanderhorck, M. P., Minneapolis | 1895 |
| Volght, Wm. C., Stillwater | 1895 |
| Walrath, Belle M., St. Paul | 1896 |
| Walker, A. E., Duluth | 1897 |
| Walling, P. A., Park Rapids | 1895 |
| Warner, C. F., Mankato | 1882 |
| Wedge, A. C., Albert Lea | 1895 |
| Wellcome, T. W. B., Sleepy Eye | 1897 |
| Wells, C. L., Minneapolis | 1897 |
| Wheaton, C. A., St. Paul | 1882 |
| Whittemore, N. K., Elk River | 1884 |
| White, Jas. B., Montgomery | 1896 |

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| Witherstine, H. H., Rochester | 1887 |
| MEXICO. | |
| Marsh, W. Q., Sierra Mojada | 1897 |
| Seyffert, F. R., Sierra Mojada | 1897 |

MISSISSIPPI.

| | |
|---|------|
| Barroum, A. J., Corinth | 1892 |
| Baskin, J. L., Itta Bena | 1897 |
| Beadles, E. St. Clair, Water Valley | 1892 |
| Bennett, J. W., Brookhaven | 1897 |
| Berry, Jos. T. B., Brandon | 1896 |
| Brownrigg, J., Columbus | 1895 |
| Cook, J. H. C., Augusta | 1895 |
| Culley, B. L., Jackson | 1896 |
| Dickerson, L. D., McComb City | 1897 |
| Duncan, B. A., Columbus | 1895 |
| Ewing, C. C., Aberdeen | 1879 |
| Fullilove, E. W., Vaiden | 1887 |
| Gant, H. A., Water Valley | 1890 |
| Gilbert, J. W., Verona | 1897 |
| Greene, W. S., Aberdeen | 1896 |
| Hall, A. J., Natchez | 1896 |
| Hall, J. C., Anguilla | 1877 |
| Heath, T. A., Shiloh Landing | 1896 |
| Henderson, T. R., Greenwood | 1883 |
| Henderson, C. R., Deasonville | 1895 |
| Howard, R. E., Durant | 1880 |
| Jones, R. E., Crystal Springs | 1896 |
| Hughes, W. P., St. Elmo | 1896 |
| Jagoe, A. J., Hermando | 1897 |
| Johns, W. A., Corinth | 1873 |
| Kittrell, B. F., Black Hawk | 1895 |
| Lowry, M. J., Meridian | 1897 |
| Maddox, J. H., Perthshire | 1869 |
| Moore, J. P., Yazoo City | 1895 |
| Norton, J. J., Biloxi | 1896 |
| Pease, Sr., Jno. B., Gunnison | 1896 |
| Porter, W. O., Morton | 1897 |
| Quin, O. B., McComb | 1892 |
| Redus, Wm. D., Port Gibson | 1886 |
| Rowland, P. W., Coffeeville | 1883 |
| Shackelford, J. A., Greenville | 1896 |
| Steele, A. N., Columbus | 1879 |
| Taylor, W. A., Booneville | 1897 |
| Turner, R. L., Ellisville | 1895 |
| Unger, J. W., West Point | 1872 |
| Vaughan, B. A., Columbus | 1896 |
| Walker, W. E., Pass Christian | 1891 |
| Weissenger, W. S., Hernando | 1897 |
| Whitehead, N. E., Greenwood | 1897 |
| Williams, D. J., Elleville | 1897 |

MISSOURI.

| | |
|---|------|
| Allen, J. M., Liberty | 1886 |
| Allee, W. S., Olean | 1897 |
| Austin, J. H., Kansas City | 1897 |
| Avery, D., Lebanon | 1897 |
| Barnes, A. S., St. Louis | 1891 |
| Barck, Carl, St. Louis | 1893 |
| Bell, W. T., Stoutsville | 1897 |
| Berghoff, J. T., St. Joseph | 1886 |
| Bock, A. F., St. Louis | 1886 |
| Bogie, M. A., Kansas City | 1897 |
| Borck, E., St. Louis | 1881 |
| Bottom, M., Breckenridge | 1895 |
| Boulware, T. C., Butler | 1885 |
| Bralnard, B. F., Martin City | 1890 |
| Bremer, L., St. Louis | 1886 |
| Briggs, Waldo, St. Louis | 1890 |
| Brokaw, A. V. L., St. Louis | 1891 |
| Brown, S. M., Monroe City | 1897 |
| Brown, Tinsley, Hamilton | 1885 |
| Bronson, I. T., Sedalia | 1887 |
| Broome, G. W., St. Louis | 1886 |
| Bruere, J. E., St. Charles | 1896 |
| Brumhall, J. D., Salisbury | 1896 |
| Bryant, Jr., J., Independence | 1896 |
| Campbell, G. B., Bevier | 1896 |
| Campbell, J. F., Callao | 1886 |
| Carpenter, S. F., St. Joseph | 1890 |
| Carter, H., St. Louis | 1897 |
| Cathcart, C. P., Kansas City | 1887 |
| Cave, E. S., Mexico | 1886 |
| Chancellor, Eust, St. Louis | 1887 |
| Chapman, A. W., Charleston | 1890 |
| Chaddock, C. G., St. Louis | 1896 |
| Clausen, J. J., Kansas City | 1897 |
| Clements, J., Kansas City | 1897 |
| Coffee, J., Turner, Steelville | 1878 |
| Cordier, A. H., Kansas City | 1888 |
| Crandall, G. C., St. Louis | 1897 |
| Crow, A. M., Kansas City | 1887 |
| Damour, F., Bolckow | 1895 |
| Dalton, H. C., St. Louis | 1887 |
| Delany, J. O. F., St. Louis | 1880 |
| DeVilbiss, Frank, Spring Garden | 1891 |

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| Doyle, T. H., St. Joseph | 1878 |
| Drake, Nelson A., Kansas City | 1893 |
| Ellis, T. B., Bethany | 1895 |
| Enloe, Jno. S., Greenville | 1897 |
| Evans, E. C., Sedalia | 1886 |
| Evans, W. H., Sedalia | 1880 |
| Ewing, F. C., Webster Grove | 1895 |
| Finley, R. H., St. Louis | 1892 |
| Fischel, W. E., St. Louis | 1896 |
| Foreman, J. M., Jonesburgh | 1873 |
| Fulkerson, P. S., Lexington | 1897 |
| Funkhouser, R. M., St. Louis | 1884 |
| Furney, E. E., St. Louis | 1885 |
| Gant, S. G., Kansas City | 1895 |
| Gant, J. O. K., Plattsburg | 1886 |
| Gehrung, E. C., St. Louis | 1886 |
| Geiger, J., St. Joseph | 1888 |
| Glasgow, F. A., St. Louis | 1886 |
| Gober, G. A., Kirksville | 1886 |
| Goodrich, C. F., New Haven | 1886 |
| Gore, David C., Marshall | 1886 |
| Gray, L. L., St. John | 1896 |
| Graves, W. W., St. Louis | 1886 |
| Graham, A. W., Holstein | 1886 |
| Gregory, E. H., St. Louis | 1872 |
| Greer, E. O., St. Louis | 1897 |
| Griswold, S. C., New Haven | 1886 |
| Griffith, J. D., Kansas City | 1886 |
| Haire, R. D., Schell City | 1896 |
| Haley, R., Brookfield | 1897 |
| Hall, Jos. R., Marshall | 1893 |
| Hall, C. Lester, Kansas City | 1882 |
| Hall, L. T., Potosi | 1885 |
| Halley, J. J., Benton City | 1878 |
| Harris, W. E., Sedalia | 1897 |
| Harrelson, N. O., Kansas City | 1896 |
| Hawkins, A. S., Monett | 1886 |
| Heddens, J. W., St. Joseph | 1897 |
| Henderson, R. T., Jackson | 1880 |
| Hickman, Henry, St. Louis | 1887 |
| Highsmith, G. R., Carrollton | 1887 |
| Hill, R. J., St. Louis | 1884 |
| Houston, J. A., Warrensburg | 1895 |
| Hughes, C. H., St. Louis | 1880 |
| Hypes, B. M., St. Louis | 1885 |
| Isbell, J., Washington | 1886 |
| Jackson, J. N., Kansas City | 1895 |
| Jackson, T. B., Altamont | 1886 |
| James, S. C., Kansas City | 1896 |
| Jennings, J. E., St. Louis | 1897 |
| Jerowitz, H. D., Kansas City | 1895 |
| Kier, Wm. F., St. Louis | 1886 |
| King, Willis P., Kansas City | 1884 |
| Kolbenberger, F., St. Louis | 1886 |
| Kuhn, D., St. Louis | 1886 |
| Lemoine, E. S., St. Louis | 1886 |
| Leeper, C. C., Braymer | 1885 |
| Lewis, E. R., Kansas City | 1885 |
| Lockwood, W. D., Rock Port | 1897 |
| Loeb, H. W., St. Louis | 1892 |
| Logan, J. E., Kansas City | 1886 |
| Love, I. N., St. Louis | 1883 |
| McClure, J., St. Louis | 1895 |
| McCandless, W. A., St. Louis | 1886 |
| McCullers, E. H., St. Louis | 1896 |
| McIntyre, J. H., St. Louis | 1873 |
| McLean, Mary H., St. Louis | 1896 |
| Marsh, J. T., Liberty | 1877 |
| Marks, H., St. Louis | 1897 |
| Mathis, C. E., Kansas City | 1897 |
| Mayfield, W. H., St. Louis | 1896 |
| Mayger, J., St. Louis | 1886 |
| Meany, W. B., St. Louis | 1896 |
| Meisenbach, A. H., St. Louis | 1886 |
| Metcalf, W. A., Steelville | 1885 |
| Middlekamp, H. H., Warrenton | 1886 |
| Miller, A. B., Macon | 1886 |
| Miller, Geo. W., Joplin | 1885 |
| Miller, John J., St. Louis | 1885 |
| Mitchell, D. L., Cassville | 1886 |
| Mitchell, W. F., Lancaster | 1886 |
| Mooney, F. D., St. Louis | 1886 |
| Moore, W. G., St. Louis | 1896 |
| Mudd, H. H., St. Louis | 1873 |
| Mulhall, J. C., St. Louis | 1887 |
| Mullen, A. J., St. Louis | 1895 |
| Murray, L. F., Holden | 1896 |
| Oglesby, C. R., Kirkwood | 1895 |
| O'Reilly, P. S., St. Louis | 1873 |
| Ohmann-Dumesnil, A. H., St. Louis | 1886 |
| Outen, W. B., St. Louis | 1873 |
| Overstreet, W. C., Sedalia | 1886 |
| Owen, W. C., St. Louis | 1891 |
| Paquin, Paul, St. Louis | 1895 |
| Pearson, John S., Louisiana | 1886 |
| Perkins, J. W., Kansas City | 1897 |
| Pettijohn, N. J., Kansas City | 1895 |

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| Pickel, J. W., Crystal City | 1897 | Brady, L. M., Oxford | 1893 | Carvelle, H. D. W., Manchester | 1895 |
| Pollmann, L. P., St. Louis | 1886 | Breuer, C. H., Omaha | 1896 | Conn, G. P., Concord | 1880 |
| Pollak, S., St. Louis | 1882 | Brother, Ford, Beatrice | 1875 | Currier, E. H., Manchester | 1897 |
| Porter, David R., Kansas City | 1888 | Bryant, D. C., Omaha | 1830 | Downing, C. W., Manchester | 1896 |
| Post, M. H., St. Louis | 1886 | Bullard, J. W., Pawnee City | 1897 | Dunham, Wm. R., Keene | 1897 |
| Powers, Ed M., St. Louis | 1886 | Burrell, H. L., Omaha | 1895 | Eastman, C. A., Exeter | 1897 |
| Powell, I. W., Holcomb | 1897 | Bush, J. C., Wahoo | 1888 | Ersline, J. B., Colebrook | 1892 |
| Prewitt, T. F., St. Louis | 1882 | Butler, F. A., Harvard | 1890 | Evans, Earl, Winchester | 1880 |
| Prichard, J. B., St. Louis | 1890 | Bush, R. D., Ceresco | 1897 | Frink, L. J., Bartlett | 1897 |
| Punton, J., Kansas City | 1895 | Cameron, Neil, Burwell | 1897 | Gove, George S., Whitefield | 1884 |
| Redman, Spencer, Platte City | 1885 | Carter, J. O., Lincoln | 1882 | Graves, E. E., Boscowen | 1884 |
| Ridge, I. M., Kansas City | 1890 | Cargen Wm., Newman Grove | 1895 | Greeley, G. H., Thornton's Ferry | 1895 |
| Riggs, T. S., Providence | 1886 | Coffin, C. E., Asylum | 1891 | Greeley, J. T., Nashua | 1895 |
| Riley, C. M., St. Louis | 1895 | Coffman, V. H., Omaha | 1882 | Goodhire, P. D., West Springfield | 1896 |
| Ring, Frank, St. Louis | 1892 | Cook, S. E., Lincoln | 1896 | Gould, Charles R., Tilton | 1896 |
| Ritter, C. A., Kansas City | 1897 | Crummer, B. F., Omaha | 1882 | Hofit, G. C., Manchester | 1897 |
| Rogers, D. F., Kansas City | 1895 | Cushman, H., Stromsburg | 1884 | Holt, J. D., Berlin | 1896 |
| Rohlfing, C. G., St. Louis | 1886 | Davis, J. C., Omaha | 1892 | Houghton, E. F., Rochester | 1895 |
| Rowe, S. B., St. Louis | 1886 | Davis, B. B., Omaha | 1897 | Hoyt, J. Eliz., Concord | 1896 |
| Rowe, J. M., Charleston | 1886 | Dawson, J. O., Lincoln | 1883 | Lononette, J. E. A., Manchester | 1897 |
| Rowell, Haynie, Kearney | 1896 | Denise, J. C., Omaha | 1886 | McQueston, E. Y., Nashua | 1895 |
| Rumbold, T. F., St. Louis | 1895 | Evans, C. D., Columbus | 1895 | Neal, J. H., Rochester | 1895 |
| Russell, J. W., Longtown | 1894 | Fletcher, E. R., St. Paul | 1851 | Newton, L. A., Walpole | 1897 |
| Sawyer, L. B., Kansas City | 1895 | Gay, B. F., Pierce | 1896 | Parsons, J. W., Portsmouth | 1870 |
| Sander, Enno, St. Louis | 1895 | Geer, F. H., Columbus | 1896 | Richardson, A. P., Walpole | 1880 |
| Schlosstein, A., St. Louis | 1886 | Gilmore, Geo. H., Murray | 1897 | Robinson, J. Franklin, Manchester | 1896 |
| Schauffler, E. W., Kansas City | 1880 | Grotham Ole, St. Paul | 1895 | Smith, H. O., Hudson Centre | 1897 |
| Shert, J. L., Rolla | 1893 | Haggard, J. R., Lincoln | 1890 | Sullivan, M. B., Dover | 1896 |
| Shutte, H. C., West Plains | 1897 | Haldeman, F. D., Ord | 1884 | Sweeney, H. L., Kingston | 1896 |
| Sloan, R. T., Kansas City | 1895 | Hamilton, H. P., Omaha | 1897 | Taylor, Joseph, Acworth | 1897 |
| Spiegelhalter, J., St. Louis | 1886 | Hasemier, J. A., Louisville | 1892 | Towle, F. S., Portsmouth | 1896 |
| Smith, E. F., St. Louis | 1895 | Hay, J. T., Lincoln | 1897 | Wallace, A. S., Nashua | 1896 |
| Smith, J. W., St. Louis | 1897 | Headrick, Chas. M., Tecumseh | 1896 | Watson, Irving A., Concord | 1884 |
| Steffel, R. J., St. Louis | 1886 | Hildreth, M. L., Lyons | 1899 | Weymouth, H. A., Andover | 1881 |
| Steer, Justin, St. Louis | 1886 | Hungate, J. B., Weeping Water | 1892 | Woodman, M. S., West Lebanon | 1897 |
| Summers, T. O., St. Louis | 1895 | Hunt, W. N., Central City | 1897 | | |
| Tefft, J. E., Springfield | 1882 | Jones, W. D., Rising City | 1893 | | |
| Thatcher, J. P., Pisgah | 1886 | Jones, A. F., Omaha | 1882 | | |
| Thompson, J. H., Kansas City | 1885 | Keller, A., Falls City | 1892 | | |
| Tiffany, F. B., Kansas City | 1884 | Kern, W. B., Wood River | 1892 | | |
| Tuholske, H., St. Louis | 1885 | Lee, E. W., Omaha | 1882 | | |
| Van Note, E., Hamilton | 1885 | Lee, D. R., Arcadia | 1897 | | |
| Valle, J. F., St. Louis | 1897 | Leisenring, H. G., Wayne | 1892 | | |
| Wallace, J. S., St. Louis | 1886 | Link, H., Millard | 1880 | | |
| Walbridge, L. P., St. Louis | 1895 | Livingston, T. P., Plattsmouth | 1887 | | |
| Wainright, C. F., Kansas City | 1896 | Long, F. A., Madison | 1890 | | |
| Watts, A. J., Seymour | 1896 | Loper, A. N., College View | 1896 | | |
| Wedding, C. V., Kansas City | 1896 | Lord, J. P., Omaha | 1887 | | |
| Welch, J. F., Salisbury | 1896 | McConaughy, Robt., York | 1880 | | |
| Wesseler, F. W., St. Louis | 1876 | McKeeby, G. E. M., Red Cloud | 1892 | | |
| Whelpley, H. M., St. Louis | 1895 | Mansfelde, A. S. V., Ashland | 1884 | | |
| W. B. Wilson, Cape Girardeau | 1885 | Minnich, C. S., Palmer | 1897 | | |
| Wilson, A. M., Kansas City | 1891 | Milton, E. W., Oakdale | 1896 | | |
| Wood, J. B., Marshall | 1886 | Morris, F. S., McCool Junction | 1892 | | |
| Wood, E. A., Sedalia | 1897 | Moore, R. C., Omaha | 1882 | | |

MONTANA.

| | | | |
|--|------|---|------|
| Adams, F. J., Great Falls | 1892 | Peabody, J. H., Omaha | 1870 |
| Alton, R. D., Livingston | 1897 | Pickett, I. N., Odell | 1896 |
| Atwater, May B., Marysville | 1885 | Pollard, J. A., Nehawka | 1896 |
| Bullard, Wm. M., Wickes | 1895 | Quinn, John H., Gotheberg | 1888 |
| Campbell, W. H., Livingston | 1891 | Rodgers, Wm. O., Omaha | 1892 |
| Chapple, Henry, Billings | 1897 | Roeder, Geo., Grand Island | 1897 |
| Cole, Chas. K., Helena | 1893 | Schaufelberger, J. E., Hastings | 1892 |
| Craig, Jas., White Sul. Spr'gs | 1896 | Shidler, G. W., York | 1888 |
| Ford, L. C., Lima | 1891 | Smith, L. B., Fremont | 1885 |
| Hammond, J. S., Butte | 1897 | Smith, E., Burchard | 1884 |
| Gordon, R. P. R., Great Falls | 1897 | Somers, A. B., Omaha | 1897 |
| Grigg, T. A., Butte | 1895 | Spaulding, S. K., Omaha | 1890 |
| Hopkins, C. F., Chinook | 1897 | Stevenson, W. J., Decatur | 1892 |
| King, G. W., Marysville | 1893 | Sumney, H. C., Omaha | 1897 |
| MacNevin M. G., Butte | 1897 | Summers, Jr., John E., Omaha | 1887 |
| McCann, D. B., Sand Coulee | 1897 | Sutherland, J. L., Grand Island | 1894 |
| McKay, McH., White Sul. Spr'gs | 1892 | Tilden, George, Omaha | 1895 |
| Mills, W. P., Missoula | 1897 | White, W. S., Omaha | 1895 |
| Miller, C. B., Helena | 1880 | Wilson, H. B., Omaha | 1897 |
| Mitchell, A. H., Deer Lodge | 1892 | Wilkinson, A. D., Lincoln | 1892 |
| Murray, T. J., Butte | 1897 | Woodward, T. H., Lincoln | 1890 |
| Owings, J. H., Deer Lodge | 1892 | Zellers, M. T., Hooper | 1896 |
| Sandow, B. F., Neihart | 1894 | | |
| Shultz, W. M., Butte | 1893 | | |
| Southmayd, Le Roy, Virginia City | 1897 | | |
| Treacy, Wm., Helena | 1897 | | |
| Vidal, C. E. K., Belt | 1897 | | |
| Wells, G. H., Butte | 1897 | | |
| Wells, G. R., Livingston | 1891 | | |
| Whitefoot, R. M., Bozeman | 1897 | | |

NEBRASKA.

| | |
|--|------|
| Aiken, J. M., Omaha | 1897 |
| Anderson, A. B., Pawnee City | 1886 |
| Arthur, M. L., Omaha | 1893 |
| Beede, S. C., Surprise | 1896 |
| Bell, H. S., Kearney | 1896 |
| Benton, E. A., Central City | 1892 |
| Boardman, E. O., Overton | 1892 |
| Boyd, H. D., Grand Island | 1896 |

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|---|------|
| Bergstein, H., Reno | 1895 |
| Campbell, J. D., Pioche | 1896 |
| Dougan, W. McKay, White Rock | 1895 |
| Guinan, James, Carson City | 1895 |
| Manson, Peter, Virginia City | 1895 |
| Mayo, H. N., De Lamar | 1897 |
| Pickard, J. E., Virginia City | 1896 |

NEVADA.

| | |
|---|------|
| Bergstein, H., Reno | 1895 |
| Campbell, J. D., Pioche | 1896 |
| Dougan, W. McKay, White Rock | 1895 |
| Guinan, James, Carson City | 1895 |
| Manson, Peter, Virginia City | 1895 |
| Mayo, H. N., De Lamar | 1897 |
| Pickard, J. E., Virginia City | 1896 |

NEW HAMPSHIRE.

| | |
|--|------|
| Adams, Daniel S., Manchester | 1889 |
| Aldrich, W. H., Marlboro | 1889 |
| Allen, C. J., Peterboro | 1896 |
| Anthoine, J. G., Nashua | 1897 |
| Blaylock, Ella, Nashua | 1895 |
| Flairsdell, F., Goffstown | 1895 |
| Blaisdell, G. C., Contoocook | 1896 |

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|---|------|
| Carvelle, H. D. W., Manchester | 1895 |
| Conn, G. P., Concord | 1880 |
| Currier, E. H., Manchester | 1897 |
| Downing, C. W., Manchester | 1896 |
| Dunham, Wm. R., Keene | 1897 |
| Eastman, C. A., Exeter | 1897 |
| Ersline, J. B., Colebrook | 1892 |
| Evans, Earl, Winchester | 1880 |
| Frink, L. J., Bartlett | 1897 |
| Gove, George S., Whitefield | 1884 |
| Graves, E. E., Boscowen | 1884 |
| Greeley, G. H., Thornton's Ferry | 1895 |
| Greeley, J. T., Nashua | 1895 |
| Goodhire, P. D., West Springfield | 1896 |
| Gould, Charles R., Tilton | 1896 |
| Hofit, G. C., Manchester | 1897 |
| Holt, J. D., Berlin | 1896 |
| Houghton, E. F., Rochester | 1895 |
| Hoyt, J. Eliz., Concord | 1896 |
| Lononette, J. E. A., Manchester | 1897 |
| McQueston, E. Y., Nashua | 1895 |
| Neal, J. H., Rochester | 1895 |
| Newton, L. A., Walpole | 1897 |
| Parsons, J. W., Portsmouth | 1870 |
| Richardson, A. P., Walpole | 1880 |
| Robinson, J. Franklin, Manchester | 1896 |
| Smith, H. O., Hudson Centre | 1897 |
| Sullivan, M. B., Dover | 1896 |
| Sweeney, H. L., Kingston | 1896 |
| Taylor, Joseph, Acworth | 1897 |
| Towle, F. S., Portsmouth | 1896 |
| Wallace, A. S., Nashua | 1896 |
| Watson, Irving A., Concord | 1884 |
| Weymouth, H. A., Andover | 1881 |
| Woodman, M. S., West Lebanon | 1897 |

NEW JERSEY.

| | |
|--|------|
| Allen, U., Jersey City Heights | 1895 |
| Applegate, J. C., Bridgeton | 1895 |
| Baer, J. S., Camden | 1896 |
| Baldwin, H. R., New Brunswick | 1880 |
| Bayles, G., Orange | 1884 |
| Benjamin, D., Camden | 1884 |
| Braymer, O. W., Camden | 1891 |
| Brann, H. E., Blackwood | 1892 |
| Bridgmar, G. H., Elizabeth | 1896 |
| Brumley, J. D., Newark | 1896 |
| Buffet, E. P., Jersey City | 1896 |
| Carpenter, W. H., Salem | 1897 |
| Carpenter, A. E., Boonton | 1870 |
| Carman, J. H., Plainfield | 1896 |
| Coles, J. A., Scotch Plains | 1896 |
| Cook, H. G., Holmdel | 1884 |
| Crane, H. B., Newark | 1897 |
| Currie, D. A., Englewood | 1876 |
| Dallas, A., Bayonne City | 1895 |
| Davis, T. G., Bridgeton | 1897 |
| Davis, W. A., Camden | 1884 |
| Day, S. Thomas, Port Norris | 1896 |
| De Grofft, E. E., Camden | 1897 |
| Dennis, J., Newark | 1897 |
| Dickinson, G. K., Jersey City | 1880 |
| Disbrow, W. S., Newark | 1897 |
| Donges, J. W., Camden | 1884 |
| Edge, B., Jersey City | 1891 |
| Elmer, H. W., Bridgeton | 1884 |
| Elmer, William, Trenton | 1891 |
| English, D. C., New Brunswick | 1870 |
| English, T. D., Newark | 1895 |
| Evans, Britton D., Morris Plains | 1895 |
| Exton, J. A., Arlington | 1897 |
| Faber, J., Jersey City | 1896 |
| Fitch, Thos. S. P., Orange | 1889 |
| Frey, A., Newark | 1896 |
| Gage, R. S., Newark | 1897 |
| Godfrey, E. L. B., Camden | 1895 |
| Gross, O. B., Camden | 1880 |
| Hamill, P. H., Newark | 1893 |
| Harris, E. A., Paterson | 1895 |
| Harvey, T. W., Orange | 1895 |
| Hinkley, L. S., Newark | 1887 |
| Hollingshead, E., Pemberton | 1897 |
| Hollister, L. E., Newark | 1897 |
| Hough, H. Page, Rahway | 1889 |
| Hill, C. L., Newark | 1897 |
| Hill, Ed. J., Newark | 1895 |
| Jackson, F. J., Springfield | 1895 |
| Jarrett, H., Camden | 1897 |
| Johnson, W. B., Paterson | 1891 |
| Kelchner, W. I., Camden | 1897 |
| Kornemann, H. A., Newark | 1888 |
| Leal, J. L., Paterson | 1895 |
| Long, Isaac, Freehold | 1897 |
| Luther, C. V., Newark | 1897 |
| McAlister, Alexander, Camden | 1893 |
| McGill, J. D., Jersey City | 1872 |
| McLean, T. N., Elizabeth | 1895 |

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|---|------|--|------|--|------|
| Marvel, P., Atlantic City | 1895 | Briggs, A. H., Buffalo | 1881 | Guy, J. D., Chenango Forks | 1892 |
| Merrill, J. R., Paterson | 1892 | Brownell, M. A., Newark | 1895 | Hagey, J. M., Mt. Morris | 1889 |
| Mitchell, Henry, Trenton | 1896 | Brown, J. W., Mottville | 1889 | Hall, N. F., Fulton | 1889 |
| Neer, H. C., Park Ridge | 1890 | Brown, U. H., Syracuse | 1886 | Hammer, Chas., Schenectady | 1889 |
| Newton, R. C., Montclair | 1892 | Brown, John P., Nunda | 1892 | Hanks, H. T., New York | 1893 |
| Nicholson, J. L., Camden | 1897 | Brothers, S., New York | 1886 | Hanbold, H. A., New York | 1897 |
| Noble, F. E., Jersey City | 1896 | Brundage, Amos H., Brooklyn | 1896 | Hart, I. F., Elmira | 1876 |
| Peck, G., Elizabeth | 1891 | Brundage, A. H., Brooklyn | 1896 | Harrison, G. T., New York | 1881 |
| Pettitt, A., Elizabeth | 1891 | Brush, E. F., Mt. Vernon | 1884 | Harrington, D. W., Buffalo | 1887 |
| Pierson, William, Orange | 1876 | Bryant, J. D., New York | 1880 | Harnden, R. S., Waverly | 1895 |
| Piersons, S., Morristown | 1896 | Buchanan, H. M., St. Lawrence | 1895 | Haynes, J. U., Cohoes | 1894 |
| Powell, William R., Camden | 1895 | Bulkley, L. D., New York | 1874 | Hayd, H. E., Buffalo | 1897 |
| Probasco, John B., Plainfield | 1888 | Burrell, D. R., Canandaigua | 1878 | Head, A. D., Syracuse | 1896 |
| Pulsford, H. A., South Orange | 1896 | Burchard, T. H., New York | 1889 | Heimstreet, T. E., Troy | 1897 |
| Quimby, I. M., Jersey City | 1872 | Burge, J. H. H., Brooklyn | 1887 | Hemingway, S., New York | 1896 |
| Reading, G. E., Woodbury | 1892 | Burrell, F. A., New York | 1872 | Hendricks, H. C., McGrawville | 1876 |
| Reed, B., Atlantic City | 1884 | Burns, John F., Sea Cliff | 1895 | Heplurn, N. J., New York | 1895 |
| Reed, E. L., Atlantic City | 1897 | Cahill, J. T., Hoosick Falls | 1897 | Hewit, A., Saratoga Springs | 1894 |
| Ridge, J. M., Camden | 1895 | Callan, P. A., New York | 1897 | Higgins, F. W., Cortland | 1896 |
| Risk, J. B., Summit | 1897 | Carroll, C. C., New York | 1896 | Hillis, T. J., New York | 1896 |
| Rolerfort, G. W., Newark | 1895 | Carpenter, H. W., Oneida | 1885 | Hinton, J. H., New York | 1876 |
| Seidman, M., Newark | 1897 | Case, M., Oneonta | 1831 | Hodgman, A., New York | 1889 |
| Seidler, W. F., Newark | 1896 | Clark, W., Utica | 1837 | Hodgman, W. H., Saratoga Springs | 1896 |
| Shepard, C., Trenton | 1896 | Claiborn, J. H., New York | 1897 | Howe, Lucien, Buffalo | 1895 |
| Sherk, H. H., Cramer Hill | 1896 | Cleaves, M. A., New York | 1895 | Howard, C. F., Buffalo | 1897 |
| Shippis, William H., Bordentown | 1896 | Clum, F. D., Cheviot | 1883 | Hough, F. P., Binghamton | 1896 |
| Skinner, D. M., Belleville | 1880 | Coakley, J. B., Buffalo | 1883 | Hevey, B. L., Rochester | 1876 |
| Smith, D. W., Newark | 1876 | Cobb, J. O., New York | 1895 | Hubbell, A. A., Buffalo | 1892 |
| Southard, L., Newark | 1876 | Coffin, L., Brooklyn | 1891 | Hummel, A. L., New York | 1895 |
| Stewart, W. B., Atlantic City | 1895 | Colvin, D., Clyde | 1878 | Hutette, G. S., Arcade | 1894 |
| St. John, D., Hackensack | 1892 | Congdon, C. E., Buffalo | 1892 | Ingraham, H. D., Buffalo | 1893 |
| Stockton, Charles S., Newark | 1889 | Conner, M. C., Middletown | 1892 | Jacobson, N., Syracuse | 1890 |
| Straley, S. B., Andover | 1892 | Contant, R. B., Tarrytown | 1885 | Jackson, V. H., New York | 1891 |
| Sullivan, A. W., Shiloh | 1897 | Cook, Chas. D., Brooklyn | 1886 | Jamison, J. S., Hornellsville | 1885 |
| Synott, M. J., Little Falls | 1897 | Cramer, W., Poughkeepsie | 1897 | Janvrin, J. E., New York | 1880 |
| Taylor, H. G., Camden | 1870 | Creveling, J. P., Auburn | 1890 | Jenkins, J. A., Brooklyn | 1896 |
| Terry, J. W., Englewood | 1887 | Crocker, Edw., Narrowsburg | 1894 | Jones, Geo. H., Fowlerville | 1897 |
| Voorhees, C. H., New Brunswick | 1887 | Crosby, A. H., Lowville | 1896 | Judson, J. B., New York | 1876 |
| Waddington, B. A., Salem | 1890 | Cronyn, John, Buffalo | 1878 | Julian, J. M., Pleasant Valley | 1897 |
| Ward, Arthur, Newark | 1889 | Curtis, G. L., New York | 1889 | Kempe, J. J., Rochester | 1883 |
| Washington, W. S., Newark | 1897 | Curtis, H. L., New York | 1895 | Kene, J. A., Brooklyn | 1897 |
| Watson, W. P., Jersey City | 1889 | Cutter, John A., New York | 1888 | Kent, J. L., New York | 1895 |
| Way, Eugene, Dennisville | 1896 | Cutter, E., New York | 1871 | Kenyon, Frank, Scipio | 1880 |
| Weeks, H. M., Trenton | 1896 | Daniels, C. M., Buffalo | 1884 | King, F., New York | 1890 |
| Welch, G. T., Passaic | 1884 | Darrow, C. E., Rochester | 1897 | King, J. K., Watkins | 1893 |
| Wilkoff, J. H., Princeton | 1884 | Davis, J. G., New York | 1890 | Kittinger, M. G., Lockport | 1883 |
| Williamson, N., New Brunswick | 1880 | Davidoff, M., New York | 1896 | Knapp, Herman, New York | 1892 |
| Wilson, N. L., Elizabeth | 1895 | Dawbarn, H. M., New York | 1889 | Kripe, G., New York | 1896 |
| Wilson, S. M., Bridgetown | 1895 | De Garmo, Wm. B., New York | 1889 | Knopf, S. A., New York | 1897 |
| Wilson, J. G., Perth Amboy | 1897 | Dench, E. B., New York | 1897 | Landon, N. E., Newark | 1885 |
| Wrightson, J. T., Newark | 1884 | Dennis, F. S., New York | 1883 | Leaning, J. K., Cooperstown | 1884 |
| Zeglio, P. J., Plainfield | 1897 | DeSizithy, C. A. H., Brooklyn | 1895 | Leale, Chas. A., New York | 1876 |
| NEW MEXICO. | | DeWitt, Byron, Oswego | 1876 | Leighton, N. W., Brooklyn | 1885 |
| Bratton, W. D., Albuquerque | 1895 | Didama, H. D., Syracuse | 1864 | Le Roy, I. D., Pleasant Valley | 1896 |
| Given, F. I., Hillsborough | 1895 | Dolley, Sarah R. A., Rochester | 1889 | Lester, E., Seneca Falls | 1889 |
| Joyner, W. T., Roswell | 1892 | Douglas, George, Oxford | 1889 | Lewis, LeRoy, Auburn | 1897 |
| Rathborn, F. W., Albuquerque | 1897 | Doyle, G., Syracuse | 1880 | Lichty, J. A., Clifton Springs | 1897 |
| Roseberry, B. S., Catskill | 1895 | Drayton, H. S., New York | 1896 | Lindsay, W., Huntington | 1896 |
| Slack, J. C., Clayton | 1897 | Dubs, R. S., New York | 1896 | Little, F., Brooklyn | 1896 |
| Shaw, E. B., East Las Vegas | 1886 | Dudley, Dwight, Maine | 1897 | Lloyd, T. M., Brooklyn | 1892 |
| Tipton, W. R., Las Vegas | 1883 | Dunham, E. K., New York | 1896 | Lockwood, J. W., Philmont | 1894 |
| Van Cleave, A. H., Silver City | 1895 | Durant, G., New York | 1876 | Long, A. J., Whitehall | 1878 |
| NEW YORK. | | Eastman, R. W., New York | 1886 | Lundgren, C. E., Brooklyn | 1886 |
| Abrams, H. C., Newtonville | 1896 | Eccles, R. G., Brooklyn | 1888 | Lusk, W. T., New York | 1884 |
| Abrahams, R., New York | 1896 | Edwards, G. A., Syracuse | 1884 | Lusk, Z. J., Warsaw | 1893 |
| Acker, T. J., Croton on Hudson | 1895 | Edwards, A. S., Syracuse | 1878 | Lynch, P. J., New York | 1896 |
| Akin, W., Troy | 1896 | Eichberg, L. R., New York | 1896 | McAlpin, D. H., New York | 1894 |
| Anderton, W. B., New York | 1883 | Einhorn, M., New York | 1893 | McCollum, Wm., Brooklyn | 1889 |
| Amworth, H. R., Addison | 1879 | Ellinwood, A. G., Attica | 1880 | McGann, Thos., Wells | 1896 |
| Armstrong, S. T., New Rochelle | 1885 | Elliott, E., New York | 1880 | McGauran, G. D., New York | 1895 |
| Arnold, J. N., Clyde | 1897 | Evans, S. G., Brooklyn | 1897 | McGilleuddy, T. J., New York | 1891 |
| Ashmead, A. S., New York | 1895 | Farrington, J. M., Binghamton | 1889 | McKeely, W. C., New York | 1895 |
| Ayres, D., Fort Plain | 1892 | Fenno, Henry M., Rochester | 1889 | McLeod, S. B. W., New York | 1872 |
| Bacon, C. G., Fulton | 1855 | Ferguson, E. D., Troy | 1880 | McLellan, E., Saranac Lake | 1870 |
| Baldwin, E. R., Saranac Lake | 1897 | Fischer, L., New York | 1896 | McNicholl, T. A., Sea Cliff | 1896 |
| Baker, B. N., Rhinebeck | 1894 | Fite, C. C., New York | 1895 | Macdonald, M. G., Albany | 1895 |
| Bangs, L. B., New York | 1880 | Flandrau, T. M., Rome | 1878 | Maher, J. J. E., New York | 1895 |
| Barton, L. G., Willboro | 1897 | Flint, Austin, New York | 1896 | Manley, T. H., New York | 1889 |
| Bassett, M. I., Cooperstown | 1897 | Fowler, Geo. B., Brooklyn | 1880 | Martin, J. H., Otego | 1894 |
| Bayley, G. C., Poughkeepsie | 1896 | Frederick, C. C., Buffalo | 1888 | Martine, Godfrey R., Glen Falls | 1887 |
| Beahan, A. L., Canandaigua | 1897 | French, S. H., Amsterdam | 1883 | Masen, L. D., Brooklyn | 1891 |
| Beck, Carl, New York | 1895 | Freeland, N. H., Tarrytown | 1876 | Mattison, J. B., Brooklyn | 1891 |
| Bellows, G. A., Waterloo | 1891 | Freundthal, W., New York | 1895 | Meder, G. C. H., New York | 1889 |
| Belhamy, R., New York | 1897 | Gallant, A. E., New York | 1897 | Mercer, A., Syracuse | 1878 |
| Bennett, T. W., Jeffersonville | 1885 | Gibbons, P. J., Syracuse | 1892 | Miller, A. B., Syracuse | 1892 |
| Blair, L. P., McDonough | 1892 | Gibney, Virgil P., New York | 1881 | Millbury, F. S., Brooklyn | 1896 |
| Birdsall, G. N., Brookfield | 1880 | Gihon, A. L., New York | 1895 | Murad, E. J. C., Brooklyn | 1895 |
| Bishop, H. M., S. Brooklyn | 1882 | Gilbert, H., Hornellsville | 1897 | Moore, E. M., Rochester | 1849 |
| Bishop, L. F., New York | 1895 | Gleitsmann, J. W., New York | 1879 | Moriata, D. C., Saratoga | 1897 |
| Bodkin, D. G., Brooklyn | 1876 | Glidden, C. H., Little Falls | 1889 | Morris, R. T., New York | 1889 |
| Boldt, H. J., New York | 1893 | Goelet, A. H., New York | 1891 | Moran, James, New York | 1883 |
| Bontecou, R. B., Troy | 1853 | Goodwin, H. T., Stapleton | 1896 | Murray, D. H., Syracuse | 1891 |
| Bosworth, F. H., New York | 1884 | Gotthells, W. S., New York | 1895 | Murray, S. J., Brooklyn | 1892 |
| Boy, James P., Albany | 1880 | Gouley, J. W. S., New York | 1873 | Myles, R. C., New York | 1895 |
| Brecht, T. E. L., Buffalo | 1897 | Green, Stephen S., Buffalo | 1893 | Mynter, H., Buffalo | 1892 |
| | | Greene, C. A., Castle | 1897 | Nefel, W. B., New York | 1870 |
| | | Grosvenor, J. W., Buffalo | 1896 | Newman, R., New York | 1872 |
| | | Gulick, C. R., Brooklyn | 1894 | | |

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|--|------|---|------|--|------|
| Noyes, H. D., New York | 1864 | Warner, J. W., New York | 1894 | Bogges, E. M., Washington C. H. | 1895 |
| Nichols, C. E., Troy | | Ward, Jno. J., Ellenville | 1896 | Bohl, Sr., J., Watertown | 1896 |
| Nichell, H., Buffalo | 1895 | Watson, W. S., Fishkill on Hudson | 1891 | Bonner, H., Dayton | 1892 |
| North, N. L., Brooklyn | 1885 | Webster, Wm. B., Schuylerville | 1893 | Bonner, C. A., Dayton | 1895 |
| Nixon, D. C., Bloomington | 1884 | Weeks, Jno. E., New York | 1892 | Bonfield, Chas. L., Cincinnati | 1893 |
| Noyes, W. B., New York | 1895 | Wenz, J., Lancaster | 1882 | Boyd, J. P., Akron | 1896 |
| Nutten, W. F., Newark | 1894 | West, C. B., East Onondaga | 1895 | Boylan, Joseph E., Cincinnati | 1888 |
| O'Brien, M. C., New York | 1897 | Wieber, Geo., Brooklyn | 1889 | Brant, A. C., Canton | 1892 |
| Oppenheimer, H. S., New York | 1896 | Wight, J. S., Brooklyn | 1880 | Brashear, B. B., Cleveland | 1890 |
| Orton, J. G., Binghamton | 1883 | Wiggins, H., Elbridge | | Briggs, Eldorado, Wilmington | 1888 |
| Ostrander, G. A., Brooklyn | 1892 | Wiggin, F. H., New York | 1889 | Brigham, O. S., Toledo | 1883 |
| Page, R. C. M., New York | 1881 | Wilson, Thos., Claverack | 1893 | Brooke, G. W., Ellsworth | 1883 |
| Palmer, C. N., Lockport | 1878 | Williams, W. H., Brooklyn | 1860 | Brockett, A. J., Cleveland | 1876 |
| Parkhill, C. S., Hornersville | 1895 | Withous, R. A., New York | 1893 | Brown, J. A., Germantown | 1888 |
| Parent, Jos. S., Bирchton | 1897 | Woodruff, R. A., Philmont | 1894 | Brown, H. M., Cincinnati | 1888 |
| Parsons, Jno., Kings Bridge | 1880 | Woodruff E. G., Auburn | 1893 | Brown, J. E., Columbus | 1896 |
| Park, Roswell, Buffalo | 1877 | Woodsworth, T. F., Kinderhook | 1892 | Brush, E. C., Zanesville | 1896 |
| Perry, Jno. G., New York | | Wunderlich, F. W., Brooklyn | 1880 | Bruehl, Gust., Cincinnati | 1871 |
| Perry, T. B., Buffalo | 1895 | Wyckoff, C. C., Buffalo | 1863 | Brundage, A. H., Xenia | 1883 |
| Phelps, W. C., Buffalo | 1878 | Wyckoff, R. M., Brooklyn | 1889 | Buckner, James H., Cincinnati | 1864 |
| Pomeroy, H. M., New York | 1897 | Wyeth, J. A., New York | 1891 | Buechner, W. L., Youngstown | 1882 |
| Preston, B. I., Rochester | | Yeamans, H. W., New York | 1895 | Bunn, J. W., West Union | 1895 |
| Pritchford, W. B., New York | 1896 | Young, A. A., Newark | 1895 | Bunce, Wm. C., Oberlin | 1895 |
| Purple, S. S., New York | 1895 | | | Pundy, Jr. D. B., Middletown | 1888 |
| Pultz, M. T., Stanfordsville | 1897 | | | Bunts, F. E., Cleveland | 1892 |
| Ransom, J. B., Dannemora | 1897 | | | Byall, H. M., Montpelier | 1889 |
| Richmond, C. H., Lavonia Station | 1897 | | | Caldwell, Wm., Fremont | 1883 |
| Di Rinaldo, C. I., New York | 1896 | | | Caldwell, C. E., Cincinnati | 1888 |
| Rives, W. C., New York | | | | Carnes, U. M., Canton | 1895 |
| Robb, W. H., Amsterdam | 1878 | | | Carpenter, J. W., Cincinnati | 1895 |
| Robinson, A. R., New York | 1886 | | | Carmichael, D. A., Cleveland | 1895 |
| Rochester, D., Buffalo | 1894 | | | Carmichael, W. A., Loveland | 1888 |
| Rockwell, A. P., New York | | | | Case, Freeman D., Ashtabula | 1892 |
| Roe, J. O., Rochester | 1880 | | | Clark, C. F., Columbus | 1897 |
| Rogers, H. R., Dunkirk | 1868 | | | Clark, M. S., Youngstown | 1883 |
| Rushmore, J. D., Brooklyn | 1881 | | | Cleveland, Jno. L., Cincinnati | 1889 |
| Sawyer, Conant, Auburn | 1889 | | | Clouse, G. M., Columbus | 1897 |
| Sayre, L. A., New York | 1848 | | | Collamore, G. A., Toledo | 1883 |
| Sayre, R. H., New York | 1887 | | | Coleman, N. R., Columbus | 1888 |
| Seaman, F. G., Seneca Falls | 1889 | | | Collins, Milton H., South Charleston | 1888 |
| Seaman, L. L., New York | 1896 | | | Cone, J. E., Youngstown | 1895 |
| Segur, Avery, Brooklyn | 1893 | | | Conner, P. S., Cincinnati | 1867 |
| Selden, Robt. Catskill | | | | Conklin, W. J., Dayton | 1878 |
| Sell, E. H. M., New York | 1867 | | | Conklin, S. A., Canton | 1873 |
| Seymour, W. W., Troy | 1884 | | | Cook, J. E., Cleveland | 1896 |
| Schoonevor, W., New York | 1860 | | | Cocperider, C. A., Columbus | 1897 |
| Schmidt, H. E., White Plains | 1880 | | | Cope, E. C., Barton | 1897 |
| Sharer, Jno. P., Little Falls | 1880 | | | Corsen, O. M., Middletown | 1881 |
| Shepard, C. H., Brooklyn | 1890 | | | Cotton, D. B., Portsmouth | 1895 |
| Shrady, J., New York | 1880 | | | Cotton, J. D., Marietta | 1895 |
| Skinner, S. A., Hoosac Falls | 1883 | | | Cosgrove, T. M., Auburndale | 1883 |
| Small, J. W., Yonkers | 1891 | | | Courtright, G. S., Lithopolis | 1896 |
| Smith, J. L., New York | 1880 | | | Courtright, A. P., Circleville | 1896 |
| Silver, H. M., New York | 1880 | | | Crile, Geo. W., Cleveland | 1897 |
| Spaulding, W. C., New York | 1895 | | | Culbertson, J. C., Cincinnati | 1889 |
| Spartling, W. P., Sonyea | 1896 | | | Cullen, G. I., Cincinnati | 1892 |
| Squibb, E. R., Brooklyn | 1889 | | | Culler, J. F., Lucas | 1897 |
| Squibb, E. H., Brooklyn | 1889 | | | Cushing, H. K., Cleveland | 1878 |
| Stafford, H. O., New York | 1895 | | | Dandridge, N. P., Cincinnati | 1883 |
| Stewart, D. H., New York | 1896 | | | Davidson, N. P., Hilliard | 1896 |
| Stedman, T. L., New York | 1895 | | | Davidson, J. F., North Amherst | 1897 |
| Stein, A. W., New York | 1870 | | | Davidson, J. A., Eldorado | 1892 |
| Stephens, Geo., New York | 1881 | | | Davis, G. R., Ironton | 1895 |
| Stebbins, F. L., Geneva | 1897 | | | Davis, J. L., Cincinnati | 1895 |
| Stockton, C. G., Buffalo | 1888 | | | Death, H. J., Franklin | 1894 |
| Stoner, G. W., Stapleton | 1895 | | | Dennis, W. H., Burbank | 1897 |
| Steckeloeber, P., Rochester | 1892 | | | Denman, W. C., Marion | 1897 |
| Stockwell, J. K., Oswego | 1897 | | | Dickson, J. A., Ashtabula | 1891 |
| Stowe, Wm. H., Cross River | 1897 | | | Dickes, Philip, Greenville | 1888 |
| Strong, Cyrus J., New York | 1894 | | | Dickey, T. A., Middletown | 1888 |
| Strong, O. C., Colden | 1894 | | | Dixon, W. A., Ripley | 1892 |
| Strong, T. D., Westfield | 1878 | | | Dorman, H. W., Harbor | 1892 |
| Straight, A. B., Perry | 1897 | | | Dunham, J. M., Columbus | 1895 |
| Suiter, A. Walter, Herkimer | 1893 | | | Duncan, J. A., Toledo | 1883 |
| Sullivan, D. J., Brooklyn | 1886 | | | Dunn, O. B., Ironton | 1883 |
| Summers, T. O., New York | 1895 | | | Dunham, Wm. H., Cincinnati | 1895 |
| Sutton, H. C., Rome | 1888 | | | Dutton, C. F., Cleveland | 1883 |
| Taylor, P. K., New York | 1895 | | | De Vilbiss, E., Toledo | 1888 |
| Thayer, C. C., Clifton Springs | | | | Eakins, John, Patriot | 1897 |
| Thissell, J. A., Tupper Lake | 1895 | | | Eichberg, J., Cincinnati | 1893 |
| Thomas, T. G., New York | 1880 | | | Erwin, A. J., Mansfield | 1892 |
| Townsend, M. W., Bergen | 1876 | | | Evans, G. B., Dayton | 1889 |
| Townsend, W. R., New York | | | | Evans, O., Franklin | 1888 |
| Tozier, L. L., Batavia | 1897 | | | Everhard, N. S., Wadsworth | 1874 |
| Tripp, C. H., Clinton Corners | 1878 | | | Everts, O., College Hill | 1886 |
| Truax, J. G., New York | 1889 | | | Eyman, H. C., Cleveland | 1897 |
| Tucker, C. P., New York | 1894 | | | Faber, C. A., Toledo | 1894 |
| Tuttle, J. P., New York | 1895 | | | Farnsworth, G. B., Cleveland | 1896 |
| Valentine, P. C., New York | | | | Fausett, R. C., North Jackson | 1895 |
| Vanderiver, A., Albany | 1879 | | | Feil, G. R., Cleveland | 1895 |
| Vanderveer, J. R., Monroe | 1878 | | | Ferguson, J. W., West Salem | 1888 |
| Van Ertan, E. S., Rhinebeck | | | | Fletcher, M. H., Cincinnati | 1895 |
| Walton, T. C., Brooklyn | | | | Firestone, W. W., Wooster | 1887 |
| Walker, J. E., Hornellsville | | | | Fitzpatrick, T. V., Cincinnati | 1892 |
| Wales, T. A., Elmira | 1880 | | | Focht, Wm. H., Tiffin | 1887 |
| Wall, Chas. A., Buffalo | 1896 | | | Foltz, F. H., Lima | 1896 |
| Ward, R. H., Troy | 1888 | | | Forbes, S. F., Toledo | 1874 |

NORTH CAROLINA.

OHIO.

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|--------------------------------|------|-----------------------------------|------|--------------------------------|------|
| Foster, G. F., Kingston Centre | 1896 | Kelley, Lester, Ironton | 1896 | Reed, T. J., Massillon | 1878 |
| Fowler, S. W., Delaware | 1883 | Kelley, H. R., Gallion | 1884 | Reed, C. H., Toledo | 1896 |
| Fraunfelder, J., Canton | 1883 | Keller, T. F., Tiffin | 1896 | Reed, R. H., Columbus | 1883 |
| French, J. M., Cincinnati | 1883 | Keith, Wm., Columbus | 1886 | Reinfrank, J. H., Perrysburgh | 1882 |
| Gahn, J. L., Jackson | 1896 | Kendig, E. V., Hayesville | 1884 | Rhu, Auguste, Marion | 1888 |
| Gallagher, J. V., Cleveland | 1895 | Kimmell, J. A., Findlay | 1895 | Richards, G. H. C., Cincinnati | 1897 |
| Gallagher, J. S., Cleveland | 1895 | Kinsman, D. N., Columbus | 1892 | Richardson, A. B., Columbus | 1896 |
| Gardiner, W. G., Toledo | 1897 | Kirkpatrick, O. B., Cherry Fork | 1888 | Ricketts, B. M., Cincinnati | 1888 |
| Gardner, D. S., Massillon | 1897 | Kirkley, C. A., Toledo | 1888 | Robb, H., Cleveland | 1896 |
| Gay, N., Columbus | 1884 | Knight, Wm., Cincinnati | 1888 | Rodgers, J. H., Springfield | 1883 |
| Gehrette, T. M., Deshler | 1891 | Koehler, Max, Cincinnati | 1888 | Rogers, Wm. K., Columbus | 1896 |
| Gibson, R. D., Youngstown | 1883 | Koib, M. G., Cleveland | 1896 | Root, H. A., Toledo | 1892 |
| Gibson, H. B., Tiffin | 1892 | Langdon, F. W., Cincinnati | 1892 | Rosenweser, M., Cleveland | 1892 |
| Gifford, W. R., Toledo | 1884 | Landman, Otto, Toledo | 1892 | Rosenkrantz, T. S., Batesville | 1896 |
| Gilliam, D. Tod, Columbus | 1889 | Larimore, F. C., Mt. Vernon | 1895 | Rudy, A. S., Lima | 1897 |
| Goebel, Anna M., Lima | 1896 | Lasher, J. W., Chillicothe | 1895 | Russell, G. C., Cleveland | 1897 |
| Goode, B. P., Cincinnati | 1896 | Lehman, C. W., Eaton | 1897 | Sager, Joseph, Celina | 1883 |
| Gordan, O. F., Cleveland | 1897 | Lenhart, W. C., Columbus | 1883 | Sattler, E. E., Cincinnati | 1889 |
| Gorden, P. A., Junction City | 1895 | Leonard, W. W., Akron | 1893 | Sattler, Robt., Cincinnati | 1888 |
| Gordon, T. W., Georgetown | 1875 | Leonard, B. S., West Liberty | 1884 | Sewell, S. G., New Burlington | 1896 |
| Gores, F. C., Cincinnati | 1888 | Leslie, J. M., Chillicothe | 1888 | Scott, B. B., Mt. Vernon | 1883 |
| Graefe, C., Sandusky | 1884 | Lewis, Wm. C., Rushville | 1896 | Scott, X. C., Cleveland | 1874 |
| Green, H. S., Cordington | 1896 | Lightner, S. B., Sabina | 1883 | Scott, N. S., Cleveland | 1896 |
| Greene, J. H., Troy | 1893 | Long, John W., Bryan | 1888 | Shaw, W. E., Cincinnati | 1888 |
| Greenfield, E. J., Haskins | 1897 | Loving, Starling, Columbus | 1876 | Sheldon, S. B., Five Mile | 1883 |
| Greenamyer, P. S., Orville | 1890 | Lyman, C. N., Wadsworth | 1874 | Sherman, H. G., Cleveland | 1897 |
| Grube, W. W., Toledo | 1897 | McCassy, J. H., Dayton | 1896 | Silver, D. R., Sidney | 1883 |
| Halderman, S. S., Portsmouth | 1893 | McClellan, B. R., Xenia | 1887 | Slager, J. I., Paulding | 1890 |
| Hall, Rufus B., Cincinnati | 1888 | McClung, J. C., Leipsic | 1888 | Sloum, C. E., Defiance | 1875 |
| Hall, W. W., Springfield | 1888 | McCullum, E. J., Tiffin | 1885 | Smity, Henry A., Cincinnati | 1895 |
| Haldeman, J. S., Zanesville | 1896 | McCurdy, John, Youngstown | 1883 | Snodgrass, J., Kenton | 1888 |
| Haine, W. J., West Farmington | 1895 | McDougal, Jno. G., New Lexington | 1888 | Snyder, G. J., Scio | 1886 |
| Haines, W. D., Cincinnati | 1888 | McKee, E. S., Cincinnati | 1885 | Souders, S., Dean | 1896 |
| Hamann, C. A., Cleveland | 1895 | McMurray, A. B., Marion | 1896 | Spencer, E. R., Doylestown | 1888 |
| Hamilton, J. W., Columbus | 1880 | McQuaide, T. L., Cambridge | 1895 | Spurney, A. F., Cleveland | 1895 |
| Hamilton, W. D., Columbus | 1897 | Macready, Jas., Monroe | 1888 | Stark, S., Cincinnati | 1897 |
| Hamilton, C. S., Columbus | 1881 | Maerker, A. E. H., Napoleon | 1896 | Stanton, Byron, Cincinnati | 1882 |
| Hamer, W. W., Bellefontaine | 1890 | Malsbury, G. E., Cincinnati | 1895 | Stanley, E. S., Sandusky | 1883 |
| Hart, H. A., Wooster | 1884 | Marchand, J. F., Canton | 1891 | Stamm, M., Fremont | 1883 |
| Hardy, Neal, Massillon | 1891 | Marquart, O. M., Osborn | 1892 | Stewart, T. H., Church Hill | 1876 |
| Harris, J. M., Yellow Springs | 1897 | Marshall, Geo. M., Columbus | 1895 | Stevens, M. B., Defiance | 1875 |
| Harrison, E. B., Napoleon | 1874 | Martin, J. C., Findlay | 1897 | Stewart, Robt. W., Cincinnati | 1888 |
| Harmon, Julian, Warren | 1883 | Markley, Lee, Georgetown | 1895 | Steiner, D. W., Lima | 1897 |
| Hart, Samuel, Marietta | 1888 | Means, W. J., Columbus | 1895 | Stimson, C. H., Newark | 1896 |
| Hart, B. F., Marietta | 1887 | Merriam, E. D., Conneaut | 1896 | Storey, Wm., Castalia | 1897 |
| Hartmann, G. W., Wauseon | 1896 | Millikin, B. L., Cleveland | 1892 | Straight, H. S., Cleveland | 1895 |
| Hasencamp, Oscar, Toledo | 1892 | Milliken, D., Hamilton | 1882 | Strain, A. J., London | 1886 |
| Hathaway, H., Toledo | 1883 | Millikin, M., Hamilton | 1895 | Stueber, F. G., Lima | 1897 |
| Hawn, Enos, Leetonia | 1884 | Miller, M. F., Wadsworth | 1897 | Taft, J., Cincinnati | 1886 |
| Heady, Jas. F., Glendale | 1895 | Miller, J. F., Port Jefferson | 1896 | Tauber, B., Cincinnati | 1897 |
| Hedges, J. S., Mansfield | 1891 | Miller, Wm., Thurman | 1897 | Taylor, Jas. L., Wheelersburg | 1888 |
| Hendley, F. W., Cincinnati | 1888 | Mills, J. T., Jersey | 1890 | Taylor, Wm. H., Cincinnati | 1883 |
| Henderson, D. W., Marysville | 1896 | Mitchell, Giles S., Cincinnati | 1888 | Thomas, F. W., Marion | 1887 |
| Henry, A. G., North Baltimore | 1896 | Mitchell, E. W., Cincinnati | 1888 | Thorne, S. S., Toledo | 1883 |
| Hendrixson, H., Columbus | 1897 | Miner, A. G., Niles | 1885 | Thorner, M., Cincinnati | 1888 |
| Herrick, H. J., Cleveland | 1877 | Monosmith, O. B., Lorain | 1896 | Thompson, W. R., Troy | 1888 |
| Hersh, E. G., McComb | 1896 | Moore, D. L., Columbus | 1897 | Thompson, F. E., Marengo | 1896 |
| Heydrich, L. W., Toledo | 1896 | Moore, Wm., Lisbon | 1878 | Thrasher, A. B., Cincinnati | 1888 |
| Hill, F. E., Cincinnati | 1897 | Morrow, Edward P., Canton | 1895 | Tobey, H. A., Toledo | 1896 |
| Hill, E. W., Sitka | 1897 | Moody, M. M., Chatham | 1883 | Todd, J. H., Wooster | 1883 |
| Hiner, S. B., Lima | 1873 | Mortland, J. C., Edgerton | 1874 | Tracy, J. L., Toledo | 1894 |
| Hines, J. A., Van Wert | 1888 | Morgan, J. F., Jackson | 1896 | Trimble, C. E., Crestline | 1896 |
| Hoeltze, A., Cincinnati | 1883 | Morehouse, G. W., Sparta | 1896 | Trush, J., Cincinnati | 1888 |
| Hoff, J. W., Pomeroy | 1883 | Morrow, J. C., Scio | 1897 | Vail, J. B., Lima | 1884 |
| Holston, J. G. F., Zanesville | 1888 | Moss, W. F., Maineville | 1895 | Van Note, W. B., Lima | 1897 |
| Holmes, C. R., Cincinnati | 1893 | Mosgrove, J. M., Urbana | 1887 | Van Pelt, C. L., Toledo | 1888 |
| Holmes, A. F., Lee | 1897 | Mount, J. L., Morrow | 1882 | Van Winkle, N. B., Blanchester | 1888 |
| Holt, O. P., Cincinnati | 1895 | Mullen, Thos. J., New Richmond | 1888 | Vanden, Geo., Gallipolis | 1895 |
| Hons, G. W., Clayton | 1897 | Murray, L. S., Medina | 1874 | Vincent, D., Cleveland | 1895 |
| Hoover, T. C., Columbus | 1890 | Murphy, J. A., Cincinnati | 1878 | Wagner, H. P., Delphos | 1896 |
| Hoppe, H. N., Cincinnati | 1897 | Myers, I. A., Shelby | 1896 | Waggoner, Jos., Ravenna | 1882 |
| Hough, W. S., Cuyahoga Falls | 1897 | Nash, E. K., Montrose | 1890 | Walker, A. B., Canton | 1891 |
| House, A. F., Cleveland | 1892 | Nell, A., Columbus | 1896 | Walker, R. T., Toledo | 1895 |
| Hough, C. A., Lebanon | 1888 | Norris, T. B., Alton | 1896 | Walker, Edw. W., Cincinnati | 1888 |
| Hubbard, T., Toledo | 1892 | Ogan, F. W., Jamestown | 1897 | Wanzer, C. M., Zanesfield | 1894 |
| Hudson, J. F., Canton | 1897 | Orr, G. B., Cincinnati | 1897 | Warner, Frank, Columbus | 1897 |
| Huffman, D. C., Nat. Mil. Home | 1896 | Malven, J. C., Oliver, Cincinnati | 1892 | Warner, C. J., Wooster | 1891 |
| Hughes, D. E., Delaware | 1893 | Peck, G. S., Youngstown | 1883 | Ward, W. A., Conneaut | 1896 |
| Hulin, O. W., Greenford | 1896 | Pennell, W. W., Fredericktown | 1888 | Waters, G. M., Columbus | 1897 |
| Hunt, A. H., Wooster | 1883 | Peskind, Arnold, Cleveland | 1891 | Weaver, J. M., Dayton | 1883 |
| Humiston, W. H., Cleveland | 1883 | Pettitt, R. R., Dayton | 1888 | Weber, W. C., Cleveland | 1896 |
| Hurd, A., Findlay | 1874 | Portius, Marian G., Canton | 1888 | Weeks, O. W., Marion | 1883 |
| Hyndman, J. G., Cincinnati | 1895 | Pontius, L. W., Canton | 1887 | Weitz, Jos. A., Montpelier | 1892 |
| Jacobs, W. C., Akron | 1883 | Pool, A. C., Cincinnati | 1897 | Werning, Wm. H., Cincinnati | 1888 |
| Jennings, G., West Milton | 1896 | Potter, Nathaniel, Adelphi | 1897 | Wendel, H. C., Cincinnati | 1896 |
| Jewett, H. S., Dayton | 1896 | Powell, W. S., Defiance | 1882 | Whittaker, J. T., Cincinnati | 1881 |
| Johnson, O., Worthington | 1882 | Powell, H. H., Cleveland | 1883 | Wilson, B. F., Columbus | 1895 |
| Jones, I. D., Cincinnati | 1897 | Pratt, L. C., Bellefontaine | 1896 | Wilson, A. C., Youngstown | 1895 |
| Jones, R. E., Gomer | 1882 | Probst, C. O., Columbus | 1895 | Wilson, D. C., Ironton | 1889 |
| Jones, J. D., Newburg | 1883 | Quinn, Allen T., Wilmington | 1880 | Willard, G. P., Tiffin | 1891 |
| Jones, T. W., Columbus | 1883 | Quirk, H. W., Cleveland | 1889 | Wilbur, A. M., West Unity | 1888 |
| Jones, Frank S., Medina | 1883 | Ransohoff, J., Cincinnati | 1882 | Williams, B. O., Martins Ferry | 1896 |
| Jones, Wm. A., Toledo | 1896 | Rardin, Joseph S., Portsmouth | 1895 | Williamson, A. M., Dayton | 1897 |
| Judkins, Wm., Cincinnati | 1881 | Ravogii, Aug., Cincinnati | 1892 | Winn, J. J., Norwood | 1888 |
| Junkerman, G. S., Cincinnati | 1897 | Reamy, Thad. A., Cincinnati | 1867 | Wire, G. W., Wilmington | 1888 |
| Kaesthen, S. E., Cleveland | 1896 | Reel, C. R., Middleport | 1883 | Wirt, Wm. Edgar, Cleveland | 1892 |
| Kahle, R. D., Lima | 1888 | Reid, C. A. L., Cincinnati | 1888 | Wise, S. P., Millersburg | 1897 |

Withrow, John M., Cincinnati . . . 1888
 Wood, J. T., Toledo . . . 1884
 Woodbridge, J. E., Cleveland . . . 1869
 Woodruff, L., Alton . . . 1895
 Woodward, W. R., Cincinnati . . . 1888
 Wright, S. J., Tallmadge . . . 1891
 Zinke, E. G., Cincinnati . . . 1884
 Zimmerman, H., Youngstown . . . 1895

OKLAHOMA TERRITORY.

Chandler, H. S., Woodward . . . 1896

OREGON.

Adair, B. A. O., Skipanon . . . 1897
 Beckman, O. H., Astoria . . . 1896
 Binswanger, O. S., Portland . . . 1895
 Boys, Wm., Portland . . . 1882
 Brosins, F. C., Hood River . . . 1896
 Byrd, W. H., Salem . . . 1896
 Coe, H. W., Portland . . . 1895
 Cromwell, I. N., Union . . . 1894
 Daly, B., Lakeview . . . 1895
 Dickson, J. E., Portland . . . 1896
 Dodson, O. M., Baker City . . . 1894
 Hall, C. H., Salem . . . 1895
 Holmes, H. R., Salem . . . 1880
 Jefferson, G. O., Portland . . . 1896
 Kime, J. H., Bandon . . . 1895
 Linklater, S. T., Hillsboro . . . 1895
 McCormac, J. T., Marshfield . . . 1894
 McDaniel, E. B., Cove . . . 1895
 Mackenzie, K. A., Portland . . . 1895
 Marsden, W. S., Burns . . . 1896
 Maston, G. W., Albany . . . 1892
 Maxwell, W. E., Portland . . . 1895
 Moore, A. W., Portland . . . 1895
 Pickel, Elijah B., Medford . . . 1897
 Rand, D. H., Portland . . . 1895
 Roeky, A. E., Portland . . . 1892
 Smith, C. J., Pendleton . . . 1892
 Smith, A. C., Portland . . . 1895
 Stott, Jno. S., Gervais . . . 1895
 Sutherland, J., The Dalles . . . 1896
 Tower, C. W., Marshfield . . . 1896
 Walker, M. M., Astoria . . . 1895
 Wall, Geo., Cottage Grove . . . 1897
 Whitney-Cardwell, M. H., Portland . . . 1895
 Wright, H. A., Linkville . . . 1889

PENNSYLVANIA.

Adams, W. H., Danville . . . 1891
 Adler, L. H., Philadelphia . . . 1891
 Allen, M. E., Philadelphia . . . 1892
 Allyn, H. B., Philadelphia . . . 1891
 Anders, H. S., Philadelphia . . . 1894
 Anders, J. M., Philadelphia . . . 1884
 Anderson, Jos. W., Ardmore . . . 1889
 Andersen, A. H., Philadelphia . . . 1896
 Angrey, W. M., Philadelphia . . . 1897
 Anslay, W. B., Saltburg . . . 1897
 Armitage, T. L., Lilly . . . 1897
 Armstrong, J. A., Leechburg . . . 1892
 Armstrong, R., Lock Haven . . . 1896
 Arnold, H. A., Ardmore . . . 1895
 Arnold, J. P., Philadelphia . . . 1897
 Arters, J. D., Oil City . . . 1892
 Asdale, W. J., Pittsburg . . . 1860
 Ash, H., St. Clair, Philadelphia . . . 1890
 Ashton, Wm. E., Philadelphia . . . 1892
 Ashton, T. G., Philadelphia . . . 1897
 Atkinson, W. B., Philadelphia . . . 1859
 Ayres, S., Pittsburg . . . 1884
 Baer, B. F., Philadelphia . . . 1885
 Bacon, W. F., York . . . 1891
 Bacon, John, Adalusia . . . 1896
 Baker, L. B., Erie . . . 1895
 Baker, Geo. Pales, Philadelphia . . . 1892
 Bahn, G. W., Spring Forge . . . 1895
 Balmer, A. F., Brookville . . . 1883
 Ball, F. P., Lock Haven . . . 1891
 Baldwin, Kate W., Philadelphia . . . 1897
 Banes, S. T., Philadelphia . . . 1892
 Barr, G. W., Titusville . . . 1868
 Barr, J. A., McKees Rocks . . . 1895
 Barker, T. R., Philadelphia . . . 1891
 Barton, A. S., Philadelphia . . . 1896
 Barker, W. M., West Sunbury . . . 1897
 Barkley, P., Erie . . . 1897
 Bartho, B. F., Mt. Carmel . . . 1897
 Bartleson, S. P., Clifton Heights . . . 1883
 Batten, J. M., Pittsburg . . . 1876
 Bauer, Chas., Philadelphia . . . 1895
 Baxter, H. F., Philadelphia . . . 1880
 Beal, G. Y., Radon . . . 1895
 Beaver, D. B. D., Reading . . . 1891
 Beach, W. M., Pittsburg . . . 1895
 Beatty, R. C., Pittsburg . . . 1896

Beates, Jr., H., Philadelphia . . . 1894
 Beane, W. H., Middletown . . . 1892
 Becker, J. N., Reading . . . 1897
 Bell, G. Franklin, Newberry . . . 1883
 Berens, B., Philadelphia . . . 1897
 Bernardy, E. P., Philadelphia . . . 1891
 Berlin, J. O., Bath . . . 1881
 Blaisdell, W. S., Punxsutawney . . . 1897
 Blaisdell, I. C., Wilmore . . . 1895
 Blumberg, A., Pittsburg . . . 1895
 Biddle, J. C., Fountain Springs . . . 1897
 Blreh, S. T. J., Port Carbon . . . 1883
 Bishop, W. T., Derry Station . . . 1884
 Bittinger, J. H., Hanover . . . 1881
 Bodamer, Geo. A., Philadelphia . . . 1892
 Bonwill, W. G. A., Philadelphia . . . 1895
 Borland, E. B., Pittsburg . . . 1895
 Born, R. H., Montoursville . . . 1895
 Boucek, A. J., Allegheny . . . 1897
 Bowman, J. W., Camp Hill . . . 1895
 Bower, Collier L., Philadelphia . . . 1892
 Bower, J. L., Reading . . . 1896
 Boyce, J. W., Pittsburg . . . 1897
 Brady, F., Philadelphia . . . 1896
 Brandes, Chas., Erie . . . 1880
 Brinton, J. H., Philadelphia . . . 1880
 Bronsen, A. F., Girardville . . . 1892
 Brown, Ellen E., Chester . . . 1896
 Brodbeck, J. R., Codorus . . . 1895
 Brumbaugh, A. B., Huntingdon . . . 1884
 Buck, W. P., Philadelphia . . . 1884
 Bucher, I. R., Lebanon . . . 1889
 Burns, R. B., Philadelphia . . . 1889
 Burnett, J., Scranton . . . 1889
 Burr, C. W., Philadelphia . . . 1897
 Buttermore, S., Connellsville . . . 1874
 Byer, W. F., Punxsutawney . . . 1895
 Byles, F. G., Fredonia . . . 1895
 Cadwallader, C. E., Philadelphia . . . 1897
 Caldwell, Joseph R., Greenville . . . 1887
 Campbell, C., Petersburg . . . 1896
 Carpenter, J. T., Philadelphia . . . 1895
 Carpenter, John, Pottsville . . . 1878
 Cass, J. T., West Lebanon . . . 1892
 Cassel, G. L., Lancaster . . . 1897
 Cave, J. R., Worcester . . . 1895
 Cawley, J. J., Springtown . . . 1895
 Cawley, M. F., Allerton . . . 1897
 Chappel, V. P., Newberry . . . 1895
 Chase, R. H., Philadelphia . . . 1891
 Chestnut, J. H. W., Philadelphia . . . 1889
 Christy, T. C., Pittsburg . . . 1891
 Chritzman, H. G., Welsh Run . . . 1884
 Clark, L. S., Philadelphia . . . 1880
 Clagett, L. S., Blairsville . . . 1881
 Claxton, C., Philadelphia . . . 1896
 Cline, J. C., Derry Station . . . 1891
 Cline, G. H., Jersey Shore . . . 1891
 Clover, W. M., Knox . . . 1896
 Cochran, J. C., Big Run . . . 1892
 Coffman, Jno. J., Scotland . . . 1897
 Cohen, S. Solis, Philadelphia . . . 1839
 Cellen, J. S., Shenandoah . . . 1896
 Collins, K. R., Germantown . . . 1895
 Conner, Robt. E., New Florence . . . 1897
 Conser, T. C., Sunbury . . . 1897
 Connell, A. J., Scranton . . . 1897
 Coope, A. F., Oil City . . . 1874
 Cooper, W. R., Point Pleasant . . . 1891
 Cooper, Alfred M., Point Pleasant . . . 1889
 Coover, E. H., Harrisburg . . . 1877
 Coover, F. W., Harrisburg . . . 1895
 Coplin, M. L., Philadelphia . . . 1896
 Corson, E. M., Norristown . . . 1891
 Crawford, Jno. K., Cooperstown . . . 1876
 Crane, A. F., Olyphant . . . 1896
 Craig, A. R., Columbia . . . 1870
 Craig, Alex., Columbia . . . 1870
 Croskey, J. W., Philadelphia . . . 1895
 Cross, G. D., Chester . . . 1895
 Cunningham, J. G., Kittanning . . . 1883
 Curwen, John, Warren . . . 1870
 Curtin, R. G., Philadelphia . . . 1880
 DaCosta, J. C., Philadelphia . . . 1871
 Daly, W. H., Pittsburg . . . 1887
 Deland, Judson, Philadelphia . . . 1892
 Dale, J. Y., Lemont . . . 1896
 Davis, F. P., South Oil City . . . 1883
 Davis, Thos. J., Pittsburg . . . 1888
 Davis, G. G., Philadelphia . . . 1895
 Davison, F. B., Fleetville . . . 1885
 Davidson, S. S., Mercer . . . 1896
 Deaver, H. C., Philadelphia . . . 1896
 Deaver, Jno. Blair, Philadelphia . . . 1889
 Dean, H. J., Philadelphia . . . 1896
 Dean, G. E., Scranton . . . 1893
 Derms, D. N., Erie . . . 1892
 Derris, F. N., Philadelphia . . . 1892

De Schweinitz, G. E., Philadelphia . . . 1890
 Detweiler, B. H., Williamsport . . . 1886
 Donaldson, J. B., Canonsburg . . . 1884
 Donnellan, P. S., Philadelphia . . . 1897
 Donahay, Dewitt S., Philadelphia . . . 1896
 Dorland, W. A. W., Philadelphia . . . 1893
 Dowles, A. J., Philadelphia . . . 1896
 Drake, H. H., Norristown . . . 1890
 Drake, E. L., Philadelphia . . . 1895
 Drysdale, Thos. M., Philadelphia . . . 1873
 Dudley, W. H., Easton . . . 1896
 Duer, E. L., Philadelphia . . . 1897
 Duff, John Milton, Pittsburg . . . 1892
 Duhring, L. A., Philadelphia . . . 1884
 Dulles, C. W., Philadelphia . . . 1895
 Dunn, I. J., Erie . . . 1896
 Dunn, Thos. D., West Chester . . . 1893
 Durmire, G. B., Philadelphia . . . 1884
 Dunglison, R. J., Philadelphia . . . 1873
 Dundor, A. B., Reading . . . 1873
 Eastman, T. N., Uniontown . . . 1897
 Easton, P. J., Pittsburg . . . 1896
 Eckman, P. N., Philadelphia . . . 1896
 Edsall, D. L., Philadelphia . . . 1895
 Elsenberg, P. Y., Norristown . . . 1891
 Ellenberger, J. W., Harrisburg . . . 1884
 Ely, T. C., Philadelphia . . . 1896
 English, W. T., Pittsburg . . . 1895
 Erdman, M. S., Richlandtown . . . 1891
 Erdman, W. B., Macungie . . . 1880
 Erwin, D. F. H., South Bethlehem . . . 1895
 Eshner, A. A., Philadelphia . . . 1897
 Estes, W. L., South Bethlehem . . . 1895
 Ewing, W. Brown, Wernerville . . . 1892
 Ewing, R. B., West Grove . . . 1881
 Faulds, W. H., Luzerne . . . 1892
 Fay, John, Altoona . . . 1858
 Feldstein, A., Philadelphia . . . 1896
 Feltwell, A. L., Altoona . . . 1896
 Fenton, T. H., Philadelphia . . . 1884
 Fetter, W. H., Scottsdale . . . 1898
 Findley, W. M., Altoona . . . 1869
 Fischer, Emil, Philadelphia . . . 1868
 Fisher, F., Philadelphia . . . 1895
 Flexer, L. A., Tamanend . . . 1893
 Fletcher, Wm. W., W. Carbondale . . . 1893
 Foringer, H. H., Erie . . . 1897
 Forrester, J., Erie . . . 1895
 Forbes, W. S., Philadelphia . . . 1884
 Forster, Wm., South Oil City . . . 1884
 Forwood, W. H., Chester . . . 1879
 Foster, W. R., Crafton . . . 1897
 Foster, W. S., Pittsburg . . . 1877
 Fox, L. Webster, Philadelphia . . . 1887
 Frank, Geo. S., Millheim . . . 1893
 Frankhauser, W., Reading . . . 1891
 Frankish, J. K., Philadelphia . . . 1891
 Franklin, M., Philadelphia . . . 1896
 Frazier, C. H., Philadelphia . . . 1897
 Freeman, Walter J., Philadelphia . . . 1892
 Frenz, O. H., Quakertown . . . 1897
 Free, S. M., Du Bois . . . 1884
 Freund, H. H., Philadelphia . . . 1897
 Frey, C. L., Scranton . . . 1892
 Fricke, Albert, Philadelphia . . . 1872
 Frontz, H. C., Huntingdon . . . 1895
 Fullerton, A. M., Philadelphia . . . 1893
 Funk, D. S., Harrisburg . . . 1895
 Gable, I. C., York . . . 1880
 Gaddis, L. S., Uniontown . . . 1884
 Gale, Constantine, New Brighton . . . 1892
 Garey, H., Berlin . . . 1895
 Garver, J. K., Harrisburg . . . 1897
 Gardiner, H. D., Scranton . . . 1891
 Gass, James, Sheffield . . . 1895
 Gates, L. M., Scranton . . . 1889
 Gemmill, J. M., Tyrone . . . 1884
 Gerhard, J. Z., Harrisburg . . . 1878
 Getchell, F. H., Philadelphia . . . 1897
 Getters, J. P., Belleville . . . 1895
 Gibbs, Jos. S., Philadelphia . . . 1889
 Gibbs, L. H., Hyde Park . . . 1881
 Gibson, J. H., Philadelphia . . . 1891
 Gibson, M., Wilkesbarre . . . 1892
 Gifford, U. G., Avondale . . . 1895
 Gillford, R. H., Allegheny . . . 1883
 Gilmore, J. K., Westport . . . 1897
 Gleason, E. B., Philadelphia . . . 1897
 Glover, S. P., Altoona . . . 1895
 Gordon, J. M., Bellevue . . . 1891
 Gould, G. M., Philadelphia . . . 1895
 Graham, Edwin E., Philadelphia . . . 1893
 Graham, S., Butler . . . 1878
 Grayson, Wray, Washington . . . 1892
 Grayson, C. P., Philadelphia . . . 1897
 Green, E. M., Easton . . . 1892
 Green, D. T., Easton . . . 1853
 Greenfield, Robt. N., Penn Line . . . 1897

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| Grier, M. J., Philadelphia | 1897 | Kirk, Wm. H., Pittsburg | 1895 | Mills, Chas. K., Philadelphia | 1892 |
| Grove, J. H., Philadelphia | 1867 | Kirkpatrick, A. B., Philadelphia | 1893 | Minich, A. K., Philadelphia | 1884 |
| Groff, J. W., Harleysville | 1895 | Kistler, O. F., Wilkesbarre | 1891 | Nish, Geo. F., Middletown | 1892 |
| Guiteras, Jno., Philadelphia | 1897 | Klapp, W. P., Philadelphia | 1896 | Mitchell, W. T., Allensport | 1895 |
| Gulford, W. M., Lebanon | 1888 | Klein, A., Philadelphia | 1897 | Modell, D. A., Philadelphia | 1897 |
| Guth, M. S., Warren | 1883 | Kline, W. J. K., Greensburg | 1889 | Montgomery, Jno., Chambersburg | 1880 |
| Guthrie, G. W., Wilkesbarre | 1895 | Kline, L. B., Catawissa | 1895 | Montgomery, P. B., Chambersburg | 1895 |
| Hallock, Wm. E., Pittsburg | 1892 | Klingensmith, I. P., Blairsville | 1878 | Montgomery, R. S., Pittsburg | 1897 |
| Halberstadt, A., Pottsville | 1891 | Klump, J. A., Williamsport | 1891 | Montgomery, J. H., Erie | 1895 |
| Hale, G., Philadelphia | 1896 | Knapp, C. P., Wyoming | 1889 | Montgomery, E. E., Philadelphia | 1895 |
| Hansell, H. F., Philadelphia | 1894 | Kneeder, Geo. C., Ruffsdales | 1897 | Moon, A. S., Beaver Falls | 1895 |
| Hanna, D. B., Stoneboro | 1897 | Knipe, J. O., Norristown | 1880 | Moore, C. C., Philadelphia | 1893 |
| Hamilton, H., Harrisburg | 1895 | Knitter, O., Pittsburg | 1897 | Moore, T. W., Everett | 1896 |
| Hamilton, B. F., Emlenton | 1883 | Knight, T. H., Philadelphia | 1897 | Morton, T. G., Philadelphia | 1876 |
| Hammer, Robt. B., Greensburg | 1889 | Knox, W. F., McKeesport | 1870 | Morton, Thos. S. K., Philadelphia | 1889 |
| Hamaker, W. D., Meadville | 1891 | Koch, I. M., Philadelphia | 1897 | Morrow, J. W., Tionesta | 1897 |
| Hamill, S. M., Philadelphia | 1897 | Koenig, A., Pittsburg | 1894 | Morehouse, G. R., Philadelphia | 1897 |
| Harvey, E. M., Media | 1897 | Koeller, F., Pittsburg | 1891 | Mowery, Henry A., Marietta | 1888 |
| Hartzell, M. B., Philadelphia | 1897 | Kosen, J. J., Shippensburg | 1895 | Muehleck, G. A., Philadelphia | 1897 |
| Hare, H. A., Philadelphia | 1889 | Kyle, D. B., Philadelphia | 1895 | Mullhaupt, A., St. Mary's | 1892 |
| Harnish, C. A., Alexandria | 1896 | Laine, D. T., Philadelphia | 1896 | Munford, J. R., Pittsburg | 1896 |
| Hartsell, W. H., Allentown | 1892 | Langton, D. J., Shenandoah | 1889 | Murray, J. A., Clearfield | 1895 |
| Harmon, G. H., Huntingdon | 1890 | Langfitt, W. J., Allegheny | 1886 | Musser, John H., Philadelphia | 1889 |
| Harrison, A. C., Meyersdale | 1891 | Landis, H., Reading | 1891 | Musser, J. H., Lampeter | 1880 |
| Hazlett, J. D., Vanderbilt | 1895 | Lange, J. Chris., Pittsburg | 1883 | Musser, E. Chas., Aaronsburgh | 1887 |
| Hearne, W. J., Philadelphia | 1884 | Laplace, E., Philadelphia | 1892 | Nevling, F. S., Clearfield | 1897 |
| Hengst, D. A., Pittsburg | 1883 | Larimer, W. T., Allegheny | 1896 | Nicholson, Wm. A., Franklin | 1892 |
| Henkle, A. G. B., Philadelphia | 1872 | Latta, S. W., Philadelphia | 1895 | Noble, C. P., Philadelphia | 1891 |
| Henry, F. P., Philadelphia | 1880 | Lautenbach, L. J., Philadelphia | 1891 | Nutt, G. D., Williamsport | 1884 |
| Henry, Wm. P. S., Everett | 1896 | Leidy, J., Philadelphia | 1891 | O'Brien, W. D., Pittsburg | 1890 |
| Hermany, P., Mahoney City | 1883 | Leadenham, J. W., Franklin | 1882 | Oliver, Chas. A., Philadelphia | 1890 |
| Herr, M. L., Lancaster | 1880 | Leaman, B., Leaman Place | 1872 | O'Neal, J. W. C., Gettysburg | 1875 |
| Herr, A. J., Lancaster | 1881 | Leeman, H., Philadelphia | 1872 | Osborne, R. H., Morrisville | 1897 |
| Herbert, J. F., Philadelphia | 1895 | Lee, B., Philadelphia | 1868 | Packard, F. A., Philadelphia | 1897 |
| Hersman, C. C., Pittsburg | 1896 | Leopold, I., Philadelphia | 1897 | Packard, F. R., Philadelphia | 1897 |
| Hirst, Barton C., Philadelphia | 1889 | Le Moyne, F., Pittsburg | 1879 | Packard, J. H., Philadelphia | 1878 |
| Hitzrot, H. W., McKeesport | 1887 | Lineweaver, J. K., Columbia | 1879 | Paist, H. C., Philadelphia | 1892 |
| Hoch, W. R., Philadelphia | 1891 | Linn, G. A., Monongahela City | 1874 | Palmer, C. F., Chambersburg | 1897 |
| Hoffman, J. Y., Reading | 1892 | Lincoln, M. H., Philadelphia | 1897 | Pancoast, W. H., Philadelphia | 1897 |
| Hoffman, J. H., Pittsburg | 1884 | Lippincott, J. A., Pittsburg | 1880 | Park, J. W., Harrisburg | 1884 |
| Hogue, D. A., Altoona | 1895 | Litch, W. F., Philadelphia | 1897 | Parke, W. E., Philadelphia | 1896 |
| Hogue, J. H., Altoona | 1895 | Livingston, T. M., Columbia | 1876 | Parvin, T., Philadelphia | 1867 |
| Holt, J. F., Philadelphia | 1895 | Livingston, J. B., West Middlesex | 1874 | Patterson, S., Pittsburg | 1897 |
| Holtzapfe, G. E., Seven Valleys | 1892 | Litchfield, L., Pittsburg | 1896 | Pearce, F. S., Philadelphia | 1897 |
| Holmes, E. W., Philadelphia | 1889 | Look, H. A., Pittsburg | 1897 | Pearson, J. S., Philadelphia | 1896 |
| Holland, J. W., Philadelphia | 1895 | Loder, P. E., Philadelphia | 1897 | Peck, D. J., Susquehanna | 1896 |
| Holcomb, J. T., Athens | 1897 | Logg, Charles, Wilkesbarre | 1893 | Peltz, J., Philadelphia | 1885 |
| Hopkins, W. B., Philadelphia | 1897 | Longshore, W. A., Hazelton | 1884 | Pepper, Wm., Philadelphia | 1872 |
| Horwitz, O., Philadelphia | 1892 | Longaker, D., Philadelphia | 1892 | Perkins, F. M., Philadelphia | 1887 |
| Horner, C. W., Philadelphia | 1890 | Love, L. F., Philadelphia | 1892 | Perdue, W. R., Unionville | 1897 |
| Houston, J. W., Lancaster | 1897 | Lowman, W. B., Johnstown | 1896 | Petit, Albert, Pittsburg | 1893 |
| Howard, E. C., Philadelphia | 1894 | McAllister, J. B., Harrisburg | 1895 | Pillow, R. H., Butler | 1884 |
| Howell, J., Wilkesbarre | 1891 | McAllister, Anra M., Philadelphia | 1895 | Phillips, E., Scranton | 1876 |
| Huff, S. M., Lamar | 1896 | McClanless, J. G., Pittsburg | 1896 | Pollock, W. F., Pittsburg | 1895 |
| Hughes, J. W., Latrobe | 1874 | McCauley, C. A., Petersburg | 1895 | Posey, W. C., Philadelphia | 1897 |
| Hughes, D., Philadelphia | 1891 | McClenathion, J. C., Connellsville | 1897 | Potts, B., Philadelphia | 1895 |
| Hughes, G. M., Philadelphia | 1888 | McConnell, H. S., New Brighton | 1882 | Price, Joseph, Philadelphia | 1888 |
| Hughes, C. W., Big Run | 1892 | McClelland, C., Philadelphia | 1882 | Price, M., Philadelphia | 1891 |
| Hull, A. P., Montgomery Station | 1891 | McCullin, S. M., Philadelphia | 1896 | Pursell, H., Bristol | 1889 |
| Hulshizer, A. H., Philadelphia | 1889 | McCormick, D. E., Lancaster | 1896 | Putnam, B. H., North East | 1892 |
| Hummel, C. C., Mechanicsburg | 1892 | McCormick, H. G., Williamsport | 1892 | Putt, Maurice, Oberlin | 1892 |
| Hunter, J. R., Lewistown | 1897 | McCurdy, S. L., Pittsburg | 1895 | Rahauer, G. G., Pittsburg | 1878 |
| Hunsberger, J. N., S. Kippack | 1895 | McFarland, J., Philadelphia | 1897 | Rahter, C. A., Harrisburg | 1884 |
| Huston, Jos. H., Clintondale | 1892 | McKelway, Geo. L., Philadelphia | 1892 | Raker, F. D., Shamokin | 1895 |
| Husilton, W. S., Allegheny | 1872 | McKee, F., Plymouth | 1897 | Ramsey, A., Philadelphia | 1897 |
| Hyson, J. M., Red Lion | 1896 | McKeenan, M. T., Pittsburg | 1891 | Ramsey, R. W., Chambersburg | 1880 |
| Iams, J. T., Waynesburgh | 1892 | McKelvey, N. H., Pittsburg | 1881 | Randall, B. A., Philadelphia | 1890 |
| Irwin, W. U., Julian | 1897 | McIntyre, Chas., Easton | 1891 | Rankin, D. N., Allegheny | 1878 |
| Jackson, E., Philadelphia | 1884 | McIntyre, W., Philadelphia | 1895 | Rea, S. L., Philadelphia | 1897 |
| Jackson, C. Q., Pittsburg | 1892 | McNeil, G. W., Pittsburg | 1882 | Reber, W. M., Bloomsburg | 1884 |
| James, T. A., Ashley | 1895 | Mabon, J. S., Allegheny | 1896 | Reber, W., Philadelphia | 1897 |
| James, E. H., Harrisburg | 1895 | Magoffin, M. M., Mercer | 1891 | Reese, H. S., Reading | 1884 |
| Johnston, W. E., Aetna | 1892 | Makuen, G. H., Philadelphia | 1896 | Reckfus, Jr., C. H., Philadelphia | 1897 |
| Johnson, N. L., Williamsport | 1895 | Markil, C. F., Columbia | 1895 | Rehufus, E. G., Philadelphia | 1896 |
| Johnson, W. H., Robertsdale | 1888 | Martin, W., Bristol | 1897 | Reilly, P. C., Williamsport | 1896 |
| Jones, E. C., Philadelphia | 1897 | Martin, Edward, Philadelphia | 1890 | Renn, P. H., Sunbury | 1896 |
| Jones, W. H., Harrisburg | 1897 | Marshall, G. M., Philadelphia | 1896 | Rex, T. A., Pittsburg | 1897 |
| Jones, M. O., Pittsburg | 1876 | Marchand, J. L., Irwin | 1883 | Richards, J. N., Fallsington | 1889 |
| Kane, Evan O., Kane | 1888 | Marbourg, E. L. W., Johnstown | 1886 | Richardson, Wm. L., Montrose | 1863 |
| Kane, Elizabeth D., Kane | 1895 | Marsh, F. L., Mt. Pleasant | 1881 | Riddle, W. V., Burgettstown | 1893 |
| Kauffman, Leslie M., Kauffman | 1897 | Messey, G. B., Philadelphia | 1891 | Riesman, D., Philadelphia | 1897 |
| Kay, T. W., Scranton | 1895 | Massey, Isaac, West Chester | 1883 | Rigg, J. E., Wilkesburg | 1883 |
| Keath, J. W., Schaefferstown | 1895 | Masland, H. C., Philadelphia | 1895 | Riggs, E. S., Allegheny | 1876 |
| Keely, R. N., Philadelphia | 1897 | Maurer, J. M., Shamokin | 1896 | Riggs, W. J., Allegheny | 1896 |
| Keen, W. W., Philadelphia | 1891 | Mays, T. J., Philadelphia | 1895 | Risley, S. D., Philadelphia | 1891 |
| Kelm, C. J., Catawissa | 1892 | May, J. C., Manchester | 1895 | Ritchie, J. B., Allegheny | 1897 |
| Kelly, G. M., Washington | 1896 | Mears, J. Ewing, Philadelphia | 1870 | Ritchey, J. A., Oil City | 1876 |
| Kelly, A. O. J., Philadelphia | 1897 | Mears, D. W., Ashland | 1893 | Roberts, A. S., Iala | 1896 |
| Kerlin, L. N., Elwin | 1897 | Metzger, G. W., Hughesville | 1895 | Roberts, J. B., Philadelphia | 1881 |
| Kerchner, B. L., Dalmatia | 1895 | Messe, K. D., Easton | 1895 | Robertson, P. E., Philadelphia | 1897 |
| Kerr, Jai P., Pittsburg | 1892 | Miller, Joseph S., York | 1887 | Robinson, Q., West Newton | 1888 |
| Ketchum, S. R., Philadelphia | 1897 | Miller, J. S., Philadelphia | 1897 | Roebuck, P. J., Lititz | 1895 |
| Keyser, P. D., Philadelphia | 1870 | Miller, W. N., Pittsburg | 1895 | Rogers, L. L., Kingston | 1895 |
| Kibler, C. B., Cherry | 1895 | Miller, D. P., Huntingdon | 1872 | Ross, S. M., Altoona | 1882 |
| Kilbride, M. F., Philadelphia | 1895 | Miller, E. L., Johnstown | 1896 | Ross, J. D., Williamsburg | 1854 |
| Kimble, Z. E., Liberty | 1891 | Miller, C. D., Pottsville | 1896 | Ross, Geo. G., Philadelphia | 1897 |
| Kirard, J. W., Lancaster City | 1897 | Miller, A. M., Bird-in-Hand | 1880 | Rosenthal, E., Philadelphia | 1892 |

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|---|------|---|------|--|------|
| Russ, E. J., St. Marys | 1884 | Twitmyer, J. H., Sharpsville | 1884 | Gardner, H. K., Wakefield | 1889 |
| Russell, E. A., Fleming | 1892 | Tyson, James, Philadelphia | 1876 | Hunt, S., E. Providence | 1885 |
| Russell, E. S., Pittsburg | 1896 | Ulrich, W. B., Chester | 1875 | Hunt, W. W., E. Providence | 1895 |
| Rutledge, A. T., Blairsville | 1895 | Ullom, J. T., Waynesburg | 1895 | Keene, Geo. F., Howard | 1889 |
| Rutherford, J. F., Bishop | 1897 | Unger, D. F., Mercersburg | 1880 | Kenyon, G. H., Providence | 1884 |
| Sartain, P. J., Philadelphia | 1897 | Uppergrove, S., Philadelphia | 1896 | King, S. H., Narragansett Pier | 1895 |
| Seem, A. A., Bangor | 1884 | Van Kirk, B. H., West Newton | 1895 | McCaw, W. J., Providence | 1896 |
| Seipler, S. C., Centre Square | 1895 | Vansant, E. L., Philadelphia | 1895 | Matthews, G. A., Providence | 1897 |
| Seibert, Wm. H., Steelton | 1880 | Van Dyke, A. D., Marysville | 1897 | Mathews, A., Providence | 1897 |
| Seiss, R. W., Philadelphia | 1892 | Van Gasken, F. C., Philadelphia | 1897 | Miller, H. G., Providence | 1891 |
| Seiler, C., Philadelphia | 1880 | Vastine, G. H., Catawissa | 1870 | Mitchell, J. W., Providence | 1889 |
| Semple, Jno., Pittsburg | 1880 | Veasey, C. A., Philadelphia | 1895 | Mowry, J. E., Providence | 1896 |
| Schaffer, C., Philadelphia | 1892 | Veeder, A. T., Pittsburg | 1896 | Palmer, W. H., Providence | 1889 |
| Schill, F., Johnstown | 1896 | Vincent, J. R., Pittsburg | 1890 | Parks, N. O'D., Ashton | 1895 |
| Schneideman, T. B., Philadelphia | 1895 | Wagoner, G. W., Johnstown | 1892 | Perkins, Jay, Providence | 1895 |
| Scott, S. H., Coatesville | 1897 | Wagenseller, B. F., Selinsgrove | 1897 | Putnam, H. O., Providence | 1895 |
| Scott, Frank P., Monongahela City | 1889 | Wakefield, A. A., Johnstown | 1896 | Remick, A., Providence | 1881 |
| Shaw, T. W., Pittsburg | 1881 | Wallace, W. C., Ingram | 1897 | Rogers, F. T., Providence | 1895 |
| Sharpnack, T. H., Jefferson | 1896 | Walter, H. B., Harrisburg | 1884 | Saunders, A. A., Carolina | 1895 |
| Shearer, J. Y., Sinking Spring | 1880 | Walker, J. B., Philadelphia | 1884 | Shaw, R. H. R., Thornton | 1892 |
| Sheets, J. W., Northumberland | 1895 | Walker, W. E., McKeesport | 1896 | Sherman, W. S., Newport | 1889 |
| Shaw, Chas. S., Pittsburg | 1892 | Walker, G. A., Philadelphia | 1896 | Siegrfried, C. A., Newport | 1882 |
| Shaw, Wm. C., Pittsburg | 1892 | Ward, E. T., Philadelphia | 1897 | Smith, F. B., Washington | 1897 |
| Shillitto, G. M., Allegheny | 1879 | Ward, M. R., Pittsburg | 1895 | Stimson, E. P., Tiverton | 1896 |
| Shober, J. B., Philadelphia | 1890 | Warren, J. W., Bryn Mawr | 1897 | Storer, H. R., Newport | 1878 |
| Shoemaker, G. E., Philadelphia | 1897 | Warden, W. H., Philadelphia | 1896 | Swarts, G. T., Providence | 1895 |
| Shoemaker, J. V., Philadelphia | 1878 | Watson, R. B., Lock Haven | 1892 | Traver, W. H., Providence | 1880 |
| Silliman, J. E., Erie | 1884 | Weageley, T. G., Marion | 1895 | Webb, J. A., Providence | 1895 |
| Simpson, T. P., Beaver Falls | 1884 | Weaver, W. G., Wilkesbarre | 1880 | White, W. R., Providence | 1895 |
| Slifer, H. F., North Wales | 1893 | Weaver, J. K., Norristown | 1878 | Winsor, John, Anthony | 1896 |
| Slocum, H. A., Philadelphia | 1893 | Weidman, W. M., Reading | 1876 | Wiggin, O. C., Kingston | 1896 |
| Small, J. F., York | 1891 | Weatherby, B. J., Wilkesbarre | 1897 | SOUTH CAROLINA. | |
| Small, E. H., Pittsburg | 1895 | Welch, W. M., Philadelphia | 1872 | Baily, T. B., Georgetown | 1884 |
| Smith, MaeCuen S., Philadelphia | 1895 | Welaus, G. R., Lancaster | 1884 | Barbot, L., Charleston | 1896 |
| Smith, Geo. W., Hollidaysburg | 1895 | Wenck, Mary M., Sunbury | 1896 | Beacock, J. W., Columbia | 1896 |
| Smith, J. E., Altoona | 1895 | Wentz, A. C., Hanover | 1893 | Black, W. C., Greenville | 1895 |
| Smith, J. R., Philadelphia | 1895 | Wenger, M. L., Reading | 1897 | Brodie, R. L., Charleston | 1891 |
| Smock, L. P., Philadelphia | 1896 | Werner, Marie B., Philadelphia | 1890 | Crawford, T. A., Rock Hill | 1895 |
| Snively, I. N., Philadelphia | 1876 | Werder, X. O., Pittsburg | 1890 | Croft, T. G., Aiken | 1870 |
| Snively, W., Pittsburg | 1880 | Whann, W. L., Franklin | 1883 | Culbertson, J. R., Gray Court | 1895 |
| Snively, I. N., Waynesboro | 1893 | Wharton, H. R., Philadelphia | 1897 | Dawson, J. L., Charleston | 1897 |
| Snyder, A. E., New Milford | 1897 | Whitcomb, F. W., Warren | 1897 | Dean, G. R., Spartanburg | 1895 |
| Somers, L. S., Philadelphia | 1897 | Whitcomb, H. H., Norristown | 1895 | DeSaussure, P. G., Charleston | 1890 |
| Spangler, H. A., Carlisle | 1897 | White, J. W., Philadelphia | 1897 | Dial, W. H., Laurens | 1895 |
| Spiller, W. G., Philadelphia | 1897 | Whiting, A. D., Philadelphia | 1897 | Duckett, J. P., Anderson | 1895 |
| Spencer, G. W., Sligo | 1896 | Wible, E. E., Munhall | 1892 | Earle, T. T., Greenville | 1895 |
| Stahl, B. F., Philadelphia | 1895 | Willetts, Jos. E., Pittsburg | 1897 | Epting, R. B., Greenwood | 1895 |
| Sterrett, J. P., Pittsburg | 1895 | Willetts, T. L., Harrisburg | 1896 | Evans, James, Florence | 1881 |
| Steinbach, L. W., Philadelphia | 1889 | Willits, Mary, Norristown | 1895 | Furman, D., Greenville | 1895 |
| Stemmetz, E. G., Hokendauqua | 1878 | Williams, T. R., De Lancey | 1893 | Gressette, M. S., Branchville | 1896 |
| Stellwagen, T. C., Philadelphia | 1884 | Williams, W. L., Ridgeway | 1883 | Harris, J. C., Anderson | 1895 |
| Stever, J. C., Three Springs | 1894 | Williams, Roger, Pittsburg | 1882 | Holbeck, H. B., Charleston | 1896 |
| Stevens, C. L., Athens | 1895 | Williams, W. T., Mt. Carmel | 1890 | Kendall, F. D., Columbia | 1892 |
| Stengel, A., Philadelphia | 1897 | Williamson, J. H., Pittsburg | 1896 | Kollock, C. W., Charleston | 1885 |
| Sterrett, J. K., Pittsburg | 1876 | Wilson, J. C., Philadelphia | 1884 | Lowman, W. R., Orangeburg | 1896 |
| Stewart, R. W., Pittsburg | 1895 | Wilson, J. F., Beaver | 1882 | McCoy, Thos., Laurens | 1890 |
| Stewart, W. G., Newville | 1895 | Wilson, C. G., St. Marys | 1884 | McGahan, C. F., Aiken | 1895 |
| Stewart, J. G., Piteaion | 1895 | Wilson, F. S., Jarretstown | 1885 | McKie, T. J., Woodlawn | 1895 |
| Stewart, Wm. S., Philadelphia | 1876 | Wilson, C. A., Du Bois | 1893 | Memminger, A., Charleston | 1896 |
| Stewart, D. D., Philadelphia | 1892 | Wilson, A. R., Vintondale | 1896 | Miller, J. R., Gaffney | 1896 |
| Stewart, W. S., Wilkesbarre | 1892 | Wilson, J. H., Bethlehem | 1897 | Moore, A. A., Camden | 1890 |
| Stille, Alfred, Philadelphia | 1847 | Willard, DeForest, Philadelphia | 1880 | Morrall, G. W., Milletteville | 1896 |
| Stiles, G. M., Conshohocken | 1876 | Wiley, S. N., Norristown | 1895 | Munn, J. H., Hyman | 1896 |
| Stone, W. L., Pittsburg | 1897 | Wingler, F. W., Bradford | 1896 | Napier, J. L., Blenheim | 1896 |
| Stoeber, V. H., Chester | 1895 | Wireback, I. J., St. Petersburg | 1883 | Nardin, W. H., Anderson | 1896 |
| Stout, Geo. C., Philadelphia | 1895 | Wclff, L., Philadelphia | 1887 | Orr, S. M., Anderson Court House | 1889 |
| Stout, A., Bethlehem | 1891 | Wolfe, Samuel, Philadelphia | 1890 | Parker, E. F., Charleston | 1897 |
| Stoeckel, Louise M., Wilkesbarre | 1893 | Wood, Alf C., Philadelphia | 1893 | Rosamond, J. O., Brusley Creek | 1896 |
| Strittmatter, I. P., Philadelphia | 1892 | Wood, C. E., Monongahela City | 1882 | Simons, M., Charleston | 1870 |
| Strickler, A. H., Waynesboro | 1884 | Weeds, G. B., Washington | 1895 | Simons, T. G., Charleston | 1897 |
| Strauss, U. S., Beaver | 1892 | Woods, M., Philadelphia | 1892 | Stephens, L. C., Blockville | 1892 |
| Strobel, John, Philadelphia | 1896 | Woodbury, F., Philadelphia | 1877 | Stribbling, J. S., Seneca | 1896 |
| Strawbridge, G., Philadelphia | 1876 | Worrell, J. W., Brownville | 1883 | Talley, A. N., Columbia | 1858 |
| Straight, A. M., Bradford | 1883 | Young, T. J., Titusville | 1874 | Taylor, B. W., Columbia | 1896 |
| Strickler, C. M., Lebanon | 1897 | Youngman, C. W., Williamsport | 1895 | Wilhite, J. O., Anderson | 1895 |
| Strickler, A. W., Scottsdale | 1884 | Zell, J. W., Fairmount | 1895 | Witherspoon, R. G., Holland | 1896 |
| Styler, D. W., Churchtown | 1897 | Ziegler, S. L., Philadelphia | 1893 | Wylie, Wm. DeK., Richburg | 1896 |
| Sweet, W. M., Philadelphia | 1895 | Zimmerman, M. W., Philadelphia | 1895 | Young, J. P., Richburg | 1897 |
| Sweet, W. M., Philadelphia | 1897 | Zeigler, J. L., Mt. Joy | 1891 | TENNESSEE. | |
| Taylor, A. E., Philadelphia | 1897 | RHODE ISLAND. | | Allen, J. T., Brownsville | 1895 |
| Taylor, L. H., Wilkesbarre | 1886 | Arnold, E. S. F., Newport | 1897 | Anderson, E. C., Chattanooga | 1895 |
| Taylor, W. V., McKeesport | 1896 | Baldwin, M. E., Newport | 1897 | Atchison, W. A., Nashville | 1890 |
| Taylor, W. J., Philadelphia | 1895 | Baxton, G. E., Providence | 1895 | Barbour, L. P., Tallahoma | 1896 |
| Thayer, A., Erie | 1878 | Briggs, Alex. B., Ashaway | 1889 | Black, J. H., Memphis | 1885 |
| Thorne, J. M., McKeesport | 1892 | Carley, P. F., Newport | 1896 | Bogart, W. G., Chattanooga | 1895 |
| Thornton, E. Q., Philadelphia | 1897 | Champlin, John, Westerly | 1895 | Bonner, M. H., Nashville | 1890 |
| Thomas, C. H., Philadelphia | 1891 | Cheesebro, E. D., Providence | 1895 | Boyd, John M., Knoxville | 1857 |
| Thomas, J. D., Pittsburg | 1880 | Coxe, D. B., Riverside | 1897 | Brandan, John W., Clarksville | 1896 |
| Thomas, L. C., Latrobe | 1895 | Collins, Geo. L., Providence | 1889 | Baist, John R., Nashville | 1890 |
| Thomson, A. G., Philadelphia | 1895 | Crocker, G. H., Providence | 1897 | Butler, G. D., Pulaski | 1895 |
| Thomson, Wm., Philadelphia | 1892 | Davis, F. J., Newport | 1897 | Cain, John S., Nashville | 1890 |
| Tidd, E. J., Clark | 1891 | Farrell, J. T., Providence | 1890 | Campbell, M., Knoxville | 1895 |
| Towler, S. S., Marienville | 1892 | Fitch, M., Centerville | 1880 | Carmichael, J. W., Knoxville | 1890 |
| Tracy, B. G., Troy | 1889 | French, Chas. H., Pawtucket | 1893 | Cason, J. R., Nashville | 1896 |
| Treichler, C. G., Honey Brook | 1880 | Fuller, Frank B., Pawtucket | 1889 | Cheatham, Richard, Nashville | 1887 |
| Turnbull, Jr., T., Allegheny | 1895 | Gardner, C. T., Providence | 1880 | | |
| Tweedle, J. B., Weatherly | 1883 | | | | |

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|--|------|--|------|--|------|
| Clack, J. M., Rockwood | 1895 | Witherspoon, J. A., Nashville | 1895 | Taentor, L. K., Fredericksburg | 1896 |
| Cliffe, D. B., Franklin | 1890 | Wood, T. Hilliard, Nashville | 1885 | Tate, H. L., Lindale | 1896 |
| Cobleigh, E. A., Chattanooga | 1895 | Wright, W. M., Huntington | 1890 | Taylor, M. A., Austin | 1874 |
| Cole, J. D., Newbern | 1890 | Young, A. H., Ripley | 1896 | Thorpe, H. H., Liberty Hill | 1890 |
| Cox, J. B., Huntington | 1890 | TEXAS. | | | |
| Crawford, J. Y., Nashville | 1886 | Acker, Minnie C., Houston | 1895 | Thurston, D. M., Beeville | 1895 |
| Crockett, S. S., Nashville | 1890 | Archer, W. A., Houston | 1885 | Van Gasken, J., Luling | 1895 |
| Crook, J. A., Jackson | 1885 | Ashton, L., Dallas | 1881 | Wardless, H. W., Dallas | 1896 |
| Crostwait, G. W., Florence Sta'n | 1890 | Baird, T. M., Thurber | 1895 | Walker, W. W., Schulenberg | 1895 |
| Curtis, W. E., McKenzie | 1890 | Beall, E. J., Ft. Worth | 1884 | Welff, A. S., Brownsville | 1890 |
| Deutsch, J., Memphis | 1896 | Bell, T. J., Tyler | 1892 | Wooten, T. D., Austin | 1882 |
| Dietrich, W. A., Chattanooga | 1895 | Bennett, E., San Antonio | 1896 | West, H. A., Galveston | 1892 |
| Doak, W. H., Russellville | 1890 | Berg, L. M., Laredo | 1895 | Wilson, J. T., Sherman | 1873 |
| Douglas, Richard, Nashville | 1897 | Black, H. C., Waco | 1897 | Williams, J. O., Houston | 1896 |
| Douglas, J. P., Bolivar | 1896 | Blalock, W. C., Kosse | 1897 | Zachary, Riley B., Bedford | 1897 |
| Drake, G. W., Chattanooga | 1895 | Blake, D. B., Cuero | 1895 | UTAH. | |
| Edwards, J. A., Centreville | 1897 | Bobo, C. S., Boyd | 1895 | Aird, J. W., Heber | 1896 |
| Eve, Duncan, Nashville | 1895 | Brannagel, J., San Antonio | 1892 | Allen, S. H., Provo | 1896 |
| Ewing, W. G., Nashville | 1886 | Burdy, Z. T., Milford | 1897 | Bascom, Francis S., Salt Lake City | 1889 |
| Fain, S. W., Chattanooga | 1895 | Burroughs, S. R., Buffalo | 1885 | Bauscher, A., Murray | 1897 |
| Foute, Wm. T., Lenoir City | 1885 | Cantrell, C. E., Wolfe City | 1897 | Chiff, Frederic, St. George | 1894 |
| Franklin, W. E., La Grange | 1892 | Carter, R. H., Belton | 1890 | Driver, John, Ogden | 1897 |
| Gahagan, W. L., Chattanooga | 1895 | Cerna, David, Galveston | 1895 | Ewing, A. C., Salt Lake City | 1896 |
| Gallion, E. M., Harriman | 1895 | Chilton, R. H., Dallas | 1885 | Fowler, A., Salt Lake City | 1896 |
| Gillespie, G. B., Covington | 1886 | Coble, J. M., Dallas | 1895 | Hardy, M. H., Provo | 1897 |
| Givan, G. C. G., Harriman | 1895 | Cole, W. F., Waco | 1897 | Hosmer, A. J., Salt Lake City | 1895 |
| Glenn, W. F., Nashville | 1880 | Coleman, P. C., Colorado | 1886 | Jones, P. E., Salt Lake City | 1887 |
| Grainger, R. A., Paris | 1890 | Cornick, B., Knickerbocker | 1895 | Meaham, F. A., Salt Lake City | 1894 |
| Haggard, W. D., Nashville | 1885 | Darr, H. H., Caldwell | 1883 | Niles, H. D., Salt Lake City | 1894 |
| Handley, Jas. N., Nashville | 1893 | Devine, John J., Tom Bean | 1897 | Pinkerton, S. H., Salt Lake City | 1894 |
| Hanner, Jas. P., Franklin | 1890 | Duringer, W. A., Ft. Worth | 1890 | Plummer, C. G., Salt Lake City | 1897 |
| Happel, T. J., Trenton | 1888 | Eads, B. F., Marshall | 1890 | Powers, H. J., Ogden City | 1897 |
| Hardin, R. A., Savannah | 1895 | Emanuel, M. T., Weatherford | 1895 | Silver, E. W., Salt Lake City | 1897 |
| Harrison, W. B., Columbia | 1890 | Ford, F. C., Nacogdoches | 1885 | Viko, Eindred, Park City | 1896 |
| Harris, J. E., Nashville | 1890 | Frazer, J. M., Belton | 1897 | VERMONT. | |
| Henning, B. G., Memphis | 1897 | Garnett, J. W., Greenville | 1886 | Allbee, Elmore, S., Bellows Falls | 1893 |
| Herron, J. T., Jackson | 1890 | Garwood, A., New Braunfels | 1897 | Allen, S. J., White River Junction | 1897 |
| Herman, M. B., Memphis | 1897 | Ghent, H. C., Belton | 1882 | Blake, W. C., Lyndon | 1894 |
| Holtzland, C., Chattanooga | 1890 | Gibson, John E., McKinney | 1890 | Burnett, D. L., South Royalton | 1897 |
| Hubbard, G. W., Nashville | 1890 | Gilcrees, J. E., Gainesville | 1895 | Campbell, E. R., Bellows Falls | 1880 |
| Jones, James T., Jackson | 1890 | Gillis, J. August, Buda | 1895 | Caverly, C. S., Rutland | 1892 |
| Lenoir, B. B., Lenoir | 1849 | Graves, M. L., Waco | 1897 | Chandler, C. E., Montpelier | 1892 |
| Lindsley, J. B., Nashville | 1851 | Grace, J. W., Quanah | 1897 | Crain, M. R., Rutland | 1887 |
| McCall, J. W., Huntington | 1890 | Greer, J. C., Rhea Mills | 1897 | Davenport, George, East Randolph | 1889 |
| McDonald, J. M., Jackson | 1895 | Hackler, G. M., Ennis | 1896 | Dunsmore, George, St. Albans | 1882 |
| McFall, R. J., Cumberland City | 1896 | Herff, F., San Antonio | 1885 | Garland, T. F., White River Junc. | 1894 |
| McSwain, I. A., Paris | 1890 | Hicks, F. M., San Antonio | 1897 | Gorham, George H., Bellows Falls | 1895 |
| Maddin, T. L., Nashville | 1890 | Hilgartner, H. L., Austin | 1896 | Hamilton, Jas. M., Proctor | 1897 |
| Marable, T. H., Clarksville | 1890 | Hedges, R. C., Houston | 1895 | Hamilton, J. H., Richford | 1891 |
| Martin, J. B. S., Cookeville | 1896 | Hudson, E. E., Austin | 1895 | Hanrakan, J. D., Rutland | 1896 |
| Mewborn, W. A., Macon | 1897 | Hulen, V. H., Galveston | 1897 | Hawley, D. C., Burlington | 1891 |
| Miller, W. J., Johnson City | 1890 | Hunter, J. W., Waco | 1895 | Holton, Henry D., Brattleboro | 1864 |
| Mitchell, R. W., Memphis | 1879 | Inge, J. M., Denton | 1892 | Huntington, Wm. M., Rochester | 1877 |
| Moody, G. W., Shelbyville | 1890 | Jones, W. T., Georgetown | 1885 | Hutchinson, W. R., Enosburg Falls | 1877 |
| Mourfield, J. A., Concord | 1896 | Jones, J. C., Gonzales | 1885 | Jackson, J. H., Barre | 1896 |
| Murfree, J. B., Murfreesboro | 1873 | Jordan, J. D., Madisonville | 1885 | Jares, Henry, Waterbury | 1871 |
| Neeley, Jr., J. J., Bolivar | 1890 | Kendall, O. J., Wichita Falls | 1893 | Jenne, J. N., St. Albans | 1892 |
| Nelson, D. E., Chattanooga | 1890 | Kirkpatrick, D. F., Waketon | 1892 | Kidder, F. T., Woodstock | 1897 |
| Omohundro, O. C., Nashville | 1890 | Kingsley, B. F., San Antonio | 1886 | Lawton, S. E., Brattleboro | 1896 |
| Orr, W. M., Shelbyville | 1890 | Knox, M. D., Hillsboro | 1883 | Marshall, G. G., Wallingford | 1897 |
| Pearee, D. M., Union City | 1890 | Link, E. W., Palestine | 1892 | Miller, A. L., Brattleboro | 1895 |
| Powell, T. K., Eurekaton | 1885 | Lively, W. M., Detroit | 1895 | Morgan, F. C., Felchville | 1894 |
| Price, Geo. H., Nashville | 1890 | McCarthy, John, Taylors Gin | 1897 | Nichols, G. B., Barre | 1895 |
| Ramsey, A. B., McMinnville | 1892 | McCulloch, C. C., Ft. Ringgold | 1895 | Osgood, F. L., Townshend | 1897 |
| Rathmell, J. R., Chattanooga | 1890 | McCulstion, L. P., Paris | 1893 | Pettengill, E. H., Saxton's River | 1895 |
| Rochelle, W. F., Jackson | 1890 | McGee, J. A., Rice | 1885 | Rugg, F. D., Hartland | 1885 |
| Rodgers, C. W., Como | 1896 | McLaughlin, J. W., Austin | 1884 | Sherwin, O. W., Woodstock | 1896 |
| Robinson, G. L., Lebanon | 1890 | McNew, H. L., Honey Grove | 1896 | Slayton, Wm. T., Hyde Park | 1896 |
| Runyon, F. J., Clarksville | 1890 | McReynolds, Jr., J. O., Dallas | 1896 | Staples, Hall, Grafton | 1897 |
| Sasser, J. D., Middletown | 1896 | Mathews, C. O., Terrell | 1892 | Upham, E. F., Randolph | 1884 |
| Sale, E. P., Memphis | 1879 | Montgomery, A. L., Tyler | 1896 | Woodward, J. H., Burlington | 1896 |
| Saunders, D. D., Memphis | 1884 | Montgomery, D. W., Concord | 1897 | VIRGINIA. | |
| Savage, G. C., Nashville | 1885 | Mullen, J. A., Houston | 1897 | Ayler, J. W., Virginia City | 1895 |
| Scott, W. S., Dickson | 1896 | Murphy, W. A., Burns | 1897 | Beckett, H. C., Scottsburg | 1895 |
| Seruggs, A. D., Knoxville | 1892 | Oldham, J. P., San Antonio | 1888 | Blockford, D. B., Staunton | 1895 |
| Sebastian, C. M., Martin | 1890 | Paine, J. F. Y., Galveston | 1885 | Blodridge, J. B., Clarkson | 1896 |
| Shannon, J. O., Greenfield | 1890 | Paschal, F., San Antonio | 1888 | Brown, B., Alexandria | 1891 |
| Shannon, J. E., Sharon | 1890 | Peeples, D. L., Navasota | 1896 | Cannaday, A. A., Roanoke | 1891 |
| Sheddan, W. K., Williamsport | 1890 | Perkins, A. N., Sabine Pass | 1896 | Cannaday, C. G., Roanoke | 1895 |
| Shelair, A. G., Memphis | 1885 | Rabb, E. M., Hallettsville | 1896 | Charles, J., Newport News | 1896 |
| Sleyden, C., Dickson | 1895 | Renfro, J. C. B., La Grange | 1886 | Christian, W. G., Charlottesville | 1896 |
| Smith, L. E., Chattanooga | 1895 | Sampson, A. F., Galveston | 1896 | Coles, J. E., Alberene | 1896 |
| Smith, F. T., Chattanooga | 1890 | Sampson, J. H., Houston | 1897 | Cooper, W. D., Morrisville | 1884 |
| Tate, H. W., Bolivar | 1890 | Saunders, B., Ft. Worth | 1885 | Copeland, J. E., Round Hill | 1895 |
| Taylor, W. W., Memphis | 1886 | Scates, R. T., Waco | 1895 | Crawford, Joel, Yale | 1897 |
| Taylor, J. H., Knoxville | 1897 | Scott, M. M., Brownwood | 1897 | Crane, J. E., Richmond | 1897 |
| Thornton, G. B., Memphis | 1877 | Scott, R. T., Houston | 1897 | Crockett, J. H., Graham | 1896 |
| Tiltzworth, I. M., Mossy Creek | 1896 | Sears, J. H., Waco | 1881 | Davis, J. S., Charlottesville | 1896 |
| Travis, B. F., Chattanooga | 1896 | Sheaer, T. W., Wallisville | 1895 | Drewry, W. F., Petersburg | 1891 |
| Trawlek, A. N., Nashville | 1890 | Smith, Q. C., Austin | 1885 | Edwards, Landon B., Richmond | 1879 |
| Van Deman, J. H., Chattanooga | 1893 | Smith, C. S., Tyler | 1892 | Gary, B. R., Newport News | 1897 |
| Vance, W. K., Bristol | 1896 | Smith, H. R., Detroit | 1892 | Gibson, Wm., Alexandria | 1881 |
| Warnath, H. J., Smyrna | 1887 | Spohn, Arthur E., Corpus Christi | 1897 | Gibson, J. H. P., Staunton | 1881 |
| Watkins, G. H., Hollow Rock | 1890 | Spurlock, G. L., Gainesville | 1885 | Gildersleeve, J. R., Tazewell | 1892 |
| Watson, F. W., Tiptonville | 1896 | Stinson, J. B., Sherman | 1885 | Hartman, W., Swoope | 1896 |
| Weldon, A. J., Paris Landing | 1877 | Strayhorn, J. M., Bartlett | 1896 | | |
| Winston, W. B., Memphis | 1896 | | | | |

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| Harvie, L. E., Danville | 1881 |
| Harrison, V. W., Richmond | 1896 |
| Hinton, S. A., Petersburg | 1881 |
| Hoge, Jr., M. D., Richmond | 1897 |
| Horner, F., Marshall | 1884 |
| Johnston, G. B., Richmond | 1896 |
| Keister, B. C., South Boston | 1892 |
| Kuyk, D. A., Richmond | 1897 |
| Laird, E. C., Buffalo Lithia Springs | 1895 |
| Lankford, L., Norfolk | 1896 |
| Larrick, G. W., Middletown | 1895 |
| Leigh, H. G., Petersburg | 1881 |
| Leigh, S., Norfolk | 1896 |
| Love, Wm. S., Winchester | 1881 |
| McGuire, H., Richmond | 1872 |
| Martin, R. W., Lynchburg | 1879 |
| Meeks, Wm. D., Massie's Mills | 1892 |
| Nash, H. M., Norfolk | 1879 |
| Nye, M. G., Wytheville | 1896 |
| O'Brien, M. W., Alexandria | 1891 |
| Parker, W. W., Richmond | 1891 |
| Pole, H. S., Hot Springs | 1896 |
| Pratt, W. E., Buckingham | 1896 |
| Preston, R. J., Marion | 1891 |
| Pritchett, C. W., Keeling | 1896 |
| Purvis, W. R., Alexandria | 1896 |
| Robinson, S. M., Wood Lawn | 1895 |
| Shields, Chas. M., Richmond | 1891 |
| Southall, Philip T., Amelia C. H. | 1897 |
| Stephens, A. C., Allsonia | 1896 |
| Taylor, H. M., Richmond | 1891 |
| Tipton, J. S., Roanoke | 1875 |
| Tompkins, C., Richmond | 1896 |
| Upshur, J. N., Richmond | 1897 |
| White, J. A., Richmond | 1870 |
| Williams, R. T., Richmond | 1897 |
| Wood, E. N., Buchanan | 1886 |

WASHINGTON.

| | |
|--|------|
| Anderson, W. H., Medical Lake | 1894 |
| Bean, J. W., Ellensburg | 1895 |
| Bridenstine, S. J., Port Orchard | 1883 |
| Brown, Chas. G., Spokane | 1895 |
| Brown, W., Tacoma | 1892 |
| Brooks, S. D., Port Townsend | 1895 |
| Coe, F. H., Seattle | 1895 |
| Cox, W. C., Everett | 1896 |
| Crump, J. M., South Prairie | 1897 |
| Dawson, L., Seattle | 1895 |
| Deolittle, G. T., Spokane | 1895 |
| Eagleson, J. B., Seattle | 1891 |
| Esrig, N. F., Spokane Falls | 1875 |
| Horton, G. M., Seattle | 1896 |
| Kalb, C. S., Spokane | 1897 |
| Martin, C. M., Bellevue | 1895 |
| Mason, Darius, Spokane Falls | 1876 |
| Merriam, C. K., Spokane | 1894 |
| Montborne, H. P., Spokane | 1897 |
| Musgrove, T. W., Fairhaven | 1897 |
| Newman, D. C., Spokane Falls | 1892 |
| Peck, M. R., Coleville | 1897 |
| Pietrzyckie, Dayton | 1893 |
| Richter, E. T., Spokane | 1897 |
| Russell, D. G., Spokane | 1897 |
| Semple, John M., Medical Lake | 1893 |
| Starr, J. N., Snohomish | 1895 |
| Thomas, C. P., Spokane | 1895 |
| Tozer, A. A., Leavenworth | 1897 |
| Wilson, Geo. E., Pullman | 1894 |
| Willison, H. C., Port Townsend | 1892 |
| Yount, B. H., Wilbur | 1896 |

WEST VIRGINIA.

| | |
|--|------|
| Aschman, G. A., Wheeling | 1891 |
| Baguley, H. B., Wheeling | 1883 |
| Baird, R. M., Wheeling | 1896 |
| Brownfield, J. H., Fairmount | 1884 |
| Breck, Luther S., Morgantown | 1888 |
| Cock, Jno. R., Watson | 1892 |
| Cooper, J. M., Wellsburg | 1870 |
| Cooper, O. O., Hinton | 1895 |
| Cotton, J. T., Charleston | 1892 |
| Dickey, J. L., Wheeling | 1897 |
| Fox, J. F., Bluefield | 1896 |
| Frissell, O. M., Wheeling | 1895 |
| Grimm, A. S., St. Marys | 1895 |
| Guthrie, Alex., Glen Elk | 1882 |
| Hall, R. W., Moundsville | 1883 |
| Hoffman, C. S., Keyser | 1897 |
| Heed, Thomas M., Weston | 1888 |
| Howell, F., Clarksburg | 1885 |
| Hutchins, W. S., Wheeling | 1896 |
| Joyson, S. L., Wheeling | 1884 |
| Jones, H. B., Wheeling | 1891 |
| Kover, A. S. T., Belleville | 1896 |
| Kendall, J. E., Parkersburg | 1872 |
| Leuchery, D. C., Salem | 1896 |
| Lowther, F. P., New Martinsville | 1897 |

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| McDonald, Jas. W., Benwood | 1896 |
| McMillen, R. M., Wheeling | 1896 |
| McSherry, J. U., Martinsburg | 1897 |
| Mayer, Daniel, Charleston | 1897 |
| Morgan, Porter D., Clarksburg | 1885 |
| Roush, L. F., New Haven | 1897 |
| Sharp, W. H., Parkersburg | 1889 |
| Sites, J. McKee, Upper Tract | 1897 |
| Smith, B. M., Davis | 1895 |
| Stathers, W. E., Wheeling | 1895 |
| Stout, H. B., Parkersburg | 1896 |
| Thayer, A. H., Grafton | 1892 |
| Uhlich, C. F., Wheeling | 1890 |
| Walkinshaw, J. B., Wellsburg | 1896 |
| Wilson, L. D., Wheeling | 1883 |
| Wysor, J. C., Montgomery | 1896 |

WISCONSIN.

| | |
|---|------|
| Abaty, W. C., Madison | 1893 |
| Anderson, E. M., Stoughton | 1897 |
| Armstrong, L. G., Boscobel | 1891 |
| Atwell, W. A., Stevens Point | 1893 |
| Babcock, I. G., Cumberland | 1893 |
| Bacon, J. E., Waukesha | 1893 |
| Bach, Jas. A., Milwaukee | 1893 |
| Bachhuber, L. M., Mayville | 1896 |
| Barnes, J. S., Milwaukee | 1895 |
| Barnett, J. R., Neenah | 1893 |
| Bartlett, E. W., Milwaukee | 1893 |
| Bell, S., Beloit | 1880 |
| Berry, Wm. F., Neillsville | 1896 |
| Binnie, Jno., Poynette | 1897 |
| Boorse, Lorenzo, Milwaukee | 1893 |
| Borden, W. H., Milton | 1888 |
| Braun, O., Ashland | 1897 |
| Brett, B. C., Green Bay | 1893 |
| Brodsky, F. A., Racine | 1892 |
| Brodensius, F. H., Madison | 1897 |
| Brown, Robt. W., Glenwood | 1897 |
| Buck, E. J., Platteville | 1888 |
| Buckmaster, S. B., Hudson | 1896 |
| Budge, Wm. H., Marshfield | 1893 |
| Bullard, E. L., Waukesha | 1893 |
| Burgess, Arthur J., Milwaukee | 1892 |
| Caldwell, Margaret, Waukesha | 1888 |
| Catlin, Geo. E., Lake Geneva | 1880 |
| Cavaney, J., Milwaukee | 1887 |
| Chase, R. R., Eau Claire | 1890 |
| Chandler, Ralph, Milwaukee | 1893 |
| Christenson, A., Washburn | 1896 |
| Clark, A., National Home | 1882 |
| Clason, J. A., Neosha | 1893 |
| Coates, Jno. T., Milwaukee | 1893 |
| Collins, D. B., Madison | 1895 |
| Coller, Lyman T., Hingham | 1897 |
| Collier, L. B., Merrill | 1895 |
| Comfort, A. I., National Home | 1893 |
| Corbett, M. E., Oshkosh | 1896 |
| Currens, J. R., Two Rivers | 1895 |
| Cunningham, R. B., Cadott | 1897 |
| Day, D. W., Eau Claire | 1892 |
| Day, Henry L., Eau Claire | 1887 |
| Dawley, Geo. T., New London | 1887 |
| Deahofe, S. P., Mineral Point | 1883 |
| De Chesne, L., Sawyer | 1896 |
| Dewey, Richard, Wauwatosa | 1896 |
| Dodge, G. W., Menasha | 1897 |
| Dodson, B. F., Berlin | 1889 |
| Dodson, N. M., Berlin | 1872 |
| Drexel, Arnold, Milwaukee | 1893 |
| Dudley, E. H., Janesville | 1882 |
| Durr, Wm. E., Milwaukee | 1893 |
| Earl, R. W., Milwaukee | 1884 |
| Earles, W. H., Milwaukee | 1891 |
| Eastman, W., Mineral Point | 1882 |
| Edwards, J. B., Manston | 1883 |
| Ellis, Wm. H., Barron | 1895 |
| Emmons, J. W., Sparta | 1895 |
| Epley, F. W., New Richmond | 1895 |
| Everhard, F. A., Ripon | 1890 |
| Fitzgibbon, Thos., Milwaukee | 1892 |
| Fish, E. F., Milwaukee | 1892 |
| Fisk, M. H., Wauwatosa | 1882 |
| Fletcher, E. L., Augusta | 1896 |
| Fox, P., Madison | 1877 |
| Fox, P. R., Madison | 1894 |
| Fox, Wm., Milwaukee | 1876 |
| Fortier, C. A., Florence | 1892 |
| French, S. W., Milwaukee | 1883 |
| Friend, S. H., Milwaukee | 1897 |
| Garlock, F. R., Racine | 1884 |
| Gould, Chas. M., West Superior | 1896 |
| Graettinger, A., Milwaukee | 1876 |
| Ground, W. E., West Superior | 1897 |
| Sabastian, C. M., Greenfield | 1890 |
| Gratiot, C. C., Shullsburg | 1888 |
| Gregory, L. M., Stevens Point | 1888 |
| Guernsey, A. H., Amherst | 1887 |
| Gudden, Bernard C., Oshkosh | 1887 |
| Gudex, Val A., Milwaukee | 1893 |
| Gunther, W. H., Sheboygan | 1897 |
| Hall, S. S., Ripon | 1893 |
| Hanson, F. A., Abrams | 1897 |
| Harrison, Geo. H., Ashland | 1893 |
| Hayes, D. J., Milwaukee | 1893 |
| Hayes, E. S., Eau Claire | 1897 |
| Hayman, L. H., Boscobel | 1887 |
| Hay, Thos. H., Milwaukee | 1893 |
| Hayward, John C., Marshfield | 1887 |
| Heim, A. C., Beloit | 1897 |
| Hidershede, G. N., Arcadia | 1881 |
| Hill, Warren B., Milwaukee | 1893 |
| Hipke, Wm., Hustisford | 1896 |
| Hitz, Henry B., Milwaukee | 1892 |
| Hodgson, A. J., Waukesha | 1893 |
| Hosmer, M. S., Ashland | 1896 |
| Hougen, Ole T., Grand Rapids | 1893 |
| Howard, A. Z., Dartford | 1892 |
| Howard, J. T. D., Keshena | 1894 |
| Jenkins, Geo. W., Kilbourn City | 1878 |
| Jobse, Wm., Milwaukee | 1893 |
| Johnson, Sam C., Hudson | 1882 |
| Johnson, J. V., Sheboygan | 1897 |
| Judd, W. H., Janesville | 1897 |
| Kaumheimer, G., Milwaukee | 1891 |
| Kean, N. L., La Crosse | 1884 |
| Kellogg, E. W., Milwaukee | 1893 |
| Kendall, H. B., Wrightstown | 1897 |
| Kermott, Edw. P., Richland Centre | 1893 |
| King, C. F., Hudson | 1896 |
| La Count, D., Wausau | 1873 |
| Ladd, G. D., Milwaukee | 1892 |
| Langland, Peter, Milwaukee | 1893 |
| Lemon, C. H., Milwaukee | 1893 |
| Levings, A. H., Milwaukee | 1892 |
| Loomis, E. E., Janesville | 1897 |
| Lyman, Jno. V., Eau Claire | 1896 |
| McArthur, Daniel S., LaCrosse | 1887 |
| McComb, I. N., Brillion | 1893 |
| McDill, J. R., Milwaukee | 1893 |
| McDonald, E. M., Beaver Dam | 1887 |
| McGovern, W. P., Cedarburg | 1892 |
| McGregor, S. A., Nekeosa | 1897 |
| McNitt, G. F., Racine | 1895 |
| Mackie, W., Milwaukee | 1888 |
| Maller, A. C., De Pere | 1893 |
| Molone, E. Wm. F., Milwaukee | 1893 |
| Marks, S., Milwaukee | 1893 |
| Marquardt, C. H., LaCrosse | 1897 |
| Marchessault, J. A., Ashland | 1897 |
| Meacher, Wm., Portage | 1893 |
| Mears, G. V., Fond du Lac | 1893 |
| Mead, L. W., Plymouth | 1893 |
| Mereness, D., Milwaukee | 1893 |
| Miller, D. McL., Oconomowoc | 1887 |
| Minahan, J. R., Green Bay | 1896 |
| Mishoff, I. D., Milwaukee | 1893 |
| Monroe, Jas., Markeson | 1895 |
| Moore, D. W., Waupun | 1887 |
| Mulholland, J. F., Manitowoc | 1895 |
| Neilson, W. H., Milwaukee | 1892 |
| Neyman, E. H., Milwaukee | 1893 |
| Nicoll, D. T., Kilbourn City | 1897 |
| Noer, Julius, Stoughton | 1893 |
| Nolte, L. G., Milwaukee | 1893 |
| Noyes, J. C., Oshkosh | 1893 |
| Nye, Fred T., Beloit | 1887 |
| O'Brien, J. N., Milwaukee | 1877 |
| Oviatt, Chas. W., Oshkosh | 1893 |
| Owen, W. E., Fox Lake | 1896 |
| Palmer, W. H., Janesville | 1876 |
| Palmer, Judson A., Arcadia | 1897 |
| Pelton, Levi H., Waupaca | 1893 |
| Perry, Fred J., Ft. Atkinson | 1893 |
| Pfeiffer, C. W., Sheboygan Falls | 1893 |
| Philler, H., Waukesha | 1887 |
| Phillips, J., Stevens Point | 1884 |
| Porter, G. H., Benton | 1897 |
| Potter, L. A., Superior | 1897 |
| Fuls, A. J., Milwaukee | 1892 |
| Quam, Jacob, Deerfield | 1897 |
| Reed, W. A., Necedah | 1892 |
| Reeve, J. T., Appleton | 1877 |
| Reinhard, C., Milwaukee | 1897 |
| Reineking, H., Sheboygan | 1891 |
| Reynolds, B. O., Lake Geneva | 1888 |
| Reynolds, F. R., Eau Claire | 1892 |
| Riley, C. P., Baraboo | 1892 |
| Rinehart, W. T., Ashland | 1891 |
| Robinson, N. S., Neenah | 1896 |
| Rockwell, J. W., Melrose | 1897 |
| Rogers, F. C., Milwaukee | 1893 |
| Road, G., Stevens Point | 1888 |
| Russell, T. P., Oshkosh | 1873 |
| Sauer, F. N., Racine | 1895 |
| Sayle, R. G., Milwaukee | 1897 |

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|--|---|--|
| Schneider, Joseph, Milwaukee . . . 1892 | Steele, Geo. M., Oshkosh . . . 1877 | Wilmarth, A. W., Chippewa Falls . 1897 |
| Schorse, Wm., Milwaukee . . . 1893 | Stoeling, C. W., Oconto . . . 1893 | Wingate, U. O. B., Milwaukee . . 1886 |
| Schauer, J. L., Cooperstown . . . 1896 | Straw, J. R., Ashland . . . 1895 | Witter, G. F., Grand Rapids . . . 1887 |
| Schweichler, A. J., Milwaukee . . . 1893 | Sweemer, Wm., Milwaukee . . . 1892 | Woods, E. F., Janesville . . . 1896 |
| Schoen, A. F., Mayville . . . 1893 | Syoldriske, Jos. V., Milwaukee . . 1893 | Wurdemann, H. V., Milwaukee . . 1892 |
| Schaper, Chas., Franklin . . . 1896 | Tanner, H. B., S. Kaukauna . . . 1888 | Youmans, Lamel E., Mukwonago . 1892 |
| Scollard, J. T., Milwaukee . . . 1893 | Thrane, A. D., Eau Claire . . . 1880 | |
| Sears, H. B., Beaver Dam . . . 1893 | Tibbets, N. I., Peshtigo . . . 1896 | |
| Seaman, G. E., Milwaukee . . . 1893 | Townsend, E. H., New Lisbon . . . 1887 | |
| Seiler, Geo., Alma . . . 1888 | Trowbridge, J. B., Hayward . . . 1892 | |
| Sercomb, H. F., Milwaukee . . . 1893 | Tyrell, C. F., Fox Lake . . . 1896 | |
| Sheldon, Chas. S., Madison . . . 1893 | Vincent, G. R., Tomah . . . 1887 | |
| Shlmonek, F., Milwaukee . . . 1893 | Voje, J. H., Oconomowoc . . . 1896 | |
| Slaughter, A. W., Green Bay . . . 1893 | Walsh, T. G., Milwaukee . . . 1896 | |
| Smith, S. L., Neenah . . . 1897 | Walsh, C. C., Merrill . . . 1896 | |
| Smith, C. M., Evansville . . . 1897 | Walbridge, J. S., Berlin . . . 1883 | |
| Smith, C. S., Elroy . . . 1897 | Washburn, W. H., Milwaukee . . . 1892 | |
| Snyder, A. S., Baraboo . . . 1893 | Wegge, W. F., Oshkosh . . . 1894 | |
| Southwick, F. A., Stevens Point . . 1895 | Wetzel, T. E., Iron Belt . . . 1896 | |
| Stair, N. P., Ft. Atkinson . . . 1897 | Whiting, J. B., Janesville . . . 1891 | |
| Stansbury, E., Appleton . . . 1882 | Wiggington, R. M., Waukesha . . 1882 | |

WYOMING.

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|--------------------------------------|
| Maghee, Thos. G., Rawlins . . . 1897 |
| Stuver, E., Rawlins . . . 1890 |

FOREIGN.

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| Capron, V. J., Naalehu, Kau, Hawaii, H. I. . . . 1895 |
| Hansen, C. C., Mosul, Turkey, Asia Minor . . . 1895 |
| Sundberg, Jno. C., Freunfeld, Canton Thurgau, Switzerland . . . 1897 |
| Swan, J. M., Canton, China . . . 1897 |
| Wagley, Thos. J., Paris, France . . 1896 |

ASSOCIATION NEWS.

AMERICAN MEDICAL ASSOCIATION.

Official Report of the General Sessions of the Forty-eighth Annual Meeting, held in Philadelphia, Pa., June 1, 2, 3 and 4, 1897.

JUNE 1—FIRST GENERAL SESSION.

The Association met in the Academy of Music, Broad and Locust Streets, and was called to order at 10 A.M. by the President, Dr. NICHOLAS SENN of Chicago, Ill.

On the platform were Vice-presidents Dr. GEORGE M. STERNBERG of Washington, D. C., Dr. EDMOND SOUCHON of New Orleans, La.; the Permanent Secretary, Dr. WILLIAM B. ATKINSON of Philadelphia, Pa.; the Assistant Secretary, Dr. T. B. SCHNEIDEMAN of Philadelphia, Pa., and the Treasurer, Dr. HENRY P. NEWMAN of Chicago, Ill.

Divine blessing was invoked by the Rev. L. Bradley, D.D.

President SENN then introduced the Hon. C. F. WARWICK, Mayor of Philadelphia, who delivered the following

ADDRESS OF WELCOME.

Mr. President and Members of the American Medical Association: I do not know that I have ever extended a welcome on behalf of the city in the presence of so many doctors before in my life. Philadelphia is the home of medicine, as you all know, and here Gross, Pancoast, Leidy and Agnew made for themselves reputations not only local, but national and international. It is my pleasure today to welcome and greet you.

A doctor is about the last man on earth we want to send for, but I wish to say without reservation that we are glad to have you in our midst today as a body of physicians. I have great respect for doctors. I have heard men in health condemn both God and doctor, and I know it is always these men who call for both most hurriedly when they fall sick. I have a welcome to give in another part of the city, so I am afraid to utter all the pleasure I have in greeting you, or to show you how much I think of all doctors, especially female doctors. (Laughter.) But if I could find a full opportunity to tell all I think and feel, you would see that it would be impossible for anyone to find a heartier or more sincere welcome than this I give you now. I hope your discussions and deliberations will result in great good to the human race.

The other day I addressed a class of trained nurses—graduates, and I said at that time that after a while nursing would be made such an art that it would be worth one's while to get sick occasionally in order that he might be nursed. (Laughter.)

I welcome you to this city with all the hospitality of her people and with the warmest welcome from my heart in representing them as their Mayor. (Applause.)

It was intended to have had Governor Hastings address the members of this Association, but he found it impossible to be present, and in his stead President Senn introduced the Hon. CHARLES ENORY SMITH, ex-Minister to Russia, who welcomed the Association in behalf of the State of Pennsylvania.

Mr. Smith was warmly received. He said:

Mr. President, Ladies and Gentlemen: I regret very much that the Governor of the State is unable to be present on this most interesting occasion; but I am sure you will excuse him when you understand the cause which detained him. He is holding a very important clinic at Harrisburg. He has a patient on his hands—I will not say sick, but considerably diseased. (Laughter.) Unlike your cases, it is his duty not to save but to kill the patient. He can only do this by the most drastic treatment, and so he is detained at Harrisburg in the

artistic work of amputating gangrene legislation. (Applause.) He is using the scalpel with great industry and considerable skill, and I am sure we shall all wish him greater power to his elbow in the operation.

In his absence I am not merely a substitute, but a substitute drafted at the last moment, and I can only say in a very few words what he would if he were here, namely, that the State of Pennsylvania, as well as the city of Philadelphia, cordially and heartily welcomes you within her borders. The banners which I see before me, bearing the names of the States, tell me that this is a National Convention. You have delegates here from every State and I suppose from almost every Territory in the United States. You are the distinguished representatives of that profession which comes closest to the hearts and the homes of the people, and the great State of Pennsylvania welcomes you for what you have done in the work in which you are engaged. I congratulate you that you have approached the semi-centennial of the American Medical Association. I am sure that your meeting here will mark an epoch in the history of medicine. I congratulate you on the auspices under which you assemble, and again, in the name of the Governor, I bid you a hearty welcome to the State of Pennsylvania. (Loud applause.)

Dr. H. A. HARE of Philadelphia, Chairman of the Committee of Arrangements, reported the following

RECEPTIONS AND ENTERTAINMENTS.

TUESDAY, JUNE 1.

Luncheon, 1 p. m.

Philadelphia County Medical Society, Hotel Walton, Broad and Locust Streets.

Philadelphia Polyclinic, Lombard Street, between 18th and 19th Streets.

Laryngological, Rhinological and Otological Section, Howard Hospital, Broad and Catharine Streets.

Section Dinners, 7 p. m.

Practice of Medicine, Hotel Aldine, 1914 Chestnut Street.

Surgery and Anatomy, Hotel Bellevue, Broad and Walnut Sts.

Obstetrics and Diseases of Women, Hotel Walton.

Ophthalmology, Hotel Walton.

Laryngology and Otology, Hotel Stenton.

Materia Medica and Pharmacy, Willow Grove Park.

Diseases of Children, The Bourse.

Neurology and Medical Jurisprudence, Aldine.

Dermatology and Syphilography, Hotel Walton.

State Medicine, Aldine.

Dental and Oral Surgery, Aldine.

WEDNESDAY, JUNE 2.

Luncheon, 1 p. m.

J. B. Lippincott Company, Union League, Broad near Walnut Street.

University of Pennsylvania, Houston Hall, 34th and Spruce Streets.

Jefferson Medical College, Academy of Fine Arts, Broad and Cherry Streets.

University of Pennsylvania, Union League.

Medico-Chirurgical College, 1723 Cherry Street.

Woman's Medical College of Pennsylvania, 21st Street and N. College Ave.

Dr. J. V. Shoemaker, 1519 Walnut Street.

THURSDAY, JUNE 3.

Luncheon, 1 p. m.

Dr. W. W. Keen, to Section on Surgery and Anatomy, Hotel Walton.

Philadelphia Obstetrical Society and Gynecological Section
College of Physicians to Section on Obstetrics and Diseases of
Women, Hotel Stenton.

Philadelphia Neurological Society to the Section on Neurology
and Medical Jurisprudence, University Club, 1316 Walnut
Street.

Dr. J. H. Musser, to Section on Practice of Medicine, Hous-
ton Hall, 34th and Spruce Streets.

Dr. L. Webster Fox, to Section on Ophthalmology, Hotel
Bellevue, Broad and Walnut Streets.

Provost C. C. Harrison, a tea from 6 to 7 p.m., on the Cam-
pus of the University.

Theater Party, 8 p.m.

Lea Brothers & Company to the Association, South Broad
Street Theater.

FRIDAY, JUNE 4.

Luncheon, 1 p.m.

Philadelphia Medical Club, Hotel Aldine, 1914 Chestnut
Street.

Medico-Chirurgical College, 18th and Cherry Streets.

The following clubs extend the courtesy of open doors to the
members of the Association:

Art Club, Broad Street below Walnut.

Columbia Club, Broad and Oxford Streets.

Manufacturers' Club.

Athletic Club of the Schuylkill Navy.

At this juncture, the First Vice-President, Dr. George M.
Sternberg, took the Chair, and President SENN then delivered
his Annual Address. He selected for his subject "The Ameri-
can Medical Association, Its Past, Present and Future." (See
THE JOURNAL, June 5, 1897, page 1049.)

At the conclusion of the Address, Dr. E. D. FERGUSON, of
Troy, N. Y., moved that the thanks of the Association be
extended to Dr. Senn for his admirable and instructive
address, and that the recommendations contained therein be
referred to a committee of three, to be appointed by the Chair,
to report thereon. Seconded by Dr. Humiston.

It was moved as an amendment that the recommendations
in the President's Address be referred to the Business Com-
mittee. Seconded.

Dr. Ferguson accepted the amendment.

The motion as amended was carried.

Dr. Hare presented Dr. Senn with the insignia of his office
as a token of the high esteem in which he was held, not only
by the profession of Philadelphia, but by the profession of the
United States of America.

Dr. Senn accepted the badge with a few words of acknowl-
edgement.

On motion of Dr. I. N. Quimby of New Jersey, several vis-
itors were made members by invitation.

Dr. Albert L. Gihon, U. S. Navy, then read the report of
the Rush Monument Fund. (To be published later.)

The following is the Report of the Treasurer of the Rush
Monument Committee:

SYKESVILLE, MD., JUNE 1, 1897.

To the Rush Monument Committee:

I have the honor to submit the following report of the con-
dition of the Rush Monument Fund:

On hand May 1, 1896 and reported to the Ameri-
can Medical Association at the Atlanta Meeting. \$3,787.64

Received from May 1, 1896 to June 1, 1897, in-
clusive of subscriptions, interest on deposits and
investments 324.80

Total on hand June 1, 1897 4,112.44

Collections to Oct. 31, 1896, have been reported in THE
JOURNAL of the American Medical Association. Collections
since the above date are as follows:

| | |
|----------------------------|-----|
| T. W. Kay | \$5 |
| Isaac Louis | 2 |
| J. M. Patton | 1 |
| R. W. Odell | 5 |
| Edward J. Brown | 1 |
| John Fay | 1 |
| W. M. Findley | 1 |
| J. H. Hogue | 1 |
| H. H. Brotherlin | 1 |
| W. S. Ross | 1 |
| A. S. Stayer | 1 |
| J. L. Isenberg | 1 |
| E. M. Ike | 1 |
| E. S. Miller | 1 |
| J. E. Smith | 1 |
| G. W. Smith | 1 |
| B. B. Levengood | 1 |
| W. L. Lowrie | 1 |
| B. J. Fulkerson | 1 |
| R. T. Eldon | 1 |
| F. M. Christy | 1 |
| John D. Ross | 1 |

| | |
|---|--------|
| R. W. Rumsey | \$1 |
| J. H. Weegley | 1 |
| J. J. Coffman | 1 |
| J. H. Dun | 1 |
| P. T. Myer | 1 |
| R. B. Vindin | 1 |
| P. B. Montgomery | 1 |
| W. O. Lantz | 1 |
| David MacLay | 1 |
| H. C. Devilbiss | 1 |
| H. C. Chritzman | 1 |
| J. C. Gilliland | 1 |
| J. Montgomery | 1 |
| A. H. Strickler | 1 |
| C. T. Palmer | 1 |
| F. H. Wallas | 1 |
| H. M. Willson | 1 |
| I. J. Moyer | 1 |
| M. R. Ward | 1 |
| J. M. Thorne | 1 |
| E. B. Borland | 1 |
| J. E. Davidson | 1 |
| J. P. Shaw | 1 |
| O. L. Miller | 1 |
| Jos. H. Hoffman | 1 |
| J. C. Willson | 1 |
| Chas. Emmerling | 1 |
| D. N. Rankin | 1 |
| J. A. Vankirk | 1 |
| G. M. Kelly | 1 |
| G. G. Turley | 1 |
| A. V. Chessrown | 1 |
| Thomas Turnbull, Jr. | 1 |
| Lawrence Litchfield | 1 |
| R. H. Gilliford | 1 |
| J. H. Sterrett | 1 |
| H. W. Hitzrot | 1 |
| J. E. Willetts | 1 |
| M. S. McKennan | 1 |
| W. F. Knox | 1 |
| G. B. Sweeney | 1 |
| M. C. Cameron | 1 |
| W. S. Husclon | 10 |
| Beaver County Medical Society | 15 |
| J. C. Cable | 2 |
| Jos. Forrester | 1 |
| H. S. McClymonds | 1 |
| D. J. Peck | 1 |
| C. W. Caterson | 1 |
| C. N. Vanuessa | 1 |
| W. A. Richardson | 1 |
| S. Birdsall | 1 |
| B. H. Detwiler | 1 |
| V. P. Chappel | 1 |
| R. H. Born | 1 |
| Charles B. Bastian | 1 |
| Interest | 120.80 |

Very respectfully your obedient servant,

GEORGE H. ROHE,

Secretary and Treasurer Rush Monument Fund.

THE FIRST VICE-PRESIDENT—What disposition will you make
of these reports? They must be disposed of in some way. □

Dr. J. A. CUTTER of New York—I move that the Association
place annually in the hands of the Treasurer of this Commit-
tee \$1,000, to be contributed toward the Rush Monument.
Let me say, Mr. President, that if the homeopaths should
erect a monument costing \$1,000,000 it would not be as good a
monument as that of Dr. Benjamin Rusk. Nevertheless we
must build this monument, and I believe this Association can
stand \$1,000 yearly until the amount is raised. Seconded.

Dr. J. A. GRAHAM of Colorado—I move to amend the gen-
tleman's motion, that this Association proceed at once to raise
\$100,000 for the Rush Monument Fund, and in doing so I will
pledge for the State of Colorado one-fiftieth of that amount,
namely, \$2,000.

Seconded by Dr. Love.

Dr. WM. H. HUMISTON of Ohio—I agree with Dr. Graham
in reference to raising these funds. If the motion of the gen-
tleman from New York were to pass it would take us years to
raise the amount necessary and we would get very tired of it.
As President of the Ohio State Medical Society, I will pledge
myself to raise \$2,000 promptly.

Dr. I. N. LOVE of St. Louis—I want to say, Mr. President,
it is not creditable to this Association for us to go on year after
year and not do the work we started out to do. The sugges-
tion that \$1,000 be appropriated each year by the Association
is not a practical one. It drags the thing along in a very unde-
sirable way. I am in favor of the amendment of Dr. Graham
of Colorado, and on behalf of the Missouri delegation and the
State I will pledge myself to raise \$2,000.

Dr. E. D. FERGUSON of Troy, N. Y.—I am thoroughly in
sympathy with the remarks of the last speaker, and the amount
should be raised now, if possible. Each State may not be able
to pledge itself to the extent of \$2,000, but as individuals we
can pledge definite amounts. I will start the subscription
from New York State with \$100 for myself.

Here a motion was made that not less than \$2,000 be accepted
from each State, but it was not seconded.

Dr. CUTTER withdrew his motion.

Dr. H. D. DIDAMA pledged himself for \$100.

Dr. A. C. CORR of Carlinville, Ill., ex-President of the Illinois State Medical Society, said the profession of his State would pledge itself for \$2,000.

Dr. JAMES T. JELKS of Hot Springs, Ark., contributed \$100.

Dr. E. J. RUSS of Pennsylvania pledged himself for \$100; while Dr. WEIDMAN pledged \$2,000 for Pennsylvania.

Dr. JAMES H. HERRICK of Cleveland, Ohio, subscribed \$100, and expressed the hope that the audience would not disperse until the entire amount was raised.

Dr. WM. L. BAUM of Chicago pledged \$100 for the Chicago Post-Graduate Medical School.

A member from the State of Alabama said that Alabama would do its duty toward contributing its share to the Rush Monument Fund.

Here Dr. LOVE suggested that the States be called in alphabetical order.

The Secretary then called the States in the following order: Alabama. Contribution promised.

Arkansas. Dr. JAMES T. JELKS—After consultation with the Arkansas delegates, we want to say we will give all we can. Every member of the profession of our State will be appealed to for a contribution. I think we will be able to raise \$2,000; I am going to try to do it.

Arizona. No response.

California. A delegate from this State said that California would do its share.

Colorado pledged \$2,000.

Connecticut. Dr. LINDSLEY—Connecticut is in hearty sympathy with this matter. Not having been instructed to contribute to this fund I do not feel authorized to pledge \$2,000 at present. The members of our State will make earnest efforts to raise an adequate sum toward the accomplishment of this object. We can only pledge ourselves to that extent at present.

District of Columbia could not guarantee \$2,000, but \$250.

Delaware. A delegate from this State said that the matter would be brought before the State Society at the next meeting to see what it would give.

Florida. A gentleman responding for this State said he did not feel authorized to guarantee \$2,000, but the members of the profession would do the best they could.

Georgia. Dr. F. W. McRAE—There are only a few members from my State present, and I do not feel that we can pledge \$2,000. Personally, I will pledge the sum of \$100. I will also go before the medical societies of Atlanta and make an appeal for contributions to this fund. Georgia always does her duty.

Illinois. Already heard from.

Indiana. It was said that a special committee had been appointed by the State Medical Society to solicit subscriptions for the Rush Monument, but that said committee had not as yet made its report.

Iowa. A member from this State said that the profession had not been canvassed on the subject. The Iowa members did not come authorized to make a pledge, but Iowa would give as much in proportion to her population as the great States of New York, Pennsylvania or Illinois.

Idaho. No response.

Kansas. Dr. DAVIS—I am not able to make a pledge for Kansas. Kansas will do her part in contributing to this fund. Personally I pledge \$100.

Kentucky. Dr. MATHEWS—Like the other gentlemen, I do not feel authorized to make a contribution; but as President of the Kentucky State Medical Society, I shall have a special committee appointed to raise as much as it can. Kentucky is not usually behind.

Louisiana. Dr. SORCHON—Louisiana will do her duty in this matter.

Maine. Dr. GARCELON—I am not prepared to give any pledge for the State of Maine. I can only say that if my life be spared, I can reasonably pledge for my State a sum equivalent to our proportional part, as compared with New York and Pennsylvania in point of population. Further than that, I can not pledge myself.

Maryland. A delegate from this State said that at the next meeting of the Medico-chirurgical Faculty of Maryland steps would be taken to appoint a committee to solicit contributions for this fund.

Massachusetts. Dr. HENRY O. MARCY—Massachusetts State Medical Society has appointed a special committee for this purpose that will report at the next meeting, which occurs in a few days.

Michigan. Dr. DONALD MACLEAN—I have no authority to speak for Michigan further than to say this, that so far as I know, Michigan has never been found wanting in the matter of liberality or appreciation toward the interests of the profession,

and I think I can safely promise you that Michigan will do her full share. Personally, I will pledge you that a special effort will be made to arouse interest in this matter in Michigan.

Minnesota. The Minnesota delegation talked the matter over, and like others did not feel like pledging themselves to contribute a definite amount.

Missouri. Already pledged.

Mississippi. No response.

Montana. No response.

North Carolina. Not authorized to give any amount.

North Dakota. No response.

Ohio. Already pledged.

Oregon. No response.

Pennsylvania. Pledges \$1,000.

Rhode Island. A delegate from this State said that the members of the profession would contribute their share *per capita* to the fund.

Nebraska. A member from this State said that Nebraska always did its duty, but she did not feel warranted in guaranteeing as much as the great State of Pennsylvania or of New York.

New Jersey. A delegate stated that its Society would consider the matter of subscribing to the Rush Monument Fund, and he extended to Dr. Gihon an invitation to be present at the next meeting to solicit subscriptions. New Jersey would not be found wanting.

Tennessee. Dr. HAPPEL—Tennessee is notorious for shoddering its part of work. It can not undertake to do more than its proportion, according to its population and the wealth of the people. I promise that when we go home we will organize ourselves and go to work earnestly to canvass the profession of the State and endeavor to secure more than our proportion of this burden. I am unwilling at this time to give a specified amount.

Texas. A representative from this State said that the profession would organize and endeavor to do its duty.

Vermont. Dr. HOLTON—Vermont is a small State, but the Green Mountain boys will be found to the front.

Virginia. Dr. JOHNSTON—We are not prepared to pledge any specified amount, and I merely wish to say that the proper amount from our State will be forthcoming.

Washington. A member from this State said he had no doubt the profession would contribute its share.

West Virginia. The members of this State pledged themselves to do all they could in subscribing their share to the monument fund.

Wisconsin. A member stated that the profession of this State would do all they possibly could toward contributing to this fund.

South Carolina. Dr. KOLLOCK—South Carolina has generally taken a part in all scrimages which have excited this country and does not wish to be left out. I am not prepared to say that my State will give \$2,000, but I think I can safely promise you that we will give just as much as we can afford to give, and more than that I can not say.

Dr. Cutter having withdrawn his original motion, the motion of Dr. Graham was then put by the First Vice-President and unanimously carried.

On motion, the Editor of the JOURNAL of the Association was requested to keep a standing appeal in the JOURNAL until the amount of money was raised.

Dr. I. N. Love moved that the Secretary be instructed to communicate with the presidents of the various medical societies and request them to appoint special committees with a view to coöperating with the Rush Monument Committee to the fullest extent in the raising of this money.

Seconded and carried.

Dr. Gihon said that he was delighted at the prospect of so much money being forthcoming, and he promised the Association that he would live to see the fulfilment of this work.

Dr. Henry P. Newman of Chicago read his report as Treasurer, as follows:

REPORT OF THE TREASURER, DR. HENRY P. NEWMAN, FOR 1897.

In presenting this my third annual report to the Association, I desire to call your attention to some encouragements in our work. The fact of prime importance to us as an organization is the steady growth manifested and the increase in our receipts from year to year. Notwithstanding the hard times of the past three years, our increase in membership has been constant and substantial during this time.

The growth of the Association can be estimated somewhat from the following figures: In 1894 our receipts from members amounted to \$12,695.58; in 1895, \$16,665 and in 1896, \$26,075.

There is also a large decrease in our delinquent list, namely,

from nearly 2,500 in 1894 to less than 1,000 the present year. While our expenditures are necessarily large, our balance continues on the right side of the ledger, it being, prior to this meeting, May 1, 1897, \$6,931.29, and with the \$3,000 invested by the Board of Trustees as a sinking fund added, \$9,931.29, a larger balance than any previous year.

H. P. NEWMAN, A.M., M.D., Treasurer, in account with the American Medical Association.

RECEIPTS.

| 1896 | | | |
|----------|---|-------------|--|
| Jan. 1. | To cash, balance on hand | \$ 9,075.94 | |
| Feb. 1. | To cash, for check returned and protest fee | 8.04 | |
| May 7. | To cash, registration fees—Atlanta meeting | 2,945.00 | |
| " 7. | To cash, by-laws sold at annual meeting | 1.20 | |
| " 31. | To cash, refunded by Dr. J. E. Woodbridge, Trustee for over-payment of traveling expenses | 10.00 | |
| Dec. 31. | To cash, exchange | 1.16 | |
| " 31. | To cash, Journal A. M. A.—advertising, subscriptions, reprints, press work and sales | 21,011.14 | |
| " 31. | To cash, dues paid by members to date | 23,130.00 | |
| | | \$56,182.48 | |

DISBURSEMENTS.

| | | |
|-------------------------------------|---|-------------|
| Jan. 4. | By cash, Dr. Jerome Cochran—expenses to New York and Washington on Dept. of Public Health, as Secretary | 95.00 |
| " 27. | By cash, check returned and protest fee | 8.04 |
| " 27. | By cash, American Type Founders Co.—Type for Journal | 385.36 |
| Feb. 17. | By cash, Stamped envelopes for Secretary | 5.90 |
| April 27. | By cash, Secretary's expenses—travel, postage, telegrams and expressage | 52.71 |
| May 7. | By cash, expenses of Atlanta meeting | 400.50 |
| " 7. | By cash, exchange paid at Atlanta meeting | 3.00 |
| " 7. | By cash, expenses of Executive Com.—Atlanta | 5.44 |
| " 7. | By cash, Dr. A. Garcelon, Trustee—expenses of attendance at Trustees' meeting, Chicago, and annual meeting, Atlanta | 119.50 |
| " 7. | By cash, Dr. I. N. Love, Trustee—expenses of attendance at Trustees' meeting, Chicago, and annual meeting, Atlanta | 86.00 |
| " 7. | By cash, Dr. D. W. Graham, Trustee, expenses of attendance at annual meeting, Atlanta | 36.00 |
| " 7. | By cash, Dr. J. T. Priestley, Trustee, expenses of attendance at Trustees' meeting, Chicago, and annual meeting, Atlanta | 83.10 |
| " 7. | By cash, Dr. Jos. Eastman, Trustee, expenses of attendance at Trustees' meeting, Chicago, and annual meeting, Atlanta | 45.00 |
| " 7. | By cash, Dr. E. E. Montgomery, Trustee, expenses of attendance at Trustees' meeting, Chicago, and annual meeting, Atlanta | 94.65 |
| " 7. | By cash, Dr. J. E. Woodbridge, Trustee, expenses of attendance at Trustees' meeting, Chicago, and annual meeting, Atlanta | 42.50 |
| " 7. | By cash, Dr. W. B. Atkinson, Secretary, salary for 1896 | 300.00 |
| " 7. | By cash, Dr. Jno. B. Hamilton, Editor, expenses of attendance at annual meeting, Atlanta | 35.50 |
| " 7. | By cash, Dr. H. P. Newman, Treasurer, expenses of attendance at annual meeting, Atlanta | 46.00 |
| " 15. | By cash, rent of Treasurer's office, May 1, 1895, to May 1, 1896 | 300.00 |
| " 16. | By cash, M. R. Ward, report of Section (Laryngology and Otology) | 50.00 |
| " 16. | By cash, Dr. E. S. Pettyjohn, expenses of Secretary and Chairman of Section | 16.00 |
| " 16. | By cash, Dr. Elmer Lee, expenses of Secretary and Chairman of Section | 25.00 |
| " 18. | By cash, H. B. Mills, report of Section (Surgery and Anatomy) | 90.00 |
| " 18. | By cash, I. J. Williams, report of Section (Neurology) | 80.00 |
| " 22. | By cash, H. E. Reik, report of Section (Ophthalmology) | 100.00 |
| " 23. | By cash, G. E. Malsbury, report of Section (Diseases of Children) | 70.00 |
| " 23. | By cash, R. C. Shultz, report of Section (Practice of Medicine) | 80.00 |
| " 29. | By cash, Dr. E. F. Ingals, Trustee, expenses of attendance at annual meeting, Atlanta | 54.40 |
| " 29. | By cash, Dr. E. F. Ingals, expenses of Business Com. | 25.00 |
| June 10. | By cash, Am. Type Founders Co., type for Journal | 504.62 |
| " 10. | By cash, Sargent & Lundy, motor for Journal | 351.00 |
| " 19. | By cash, Dr. J. A. Work, expenses of Secretary of Section | 2.30 |
| July 18. | By cash, Wm. C. Massey, report of Section (State Medicine) | 69.00 |
| " 30. | By cash, Dexter Folder Co., folder for Journal | 1,275.00 |
| Oct. 16. | By cash, Wm. Whitford, Report of Section (Obstetrics and Diseases of Women) | 80.00 |
| " 29. | By cash, loan of building fund | 3,000.00 |
| " 30. | By cash, typewriting machine and stand for Sec'y | 103.25 |
| Dec. 31. | By cash, postage for one year | 230.00 |
| " 31. | By cash, exchange on collections | 11.66 |
| " 31. | By cash, sundries for Treasurer's office | 21.35 |
| " 31. | By cash, Treasurer's clerk hire, Nov. 12, 1895, to Nov. 12, 1896 | 450.00 |
| " 31. | By cash, dues refunded, duplicate payment at Atlanta | 70.00 |
| " 31. | By cash, requisition paid on Journal expense account | 20,800.00 |
| " 31. | By cash, total Journal expense account | \$41,811.14 |
| Less cash on requisitions | | 23,800.00 |
| | | 21,011.14 |
| By cash, balance on hand | | 5,465.56 |
| Total | | \$56,182.48 |

Respectfully submitted, H. P. NEWMAN, Treasurer.

On motion, the report was accepted and referred to the Committee on General Business.

Under the head of "Proposed Amendments," the following were taken up:

Offered by I. N. LOVE:

ARTICLE IV.—Officers. Amend to read, "Each officer shall hold his appointment for one year, and until another is elected to succeed him."

Dr. Ferguson moved that this amendment be indefinitely postponed. Seconded.

Dr. I. N. LOVE—Mr. President; I rise to a question of personal privilege. At the Baltimore meeting of this Association, I introduced the amendment to the Constitution that has just been read. It did not properly appear in the minutes for the next meeting, and therefore was not read. I did not again introduce it, and it appears on the program this year through an error of the Secretary. Therefore the amendment is not before the house. (Applause).

The Secretary then read the following amendment offered by the Executive Committee:

That there be made an Executive Council of five consisting of the three officers of the Executive Committee and two officers chosen by election. Of this Council of five, one must belong to the Section on Practice of Medicine, and one to the Section on Surgery and Anatomy. To this Executive Council shall be delegated all the duties of the Executive Committee during the interval between the meetings.

Dr. L. D. BULKLEY—I am instructed by the Executive Committee to say that there is an error in the wording of the amendment as read by the Secretary, and I will read the amendment as proposed.

Resolved, That there be made an Executive Council of five, consisting of the three officers of the Executive Committee and two other members of the Committee to be elected annually. Of this Council one must belong to the Section of Practice of Medicine, and one to the Section of Surgery and Anatomy. To this Executive Council there shall be delegated all the duties of the Executive Committee during the interval between the annual sessions of the Association.

Dr. Bulkley moved the adoption of the amendment. Seconded.

Dr. JOHN B. HAMILTON asked how many meetings a year the Executive Committee would be likely to hold, as the matter of expense in attending these meetings was one of importance.

Dr. BULKLEY replied that it was not expected any meetings would be held prior to or between the meetings of the Association. The Council had never had occasion to meet at intervals between meetings, most of the work being done by correspondence.

The motion to adopt was then put and carried.

The Secretary read the following amendment, which was offered by H. B. Ellis:

ARTICLE IX.—Conditions for further representation. "Any State or local medical society, or other organized institution whose rules, regulations and Code of Ethics agree in principle with those of this Association may be entitled to representation on the advice or agreement of the Judicial Council."

On motion of Dr. James F. Hibberd, of Indiana, this amendment was indefinitely postponed.

The Secretary read the following amendment offered by L. D. Bulkley:

To change the name of the Section on Dermatology and Syphilography to that of "Cutaneous Medicine and Surgery."

On motion, the amendment was adopted.

On motion, the Association adjourned until Wednesday 10 A.M.

JUNE 2—SECOND GENERAL SESSION.

The Association met at 10 A.M., and was called to order by the President.

The Secretary began to read the minutes, when on motion of Dr. Hare, further reading of them was postponed till later in the session.

COMMITTEE ON NOMINATIONS.

The Secretary announced the Committee on Nominations as follows:

Alabama, J. C. Le Grand; Arkansas, J. H. Southall; California, H. B. Ellis; Colorado, J. W. Graham; Connecticut, R. Robinson; District of Columbia, H. L. E. Johnson; Delaware, R. G. Ellegood; Florida, T. S. Anderson; Georgia, F. W. McRae; Illinois, Norval H. Pierce; Indiana, J. V. Woollen; Iowa, J. M. Emmert; Kansas, F. M. Dailey; Kentucky, J. B. Marvin; Louisiana, Edmond Souchon; Maine, C. W. Foster; Maryland, C. M. Ellis; Massachusetts, A. H. Tuttle; Michigan, O. O. Walker; Mississippi, W. S. Greene; Minnesota, John Fulton; Missouri, C. Lester Hall; Montana, T. J. Murray; New Mexico, W. R. Nathran (?); New Hampshire, G. P. Conn; New Jersey, Alex. Marcy, Jr.; New York, J. E. Janvrin; North Carolina, H. B. Weaver; Ohio, C. A. L. Reed; Pennsylvania, E. E. Montgomery; Rhode Island, J. T. Farrel; Tennessee, W. K. Shedd; Texas, J. W. Coble; Vermont, E. R. Campbell; Virginia, J. R. Gildersleeve; Washington, T. L. Catterson; West Virginia, R. W. Hall; Wisconsin, H. V.

Würdemann: U. S. Army, W. N. Norwood; U. S. Navy, W. K. Scofield; U. S. Marine Hospital Service, G. W. Stoner.

It was announced that the Committee would meet at 4 P. M., at the Hotel Walton.

Dr. AUSTIN FLINT then delivered the Address in Medicine. His subject was "Stercorin and Cholesteremia." (See page 1097.)

On motion of Dr. Holton of Vermont, the thanks of the Association were tendered to Dr. Flint for his able, interesting and instructive address.

Vice President SOUCHON now took the Chair.

Dr. L. D. BULKLEY of New York, reported on behalf of the Executive Committee as follows:

The Executive Committee beg leave to report to the Association as follows: Full meetings have been held on Monday and Tuesday afternoons, and many matters of importance have been discussed.

In order that the Committee may keep fully informed and better able to perform its work, it was

Resolved, That the permanent Secretary of the Association furnish to the Executive Committee a completed copy of the Constitution and By-laws of the Association, and send in writing to the Secretary of the Committee a copy of each amendment as soon as passed by this Association; also a written copy of all rules and regulations immediately on adoption.

In order to better fulfil one of the objects for which it was created, the Executive Committee has undertaken to secure a daily report, through the different members of the attendance at each of the sessions of each Section, and would report that about nine hundred and fifty person were counted in the nine sections from which report was obtained on Monday. The Committee have taken further action relating to the better work of the Sections.

The Committee is not ready as yet to report upon the President's Address, or on the report of the Treasurer.

After very full and long discussion, the Committee unanimously recommend the following preamble and resolution for adoption by the Association:

WHEREAS, It is important for the welfare of the Association that the dues for membership be paid as promptly as possible, and

WHEREAS, Conducting to this end it is desirable that a uniform method of registration be adopted, year after year, with which members may become familiar, and thus facilitate the payment of dues; therefore be it

Resolved, That the Treasurer of the Association be constituted, *ex officio*, the Committee on Registration, and that in such capacity he shall proceed to the place of meeting at least three days before the time of meeting to establish the Registration Bureau, and that the sum of \$100 be annually appropriated as his compensation for this extra service.

Dr. Bulkley moved the adoption of the resolution.

Dr. W. H. DALY, Pittsburg—I desire to second the resolution and hope it will pass. This resolution must not be considered a reflection upon the magnificent work of the Committee of Arrangements here. The resolution simply states that the object is to establish uniformity and facility and place this work in the hands of the proper officer year after year.

Carried.

The Secretary read communications from cities inviting the Association to hold its next meeting at Tampa, Fla.; Denver, Colo.; Milwaukee, Wis.; Columbus, Ohio; and Chicago, Ill.

Dr. JOHN B. HAMILTON of Chicago moved that the various invitations be referred to the Committee on Nominations. Seconded.

Dr. JOSEPH T. COULBOURN, Birmingham, Ala.—Mr. President: The place of meeting is one of the most important things that this Association has to deal with, because we want to hold our meeting in a place where we can have the largest membership and the largest attendance; and, Mr. President, I want to make a motion that the selection of the place of meeting be left at some future date for the Judicial Council or Nominating Committee to decide. My reasons for doing this are, that we want a larger attendance from the Southern and Western States. Many of us who come from away down South and the distant West have had to go deep down into our pockets in order to attend this meeting. The railroads ought to give us half rates. It is an outrage. Many of us have come to this meeting and have had to pay full fare, and it is on this account that many physicians who are not present would otherwise have been here to accept and partake of the hospitalities and courtesies extended by the profession and citizens of this beautiful city, which has thrown open its doors and its finest institutions. Many physicians have not been able to take advantage of this meeting on account of railroad rates. Mr. President, we demand rates. We should insist that the railroads treat us with the consideration due our numbers and importance. (Applause.) We want an opportunity to examine and study all the magnificent institutions that cities like Philadelphia offer us to visit. It may not be in order, but my motion is that the place of meeting be left to the Judicial Council, so

that we can "dicker" with the railroads and compel them to give us half rates. Seconded.

Dr. SHEDDAN, Tennessee—I move that the last motion be laid on table. Seconded.

The President put the motion to table, but it was lost.

Dr. REXBURN, Washington D. C.—This motion is out of order, for the reason that the place of meeting should be referred to the Nominating Committee.

Dr. I. N. LOVE, St. Louis—The matter of deciding the place of meeting has always been left to the Nominating Committee, and I am sure this Committee will properly attend to the matter.

Dr. E. D. FERGUSON—I am fully in sympathy with the mover of the resolution and with the object sought to be accomplished, but I rise to ask of the Secretary whether this matter must not be left to the Nominating Committee, to report on the morning of the fourth day.

Dr. I. N. QUIMBY—The object of the mover of the resolution is one of great importance. The railroads do not grant to the American Medical Association the same privileges they do political bodies, synods, Christian Endeavor Unions, etc. Now, Mr. President, let it be understood by this audience that there is no body of men who spend so much time for the benefit of railroads as the medical profession. (Applause.) Let it be distinctly understood that there is no class of men who more quickly appeal to the medical profession for assistance than railroad men when they have a lawsuit on hand. (Applause.) It should be thoroughly understood that it is the sense of this Association that the railroads be respectfully requested to give us half rates, the same as they do political bodies and trade organizations, whom they have hitherto respected more than the medical profession.

Dr. I. N. LOVE—I would offer, as a substitute, that the matter of deciding the place of meeting be left to the Nominating Committee, and each State representative on the Committee be requested to confer with the railroad companies of his respective State, with a view to giving us the same consideration and generosity as are given to other conventions of the United States, such as Christian Endeavor societies, Grand Army men, etc. Seconded.

THE SECRETARY—I wish to say that since last December I have been begging of the railroads for half rates to this city for our members. I have had a voluminous correspondence with what is called the Trunk Line Association, which has had this matter in charge, and they positively refuse to give us a better rate than a fare and a third, although it is known that they give Christian Endeavor societies, baseball men, and other organizations half rates. I also asked the railroad officials to extend the railroad certificates to at least three days after adjournment, and the reply was that they could not do better than they had done. I assure the Association that I have done my best toward securing rates for the members.

At this juncture President Senn rapped for order and announced that President McKinley had arrived.

A moment or two later President McKinley came in arm in arm with Dr. Senn, who had returned to the rear of the stage to perform the office of escort, immediately after quieting down the Association. Dr. Hare preceded Dr. Senn and President McKinley; Mayor Warwick and Governor Hastings and Dr. Pepper and the others of the party attending President McKinley, came after. The Association rose and cheered heartily for a minute or two. Quiet being restored, Dr. Senn presented President McKinley, who addressed the Association as follows:

REMARKS BY PRESIDENT MCKINLEY.

Mr. President, Ladies and Gentlemen: Although summoned to this city for another purpose, I deem myself most fortunate to find this honorable Association in its semi-centennial meeting on the same day, and I can not refrain from taking a moment from the busy program mapped out for me by Dr. Pepper, whose assurance I had before coming here that it should be a day of rest. I can not refrain from pausing a moment that I might come into this brilliant presence to meet the learned gentlemen here assembled, and to pay my respectful homage to the noble profession which you so worthily represent. You have my best wishes, and I am sure the best wishes of our countrymen, for the highest results of your profession, and my warm and hearty congratulations upon this, your fiftieth anniversary. (Loud applause.)

The applause having subsided there were loud cries for Hastings! Hastings!

Governor HASTINGS advanced to the footlights and was very warmly received.

REMARKS BY GOVERNOR HASTINGS.

Mr. President, Ladies and Gentlemen: It was with great

regret that I was compelled to be absent from your initial meeting yesterday morning. I am here twenty-four hours late, but I give you just as warm and as cordial a welcome as if I had met you upon the borders of our city to welcome you here and to our commonwealth. Philadelphia and the State of Pennsylvania are greatly honored with the presence of this distinguished Association, and although our people here are very much occupied in matters tending to the development and upbuilding of the city and State and United States, yet there is always room for such a splendid American organization as this. (Applause.) Two weeks ago there was unveiled in this city the grandest monument that was ever erected to perpetuate the memory of Washington; and only a few days ago another statue was unveiled to perpetuate the memory of Philadelphia's, of Pennsylvania's greatest philanthropist, Stephen Girard, and today the chief executive of this nation comes here, first of all to pay his respects to this great national organization, and secondly to attend the inaugural of the Philadelphia Commercial Museum, which, in my judgment, is the initial movement in an enterprise that will grow until it shall not only be a Pan-American institution, but one which shall take in all the commercial nations of the earth. President McKinley is here today to give his official seal of approval. It is not a new thought to him, because these ideas of reciprocity and mutual trade relations with the nations of the western hemisphere were agitated by him, by Harrison and by Blaine, and are grafted into our fundamental law. (Applause.)

Of course, I am only a layman. Looking into the faces of distinguished representatives of medicine from all over this country it puzzles me, and I can only stand on the side-board and look at the procession of medicine as it goes by. (Laughter.) I will give you some impression of what the common, everyday people of the country think of you, who are subject to the ills which you cure. There is a code of honor in the medical profession in this country that is worthy of the highest emulation. (Applause.) The lawyer's contention is in the forum where he has an antagonist worthy of his steel, and it is before courts of justice, educated and trained, that he pleads for the rights of people and of corporations. The work of the Christian teacher is done in the full glare of the sunlight of the people; while with the physician it is different. He is judge, jury and opposing counsel—and, sometimes, executioner. (Laughter.) From his court there is no appeal in this world. Sickness and the fear of death make cowards of us all in the sick room, and the physician is the autocrat whose voice, direction, instruction and prescriptions are taken generally with the simplicity and the confidence that a babe takes its food from its mother. In that forum, in those sacred precincts the American medical profession have determined that there is no room for the quack or the mountebank. (Loud applause.)

We have all seen the ideal physician, whose presence in the sick room is as welcome as the morning sunshine; his voice is a benediction, his touch an inspiration and his presence an emblem of security. To him children turn, and the marks of pain are changed into the expression of love and confidence. The aged reveal to him the secrets of their lives and their hopes of the life hereafter; mothers forget their vigils of the night in loving anticipation for the restoration of their revered or dear ones, or perhaps in the contemplation of the inevitable that the pathway to the tomb shall be strewn with roses in the confidence of a Redeemer's love. (Applause.)

There are a great many doctors in this country. A gentleman told me a short time ago that there was one doctor for about every four hundred and fifty of our population.

You have county, city, State and National societies that are the means of wielding great power: they are a constant factor in every community, just as constant as the postoffice, the grocery store, the tavern or the sepulcher. (Laughter.)

The development of medicine from a layman's point of view has been greater than that of any other science during the last one hundred years. There was left a hiatus for a long period of time, when medicine appeared to be nothing but an empiric art. It is very, very different now. I was speaking to you a moment ago about the erection of statues or monuments to our great philanthropists, great soldiers, etc., and allow me to say that I think it is absolutely wrong and decidedly un-American that we do not erect monuments and statues to the great masters of medical science in this country. (Loud and prolonged applause.) Then, too, I have been puzzled at the number of new diseases you have discovered. I read in a history of the fourteenth century by Ilorner something about diseases of the skin, in which he said there were three diseases of the skin. One was a disease which could be cured by the use of sulphur, a second disease of the skin could be cured by the use of mercury, and the other was a disease of the skin which the devil himself could not cure. (Laughter and applause.)

I am beginning to think there is a better feeling existing among the different schools of medicine in this country than there used to be. I think there is great room for it. (Laughter.) I read that in ancient times one of the great physicians—I think his name is Galen—went to another physician and notified him that he had cured numbers of people by a method of his own discovery, and that he wanted to burn the books that were written by Hippocrates: that a new science of medicine had been discovered. The great physician (Galen) had a conversation with him, and after he had consulted with Hippocrates a few moments he ordered his servants to throw him out of the window, and history tells us that he broke his neck in the fall. That kind of peaceful and pleasant consultation has been going on in the medical profession ever since. (Laughter.) Nevertheless, if I had my way, I would build monuments to the great medical teachers, to the discoverer of anesthesia, to the discoverer of the science of bacteriology, to the men who first told us about antitoxin, the spectroscope, the stethoscope and other valuable inventions. What new discoveries medicine may make; what advancement may come to the American Medical Association under your leadership; what a proud position American medicine may take among the nations of the earth as one generation passeth away and another generation cometh! The true physician follows the true teacher of medicine. He who was the first healer of humanity, the lowly Nazarene, in whose footsteps every true physician will follow. (Loud and prolonged applause.)

At the conclusion of Governor Hastings' remarks, the debate on railroad rates was resumed.

Dr. C. A. L. REED, Cincinnati, Ohio—In pursuance of the regular order, which I believe is the motion of Dr. Love, I beg the indulgence of the Chair for a moment. That motion is one of extreme importance to this Association. The question of transportation is a serious one, and one for which this organization has labored and suffered. The transportation companies of this country have discriminated against this Association. It is absolutely impossible for us by any organized effort to bring the railroads to task this year, for the reason that the time is too short, and it will necessitate considerable communication to carry it out, and the only thing that is left is to select the place of meeting, and then make arrangements with the railroads for rates afterward.

After further discussion the place of meeting was referred to the Nominating Committee for its decision.

Under the head of miscellaneous business, Dr. H. C. Wood of Philadelphia, offered the following resolution, presenting it with a brief speech:

WHEREAS, Senate Bill 1063 (formerly Senate Bill 1552) has been reported favorably to the United States Senate; and

WHEREAS, We believe that its passage would seriously interfere with the progress of practical medicine and therefore be a public calamity; therefore, be it

Resolved, That the American Medical Association, with a full knowledge of the contents of Senate Bill 1063, most earnestly protest against its enactment.

Dr. HOLTON moved the adoption of the resolution, which was seconded by Dr. QUIMBY and unanimously carried.

On motion of Dr. GIBON, the Secretary was instructed to forward a resolution of thanks to both President McKinley and Governor Hastings for attending the meeting and addressing the Association.

Seconded and unanimously carried.

On motion, the Association adjourned until Thursday at 10 o'clock.

JUNE 3—THIRD GENERAL SESSION.

The Association was called to order at 10 A.M. by President SENN.

The Secretary read the minutes of the previous session, which were approved.

Announcements were made by the Chairman of the Committee of Arrangements, Dr. HARE, relative to entertainments and receptions.

President SENN called for the report of the Board of Trustees, which was read by Dr. E. E. MONTGOMERY, as follows:

REPORT OF BOARD OF TRUSTEES.

The Trustees would present the following report for the year ending Dec. 31, 1896:

RECEIPTS.

| | |
|------------------------------|-------------|
| On hand January 1. | \$ 1,009.04 |
| Advertisements. | 14,502.02 |
| Subscriptions. | 3,398.97 |
| Reprints. | 1,251.58 |
| Press work. | 927.98 |
| Rebate on insurance. | 80.25 |
| Sales. | 197.96 |
| Bank collections. | 1,337.85 |
| From Treasurer. | 20,800.00 |
| | \$43,505.66 |

EXPENSES.

| | | |
|--|-------------|------------|
| Pay roll | \$14,387.03 | |
| Paper | 6,394.01 | |
| Office salaries | 7,185.98 | |
| Editorial staff | 3,555.06 | |
| Rent | 1,500.00 | |
| Postage | 2,923.15 | |
| Membership transfers | 290.00 | |
| Miscellaneous | 1,051.19 | |
| Electrotypes | 425.71 | |
| Commissions | 920.87 | |
| Reporting | 619.59 | |
| Binding | 308.34 | |
| Ink | 308.50 | |
| Moving | 377.00 | |
| Express | 227.82 | |
| Press clippings | 120.00 | |
| Repairs to machinery | 187.64 | |
| Electric power | 261.80 | |
| Carpenter | 72.10 | |
| Office fixtures | 63.75 | |
| Telephone | 87.50 | |
| Freight on folder | 22.75 | |
| Stationery | 19.70 | |
| Press work | 56.55 | |
| Bindery supplies | 16.98 | |
| Journal Index | 150.00 | |
| Type | 89.09 | |
| Insurance | 85.00 | |
| Taxes | 105.49 | |
| Gas fixtures | 63.10 | |
| Agent's traveling expenses | 35.85 | |
| | \$41,811.14 | |
| Balance on hand December 31 | | \$1,691.52 |
| Balance in Treasury (See Treasurer's report) | | 3,465.66 |
| Total | | \$7,160.18 |

It will be seen that the balance on hand is some \$3,000 less than in the report of last year. It should be remembered, however, that this is about equal to the amount which has been invested in the building fund, as was authorized by the Association at its last meeting.

In our last report it was estimated that the policy of the Association would reduce the amount of money received from advertisements some \$3,000. The actual experience has been nearer \$4,000, as advertisers who have withdrawn from the Association make a total for advertising of \$3,815.40. The reason assigned for withdrawal of an advertisement has been that the continued publication of a formula gives every druggist an opportunity to enter into competition with the manufacturer of such specialties. It has been suggested that one publication of the formula should be considered as complying with the requirement, but upon consideration the Board has decided it could not so interpret the decision of the Association without its express permission, and the Board would now ask an expression from the Association as to its willingness to make any change in the manner and standard of advertising.

While there has been a severe cutting off in the advertisements, the Board is able to report a marked increase in the circulation. In our last report the issue of the JOURNAL was 6,548. The issue for Dec. 26, 1896, was 9,000, making a difference of nearly 2,500. The weekly average for 1896 was 7,742, while the regular issue in 1894 was 4,876, showing the JOURNAL has nearly doubled its circulation in less than three years.

The vote authorized by the Association to determine the choice of its members as to a permanent home for the JOURNAL was largely in favor of Chicago, although the report does not demonstrate that anything like a majority of its members cast a ballot.

In obedience to the action of the Association, \$3,000 has been invested in a first mortgage on real estate in the city of Indianapolis, at less than half its value. As neither the Association nor the Board of Trustees was a chartered or legal corporation, this investment had to be made in the name of one of the Board, as trustee for the Association.

The Treasurer's report will show that owing to a bank failure a large amount of the funds of the Association were placed in peril. A portion of this has been paid and from the present indications the entire amount will be repaid, although at present the funds are locked up and unavailable. This failure and the beginning of investments have impressed the Board with the importance of securing a legal position, not only for its protection, but for the protection of the Association and its funds, as under the want of legal organization no one has any authority to proceed against a defaulter or protect the interests of the organization. For this reason, the Board at its last meeting authorized that a charter should be secured for the Board of Trustees, which would give it the right to sue and be sued for the interest of the organization, and this has been done.

The increase in the circulation of the JOURNAL is largely due to the untiring efforts of the Editor, as medical organizations all over the country have had brought to their notice the Association JOURNAL, and the methods by which they could become subscribers to the JOURNAL and members of the Association.

The Board feels confident that the Association will agree with it that the JOURNAL is increasing in value as well as in importance and gives promise of being an exceedingly important factor in developing the best interests of the profession of this country.

In conclusion, the Board would express its appreciation of the untiring efforts of the Editor and of the JOURNAL employees.

Respectfully submitted,
A. GARCELON,
D. W. GRAHAM,
CHARLES A. L. REED,
G. C. SAVAGE.

On motion of Dr. W. T. BISHOP of Harrisburg, Pa., the report was accepted and the action of the Board in securing incorporation concurred in.

Dr. FREDERICK HORNER, Chairman of the Committee on Mutual Aid Section for Physicians, presented the following report:

REPORT OF MEDICAL AID SECTION.

In 1876 it was suggested by the success of the Medical Aid Societies of Boston, Louisville, New York and Philadelphia, and that of the British Medical Association founded in 1836, to raise funds for the relief of disabled physicians and their families, to try a like experiment in this Association; the late Prof. S. W. Gross and the father of this Association, Prof. Nathan S. Davis, gave their cordial approval to such a plan to be carried out with the cooperation of the State Medical Societies and that of the District of Columbia.

In such behalf the Chairman of your Committee of a Medical Aid Association published from time to time in the columns of the *Medical and Surgical Reporter* and the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION a series of articles, viz.: "A Plea of an American Medical Brotherhood for a Medical Aid Association."

"A Medical Aid Fund."

"A Proposed American Medical Benevolent Fund."

"A Section of Benevolence Urged at the Association Meeting in Baltimore."

"An Appeal to the Fellows of the American Medical Association in behalf of the Disabled Physicians, and Widows and Orphans of Physicians Members of the Association, presented at the Meeting in Atlanta, Ga."

With no exception, such a plan has been endorsed by thirteen of the Presidents of this Association, and one of these distinguished physicians, Dr. Hooper, at Minneapolis, made the subject well nigh the theme of his address on that occasion. During the past year your reporter in correspondence with all the secretaries or presidents of our forty-eight State Medical Societies and the District of Columbia, received encouragement to be present at this semi-centennial gathering, where the first Medical University was founded under the inspiration of Benjamin Rush. Can you, my medical brethren, marvel that I should urge upon you to emphasize and make glorious this semi centennial meeting by raising a fund for the relief of disabled physicians and the widows and orphans of our members? Have the members of it forgotten or have they failed to make any provision for their disabled medical brethren, or their destitute families? Some of our medical brethren may be stricken down by insanity or in time of financial distress, and in the midst of a life of self-sacrifice for others, are cut off and their families left destitute. Dr. Taliadro of Virginia was drowned as he in vain sought to visit his patient, and Dr. Payne, a professor of the Medical College of Atlanta, Ga., both physicians of talent and learning, presented examples of the kind; unlike the mechanical and operative classes, surely the American medical profession as represented by its National Association will not permit the exit of the nineteenth century to close without providing for the destitute of their household. "Allowing the ratio of deaths per 1,000 to be 15 per cent. per annum of the 4,000 or more," Fellows of the Association, we have by such estimate, sixty widows with perhaps orphan children to care for; may we not assume that of such one-fourth have but limited means to subsist upon and on which to be educated? And of this class there can be no question according to human experience and confirmed by Holy Writ, that both widow and orphan are sometimes dependent and imposed upon by selfish and covetous individuals. The strongest reason which can be urged for the Fellows of this Association to raise an *American Medical Benevolent Fund* is that, while the mechanical, the operative and the clerical and military and naval organizations have long ago had such a fund for their needy ones, we have permitted a half century to elapse without making any provision at all. The Mutual Aid Association of the Philadelphia County Medical Society founded in 1876, and which has 665 enrolled members, has at present a fund of \$12,000. It is said of the late Mr. Charles Parrish, President of the Lehigh and Wilkesbarre Coal Company, that he

prevailed upon his employees to allow the entire wages of one day in each year to be retained for the purpose of raising a fund for the relief of disabled miners and their families. In this way a yearly charity of \$15,000 is amassed, from which may be said, in honor of the memory of Mr. Parrish: "Many wants have been provided for and much suffering relieved." The Irish Medical Benevolent Fund, according to its report for 1896, expended £1,413, 4s. to eighty applicants, five of whom were physicians, nine widows and sixty-six orphans. The Birmingham Medical Benevolent Society, founded in 1821, has distributed £16,510. At the end of last year there were 353 members. The Medical Assurance Society of London, founded 1884, has steadily prospered. The medical fraternity in America, equally potent, ought not to continue longer ignoring the claims of the disabled and he deaf or indifferent to the appeal to them from widows and orphans of physicians of this Association, while your lives and property may be covered by secure investments. Forbid that Fellows of this Association should any longer practically leave a disabled, sick stricken brother physician to suffer because of failure on their part to raise an *American Medical Benevolent Fund* at this meeting of the semi-centennial year of our existence, and we say to them: "Depart in peace, be ye warmed and filled." How many are practically deaf to the wail of the widow and orphan, while among the latter class there may perchance be some bright and talented boy who recalls no favor shown by medical *confrères* to his disabled father, and none to his impoverished and widowed mother. No marvel such a boy has no desire to buckle on the armor and to don a shield with neither spot nor stain upon its surface and upon which Spartan-like the father he had seen borne by strangers' hands to the silent tomb, with not a single brother physician present to do the faithful hero honor; can you wonder over that boy's decision, rather than belong to the medical fraternity, deciding, let me choose to be "a hewer of wood," any calling other than the medical. During this semi-centennial anniversary year, the occasion could not be more gloriously emphasized than for the 4,000 or more Fellows, representing perhaps forty eight States of the Union, with forty-eight or more State Medical Societies, learned faculties of richly endowed colleges and universities, medical editorial corps, boards of health and surgeons to the U. S. army and navy, all of whom enjoy liberal incomes, and with their lives and properties, perhaps, insured, for them, who are able, to come to the sacred resolve to give annually at least two or five dollars as the American Medical Benevolent Fund. Various State medical societies might then be invited to coöperate in this good work, this labor of love for our medical brethren less favored; the secretaries of such societies receiving the honorary appointments by the Association in their several States, cities and communities, as the authorized legal representatives of that section of benevolence. When organized, the British Medical Association undertook a like experiment as long ago as 1836, "for the relief," as the late reports state, "of medical men in temporary distress and for their widows and orphans, and also, for granting annuities to those who are quite incapable of providing for themselves," after sixty years' trial have carried out a plan of this kind with marvelous success and blessing to the recipients. We believe that the members of the Medical Aid Societies in Massachusetts, in Kentucky, in New York, in Philadelphia and friends in Virginia will come forward at this meeting and will help us to organize as to officials, and will now, not tomorrow, take from their pockets the stipend of a few dollars only to start such a fund, and that each of us will cheerfully do this every year hereafter. President Senn, one of your honored predecessors, gave a cordial approval to this undertaking, and others were Presidents Drs. S. W. Gross, N. S. Davis, L. A. Sayre, J. T. Hogden, H. O. Marcy, Donald Maclean, W. T. Briggs, R. Beverly Cole and Hooper. Mr. President, I pray the Association will now not accept mere words written or spoken as things of course in behalf of a Medical Aid Section, but that the Association will organize now or in the near future the Section and elect its officers, and doctors become members and contribute funds to make a practical, legal working Section, as stated, seeking the support and coöperation also of the forty-eight or more State medical and municipal societies of our country. Sir, when the Savior of mankind hang in agony on the cross He provided for His widowed mother when He said: "Behold thy mother," and it was He who commended the good Samaritan who took pity on a disabled brother, helpless by the wayside.

Dr. HENRY O. MARCY of Boston offered the following in connection with Dr. Horner's report, which was unanimously adopted:

Resolved, That the suggestion of Dr. F. Horner, that steps be taken to organize a relief association for disabled physicians and the widows and orphans of deceased members, be approved;

Resolved, That a committee, consisting of a member from each of the several State medical societies, be appointed by the Chair to formulate a scheme for the organization of such a beneficial association within the American Medical Association, and that this committee report in detail at the next annual meeting;

Resolved, That the President add to the committee the names of the secretaries of State medical societies.

Dr. W. W. KEEN of Philadelphia then delivered the "Address in Surgery." (See page 1102.)

The Address was punctuated with applause throughout its delivery.

Dr. G. LANE TANEYHILL—I move that a vote of thanks be extended to Professor Keen for his incomparable address, and that that part of it which is a strong and incomparable argument in favor of the justification of animal experimentation be added to the resolution of Dr. Wood relative to the Anti-vivisection Bill, and that the resolution be transmitted to the Senate Committee of the District of Columbia.

Seconded by several members and unanimously carried.

JUBILEE EXERCISES. FIFTIETH ANNIVERSARY OF THE FOUNDING OF THE AMERICAN MEDICAL ASSOCIATION.

The Jubilee Exercises being in order, Dr. N. S. Davis of Chicago, the founder of the Association, appeared upon the stage, escorted by the Presidents of the State Medical Societies and the Presidents of the State Boards of Medical Examiners.

Dr. Davis was presented to President Senn by Dr. JOHN B. ROBERTS, Chairman of the Committee on Anniversary Exercises, who said:

"Some fifty-two years ago, at a meeting of the New York State Medical Society, there appeared for the first time a young delegate from Broome County. Observation during his collegiate course had opened his eyes to the fact that there were radical defects in the methods of medical education. To remedy these evils and to organize the profession of the United States into a professional brotherhood with a common purpose, a common dignity, a common ethical standard and a common humanity, he determined to use all the vigor which he possessed. It was his desire to separate medical teaching from medical licensing and to organize the profession in connection with a central medical body. That his labors, despite much opposition, have been crowned with success, is shown by the existence of a Medical Examining Board in nearly every State in the Union and State Medical Societies in all parts of the country. The presence of these gentlemen who accompany him today and the registration of 2,000 delegates and members attest the approval given to the efforts of the ever young man whom I now present to you." (Applause.)

At the conclusion of Dr. Roberts' remarks, Dr. Davis arose and was greeted with round after round of applause, which continued for fully three minutes. As soon as quiet was restored, President SENN said:

"Dr. Davis, in the name of the nine thousand members of the Association I greet you, and congratulate you that you have been permitted to live long enough to witness the commemorative exercises of your life work, the fiftieth anniversary of your favorite child—the American Medical Association. May you live long, and when the inevitable comes find a peaceful end and an ample reward in the life to come." (Applause.)

Dr. DAVIS then delivered his Address, selecting for his subject "A Brief History of the Origin of the American Medical Association, the Principles on which it was organized, the Objects it was designed to accomplish, and how far they have been attained during the Half Century of its Existence." (See page 1115.)

Dr. JOHN B. ROBERTS, Chairman of the Committee on Anniversary Exercises, informed the Association that diligent search had shown that there were surviving only four of the original members of the Association. Dr. Alfred Stillé of Philadelphia, an ex-President of the Association; Dr. John B. Johnson of St. Louis, an ex-Vice-President; Dr. David F. Atwater of Springfield, Mass., and Dr. N. S. Davis of Chicago, an ex-President. Dr. Roberts stated that the Committee regretted that Dr. Stillé was not present, and read the following letters to the Association from Drs. Atwater and Johnson. Dr. Davis had made his presence known by the excellent address on the history of the Association, which had just been heard.

Letter from Dr. D. F. ATWATER of Springfield, Mass.:

"While it would give me much pleasure to be with you on this interesting occasion, I feel that I must deny myself the privilege. The Association is to be congratulated on having with it Dr. N. S. Davis, a representative specimen of a Doctor of the Old School. The first meeting of the Association was held under very different conditions and circumstances from the present one, and it is interesting to note the contrast between then and now.

"I can not be supposed to intimate any deficiency in the

knowledge of medicine and surgery at that day, but we were, comparatively speaking, pioneers in a new country, where there was much clearing to be done and roads to be made, with but the rudest implements at command. Disease was then combated with arms and ammunition quite different from those in use at the present day. The lancet was our inseparable companion and bleeding was practiced freely. Calomel, ipecac, squills, tartar emetic, castor oil and senna were familiar words in every household.

"When room was needed in the medical department of the library at the University of Edinburgh the custodian, it is rumored, was once told to remove all books over ten years old and put them in the basement. What do you think should be done with doctors whose medical degrees are now over fifty years old? We had, however, some compensations as an offset to our limited means. Appendicitis, diphtheria, la grippe, heart failure and the deadly pneumonia were not as frequent as at the present day. We could not summon to our aid, unfortunately, many remedies of recent date, nor the thermometer, microscope or chemic analysis. The profession has sought and discovered where the germs of disease are to be found, where the bacilli have their hiding place, whence come typhoid fever and other diseases arising from impurity and uncleanness: the laws of health have been investigated, and the prevention of disease now claims quite as much of the doctor's attention as its cure.

"That the Association, so powerful for good in the past in the promotion of medical science and the elevation of the profession, may maintain its reputation in the future, so that the close of another half century may find here those pursuing their profession with equal zeal, and that at last one and all of its members may hear the welcome summons, 'Come ye blessed of my Father, for I was sick and ye visited me,' is the earnest wish of

DAVID F. ATWATER."

Letter of Dr. JOHN B. JOHNSON, St. Louis, Mo.

"I regret that I can not accept the kind invitation to be present at the Semi-Centennial meeting of the American Medical Association. I have been suffering from the past three months from an attack of articular rheumatism which has not only unfitted me for professional duty, but has greatly interfered with my powers of locomotion. Much as I should enjoy a reunion with the few original members now remaining, who fifty years ago in Philadelphia founded the Association, I would even more rejoice in witnessing the increasing evidence of its prosperity and usefulness.

JOHN B. JOHNSON."

Dr. GEORGE BEN JOHNSTON, President of the Medical Society of Virginia, told the Association "What State Medical Societies have Done for the People," saying:

The enactment of such laws as now exist was, it is fair to claim, procured through the efforts of the State societies acting independently of each other. There was never any well-directed attempt at coöperation, hence the dissimilar character of the statutes and the varying nature of the prescribed machinery for executing them. Yet in every case the object was the same—to furnish the people with only properly equipped practitioners. This called into existence many State Examining Boards, whose function was to select qualified men. It was soon made apparent that even many of those holding diplomas were not qualified. Careless and inferior schools saw their graduates excluded from the privileges of practice and their classes diminished, because young men contemplating the study of medicine began to choose their schools with discrimination, having in view the purpose of properly fitting themselves to meet the requirements of the Examining Boards. The effect of all this was to elevate the standard of medical education. New subjects were added to the college curriculums, practical work was required, the time of study lengthened, and more rigid examinations exacted.

It became obvious that these legislative measures to secure higher medical education usually styled "Laws regulating the Practice of Medicine and Surgery," they would be more accurately described as "Laws for the Protection of the People," had taken root and had come to stay. National bodies have taken them up and are rapidly centralizing the work accomplished in a desultory but partially effective way by the State societies. On Monday of this week we witnessed in this city the seventh annual meeting of the "National Confederation of State Medical Examining and Licensing Boards." This Association is the legitimate and natural outgrowth of the efforts of the individual societies which have for so many years patiently but unconsciously worked for its formation and development. Although as yet it is scarcely more than embryonic, its function is well defined, and it must become the leader in further efforts to secure appropriate and uniform laws regulating the practice of medicine, and State societies ought to earnestly

coöperate with it in order that it may be strengthened and its usefulness increased. But the results obtained in another department of legislation are not less striking.

In most of the States in which State Boards of Health have been established these bodies have been brought into existence through the suggestion and instrumentality of the State Medical Societies. These Boards have been of inestimable value to the public in the way of promulgating the laws of hygiene, in the prevention of epidemics, the suppression of those already existing, and the conduct of commerce in times of public fear.

If then, as I believe, the State societies were the main instruments in calling into existence the State Boards of Medical Examiners and Licensers, and the State and other Boards of Health, may we not justly claim for them the title of public benefactors? They fallowed the field and sowed the seed: the community is reaping the harvest. And how are their labors made manifest?

By the improvement in the material from which medical men are formed. By the better preliminary education of medical students. By the higher technical education of doctors. By the binding together of the best medical colleges in a league, the sole object of which is to elevate the standard of medical education. By the enactment of laws which admit only properly equipped men to enter the practice of medicine. By the rapid disappearance of the pretender and the ignorant quack. By the presence in every village or hamlet of a medical man whose character and attainments entitle him to rank with the best of his community; whose professional acumen and honesty fit him to discharge the duties of his high calling with confidence, skill and success, and whose trained faculties constitute him the guardian of the public health. All these beneficent results may be traced to the working of your State societies.

Dr. William Perry Watson, President of the New Jersey State Board of Medical Examiners, who had a paper entitled "State Boards of Medical Examiners What They Have Done, How They Should be Made up, and What They Should Do," was unexpectedly called home.

The following was offered by Dr. W. LEMOYNE WILLS of Los Angeles, Cal., which was referred to the Executive Committee with the request that it report at this meeting, if possible:

At the last annual meeting of the Medical Society of the State of California, held in San Francisco, April 20-24, 1897, the following resolution, introduced by Dr. Wm. LeMoyné Wills, was unanimously adopted:

Resolved, That it is the sense of this Society that the American Medical Association take such action on the subject of medical legislation as will bring this matter to the attention of Congress and the President, and request the passage of such laws as will regulate by National examining boards the right to practice medicine in the United States; and, furthermore, we would urge that the delegates to the American Medical Association be instructed to make it their purpose to secure the adoption of such action by the American Medical Association.

Dr. W. H. SANDERS of Alabama, offered the following resolutions relative to the death of Dr. Jerome Cochran:

1. *Resolved*, That in the death of Dr. Jerome Cochran, late State Health Officer of Alabama, this Association has lost one of its most loyal and useful members, the science of medicine one of its most devoted followers, and the great cause of sanitation one of its foremost pioneers and ablest exponents.

2. *Resolved*, That the career of Dr. Cochran was signally marked by unrivaled achievements in the cause of medical organization, and by illustrious services in the field of preventive medicine.

3. *Resolved*, That the death of such a man is nothing less than a public calamity, and so regarding it, we bow in sad submission to the immutable decree that deprives the human race of his wise counsels, his fruitful labors, and his sublimely unselfish devotion to its broadest, deepest and most far-reaching interests.

After the reading of the above resolutions, Dr. GEORGE M. STERNBERG arose and said: I desire to second the resolutions offered by Dr. Sanders. I knew Dr. Cochran well. I have met him under trying circumstances. We all appreciated his loyalty to the profession, his good judgment and his earnest work, especially in the Department of State Medicine, and I wish briefly to mention one circumstance under which I saw him to the best advantage. It was during the yellow fever epidemic at Decatur, and I asked permission of the President of the United States to go there for the purpose of continuing my yellow-fever investigations. Among the first men I met was Dr. Cochran, who had been on the ground from the first. He stood by the local physicians during the epidemic from first to last. He visited my laboratory daily and took the utmost interest in the researches I was conducting. There is one incident that I would like to mention in this connection. An old practitioner of that town, who came to visit me within a day or two after my arrival at the laboratory, said he was ready to do anything he could for me. He died within a week and left instructions that I could have his body. This is the kind of

men we had there on that occasion, and Dr. Cochran was the leader among them.

Dr. HENRY D. HOLTON—In rising to further second the resolutions, I can not forbear to speak of the long acquaintance, of the love and respect which arose from that acquaintance with Dr. Cochran. We know that his whole heart and soul were in the progress of medical science, of sanitation, of doing good to his fellow men. His life was so gentle and the elements so mixed up in him that all nature could stand up and say, "Here is a man." Mr. President, time is too far spent for any lengthy eulogy, but those of us who remember Dr. Cochran can not do better than to try and follow his noble example. He directed all his efforts to increase the efficiency of medical education; he directed his efforts in sanitary science to relieve suffering, to prolong life, and like a seed planted which shall grow to a goodly tree, it shall shed its fruit when time shall have flown down the gulf of eternity. I move sir, the adoption of the resolutions.

Dr. W. H. SANDERS—I am aware that the patience of the Association has already been greatly taxed, and I would not impose upon it further, but Dr. Cochran in his life work and good judgment instilled some of the fundamental principles underlying the organization of the medical profession of my State, which principles I believe would be useful if announced to this body. But your time has been already too much taxed, and I fear it would consume too much of it to undertake to point out these principles now, but I hope I may have an opportunity of doing so some time in the future.

Dr. LISTON H. MONTGOMERY—In further honoring the memory of Dr. Cochran, I move, as an amendment, that these resolutions be adopted by a rising vote.

The motion as amended was then unanimously adopted.

Dr. BULKLEY read the following

REPORT OF THE EXECUTIVE COMMITTEE.

The Executive Committee report as follows upon the recommendations contained in the Address of the President:

1. The recommendation of the President in favor of restoring the former policy of the Association in offering a gold medal to its members for meritorious work be and is hereby endorsed, and it is recommended that the project be referred back to the Committee for the elaboration of details.

2. That the public addresses delivered before the entire Association be hereafter designated as "orations," to distinguish them from the addresses of the Chairmen of Sections, and that the speakers on such occasions be designated as orators, provided that the proposed changes in nomenclature do not conflict with anything in the By-laws.

3. That the third evening of each meeting be devoted to an illustrated lecture on some medical topic, microscopic or other, the topic and the lecturer to be decided upon by the Executive Committee.

On motion, the recommendations as reported by the Executive Committee were adopted.

Dr. T. J. HAPPEL, and Dr. T. K. POWELL of Tennessee, offered the following:

WHEREAS, The discussion of the question of railroad rates to meeting of the American Medical Association has revealed much dissatisfaction in regard to the actions of the roads in these matters; therefore, be it

Resolved, That the President for the next ensuing meeting of this Association appoint a special committee of seven, to be known as a Committee on Transportation, whose duty it shall be to report to the Committee on Nominations at the next meeting the railroad rates offered by different places put in nomination as a place of meeting for 1899, and that the Committee in selecting such a place of meeting for 1899 be directed to consider such rates in connection with the selection of such place of meeting.

Resolved, Further, that the President be instructed to appoint this Committee within the next thirty days, and that the Secretary notify at once each member when appointed.

On motion, these resolutions were referred to the Executive Committee.

Dr. I. N. QUIMBY offered a resolution which was referred to the Executive Committee.

The report of the Judicial Council was read by the Secretary, as follows:

REPORT OF THE JUDICIAL COUNCIL.

Your Judicial Council would report that the charges against the Cleveland Medical Society were dismissed for want of jurisdiction, on account of said Cleveland Medical Society having become affiliated with the Ohio State Medical Society.

In the matter of protest and charges against C. G. Cannady, M.D., your Council has referred the matter to the State Medical Society of Virginia for adjudication.

In regard to the protest and appeal of William F. Barclay, M.D., Pennsylvania, your Council has instructed its Secretary to transmit the same to the State Medical Society of Pennsyl-

vania, and instructed him to inquire as to the status of this case, and why there has been so much delay in its adjudication.

NATHAN S. DAVIS, President.

X. C. SCOTT, Secretary.

On motion, the report was accepted.

On motion, the Association adjourned until Friday, 10 o'clock.

(To be continued.)

SOCIETY PROCEEDINGS.

Illinois State Medical Society.

Abstract of the Proceedings of the Forty-seventh annual meeting, held at East St. Louis, May 18, 19 and 20, 1897.

SECTION ONE—FIRST DAY.

(Afternoon Session Continued.)

Dr. C. C. HUNT of Dixon reported a very instructive case of ATROPHIC CIRRHOSIS OF THE RIGHT LOBE OF THE LIVER, WITH COMPENSATORY HYPERTROPHY OF THE LEFT LOBE, ASCITES, RESTORATION TO HEALTH OF THE PATIENT AFTER THE REMOVAL OF 1,440 POUNDS OF LIQUID.

The following is a report of a case: On Oct. 1, 1894, J. E. T. presented the following history: Age 32, adjutor for fire insurance company; parents both living and in good health; never had venereal disease; had acquired the habit of drinking largely of alcoholic beverages, but never lost his legs nor his head. Soon after the habit was fixed he began to grow corpulent. This corpulency increased month by month until his legs and body assumed vast dimensions. So large did his abdomen become that he could not crawl through the ordinary trap-doors leading to the roofs of buildings, which his duties frequently required him to do. His bowels were regular, urinated naturally, had a fair appetite and good digestion, but for some months his locomotion had been growing more and more impeded. Some "doctor" had told him he had "five large tumors in his belly." Abdominal enlargement came on before swelling of legs. So much subjectively. Objectively, Dr. Hunt found: Emaciation great, lips pale ashy color, ears translucent, skin pale yellow, dry, no icterus. Pain on pressure all over regions occupied by stomach and liver, but more marked in right epigastrium; marked edema of skin and subcutaneous tissues from toes to umbilicus, from which it gradually lessened upward until at the level of the xyphoid termination of the breastbone none was appreciable. Adipose tissue of thorax, neck, face and upper extremities had about all disappeared. Abdomen immensely enlarged. All these gave a figure to the individual most singular and impressive. Physical exploration revealed the presence of liquid filling the abdominal cavity, crowding the intestines as far as possible into the vault, and at the same time causing a large loop to protrude through the umbilicus. So great was the distension that when patient was placed on back there was scarcely any appreciable flattening of the abdomen; it presented more the appearance of a cystic growth within than that of ascites. Neither palpation nor percussion afforded any evidence as to condition of liver or spleen owing to the large accumulation of liquid. No evidence of organic changes in lungs or in walls or valves of heart; urine contained neither sugar nor casts, but a considerable quantity of albumin; specific gravity 1028. Contents of stomach not examined; no blood-count made.

The next day (Oct. 2, 1894), assisted by Dr. Sheffield, he punctured the abdominal wall midway between umbilicus and pubes with a large aspirator needle and removed 54 pounds of viscid, greenish-yellow liquid, specific gravity 1017, leaving undrawn a considerable residue. The walls fell into loose folds. The skin and linea alba aponeurosis between umbilicus and xyphoid cartilage had become so attenuated that the hand, covered as it were by a thin membranous mitten, could enter the upper abdominal cavity between the widely separated recti muscles, and the lower edge of liver could be felt between thumb and fingers. The left lobe markedly hypertrophied, of apparently normal consistency and smooth surface. The right lobe characteristically "hob-nailed," and of firm consistency. The area of dulness over right lobe but little greater than that of a normal adult heart; over left lobe it extended almost to left thoracic wall. Spleen not appreciably enlarged. The xyphoid appendix was curved forward and upward like a hook. Umbilical hernia disappeared upon removal of the liquid. There was no collapse following the operation. Patient sat in an armed chair until needle was removed and then walked a few steps and took his bed. Hastening to catch a train he did not seal up the wound with as much care as he should have done, and when he called the next day he found the dressings, bed clothes and mattress soaked with the liquid

which had discharged through the opening made by the needle, and the excess was dropping into a receptacle underneath the bed. The edema rapidly disappeared. The abdomen re-filled so rapidly that he tapped him again ten days later removing 34 pounds of liquid. Eleven days after this, 24 pounds. Nine days later 32 pounds. One week later 18½, and again one week later 15 pounds. Then every two weeks removing 19, 11½ and 16 pounds respectively. This ends the three months of 1894, with a total of 224 pounds. During the year 1895 he tapped patient every two weeks, February 3 withdrawing the minimum 14 pounds and September 22 maximum 42.55 pounds, a total for the year of 696.01 pounds. Tappings were continued every two weeks until September 6, when the minimum was reached of 8.62 pounds. Maximum April 5, 40.83 pounds. From September 6 to October 25, a period of seven weeks, patient gained rapidly in muscle, fat and strength, so that his weight had increased from 123 to 145 pounds, with only a residue of liquid (less than one-half pound) remaining. This the doctor aspired and since then patient has been in first-class health. Without taking into account the unmeasured amount of liquid which escaped just after the first tapping, as before noted (presumably about ten pounds), we have a total of 1,440 pounds, or including that lost, a grand total of 1,450 pounds removed in twenty-three months. The specific gravity was taken of the liquid withdrawn at various times after the first tapping. It varied but little from 1015. Extremes of temperature, any undue excitement or exposure to cold or moisture were followed by increase in the quantity of the deposit. At no time was there hemorrhage from any source. The stools were usually of yellowish or yellowish-brown color. Temperature ranged from normal to 102 F. Infiltration of skin never reappeared after the first tapping. Edema of lower extremities would always disappear within twelve hours after tapping and would not reappear until liquid reached a point above umbilicus, or when withdrawn it measured about thirty pounds.

Patient abruptly ceased the use of his beverage when he came under my care.

Dr. Hunt omitted to state that the superficial veins coursing over abdomen were somewhat enlarged, but so-called "caput medusae" not well represented, nor was "muddy yellow color under the eyes" a prominent feature, as noted by Dr. Edwards of Chicago.

Dr. OTTO L. SCHMIDT of Chicago, made some interesting remarks on

SKIAGRAPHY IN INTERNAL MEDICINE,

and showed numerous skiagraphs. Among the pictures exhibited was a skiagraph of the heart, showing a bullet on the left side; a post-syphilitic clavicle; a picture showing hypertrophy of the heart from an advanced case of insufficiency of the aortic valve, with the presence of an enormous hypertrophy of the left ventricle. The next picture was one showing infiltration of the lungs in which case there was a systolic murmur at the pulmonary valve, with distinct hypertrophy of the right side of the heart, which was not as well marked as on the left.

Speaking of the photography of the blood vessels, the author stated that blood vessels may be seen (in favorable cases by the fluoroscope) pulsating, while in other instances the blood vessels may be skiagraphed. The next was a skiagraph of a large aneurysm of the ascending and transverse portion of the aorta. He said it had been suggested that in the diagnosis of obscure conditions in the thorax by means of the fluoroscope, while noticing the pulsation of the tumor, differentiation could be made between aneurysm and a simple tumor.

Several other skiagraphs were shown.

Dr. GEORGE H. WEAVER of Chicago read a paper entitled

A CONTRIBUTION TO THE SUBJECT OF THE SERUM TEST IN THE DIAGNOSIS OF TYPHOID FEVER.

The paper was a report of the use of the test in 71 cases; 9 being persons in good health, 30 cases of disease other than typhoid fever, and 32 cases of typhoid. In the tests non-virulent cultures were used. The examinations were made by placing a drop of emulsion of typhoid bacilli in a drop of undiluted serum and keeping the hanging drop so prepared for 16 to 20 hours at 37 C. The drop was then examined and the result considered positive if the bacilli had entirely lost their motion; doubtful if lessened motion and some clumping occurred; and negative in the absence of any effect upon the motion and no considerable clumping.

Positive reactions were obtained in all the typhoids except three, in which doubtful results occurred. Positive results were not obtained in any other disease or in health. He concluded that the presence of such a positive reaction was strongly in favor of typhoid fever, but its absence did not necessarily exclude such a diagnosis. Parallel observations made with

virulent and non-virulent cultures showed the non-virulent culture to reach more quickly and perfectly. Dry blood did not give as satisfactory results as fresh serum. He obtained doubtful reactions in two cases of typhoid fever and tuberculosis as a mixed infection, both coming to autopsy. In order that the reports of examinations may be of the most value, each writer must tell what he considers a positive reaction, what is the age of the culture employed. Only by careful testing of the effects of the serum of healthy persons and those with other diseases upon a given culture is it possible to draw definite conclusions as to how it will be differently affected by the serum of persons with typhoid fever.

FIRST DAY—EVENING SESSION.

A joint meeting with the Missouri State Medical Society was held at the McCasland Opera House, at East St. Louis. The meeting was called to order by the first vice-president, Dr. Carter of Waukegan, who introduced Dr. J. H. Duncan, the president of the Missouri State Medical Association, who in a brief speech welcomed the Illinois State Medical Society on behalf of the Missouri State Medical Association.

President DUNCAN then, by request, introduced Dr. A. C. CORR, of Carlinville, as the President of the Illinois State Medical Society.

President CORR delivered his ANNUAL ADDRESS, in which he forcibly brought before the Society medical legislation. The necessity for a committee on medical legislation he said seemed to be a development not yet perfected, and he thinks the history of its growth will bear out such a conclusion. By scanning the 23 volumes of transactions, the first legislative work of the Society was done in accordance with a motion made by Dr. J. H. Hollister in 1874, for the appointment of a committee by the President to memorialize the legislature for an appropriation to establish an institution in the State for the better and more humane care of the feeble-minded children. Those appointed were Drs. L. P. Pierce, E. P. Cook, and J. L. White. As to the ultimate success of the work of the committee the magnificent institution at Lincoln for that purpose makes further comment unnecessary. Recent events suggest the necessity of a still further perfection of the committee's duties on legislation by the addition of preventive legislation. The attitude of the so-called osteopathic bill in the present legislature suggested this most emphatically, which should make it as potent a factor to prevent pernicious as to procure and encourage useful legislation. He most emphatically suggested that in the future this be a tantamount part of the work of the legislative committee. The committee needs numerical influence and financial backing. The expense of legislation, either aggressive, conservative or preventive, to some extent depends upon the magnitude of the legislation desired. The process of legislation is very tedious and devious, and the committee pursuing it must be at every turn, for verily is safety the only reward of vigilance.

If we would procure needed reformatory legislation for sanitary purposes, for the better protection of the health and well-being of the people of the State, we must have a greater number of members, and thereby greater numerical influence and financial backing; or we must levy a tax or an assessment, or we must create a voluntary legislative fund. President CORR thinks if the membership of the Society could be increased say to 2,000 or more, with the annual dues as now, \$3.00, it would afford ample funds from which to make a sufficient legislative appropriation; otherwise voluntary contributions to a legislative fund might be solicited; and if funds can be made available he would suggest the employment of a legislative attorney, who could better watch the mutations of a bill to be passed or defeated.

The Address of Section One was delivered by Dr. WELLER VAN HOOK of Chicago, who selected for his subject

THE PRESENT RELATIONS OF SURGERY TO INTERNAL MEDICINE.

Dr. VAN HOOK expressed his especial gratification in having opportunity, as a surgeon, to address the Medical Section of the Society upon the topics of common interest to the specialties represented.

The differentiation of internal medicine as a distinct specialty was regarded as a distinct gain and the hope expressed that it might meet with still more recognition in America.

The decline of surgery as a well marked special ground, seemed, however, unfortunate. At no time in history has surgery been so little regarded as a distinct and separate field as at present, when antiseptic and aseptic methods put a large number of operations in the hands of the general practitioner. It is not the enlargement of the bounds of minor surgery which is to be deplored—on the contrary, every one must rejoice that the general worker, often remote from the specialist, is able to

extend relief to the suffering in a thousand cases we would have thought, but a short time ago beyond the reach of any but the most skilful. But the attempts to include in minor surgery the more complex conditions met with in the great cavities of the body, and the consequent operating upon cases which legitimately belong only to those especially prepared, is much to be regretted.

After briefly reviewing the recent progress in some of the subjects in which medicine and surgery are both equally interested, the speaker concluded as follows:

"While we see that surgery and internal medicine are thus working side by side to the common end of increasing one's store of knowledge and of reaching the goal of relief for our patients, we must acknowledge that a sort of friendly rivalry exists between the two specialties, not to see which can acquire the greatest amount of pathologic territory for itself, but rather to determine which can bring quickest, safest and surest relief to the sufferer. And it must be admitted that surgery has been of late years oftener the victor. Surgery has wrested from medicine the treatment of a host of diseases and morbid conditions, in addition to those in which only the so-called 'expectant' treatment was practiced. The heart has been sutured after injury; its covering, the pericardium, has been tapped and even drained for purulent pericarditis. We invade the brain and even open its ventricles with impunity. We have long since opened the spinal canal and corrected morbid conditions within. Surgery must return upon herself; must now perfect her methods within the territory already conquered; must perforce leave off the search for new organs to invade and for new diseases amenable to surgical therapeutics, and will be obliged to devote herself to diminishing the risks attendant upon surgical operations and to the improvement of functional as well as anatomic results.

Our knowledge of regeneration of organs has been enriched by the labors of Ponpick, Padwysosky, and others in a wonderful way. Ponpick has shown that three-fourths of a rabbit's liver may be removed, a part at a time, without the death of the animal. Regeneration of the lobules of liver substance takes place and the organ continues to perform its functions. The compensatory growth of the paired organs when one of them is lost requires no comment.

The spleen when removed is functionally replaced by other lymphatic structures.

Gluck of Berlin, has shown us how we may cultivate or grow certain tissues to our advantage. He has shown us how we may substitute silk or catgut strands for tendons, making connective tissue growth about them. He has shown how small bones may be replaced by pieces of ivory of proper form and size. Bardenheuer has gone a step further in the same direction and has lately made new phalanges and metacarpals by splitting and transplanting parts of similar bones, not injured or diseased. He has even taken a piece of a scapula to make good a partial loss of the humerus.

The Marmorek serum for streptococcus infection is still on trial.

The immediate great advances in internal medicine seem to lie in the direction of a development of the doctrine of immunity and the therapeutic corollaries justly dependent upon a demonstration of the problem. It seems probable that at least some of the wound infectious diseases may be successfully attacked by the method so brilliantly developed by Behring for diphtheria. Tuberculosis, the cure of which has been for fifteen years the subject of investigation with the aid of a knowledge of its specific cause, seems likely to yield before many years.

Even the malignant growths are being subject to a serum treatment invented by the enthusiasts, Emmerich and Schall. Some reports would already indicate that adherents of the method are being found.

The great surgeon, Kocher, in reporting a thousand operations for goiter, expressed his gratification that the technique had been so far improved as to give a surprisingly low death rate even in severe cases. But at the same time, he expressed the hope that prophylaxis might show how to diminish the frequency of the disease or to stamp it out entirely from its endemic haunts.

In conclusion, it must be said that at no time in the history of our common art have the difficulties in our way been more accurately appreciated or more heroically attacked. Never has our profession been so united in its efforts to overcome disease, never have the personal sacrifices of its members been so great for the common good: never have internationalists and surgeons so readily and freely and trustingly appealed to one another for aid and counsel and in deed, and never have we called upon another with greater assurance of receiving that aid we sought. For the future we can only ask that these

relations continue, that they become more intimate, and that these warmer relations between surgery and internal medicine may redound to the credit and advancement of our common art.

Dr. Van Hook was followed by Dr. E. P. Cook of Mendota, who delivered the Address of Section Two, selecting for his subject "The Relation of Surgery and Surgical Specialties to Medicine."

Dr. JOHN B. HAMILTON of Chicago, followed with the Address of Section Three, which by request was upon the subject of "Medical Legislation, and How to Obtain it." [See page 1005 of the JOURNAL, May 29].

SECOND DAY—MORNING SESSION.

SECTION TWO.

Chairman, Dr. HENRY P. NEWMAN, Chicago.

Secretary, Dr. E. W. WEIS, Ottawa.

The Section was called to order by the Chairman.

INTESTINAL ANASTOMOSIS

was the title of a paper by Dr. JACOB FRANK of Chicago, in which he stated that in 1892 Murphy had surprised the surgical world with his metallic button, which reduced the length of time required to perform an intestinal anastomosis to about thirty minutes. If Murphy's button was soluble we could wish for nothing better, but since it is not it will always create a certain degree of fear in the minds of surgeons who are about to introduce the same.

Dr. Frank then quoted from Dr. Murphy's article his claims for the button: 1, reducing the duration of the operation to at least one-half of its former length; 2, extreme simplicity of technique; 3, automatic retention of position; 4, entire independence of sutures; 5, it produces a pressure atrophy and adhesion of surfaces at the line of atrophy; 6, it insures perfect apposition and therefore obviates the danger of displacement; 7, its applicability to the lateral as well as to the end to end approximation; 8, it produces a linear cicatrix, thereby insuring a minimum of contraction; 9, edge to edge union of same intestinal coats.

Dr. Frank claims for his contrivance all of the above good qualities, with one exception and a few additions. He claims for his contrivance lightness, which is of great importance as the intestines can float it, and this obviates a possible bend or spur. Another point is the partial solubility of the apparatus, leaving but a small piece of soft rubber tubing to pass away, which is not apt to cause obstruction nor is it apt to ulcerate through the bowel.

Since the last publication on this subject, he has had the pleasure of receiving the news of a successful gastro-enterostomy with the aid of his decalcified coupler, performed March 16, 1897, by Dr. McCandless, of St. Louis. The rubber tube passed on the thirteenth day. The patient left the hospital on the twenty-fourth day after the operation.

He also reported a successful case of end to end anastomosis with the coupler, for strangulated hernia, eight inches of gangrenous bowel being resected. The operation was performed by Dr. Kramps, April 13, 1897, at the St. Elizabeth Hospital. The rubber tube passed after twenty-four hours, and the patient, who is 49 years of age, is well and now attending to her household duties.

Dr. JOHN E. OWENS of Chicago read a paper on

THE USE OF TOXINS IN THE TREATMENT OF SARCOMA, PARTICULARLY IN OPERABLE CASES.

He said the beneficial results of the treatment of inoperable sarcomatous tumors with toxins of erysipelas and the bacillus prodigiosus are so striking that the subject seems to the author most worthy of consideration.

Experiments in this direction were undertaken by Dr. William B. Coley of the Cancer Hospital, New York, in April, 1891, and the interest excited by the antagonistic and gratifying action of accidental erysipelas in a case of recurrent inoperable round-celled sarcoma led to the formation of this method of treatment. In the case referred to, the patient was known to be healthy and well seven years after the attack of accidental erysipelas. The first case treated by Dr. Coley was a recurrent sarcoma of the neck and tonsil in a male 37 years old. The patient had been twice operated upon. After the second operation a portion of the tumor of the tonsil, involving the deep structures, remained. It grew rapidly and filled the pharynx to such an extent that only liquid food could be taken, and this was frequently regurgitated. The patient was greatly emaciated. Dr. Coley began by giving injections of bouillon cultures of erysipelas, one or two weeks old, directly into the tumor of the neck. The cultures were of little virulence, and the reactions following the injections slight. There was, however, some improvement, and whenever the injections were

discontinued the patient grew worse. Having obtained a virulent culture, inoculation was followed by a very severe attack of erysipelas. The tumor of the neck broke down in part and in part was absorbed, while the tonsil tumor diminished in size, but did not entirely disappear. The general health of the patient rapidly improved without further treatment, and he was known to be healthy and well two and three-quarter years after the last inoculation.

Dr. OWENS then reported a case of sarcoma of the leg which was treated successfully with the toxins of erysipelas and the bacillus prodigiosus. From April 10 to July 10, 1896, sixty-three injections were employed, the smallest dose being $\frac{1}{2}$ m., the largest 7 m., the latter without reaction. After this date the treatment ceased. The highest temperature was, on one occasion only, 105 degrees, and the maximum pulse 132. In another successful case of sarcoma of the leg below the knee, published in the *Chicago Medical Recorder*, February, 1895, by the author, sixty-six injections were used between Sept. 28 and Dec. 7, 1894, the minimum dose was 2 m., the maximum 10 m. Elevation of temperature was not a marked feature, consisting mostly of a fraction of a degree, 101.8 degrees being the maximum. During the treatment, pain, frequency of urination, nausea, occasional vomiting and muscular soreness was experienced. Improvement was noticed on the eighth day. This patient was found in good health in all respects Sunday, May 16. In this case the diagnosis was verified by microscopic examination. In each case a leg was saved and probably the life of each patient.

Dr. J. A. BAUGHMAN of Neoga reported a very interesting case of gastrectomy, and exhibited the patient.

Dr. WELLER VAN HOOK of Chicago reported a case of excision of the testes, prostate, and vesiculae seminales for tuberculosis in a man 26 years of age, whose health was apparently good, with the exception of a local trouble located in the right epididymis. There were no evidences of tuberculosis anywhere excepting in this epididymis. There was no fistula, no breaking down of tissue and the epididymis was hard.

At the first examination the rectum, prostate gland, and vesiculae seminales were found intact. When first attacked, the patient was informed that in all probability the disease of the epididymis and testes was tubercular, and in view of the possibility of the extension of the disease, he readily consented to have the testes removed. This was done, the testes being removed as carefully as possible by the method described by Dr. Van Hook.

Dr. HAROLD N. MOYER of Chicago read a paper on

THE NERVOUS AND MENTAL PHENOMENA FOLLOWING SURGICAL OPERATIONS,

in which he said that it seemed to him that too little attention was paid to the nervous states which predisposed to shock. Of late years studies of the heart and kidneys had been made, but the nervous system did not seem to have been included in that careful scrutiny which should precede every surgical operation. It had been known for years that patients sometimes died very suddenly during the most trivial operations, such as a hypodermic injection, slight incision or the extraction of a tooth, but only during the past year had a series of these cases been investigated. In all of them an enlarged condition of the thymus gland was found, to which condition the term *constitutio lymphatica* had been given. We know of no means of recognizing this condition during life. Perhaps if cases were studied in reference to this state, clinical data might be accumulated by which it could be recognized, and thus some of the most deplorable accidents in surgical practice might be averted.

It, too, would seem advisable to study the general nervous system, especially with reference to the pupils, muscular tonus as shown by the tendon-jerks, the superficial reflexes, coördination, etc.

It is now generally believed that the length of an operation, the quantity of anesthetic, the part involved, the amount of hemorrhage, are the chief causes which determine the degree of shock. While it is conceded that shock is largely physical, yet the mental condition of the patient plays a most important rôle. A confident feeling on the part of the patient in the operator and the result of the operation is one of the most important factors in lessening shock and preventing the unpleasant nervous sequelæ which follow.

The question of local anesthesia by the Schleich method was one that was bound to be of great importance in lessening general anesthesia and consequently shock. The nervous phenomena which follow operations, often had their foundation in the preoperative period, and no intelligent discussion of their treatment could be had which did not include the entire care of a patient before and after operation.

The forms of insanity following operations were almost always included under the terms confusional, which is the most frequent; melancholia, less frequent; hypochondriasis, simple mania and sometimes paranoia. As a rule, the chronic degenerative psychoses did not have their initiation in a surgical operation. The treatment of these various conditions was not different when caused in this way from what it is when occurring in non-surgical cases.

Dr. D. W. GRAHAM of Chicago read a paper entitled

PILO-NIDAL SINUS.

The author stated that there occurs not infrequently in the sacro-coccygeal region a form of suppurative inflammation whose peculiarities were first correctly described by Dr. R. B. HODGES in the *Boston Medical and Surgical Journal*, November, 1880, and aptly named by him "Pilo-nidal Sinus." Dr. Graham finds this affection referred to only in two works on surgery, in one of which the writer places it under the head of "Diseases of the Spine," and the other classes it with "Diseases of the Rectum."

In the middle line of this region there is found in some persons one or more blind follicles or pits in the skin which will admit the end of a small probe for a quarter of an inch, more or less. These infundibula may be situated either over the coccyx, below it toward the anus, or more often, according to the author's observation, above it. There is also not infrequently found a shallow but larger depression directly over the coccyx, which has been called the coccygeal or post-anal dimple, and by the French, the posterior umbilicus.

Accumulations of dirt and débris within any of these pits or dimples may give rise to abrasion, infection and the ordinary circumscribed cutaneous or subcutaneous abscess for which the practitioner is often consulted. But when loose stiff hairs from the skin of contiguous regions in hirsute individuals find lodgment, either alone or as part of other accumulations; they are liable to burrow in any direction in the subcutaneous areolar tissue, and remaining, they cause a persistent suppurating sinus. The condition when first seen by the surgeon is almost always a chronic one, having existed for months or years. Dr. Graham then cited an illustrative case.

The author says that pilo-nidal sinus must be clinically differentiated from tuberculosis, from ordinary fistule of the rectum and anus, and from dermoid cysts. The fact that almost all the cases occur in adult males with coarse hairy development will be an aid to diagnosis. The hair found in the sinus itself is the best witness in any case as to whether we have a dermoid or the acquired hair sinus. The speaker believes that the hair found in external dermoids is, without exception, short, fine, curly and devoid of pigment; while that found in the hair sinus will always correspond in size and color found on the contiguous regions of the patient. The object of the paper was to insist on the recognition of pilo-nidal sinus as an affection distinct from dermoid proper.

Dr. J. B. MURPHY of Chicago reported some experimental work in arterial surgery. Recently he said he had made a number of experiments to establish the idea that the arteries could be united and the blood current conducted through them as before, the same as a mechanical tube may be united for conducting water or other fluids. The technique of arterial suturing is extremely difficult. We have here a tube with a wall that is strong and resisting, with but little regenerative power, which is the greatest difficulty of treating arteries with suture. He had succeeded in overcoming this difficulty in the dog as well as in the patient. He exhibited drawings illustrating the method of overcoming the feeble reproductive power of the artery by replacing it in such a position that it is kept in apposition, and the connective tissue reproduction around the artery suffices to retain it while the current continues to flow through the artery. The difficulties to be overcome are to prevent closure of the artery by manipulation; to prevent immediate thrombosis within the artery; to prevent primary and secondary hemorrhage.

Dr. Murphy reported two cases, one of which had previously been placed on record. The other case was a bullet wound of the femoral artery in which he made a resection and end-to-end approximation. There was a feeble pulsation in the artery before the operation, which was increased after operation, but the circulation in the limb was at no time disturbed by the operation. There was an enormous aneurysm produced around the femoral artery from the bleeding beneath the connective tissue, and by removing the clot he exposed the vessel. End-to-end union was performed in six minutes. The patient is now perfectly well.

Dr. ALEX C. WIENER of Chicago made some remarks on the ambulatory treatment of fractures of the lower extremities, and exhibited the apparatus which he uses.

Dr. TRUMAN W. BROPHY of Chicago followed with a paper on the "Surgical Treatment of Cleft Palate," and exhibited two patients upon whom he had operated, showing closure of the cleft in each case.

The following resolution was unanimously adopted:

Resolved, That it is the opinion of the Illinois State Medical Society in convention assembled that the laws governing medical practice in the State of Illinois should apply with equal force to all persons engaged in the healing art, and no discrimination should be made in favor of any school of practice. Furthermore, we wish particularly to enter our emphatic protest against the enactment of Senate Bill No. 297 (the osteopathic bill).

SECOND DAY—AFTERNOON SESSION.

Dr. C. S. BACON of Chicago read a paper on

THE USES OF HYPODERMATIC INJECTIONS OF NORMAL SALINE SOLUTIONS IN OBSTETRIC PRACTICE,

and showed a simple apparatus for making the injections. Three indications for the use of saline solutions were given, namely, hemorrhage, eclampsia and puerperal infection. Hemorrhages were divided into three classes. Those of the first degree included the cases where less than one-fourth of the blood was lost, *i. e.*, in women of medium size weighing 130 pounds, where less than 2.5 pounds were lost. Here the blood pressure did not change greatly because of the contraction of the vessels, and if the shock was not great the results were not serious. In hemorrhages of the second degree, where one-fourth to one-half of the blood was lost, *i. e.*, from 2.5 to 5 pounds, the most serious symptoms were due to the fact that the quantity of blood was too small to fill the vessels and the heart had nothing to contract on. Hemorrhages of the third degree, where more than one-half of the blood was lost, were generally fatal. It was in the second class, which comprised most of the serious obstetric cases, where the saline solution was most useful. Transfusion of blood and intravenous injections of defibrinated blood had been rejected on account of their dangers. Intravenous injections of saline solutions as well as intraperitoneal injections were more dangerous and scarcely better than hypodermatic injections.

In eclampsia the salt solution diluted the poisonous blood serum, especially when combined with venesection, and likewise stimulated the excretory organs. The same was the mode of action of the solution of puerperal infection.

For the solution sodium chlorid in the proportion of 8 parts in 1,000 parts of water was employed. A sufficiently accurate approximation was obtained by taking one level teaspoonful of fine table salt to a pint of water. The solution was first made and then boiled and afterward cooled by letting cold water flow over the containing vessel. The proper temperature was determined by turning a few drops on to the back of the hand. The injection apparatus consisted of a bottle or enameled-ware can holding about a pint, which had a spout from the side at the bottom, to which was attached a rubber tube about three feet long. Into this tube was inserted the stem of a glass Y, to whose branches were attached smaller tubes carrying needles. The apparatus was sterilized by running an antiseptic solution through it, followed by sterile water or by boiling. It was then filled with the salt solution; the needles were inserted into convenient locations, generally the inside of the thighs, and the solution caused to flow by raising the reservoir. Constant massage assisted the absorption of the solution. A quart at a time might be introduced in a case of hemorrhage, in from ten to fifteen minutes. In eclampsia a quart might be injected with or without the withdrawal of a pint of blood.

Dr. ALBERT GOLDSPOHN of Chicago followed with a paper on

INTRAPELVIC RETRO-VAGINAL PERINEORRHAPHY WITHOUT LOSS OF TISSUE.

Being convinced of the superficiality and relative uselessness of many operations that are performed upon the perineum, the author briefly called attention to some anatomic facts and several fundamental principles which underlie the plastic surgery of the perineum.

Accepting the wholesome reformatory views advanced by Schatz, and profiting by the suggestion of flap-splitting by Lawson Tait, the author has developed a method of operating for these lesions of the female pelvic floor, which he has employed with satisfaction for about five years. With the sharp point of a scissors passed under the skin, a rounded incision, resembling an arc of one-quarter to one half of a circle, is made through the skin on the skin side of the mucous-skin junction, terminating at the posterior ends of the nymphæ or at the posterior remnants of the hymen. This flap is dissected up in the beginning and wherever cicatricial tissue

must be severed, with careful clipping of connective tissue bands in small parts with a scissors that has rounded ends and is always directed against the tactile surface of a finger of the left hand placed on the upper side of the flap within the vagina, while the fingers of the other hand are elevating the flap. By thus constantly estimating the thickness of the flap we can take the usually scant muscular structure beneath the mucous membrane, along with that membrane, without injuring the rectum and without passing a finger into it. In rectoceles with a very thin septum the latter precaution is advisable, although the author has done so very rarely. Beyond the cicatrized portions the dissection is readily done with the end of a finger covered with gauze. This flap composed of the posterior vaginal wall is temporarily elevated to an extent of six or nine cm. inward from the plane of the hymen and the detachment is carried well up on the sides, higher on the side where the edge of the levator ani and pelvic fascia have retracted most, until the inner edges of the two lateral portions of these structures are recognized by the finger. Usually the otherwise easy detachment of the vagina becomes arrested where the borders of the fascia and levator are reached and it need not be continued further. If the venous hemorrhage is very marked, compression of the wound through the flap may be made for a few minutes, or hot water used in the irrigation. Next a full curved needle not over six cm. in total length, with a round catgut eye and armed with a round and strong catgut thread, which has been prepared to hold two weeks, is grasped with a good needle-holder that does not permit it to roll and is carried with its point at the tip of the left index finger to the bottom and left side of the wound. The levator is not often felt at that depth; so the needle is, from the front backward, made to take a liberal grasp of the soft parts and is brought out closely upon or near the rectum upon the nail of the index finger which at that moment is depressing the rectum. This finger is then turned to guide the point of the needle into the needle-holder. After it has been drawn out its point is passed by the same finger into the bottom of the wound upon the right side, the rectum depressed with the finger first, and then the point of the needle passed from the finger nail outward and forward, taking a likewise liberal grasp of soft parts. A second round of sutures is next made with the needle precisely as before, grasping deeper where the first ones caught possibly less or more yielding structures, and then the suture is drawn up tightly and tied in the bottom of the wound, when the bleeding becomes mostly checked. Then a continuous suture of three to five more rounds is placed in the same manner, by means of which the wound cavity becomes reduced to only about two cm. in depth. In the sides of the portion of the wound which is closed by this suture, the edges of the levator are usually discernible readily and should be caught in every stitch that the needle makes. Likewise every turn of this suture should seize a bit of the connective tissue from the bottom of the wound posteriorly and from the under surface of the vaginal flap anteriorly, so as to hold these surfaces against the bridge that is being constructed by the approximation of the lateral parts, but not to draw them in between the latter. The remaining superficial wound upon the outer aspect of the perineum is closed, as the cosmetic part of the operation, by interrupted silk-worm gut sutures passed from side to side successively from behind forward until the new posterior commissure of the vulva is developed. At this point a slight tip of the former vaginal flap is frequently redundant and projects. This it is best to cut off, and then this cut edge can be gathered into the final silk-worm gut suture. In case of complete rupture into the rectum, he denudes its edges and the ends of the sphincter ani and closes the wall of the bowel and the anus by interrupted sutures tied within the gut as an intermediate step between the two parts of the other operation. Placing a finger into the vagina, after this work, is like introducing it into a uniform tube seven to eight cm. in length and not merely like sticking it into an auger hole in a board two cm. thick, which resembles the usual product of most of the purely external plastiques, like that of Tait, whose chief merit is frequently of a cosmetic nature only.

Dr. FRANKLIN H. MARTIN of Chicago followed with a paper on "Treatment of Fibroid Tumors of the Uterus." and Dr. J. W. M. CATTO of Decatur read a paper on "Uterine Hyperplasia."

Etiology of Yellow Fever.—Dr. Havelburg announces that the microbe which he considers the specific cause of yellow fever is found only in the stomach and intestines, but is cultivated by injecting it subcutaneously into guinea pigs. He finds that a previous injection of blood from a yellow fever convalescent renders an animal immune to an otherwise fatal dose of injection of the cultivated microbe.—*O Brazil Medico*, April.

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INFORMATION WANTED.

It would greatly facilitate the prompt delivery of the JOURNAL to those members of the ASSOCIATION living in large cities, if they would kindly furnish this office with their street address in those cases where it is omitted from the wrapper of their JOURNAL, as we have been notified by the postmasters of the larger cities that second-class mail matter not having street address, would be placed in the general delivery to await call.

SATURDAY, JUNE 12, 1897.

THE JUBILEE MEETING.

It was a common remark at the meeting that few if any present, would ever see such a meeting of the ASSOCIATION again. It not only surpassed all previous meetings in number of members present, but in *tout ensemble*. The papers were many of them of the highest class, and the average quality was superior. The attendance on Section sessions showed great interest, and the general sessions were crowded. The citizens of Philadelphia met fully all expectations. The places of meeting of the Sections were as a rule convenient, and selected with an intelligent estimate of the needs of each.

The general sessions were opened on the exact minute by President SENN, whose skill as a presiding officer was manifest from the first hour. He made graceful recognition of the four Vice-Presidents by requesting them to preside in turn, after the address of the day, so that the ASSOCIATION had an opportunity to see them in official position. Without exception they showed themselves fully capable of keeping the sessions under control and down to business. The meeting was unmarred by any disagreeable incident such as has sometimes characterized the sessions when "miscellaneous business" was under consideration.

The proposed amendments, with two exceptions, were indefinitely postponed; one was offered by Dr. BULKLEY of New York, to change the name of the Dermatology Section to that of Cutaneous Medicine

and Surgery, by which it will hereafter be known. The amendment of Dr. LOVE to amend Article IV in regard to officers, was withdrawn by the author, but subsequently renewed by another member, so that it will come up again next year.

Action in regard to the Rush Monument resulted in the appointment of a committeeman for each State, who will raise all funds possible in his State. The JOURNAL will also receive money on this account and pay it over to the Treasurer. Several of the States were pledged to raise \$2,000, and many individual contributions were subscribed without conditions. The state of the Rush Monument fund was thus much improved in a few minutes, and Commodore GIBON, the chairman of the committee, made very happy. The members should, however, remember that pledges, unless accompanied by proper collateral, are not negotiable paper. What the committee wants is *cash*.

The resumption of prize essays, as recommended by President SENN, is a wise measure, and will undoubtedly help the ASSOCIATION, and indirectly the whole profession, by stimulating original experiments; and here we may venture to record an expression of regret that steps were not taken to form a standing committee on legislation, so that the resolutions passed against Senate Bill 1063 (which prevents vivisection, and practically animal experimentation) might be made more effective. The report of Dr. FREDERICK HORNER on a benevolent aid association was well received, and a committee was appointed to formulate a plan, and report the details at the next meeting.

Dr. U. O. B. WINGATE, from the Committee on a Department of Public Health, made an elaborate report, and formulated a Bill, the result of much correspondence, which seems to meet the desire of the ASSOCIATION, as it was adopted without dissent or opposition. The Bill provides for a commissioner of health who shall be the head of the new department, which if the Bill becomes a law, will establish the Health Department on a broad and enduring foundation. This bill, as finally perfected and agreed to by the ASSOCIATION, will be urged until it shall be finally passed. No action of the ASSOCIATION was more important than this and none has been more carefully prepared, or has more skilfully harmonized opposing interests.

The jubilee exercises were impressive. The venerable founder of the ASSOCIATION, Professor NATHAN S. DAVIS, accompanied by his colleague, Professor ALFRED STILLÉ, was escorted to the stage between a double line of ex-presidents of the ASSOCIATION, who were standing in open order. The escort consisted of the Presidents of State Medical Societies and Presidents of State Boards of Examiners.

President SENN then welcomed him in a few well-chosen words, the delegates in the hall rose and cheered until they were stilled, when Professor DAVIS

delivered the historical reminiscences which we elsewhere publish. No one present will ever forget it. The orator read with his old-time earnestness, and with a clear voice that time has scarcely impaired; and the pride and affection that the ASSOCIATION has for our venerable colleague was manifested again, when he closed, by vehement and enthusiastic applause.

Another noteworthy incident was the appearance and pleasant words of congratulation by the President of the United States, the Hon. WILLIAM MCKINLEY. His presence was the signal for prolonged applause, and his speech, which is printed in the minutes, was exactly in the right vein to be appreciated and enjoyed.

The witty speech of the Governor of Pennsylvania, the Hon. DANIEL H. HASTINGS (p. 1143) was much appreciated for its bright and telling points, and it lost nothing in its effect by the excellent voice and style of delivery. The Governor was so pronounced in favor of the regular profession, and in his denunciation of quackery, that several of the members expressed the wish that Pennsylvania's Governor might infuse some of his correct ideas into the minds of some other governors—alas, gone wrong on these questions.

Taken all in all, the jubilee meeting was a perfect and pronounced success.

THE CUMULATIVE ACTION OF DIGITALIS.

There is scarcely a text-book on therapeutics and but few works upon practice of medicine, which are carefully written in the portions of them which are devoted to therapeutics which do not warn the student and young practitioner of the fact that digitalis is capable of producing a cumulative action, and it is unfortunate that in a large number of the books which we have mentioned the author does not clearly state what he means by this term. Further than this there seems to be some difference of opinion among many members of the profession as to what is intended by the word "cumulative" and so much confusion has existed in regard to this matter that some eminent clinicians have gone so far as to state that no such thing as a cumulative effect of digitalis is ever met with. From a careful consideration of the statements which have been made in various medical journals and text-books we think it may be concluded that where the so-called cumulative action of digitalis is denied an existence the person making a denial has not a very clear idea of what is meant when such a condition is described, and with a few exceptions we think it will be found that those who have denied its existence are usually careless in studying the effects which are produced by the administration of their remedies. Our confidence in the belief that there exists a cumulative action of digitalis has been considerably sustained by an original article on this subject which was read by HARE before the Association of American Physicians

at the recent Congress in Washington and which has been published in the *Therapeutic Gazette* for May. In this paper the author after describing what was meant by the so-called cumulative action of digitalis, gives the replies which he has received from a large number of prominent practitioners and teachers of medicine throughout the United States and Great Britain as to what they mean by this term, and it is an interesting fact to note that with a few exceptions those men having the largest experience and ability for therapeutic study are firm believers in the statement that digitalis is a drug which possesses peculiar properties in this respect. The cumulative action of digitalis differs from what might be called the cumulative or poisonous effects of other drugs in that the symptoms associated with the over-action of the remedy usually come on suddenly and are alarming in character. They are associated as a rule with great gastric disturbance and with mild nervous symptoms, but it is the circulatory disorder which is most distressing to the patient and alarming to the physician. This usually consists in a sudden change from the slow, full pulse, which is so characteristic of the full influence of digitalis, to the irregular, hobbling pulse produced by a disturbance of what might be called the "cardiac balance." When sudden in its onset it is generally produced by the patient changing his position as by quickly sitting up in bed, or attempting to stand erect by the bedside, when, from the disordered function of the vaso-motor system and the heart and its supplying nerves, the circulation suddenly fails and the patient suffers either from cardiac distress or a dangerous syncope.

It has been stated by those who are opposed to the view that digitalis produces a cumulative effect that any remedy given in over-dose for too long a period produces a cumulative effect and that digitalis is therefore no more peculiar in this particular than is strychnin or morphin. This, however, is not correct. Digitalis produces its cumulative effect as a rule because it is so slowly eliminated from the body and the effects of one dose are maintained for so long a time that ordinary frequency of dosage rapidly carries the patient beyond the point of tolerance, and if it is desired we can use the term "poisoning from medicinal doses of digitalis" to cover the same symptoms as some practitioners are wont to cover by the term cumulative.

As a rule the cumulative symptoms develop because the physician who is administering the drug ignores the rules which have been laid down ever since WITHINGTON, one hundred years ago, first introduced this remedy into therapeutics, namely, they give it in large doses and give it frequently and continue these large and frequent doses over long periods of time. That this is an incorrect way of administering the drug is recognized more thoroughly in France than it is in the United States. SOULLIER, a distinguished French

therapeutist, directs that the so-called cumulative effect of digitalis is to be avoided by the suspension of the remedy for eight days after it has been given for eight days, and quotes LEPINE as never using it on consecutive days. Another reason why digitalis is more apt to produce a so-called cumulative influence than are other drugs which are more powerful but whose influence is more fleeting, is that its physiologic action tends to retain it in the body, for, as BRUNTON points out, digitalin when taken for several days causes a decrease in the flow of urine through the spasm which it produces in the renal blood vessels and this decrease of urinary flow probably diminishes the elimination of the drug. One of the most noteworthy replies which was received by HARE in his collective investigation was received from JANEWAY of New York, whose large clinical experience certainly qualifies him to speak authoritatively in this matter. This observer states that he found the chief manifestation of this state to be sudden death on exertion and he adds that he has on several occasions made post-mortem examinations of persons who had been under treatment in the hospital with digitalis, the death being due in his opinion to the continuance and excessive administration of this remedy.

H. C. WOOD also recorded a case in which digitalis was administered for a number of days without effect, until suddenly the patient's pulse, which had been running about at 90, fell to 75; the drug was immediately discontinued, but the next day the pulse was 60, the next day 50, and the next day 40, and the patient had all the symptoms of the over-action of digitalis.

In the discussion which followed the paper that we have quoted we learn from the report made in *The Medical News* that OSLER expressed an entire disbelief in the possibility of the development of the cumulative action of digitalis and attempted to explain the changes in the pulse rate mentioned by Dr. WOOD as due to the inability on the part of the clinician observing the case to accurately count the pulse without paying attention to the cardiac pulsation in the precordium. He stated that it was frequently his experience when exhibiting digitalis to a patient to find that the apex beat of the heart to occur eighty times a minute, although the pulse at the wrist could only be counted forty times a minute, the forty lost beats being due to the fact that the heart produced an abortive systole which could be felt in the precordium, but which did not have enough power to produce a pulsation in the radial artery. It seems to us that this denial of the existence of the cumulative action of digitalis is on its face a proof of its existence. Any patient who has received this drug in such large doses over a considerable period of time, as to develop such an irregular action of the heart as we have described, is certainly suffering from a cumulative or

poisonous effect of this drug, notwithstanding the fact that Dr. OSLER believed his doses to be medicinal and not poisonous, and it is pointed out by the author of the paper quoted, in closing the discussion, that this statement proves exactly what its maker is attempting to disprove. In our opinion the proper administration of digitalis consists in giving it in such doses for the first day or two as to stimulate the heart and circulation to a point as nearly normal as possible, and then the physician, remembering how persistent the action of this drug is, and how slowly it is eliminated from the body, should cut the dose down to a comparatively small amount which though minute in comparison with the original dose, is still large enough to maintain the physiologic action of the drug. Or, if he fails to do this, he should at least stop giving the remedy for a few days at the end of each week in order that the system may rid itself of the drug which the physician has been administering in excess of its needs.

THE OSTEOPATHY BILL.

The bill allowing a certain class of practitioners, styling themselves osteopaths, extraordinary and special privileges has recently passed both houses of the Illinois Legislature and is now in the hands of the Governor—let us trust for slaughter.¹ It is incredible that a bill which confers special privilege on masseurs or chiropodists can receive sanction. Regular, "homoeopathic" and "eclectic" under the existing law must come to practice under the medical practice act, but these persons are to be exempted from any restrictions whatever. This is probably unconstitutional, as it is certainly class legislation. Under the provisions of the proposed bill all the irregular advertising mountebanks that masquerade under the name of "doctor" will become osteopaths and practice without let or hindrance. The act to regulate the practice of medicine in the State of Illinois was passed for the protection of the people of the State against the quacks. This bill renders the act of no use, and practically annuls, for it would be monstrous to require an educated physician to pass under restrictions which do not exist for the so-called osteopath, this term being simply used as a cloak for ignorance and deceit. The profession in Illinois are justly aroused, but too late to have made an impression on the Legislature, where the bill was kept very quiet. They now depend on the well-known good sense of the Governor to return this piece of half-baked legislation without his approval.

THE JOURNAL TRAIN.

The JOURNAL Special train went to Philadelphia exactly on time. Its appointments were perfect, and its accommodations ample for the 140 persons who availed themselves of them. Thanks are due the

¹ As we go to press we learn that this bill has been vetoed.

management of the Pennsylvania Company for the perfectly satisfactory manner in which the train was equipped.

BOOK NOTICES.

Registration of Births, Marriages and Deaths in the Province of Ontario, for the year 1895. Pp. 354. Toronto: Warwick Bros. and Rutter. 1897.

The report presents, with other data concerning vital statistics, notes on the several Registration Acts of Ontario: the Act of 1896, in full; and replete tables summarizing births, marriages and deaths. These tables present their data by counties, by towns and by cities: with tabulations of causes of deaths, number of births and marriages by order of months, and proportion of male to female births. The twelve highest causes of deaths were phthisis, prenatal period, old age, pneumonia, diphtheria, cholera infantum, valvular diseases, paralysis, typhoid fever, convulsions, bronchitis, wounds and accidents.

Transactions of the American Microscopical Society, at its nineteenth annual meeting, held at Carnegie Library, Pittsburgh, Pa., Aug. 18, 19 and 20, 1896. Vol. xviii. Paper, pp. 420. A. T. Brown Printing House, Buffalo, N. Y. 1897.

Many of the papers presented are of marked value to medical men, while all are a credit to the Society. Among others, we note: "Diphtheria, its Bacteriology," by Charles F. Craig, M.D.; "A Study of the Cellular Pathology of Carcinoma," by C. W. Kellogg, M.D.; "The Red Blood Corpuscle in Legal Medicine," by M. C. White, M.D.; "The Requisites of a Pure Water Supply," by W. C. Krauss, M.D.; "The Increasing Pollution of our Municipal Water Supplies," by F. J. Thornbury, M.D.; and "Public Water Supply for Small Towns," by M. A. Veeder, M.D.

NECROLOGY.

GEORGE THOMAS, M.D., born in Maryland thirty-eight years ago, died in Baltimore of pneumonia, June 3. He was graduated in 1882 from the College of Physicians and Surgeons, Baltimore. Four years ago he became Secretary of that College and was also a member of the Maryland Medical and Surgical Association, the Clinical Society and the American Laryngological Society.

ANTHONY EUGENE STOCKER, M.D. University Pennsylvania, 1840, for many years on the surgical staff of the Pennsylvania Hospital, died May 23, in Philadelphia, aged 78 years.—Jeremiah B. Selby, M.D., May 31, aged 75 years. In point of residence, the oldest physician in Milwaukee.—A. L. Knight, M.D., West Columbia, W. Va., May 27, aged 74 years.—Henry A. Dubois, M.D., San Rafael, Colo., formerly in charge of the U. S. Medical Laboratory, Philadelphia.—B. F. Sherwood, M.D., Ogdensburg, N. Y., May 30, aged 80 years, at one time president of the New York State Medical Society.—B. H. Benham, M.D., Honeoye Falls, N. Y., May 31, age 68 years.—John Westgate Ladd, M.D., Newport, R. I., May 29.—Alphonso Xavier Illinski, M.D., East St. Louis, May 29, aged 90 years. Dr. Illinski belonged to the nobility of Poland but was exiled during political disturbances of 1836, coming to America in 1837. He introduced the use of antiseptics, the hypodermic syringe and the fever thermometer, into the Mississippi Valley.

MISCELLANY.

Injection of Chloroformed Guaiacoi in Severe Neuralgia. Subcutaneous injections of 15 to 60 drops of a solution of chloroform, 10 grams, and guaiacoi, 6 grams, always soothes the pain,

improves the neuralgia often and occasionally cures it. The bottle should be sheltered from the light and kept in an opaque paper. The injection should be made as close as possible to the nerve trunk, once a day, or once in two or three days. These injections have also been found effective in small surgical operations as an analgesic.—*Presse Méd.*, April 24.

Mirror Writing.—Professor Laveran has remarked that if a pencil is taken in each hand, and one then commences to write with both, the left hand will write reversed, from right to left, unless the attention is concentrated upon it. The two hands will soon be far apart, writing in opposite directions, as any one can corroborate for himself. He ascribes the reversed writing in certain cases of hemiplegia to the fact that the act of writing becomes then purely automatic, and the reversed direction of the writing proves that the individual was naturally left-handed, although this might have been unsuspected by those around him, and possibly by himself. He mentions the fact that the Arabs and Jews of antiquity wrote with the left hand, and from right to left. He suggests writing down the incomprehensible speech in aphasia, when possibly some clue to it may be discovered.—*Nord Méd.*, April 1.

Early Diagnosis and Treatment of Malignant Deciduoma.—The predominant symptom is the copious and repeated metrorrhagia resisting all the usual methods of treatment. The uterus is voluminous, the cervix soft and gaping. The pre-existence of a mole pregnancy, an actual or suspected abortion, pregnancy, all assume great importance, as a deciduoma does not develop without some product of true or false conception in the uterus. The condition of the general health is also very important, especially if there is debility more than can be ascribed to the recognized lesions. Certainty can only be obtained by curetting the uterus, when the presence of cells in the scraps of mucosa, with the characteristics of decidual tumors, decides the question. Immediate vaginal hysterectomy is the only treatment. Monod and Chabry thus recently operated on a young woman presenting the above clinical picture. The neoplasm was found penetrating the muscular interstices and lymphatic vessels, in a way that proclaimed its malignant character at a glance, although it had been ablated at such an early stage.—*Rev. de Gyn. et de Chir. Abdom.*, February 10.

The Spectroscope in Investigating the Blood.—Professor Lewin urges all to master the simple details of using the spectroscope in examining specimens of blood, calling attention to its great importance in medico-legal questions and also its clinical significance in infective and metabolic diseases. The urine, for instance, in some cases shows no macroscopic nor microscopic traces of blood, but with the spectroscope it is distinguished at once. The discovery of carbonic oxid in the blood is conclusive evidence that it was inhaled during life. The presence of sulpho-hemoglobin is also important in cases of poisoning from sewer gas, emanations in industrial establishments, etc., but it can only be discovered with a thick layer of blood, and a very narrow slit for the entrance of the light. Methemoglobin is the first product of the decomposition of oxyhemoglobin. If present in large quantities, the blood becomes thick and dark brown, and it imparts a grayish-violet color to the skin, often mistaken for cyanosis from the usual causes. The poisons that generate methemoglobin in the blood during life are sodium and potassium chlorate, arsenious oxid, the inorganic nitrates and nitrites, and also all the nitro-compounds of the fat and aromatic series, such as ethyl nitrite, amyl nitrite, nitroglycerin, nitro-benzol; also the amido compounds, like anilin, amido-toluene, paramidophenol, nitro-anilin, hydroxyl-amine; most of the hydrazins, chinolin, helvella esculenta and others. The indications of methemoglobin are the bands in the red, but still more characteristic is the disappearance of these bands, with reduction, and the appearance of the hemoglobin

bands. Old yellow ammonium sulphid (Schwefelammonium) is a reliable and sensitive test for hematin; its diagnostic value is evident. Hematoporphyrin is an extremely sensitive test for blood, and if old, dried, putrefied or otherwise altered blood is mixed with sulphuric acid, the compound contains hematoporphyrin, and the resulting spectrum is unmistakable. Lewin gives many other important suggestions with a carefully compiled table of the most frequently encountered blood spectra in the *Deutsche med. Woch.* of April 1, adding that a most important part of the procedure is to identify and interpret the bands after they are distinguished. The Browning pocket spectroscope is all that is required, with the blood in a test tube or flat-sided bottle. The bands in the red and orange portion of the spectrum must be examined first, before the blood is diluted, as even experts might fail to distinguish them after the bands in the blue become visible.

Deafness of the Usefulness of Bianchi's Phonendoscope.—Egger, after a careful study of the practical usefulness of Bianchi's phonendoscope, obtained results that do not fully accord with those claimed by the inventor of that instrument. He objects to the instrument, in the first place, on the ground that even the slightest shaking of the rubber conducting-tubes produced very distinct accessory sounds that were conducted to the ear, thus tending to obscure the heart or lung sounds. On the other hand, the very slightest manipulation of the metal rod that rests on the surface of the body causes a noise in the ears so intense as to be painful. Bianchi held that with the use of the phonendoscope all sounds, normal or adventitious, when they reached the ear, had the same intensity and quality which they possessed at their point of origin. Egger believes this to be untrue in many cases. In a tuberculous patient with lung cavities, an examination by direct application of the ear to the chest or by the use of the ordinary stethoscope showed pure amphoric breathing and exquisite metallic râles. On using the phonendoscope the amphoric character of the breathing and the metallic character of the râles were entirely lost, and only bronchial breathing could be made out. He convinced himself that high-pitched notes were much more poorly conducted than with the naked ear or with the ordinary stethoscope. Low-toned notes, on the other hand, were much better conducted. Bianchi claimed that the notes obtained while rubbing the skin slightly during auscultation over an air-containing organ is different from that obtained over an organ not containing air. He was thus able to map out the outlines of the heart and liver. Egger is doubtful whether results thus obtained can be fully relied on, as he was able to get marked variations in the note while auscultating over various parts of the thigh. He does not believe that the phonendoscope will displace the stethoscope in the clinical work.—*Münchener medicinische Wochenschrift*.

Complete Crossed Hemiatrophy of Neuritic Origin.—Lunz (*Deutsche Med. Woch.*, March 18, 1897, p. 185) has reported the case of a married woman, 26 years old, who presenting wasting of the left half of the face and of the right upper and lower extremities and of the right half of the trunk including the breast. Prior to her marriage she had been employed as a weaver and had always been perfectly well. Subsequently she worked in the fields and was often exposed to cold and wet. Soon after this change in her mode of life she became troubled with pain in the right thigh, particularly upon its posterior aspect and extending to the sole of the foot. After the lapse of several years the pain became more aggravated, and it was now noticed that the right lower extremity was wasted. Shortly before this, while nursing her first child, the patient had observed the right breast to be smaller than the left, and that the former secreted less milk than the latter. For a period of four years her friends had noticed that the left side of her face was smaller than the right side, and the former was at times the

seat of slight pain. For a year there had been complaint of pain in the upper extremities. The atrophy involved, so far as could be determined, only the soft parts. Motility, however, was in nowise impaired, except for a marked insufficiency of both ocular internal recti. Sensibility was unchanged in its several forms and there were no tender points or lines. In some muscles in the affected areas faradic and galvanic irritability was increased, probably from diminished resistance to the passage of the currents. The cutaneous reflexes were normal. The knee-jerks were slightly increased, particularly upon the right side. Tinnitus aurium recurred frequently, in association with vertigo and feelings of heat in the head. At the same time the face became reddened and there was free perspiration. There was a sense of coldness in the lower extremities, which were livid and cyanotic. Careful studies of the local temperature showed this to be depressed in those situations in which the manifestations were active and the blood vessels contracted and relatively elevated where the activity of the manifestations had largely subsided (and the tone of the blood vessels was diminished or lost). Control observations showed considerable variations between symmetric parts of healthy persons, though not so pronounced as in the case of the patient under consideration. The conclusion is expressed that the case is one of wandering interstitial neuritis, with vaso-motor manifestations resulting in atrophy from constriction of the blood vessels.

Test of the Permeability of the Kidneys.—Methylene blue injected subcutaneously after urinating appears in the urine normally in half an hour, attaining its maximum of intensity in three to four hours. But if the kidneys are affected, the blue appears much more slowly, and in seventy-seven observations this test confirmed in every case the diagnosis of renal disturbances. Achard and Castaigne also found several cases in which there were no clinical evidences of renal trouble, but investigation in each case disclosed early troubles. They consider the test a valuable confirmation of other evidence as the function of the organ is alone involved. The average dose injected was 0.050 gram.—*Bulletin de la Soc. Méd. des Hôpitaux*, May.

Intermittent Drainage of the Pleura.—R. Macias has secured brilliant results in eight cases of purulent pleurisy by this means and recommends it for the serous form also. A rubber tube is inserted into the pleural cavity and left permanently, but the free end is closed with a clamp or tied in a knot, and only opened for a while every two hours at first and once a day later. Infection and the entrance of air must be scrupulously prevented, the latter by keeping the free end when open in a vessel containing a weak solution of bichlorid of mercury. If the tube becomes obstructed, the clot can be manipulated from without and forced along.—*Revista Med.* March 14.

Acute Edema of the Lung.—A recent session of the Paris Académie de Méd. was devoted to this subject, Huchard ascribing it to aortitis, or periaortitis, shown by the diminished blood pressure. The treatment therefore should be based on the pulmonary hypertension, the disturbances in the pulmonary innervation, and the renal impermeability, as it frequently accompanies interstitial nephritis. The heart must be strengthened and its work lessened, which can best be accomplished by a large general or local venesection. With this injection of caffein and camphorated oil should be made, and strychnin administered internally or in subcutaneous injections. Morphin is strictly contraindicated owing to its depressing effect. Iodin medication should be immediately suppressed. Death ensues in a few minutes in the violent form, but there may be several attacks before the fatal ones in the subacute form. It should be distinguished from syncope, stenocardia, alimentary toxic dyspnea, asystolia, uremia and asthenia.—*Bulletin*, April 27.

Colleges.

THE COMMENCEMENT exercises of the Woman's Medical Col-

lege, Baltimore, were held May 31.—Jenner Medical College, Chicago, held its annual commencement June 3.

Hospitals.

THE fifteenth annual report of Garfield Memorial Hospital, Washington, D. C., is out. In 1896, the patients numbered 1,268. Among these were thirty-eight cases of typhoid fever, as compared with seventy cases in 1895 while the mortality rate, in 1896, was 10.5 per cent., and in 1895, 17.14 per cent. There were also (1896) sixty-five cases of malarial disease, forty-six of alcoholism, thirty-seven of pulmonary consumption, and thirty of neurasthenia, while 329 operations were performed in the surgical and gynecological departments; and forty-six in the Department of Diseases of the Eye. The dispensary work covered 1,426 cases.—The Jewish Hospital, Philadelphia, treated 648 patients during the past year, besides 12,450 dispensary cases.—The eighteenth annual report of the Binghamton (N. Y.) State Hospital, shows the average population of the institution to have been 1,249 during the past year.

Societies.

THE ANNUAL MEETING of the State Medical Society closed at Grand Forks, N. D., May 27, with the election of the following officers: President, August Eggers, Grand Forks; first vice-president, F. R. Smythe, Bismarck; second vice-president, George F. Bates, Hillsboro; treasurer, J. A. Rankin, Jamestown; secretary, R. D. Campbell, Grand Forks; board of censors, J. P. Aylen and T. Thames, three years; J. D. Wendell and Alex. Stewart, two years; George A. Carpenter and F. B. Smythe, one year. The next meeting of the association will be held at Jamestown, May, 1898.—At the seventy-seventh annual meeting of the Monroe County (N. Y.) Medical Society, the library committee reported that \$1,500 worth of books had been collected during the few years' existence of the library. The library is a branch of the Reynolds library, Rochester, and open to the public. The Reynolds library not only cares for it free of expense, but donates \$250 annually.—The Missouri Valley Medical Association convened at Omaha June 1.—The annual meeting of the Somersworth and Berwick Medical Society (N. H.) was held May 27.—The Wayne County (Mich.) Medical Society convened May 27.—The physicians of Trumbull County, Ohio, have organized the Trumbull County Medical Society.—The Ramsey County Medical Society (Minn.) met at St. Paul May 31. Plans were formulated for starting a library.

Washington.

A COMMITTEE ON TRANSPORTATION.—The action of the AMERICAN MEDICAL ASSOCIATION in creating a permanent committee on transportation will do much toward securing suitable reduction in transportation rates for their delegates and prominent members attending future meetings. The wisdom of concentrated action by the ASSOCIATION can not be overestimated. Heretofore the different States and cities have left this important matter in the hands of local committees who have never been able to secure a satisfactory reduction in rates. The temper of the medical profession was clearly demonstrated at the public meetings of the ASSOCIATION at Philadelphia, when the roads, particularly the trunk lines of the East, were severely criticised for what the medical men characterized unjust discrimination against them in matters of transportation rates. The future Transportation Committee of the ASSOCIATION, consisting of Drs. H. L. E. Johnson of Washington, D. C., chairman, Charles A. L. Reed of Cincinnati, and Henry D. Holton of Vermont, will have charge of transportation matters and report to the ASSOCIATION. The committee have decided to take action at once in the matter of reduced rates, and report to the profession at short intervals through the JOURNAL.

MEDICAL SOCIETY.—At the meeting of the society, held on the 2d instant, Dr. J. Ford Thompson made a valuable contribution to surgery in an essay entitled, "The Treatment of Open Fracture." Dr. Hasbrouck reported a case of chloroform narcosis.

WASHINGTON OBSTETRICAL AND GYNECOLOGICAL SOCIETY.—At the 265th meeting of the Society, held on the 4th inst., Dr. Samuel S. Adams read a valuable paper entitled "Tetany in Infants." He presented the literature of all the cases (forty-six) reported in North America, in children under 2 years of age. These were all cases of tetany and did not include trismus nascentium. He included three cases which occurred in his own practice, one in a rachitic, one from trauma and one from erysipelas. A full and interesting discussion followed.

THE ANTIVIVISECTION BILL.—Senator Cockrell has presented a memorial from the representatives of medical and scientific societies of Washington, D. C., and elsewhere, protesting against the passage of Senate Bill 1063, for the further prevention of cruelty to animals in the District of Columbia. It is Senate Document 107, 55th Congress, 1st session, and can be obtained free on application to the U. S. Senate. It is a very valuable seventy-one page report.

THE PUBLIC SERVICES.

Army Changes. Official List of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from May 28 to June 4, 1897.

Major Joseph K. Corson, Surgeon (Ft. D. A. Russell, Wyo.), is granted leave of absence for one month, to take effect on or about June 15, 1897.

Navy Changes. Changes in the Medical Corps of the U. S. Navy for the week ending June 7, 1897.

Medical Director T. N. Penrose, retired from June 6.

CHANGE OF ADDRESS.

Brown, H. M., from 2362 S. Elm St. to 1219 McMillan St., W. H., Cincinnati, Ohio.

Brown, R. L., from 1211 Van Buren St. to 1217 Jackson Blvd., Chicago, Ill.

Billmeyer, G. M., from Chicago to Waukegan, Ill.

Butler, T. L., from 2101 Floyd St. to 1511 4th Av., Louisville, Ky.

Derwent, A. E., from Chicago to Pecatonica, Ill.

Faber, C. A., from Chicago, Ill., to Room 41 and 42 Merrill Bldg., Milwaukee, Wis.

Hartman, F. T., from Chicago, Ill., to Anamosa, Iowa.

Hammond, Wm. A., from Washington, D. C., to Hotel Madison, 42d and Madison Av., New York, N. Y.

Jegl, H. A., from Arcadia to Galesville, Wis.

Miller, De Laskie, from Virginia Hotel to 56 Astor St., Chicago, Ill.

McDougall, G. T., from Hotel Phister Drug Store to 70 Farwell Av., Milwaukee, Wis.

Otis, N. M., from Chicago to Fairbury, Ill.

Owen, D. W. C., from 1961 Arsenal St. to 3864 Park Av., St. Louis, Mo.

Pbelps, A. M., from 40 West to 62 East 34th St., New York, N. Y.

Roseberry, B. S., from Catskill, N. M., to Florence, Colo.

Steele, D. C., from Cocato, Minn., to Kindred, N. D.

Trout, E. H., from 1278 Adams St. to 1025 Warren Av., Chicago, Ill.

Traver, W. H., from 203 High St. to 5 Stewart St., Providence, R. I.

LETTERS RECEIVED.

Adams, W. A., Fort Worth, Texas; Adkinson, L. G., New Orleans, La.; American Therapeutic Co., New York, N. Y.; Ammonol, The Chemical Co., New York, N. Y.

Barnes, F. M., Fairbury, Ill.; Bennett, R. F. (Mrs.), Elgin, Ill.; Bid-
dle, James G., Philadelphia, Pa.; Battle Creek Sanitarium, Battle Creek,
Mich. (2); Barnes Medical College, St. Louis, Mo.; Baughman, J. A.,
Neoga, Ill.; Bailey, E. S., Chicago, Ill.

Cooksey, Thos. L., Fairfield, Ind.; Church, Otis E., Chicago, Ill.; Cop-
lan, M., Cleveland, Ohio; Cooper, James E., Rock Lick, W. Va.; Consum-
ers' Company, The, Chicago, Ill.; Columbus Phaeton Co., Columbus,
Ohio; Coulter, C. E., Ogden, Utah; College of Physicians and Surgeons
of San Francisco, San Francisco, Cal.; Case, F. L., Columbus, Ohio; Cor-
ley, H. N., St. Paul, Mo.; California Fig Syrup Co., San Francisco, Cal.;

Collison, F. J., Columbus, Ohio.
Densmore Typewriter Co., The, New York, N. Y.; Dodds, H. C., Honey
Creek, Wis.; Doliber, Goodale Co., Boston, Mass.

Fessenden Mfg. Co., The, Pittsburgh, Pa.; Fennacy, G. W., Blenheim,
Ontario, Canada; French, J. M., Milford, Mass.

Green, Bedford, Nashville, Tenn.

Haas, Chas. A., St. Paul, Minn.; Howard University, Washington, D.
C.; Haggard, G. D., Minneapolis, Minn.; Hicks, J. A., Indianapolis,
Ind.; Hummel, A. L., Adv. Agency, New York, N. Y.

Johnson, L. M., Eagle Pass, Texas.

Klie, G. H., Chas., St. Louis, Mo.; Krieger, G. S., Madisonville, Ohio;

Kelso, H. A., Paxton, Ill. (2).

Murphy, Chas. T., Chicago, Ill.; Marion Sims College of Medicine, St.
Louis, Mo. (2); Medico-Chirurgical College, Philadelphia, Pa.

Orr, G. B., Cincinnati, Ohio.

Patton, E. E., New Kensington, Pa.; Price, A. E., Chicago, Ill.; Patter-
son, J. D., Wakefield, N. Y.

Roberts, Heber, St. Louis, Mo.; Richter, B. M., Bethany, Mo.

Scherer & Glatz, New York, N. Y.; Shaw, C. A., South Macalester,
Ind. Ter.; Stoddard, J. T., Joesboro, Kan.; Stites, J. A., Lebanon, N. J.;

Shuey, J. J., Neola, Iowa; Schottler, G. J., Dexter, Minn.; Syracuse Uni-
versity, Syracuse, N. Y.

Tennysou, E., Minneapolis, Minn.; Taylor, C. F., Philadelphia, Pa.;

Thompson, S. W., Oswego, N. Y.

University College of Medicine, Richmond, Va.; University of Mary-
land, Faculty of Physies, Baltimore, Md.

Wine, W. E., Twin Bridges, Mont.; Walker, Edwin, Evansville, Ind.

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No. 25.

ORIGINAL ARTICLES.

THE LATEST METHODS OF TREATING CARCINOMA BY HYPODERMIC INJECTION.

BY EDMUND ANDREWS, M.D., LL.D.

PROFESSOR OF CLINICAL SURGERY IN THE MEDICAL SCHOOL OF THE NORTH-
WESTERN UNIVERSITY, AND SENIOR SURGEON OF MERCY HOSPITAL,
CHICAGO.

The partial success of Professor Coley's treatment of sarcoma by the injection of the toxins of erysipelas and of the bacillus prodigiosus has aroused interest, and induced surgeons both sides of the ocean to experiment with other articles.

One of these is the extract of *chelidonium majus*. This is the ancient semi-domestic remedy calledcelandine. It is an acrid irritant having such energy that applied to the skin it causes inflammation and blisters, and applied to warts is said to destroy them by acting like a caustic.

Dr. Denicenco of Russia (*Wratsch, St. Petersburg*) experimented with it first in epithelioma of the lip, and having produced cures (by sloughing) he was led to use it in inoperable cancers of various parts of the body. He gives it internally by the mouth, applies it on the surface, and injects it into the tumor itself. Probably the whole effect comes from the injections, but of that I am not certain. By the mouth he gives from one and a half up to five grams of the extract dissolved in peppermint water in twenty-four hours. On the ulcerated surfaces of the cancer he paints twice a day a mixture of two parts of the extract of *chelidonium* and one of glycerin. For injection into the substance of the tumor he prepares a solution of extr. of *chelidonium*, glycerin and water in equal parts, and adds half of 1 per cent. of chloroform to prevent decomposition. One ordinary hypodermic syringe full is injected daily. Denicenco says that it causes pain, a severe chill, and a high temperature lasting until the next day. This series of symptoms does not always follow. I know of at least one case of cancer of the rectum in which there was no pain, chills, nor fever, and yet the patient derived great benefit from the treatment.

Denicenco describes the local effect as follows: "On the first days of the treatment the tumor softens and seems to melt; in three to five days fistulas appear at the places of the punctures; around these fistulas the neoplasm seems to be dissolved; in fifteen to twenty days the tumor separates from the healthy tissues and is expelled" (*i.e.*, it becomes gangrenous and sloughs out). "The enlarged lymphatic glands become normal." This latter statement is very important, if true, because it implies that the effect goes beyond the mere caustic destruction of the primary tumor, and cures the infected lymphatics, or in other words the glandular secondary tumors. If I understand him rightly, he does not claim that the secondary tumors are

sloughed out like the primary, but that they are changed in character and "become normal." This opinion needs confirmation. The author asserts that he examined all the primary tumors microscopically, and was sure of their malignant structure.

Dr. Hunt of Dixon, Ill., sent a patient to me for examination and opinion. I found a malignant tumor of the rectum surrounding the entire gut about 2½ inches above the anus, and causing a stricture which amounted to an almost total obstruction of the bowel. The growth was firmly adherent to the walls of the pelvis and evidently inoperable. On consultation we agreed that it was best to try the *chelidonium*. Dr. Hunt and Dr. Grim arranged to carry out the injections, using a mixture of equal parts of extr. *chelidonium*, alcohol and glycerin. After three weeks trial, there was no softening. They then increased the strength to nearly pure extract (Parke, Davis & Co.'s). The tumor now softened, and soon sloughed away so extensively as to completely relieve the obstruction of the intestine and the distress of the patient, and causing a decided improvement of his health as well as of his comfort. One pretty severe hemorrhage occurred during the sloughing, but it was not exhausting. The parts being internal, it is impossible to say whether the whole primary tumor is destroyed, nor whether the infected lymphatics have improved in their condition, as was claimed by Denicenco.

This is a new treatment, and needs further testing, but I incline to think it will be found valuable in certain cases which are now considered hopeless because inaccessible to operative measures.

INTERSTITIAL INJECTIONS OF ALCOHOL.

Hassel of Nordhausen, Prussia, claims remarkable effects and even cures by injecting a solution of alcohol having a strength of 30 to 50 per cent. He says there is some pain at the moment of injection, but great relief from the pain of the disease. In tumors of the breast, he does not inject the tumor itself, but the connective tissue under and around it are liberally infiltrated with the alcoholic fluid by means of a syringe with a long pipe. The tumor shrinks and in many cases seems permanently cured.

Hassel of Germany, says the same thing substantially (*Therap. Woch.*, Oct. 11 and 25, 1896). He puts in from 5 to 20 cubic centimeters at once. The injections are made twice a week at first, and later once in two or three weeks. In fifteen out of eighteen cases of carcinoma of the breast the growth "dwindled gradually away until in a year there was nothing left of it but the connective tissue stroma, and there has been no return." The pains disappear and the general health improves in a remarkable manner. In five cases of carcinoma of the cervix uteri similar success was obtained.

Dr. Edwin J. Kuh of Chicago, reports one case. He deviated from the plan of Hassel by using absolute

alcohol, instead of a dilution. The patient could only tolerate three minims at first on account of the pain, but later endured with difficulty 30 minims. Dr. Kuh thinks the diluted form might have been better. The tumor was a carcinoma seated in the naso-pharynx. The reduction in size began after the seventh injection, and was apparently cured after the twenty-fifth. After four months there was no sign of return. He put the fluid into the tumor itself.

I have recommended the alcohol injections in consultation in several cases; but there has not been time enough yet to judge of the permanency of the cure, nor of the effects on the infected lymphatic glands. At present I advise it only in inoperable cases.

Dr. Young of Bloomfield, Iowa, uses the pure alcohol and puts it into all parts of the tumor itself. He claims some cures.

Hué of France, injects a solution of arsenic and cocain at intervals of two or three days, and later at longer periods. He claims good results and some cures, with freedom from pain.

Alexandro and others have injected methyl blue, and report the pains relieved and the tumors made to shrink and disappear.

Dr. C. M. Fenn of California, reports the injection of saturated solution of citric acid. He says it brings "instant relief" and some cures.

This whole investigation is yet in a crude and unfinished state, but it will go on to more definite results. If some injection can be found which, while curing the primary tumor, will have such a controlling power over the inaccessible secondary ones, as is claimed for the chelidonium, it will be of immense value. If this power over the infected glands is not finally proven, it will still be of great importance in many individual cases to atrophy the primary tumor and to relieve the distressing pains.

3912 Lake Avenue.

SURGICAL SHOCK.

Read before the Chicago Academy of Medicine April 9, 1897.

BY FENTON B. TURCK, M.D.
CHICAGO.

The experiments on animals for inducing shock were reported before the AMERICAN MEDICAL ASSOCIATION, May, 1896. In these experiments the color changes in the abdominal viscera were noted, the blood pressure in both arteries and veins in the peripheral circulation as well as the central. I will give a brief résumé of some of these experiments.

Experiment No. 1 showed that after exposure of the stomach and intestines to draught of air from an open window, temperature 58, profound shock resulted. The gastric veins within half an hour were all congested. Respiration shallow; pulsations weak. The chloroform was pushed to the extreme; animals stopped breathing. Withdrawal of chloroform and artificial respiration did not excite respiratory movements. The intragastric resuscitator¹ was introduced into the stomach, and hot water 130 F. As soon as the water returned from the other side of the double tube, and more hot water introduced the animal began to breathe. In twenty minutes there was a remarkable change in the color of the stomach. Instead of the blue dull color it became a bright red. In forty minutes the surface of the body became warm. The mouth showed a bright red color, in place of the pale

livid hue. Pulsation became strong, showing increased arterial tension and the respirations became deep and uniform. This was repeated during the same period, and the second time the same phenomena were again presented. When the restoration of the circulation seemed assured, the abdominal wound was closed, leaving a permanent gastric fistula. The animal recovered and was exhibited in my lectures given at Jefferson Medical College, Philadelphia, February, 1896.

Experiment No. 2 was of a similar character. The pressure in the veins and the arteries was studied with a manometer to indicate the changes in blood pressure. During shock the veins and the viscera show increased pressure while the arteries a decrease. After the introduction of the intragastric resuscitator this condition is reversed.

Experiments 3 and 4 similar to 1 and 2.

Experiment 5 was a study of changes that occur by the observation of color of the viscera. The shades from the normal to profound shock, showing eight different stages; also standard changes of shades observed after the introduction of the intragastric resuscitator. Referring to the chart, No. 1 is the normal, No. 2 the first changes observed after shock, No. 3 and so forth up to 8. It is found that within three minutes after exposure shade No. 2 was observed, in eight minutes No. 3; ten minutes No. 4; fifteen minutes No. 5; half an hour No. 6. It required an hour and a half for No. 8 to appear. There was a marked difference in the shades of the intestine and the stomach; when the stomach showed shade No. 5 the intestines appeared shade No. 6 (after the introduction of the intragastric resuscitator). After thirty minutes the shade in the stomach showed No. 4, intestines showed No. 5. In forty-five minutes all the larger veins were apparently empty. In one hour the stomach showed shade No. 3, while intestines remained shade No. 4. (Exhibition of color chart.)

SHOCK BY THE INTRODUCTION OF TOXINS.

Experiment No. 5. Method. Stomach contents drawn off, from a patient suffering with dilatation of the stomach. One hundred cu. cm. injected into a dog weighing 15 kg. This is repeated in one hour. Evidence of shock observed. In one hour the surface was cold, the mouth and gums pale, and on opening the abdomen a deep injection of all the viscera was apparent. The animal was in shock. Introduction of the intragastric resuscitator, reduction of the shock is produced. The animal recovered. While a control under the circumstances carried out on a dog weighing 16½ kg. the animal died.

Experiment No. 7. Shock produced by operation on abdominal viscera. Long incision from xiphoid appendix to symphysis pubis. Operation for gastrostomy (Turck's valve operation). Operation for the Heintze-Mukilitz pyloroplasty. Also Martell's operation for gastro-enterostomy. Within one hour the entire stomach and intestines showed a bluish color with all the veins congested. Respiration shallow; pulse 130; evidence of collapse. Hot water bag placed inside the stomach. Temperature of 125 raised to 135, in a moment there was a change in both the pulse and respiration, the high heat having an instantaneous reflex action. The color changes within two minutes. In fifteen minutes the veins grew smaller in size and the surface appeared more of a rosy color. Respirations not so shallow, pulse strong, show-

¹ For description of the instrument see Journal, Jan. 11, 1896, p. 79.

ing increased tension. Twenty minutes intestines began to change in color similar to the effect observed in the circulation of the stomach. The general effect was pronounced upon all the mesenteric vessels. Thirty minutes the congestion was reduced and arterial circulation restored. Water introduced had to be changed every five minutes and absorption of heat was very great. Water introduced at 125 and 130 returned at 110 and 105. The viscera was exposed for three hours. The animal made a good recovery.

Experiment No. 9. To determine the rapidity with which color changes take place in the abdominal viscera. Exposed to the cold draught No. 1 on opening the abdomen. Color No. 2 in five minutes; No. 3 in ten minutes; 4 in fifteen minutes; 5 in thirty minutes; 6 in forty-five minutes. Hot water bag introduced in ten minutes from the time shade No. 2 was evident. In other areas No. 3 shade was observed.

Experiment No. 10, April 7, 1896; assisted by Captain Appell, Assistant Surgeon U. S. A. The animal was placed on a hot water bed. The abdomen was opened to a draught of air; operation was made for valvular gastrotomy. In forty-five minutes profound congestion of abdominal viscera was apparent; congestion of all the viscera, gastric vessels, gastric epiploica, and senestra, and gradually became filled and the tortuous veins stood out in dark relief upon the livid background. The stomach, though congested, was cold to the touch and intestines likewise. All evidence of shock was present. Reflexes absent though the animal was not under the influence of chloroform at this time, or ether. Shallow and rapid breathing. Rapid weak pulse, surface of the body cold, gums and tongue pale; collapse was imminent. The intragastric resuscitator was introduced and water of 130 degrees. In three minutes the water was withdrawn at 110 degrees F. The effect of the hot water was instantaneous. A continuous stream was allowed to play through for ten minutes; breathing and pulse improved at once and the circulatory changes were manifest, probably due to the stimulation of the solar plexus, cardiac plexus. The veins diminished in size right under the eye, the red bluish shade taking place instead of the sluggish blue. In twenty minutes the animal breathed steadily, pulse "came up," and arterial tension was increased. The body grew warm; tongue and gums showed a natural color. It was evident to all present that the animal was out of shock in half an hour.

REPORT OF CASES AND METHOD OF TREATMENT.

The following cases are selected from a large number to illustrate the symptoms and physical condition found in shock, also the effects of the treatment by the intragastric resuscitator.

Case 1 was that of a woman 40 years of age, suffering from impaction in which she was found in an unconscious condition, surface of the body cold, pale, lips bluish. The intragastric resuscitator was immediately introduced into the stomach. Within fifteen minutes reaction was complete, consciousness was restored and in thirty minutes the surface of the body, hands and feet were warm and the patient out of shock. Following this the usual treatment was inaugurated to reduce the impaction of the bowel.

Case 2.—Mrs. K., age 36, was found in shock, resulting from acute gastro-enteritis. There was a cold sweat upon the surface, a feeling of impending

death and anesthesia of the surface, pale and livid. The intragastric resuscitator was introduced into the stomach; within ten minutes the pulse became fuller, stronger and less rapid. The color began to change in the lips from a bluish to a reddish. Within half an hour the surface became rosy in color, hands and feet warm, and instead of the heat increasing perspiration, skin became more dry while under shock.

Case 3, operation on a case of carcinoma of the pylorus. The operation was a gastro-enterotomy. Murphy button anastomosis. On opening the abdomen on exposure to the air a red shade of the stomach was observed, and after manipulation of the viscera there were great adhesions, shade No. 3 was observed. In thirty minutes shade No. 4 was observed. At the same time breathing became very laborious, pulse diminished, the lips became pale and there were other evidences of shock. The intragastric resuscitator was introduced into the stomach and the immediate effects could be observed under the eye. The change of the color of the viscera was apparent; with the reduction of the venous congestion, surface grew warm, the perspiration which stood out like beads upon the forehead, disappeared. All signs showed the reduction of shock within fifteen minutes.

Case 4.—A young football player in Lincoln Park was struck in the epigastrium. At the same time sustained a Colle's fracture. Was brought into the office insensible and after a moment recovered, calling for water; his eyes were leaden; slow respiration; surface cold; great anxiety. I introduced the intragastric resuscitator and the effect was immediate. The breathing became even, the pulse that was weak became strong, fuller, the color returned to the surface; the eyes bright. The effect of this was very evidently due to the use of the intragastric resuscitator.

Case 5.—Mrs. McG., age 45, case hemorrhage from the bowels; estimated loss of blood was over one quart. All the signs of shock were present including anesthesia, disturbance of vision, thirst, cold surface, lips blue, anxious expression; patient experiences the feeling of impending death. The intragastric resuscitator was introduced into the stomach and within twenty minutes the symptoms disappeared with the exception that the hands and feet were still cold, but within forty-five minutes the hands and feet also were warm. No other treatment for the reduction of shock was used. This was again repeated the next day and the patient felt so well after treatment that she requested a daily treatment, which was instituted for one week. Recovery complete.

Case 6.—Mrs. F., Presbyterian Hospital, called by Dr. Etheridge; been in shock two days and a half. The patient was moribund, mottled blue surface, could not speak, and impending death was apparent. The intragastric resuscitator was introduced in the usual manner and temperature at 130; observations made by the attending and house physician as well as myself. It was observed that the stimulation was immediate. The pulse that was before imperceptible could now be felt. Breathing improved and patient could speak. The physicians and attendants thought that there might be some hope for her recovery, but as the patient was already moribund, the blood having passed largely into the veins, and extravasation had occurred and the whole surface was mottled. When in this condition it seemed that nothing could restore her. The improvement in this case kept up for three

hours, when the patient gradually sank and died. It was instructive in this case, however, to observe in the extreme the profound effect that the hot water had upon the nervous centers and upon the circulation, including respiration and return of intelligence.

The seventh, eighth and ninth cases were cases of laparotomy upon the pelvic viscera. Shock was imminent in each case and in Case 9 the shock occurred also the following day, when the intragastric resuscitator was introduced again with the usual prompt results.

The last case that I report here tonight is one for an exploratory incision in which was found large adhesions, due to a pancreatitis, parapancreatitis hemorrhagica. The case was operated upon by Dr. Ferguson. The patient was found in shock; face was blue, especially marked about the lips; breathing became very labored, large beads of perspiration were found all over the face and was regarded as a case of shock. The intragastric resuscitator was introduced into the stomach and immediately the effect was manifest to all present. Within five minutes the color had changed from the bluish to the rosy tint. The perspiration disappeared from the face, breathing was again deep and regular, pulse restored. It was evident that the respiration of this condition was brought about promptly by the use of the intragastric resuscitator.

DISCUSSION.

Dr. JAMES G. KIERNAN—I can hardly agree with Dr. Turck that stimulation of the ano genital center is comparable with that of the gastric centers. It has been shown by experiments on conditions of collapse resulting after anesthesia, and also on the conditions of coma resultant on opium poisoning, that the ano-genital center is one of the last centers in the body whose reflex action is destroyed, and is the quickest to react to excitants in the restoration of consciousness. For example, sixteen years ago I was called to a case of opium poisoning. The patient, a prohibition Congressman, went on a tremendous spree, as a consequence of which he had incipient symptoms of delirium tremens, and sent out for laudanum and took an ounce of it. All the usual methods to counteract poisoning from opium were employed without avail. The case was turned over to me with the benevolent intention of having me sign the death certificate, inasmuch as he had passed into the condition of opium collapse. I poured three drams of tincture of capsicum up his rectum. I have never seen anything act as quickly as that did. Since that case a large number of others have been reported independently, and my observations have confirmed with regard to the quickness with which this center reacts. Not only that, but a large number of observers have pointed out that this center is the quicker to be excited in failures after anesthesia than almost any other. This has been demonstrably the case with Dr. R. A. Murray in New York and a number of others who have followed his researches. I do not doubt, from the surrounding innervation of the stomach, but what Dr. Turck would get undeniably rapid and beneficial effects from this procedure. At the same time, I doubt very much whether if the shock had passed beyond a certain point, he would get quite as rapid and efficacious results from this procedure as from a similar one applied to the rectum.

Dr. WILLIAM L. BAUM—I have had no experience with the apparatus of Dr. Turck, but I have been making some experiments during the last few months at the Cook County Hospital on cases of erysipelas. In a number of cases in which there was present nephritis with scanty urine, where the patients were in a condition practically of uremic coma, with slow and labored respiration and very irregular pulse, particularly in old individuals, for want of any other therapeutic measure I could think of at the time, advised in one case hot injections of normal salt solution of the strength of six-tenths of 1 per cent., using a quart every two hours. This was kept up night and day for eight days, the patient receiving the injections every two hours. He passed not only large quantities of urine, but the casts diminished rapidly in number, and the patient was discharged as cured. Since that time I have had four other cases in which I have resorted to similar treatment, all of which have recovered and have been discharged as cured.

Another case in which hot water injections have been very efficacious was one that I was called to see in connection with Dr. Fütterer. It was a case of vesical hemorrhage. The hemorrhage was continuous for some forty-eight hours; there was also present hydronephrosis. The patient had at some time ulcerative endocarditis with marked symptoms of recent endocarditis. He was given hot rectal injections of the normal salt solution, as well as subcutaneous injections of one quart of normal salt solution on each side of the abdomen. In this case, as in the other cases, within almost half an hour the respiration became more regular, and the pulse also became more regular, full and strong. Whether in the latter case the marked improvement was due to the hot solution injected subcutaneously, I am not at present prepared to say. We have benefit from large quantities of hot water taken up by the mesenteric glands and the intestines, and we have rapid elimination through the kidneys. In the erysipelas cases the heat may have had a marked beneficial effect, because the change took place in an extremely short period of time.

Dr. D. W. ROGERS—I was very much interested in the remarks of Drs. Kiernan and Turck with regard to surgical shock, and consider the method of Dr. Turck especially commendable. The heat supplied by the hot water which is poured into the stomach is rapidly taken up by the tissues. In addition there is a nervous stimulus, but the heat which the body must have in order to carry on its functions is supplied by this hot water, for this simple nervous stimulus would in my opinion not be sufficient to resuscitate a case suffering from severe surgical shock.

Dr. W. X. SUDUTH—The remarks of the last speaker bring up the point as to the causes of temperature. The old idea that temperature is entirely the result of chemic changes in the body has to be modified to a considerable extent according to recent observations. You may take an iron bar and pound it to a red heat without any chemic change taking place. It is then a matter of vibration, and so we find in the body that vibration is the principal cause of the development and maintenance of temperature in the body, and that temperature is to a very great extent, to be controlled through mental processes. We have unquestionably much that is to be commended in the method of Dr. Turck by raising bodily temperature by the immediate contact of the hot water, which may be accounted for on the same ground, because we know vibration is much higher in hot than it is in cold water. Whether this vibration is carried and taken up by the body directly, as Dr. Turck has mentioned, in the passage of the blood through the different portions of the body and marking its course, or whether it is simply through association, raising the temperature in that way, is an open question. Undoubtedly, we have a nervous stimulation which is more effectual in the raising of the temperature and the resuscitation of the patient than we have in its mechanical effect. We have, then, the temperature raised by reason of the increased rate of nervous vibration, and the strength or the ability to maintain that vibration is the result of the increased temperature which is induced by the hot water.

The old theory of oxidization being the principal cause of temperature is pretty generally accepted, but I think we have evident reason for attributing many of the changes in temperature to mental processes. Let us take fevers, for instance, where we have a temperature of 104 degrees, by purely passifying methods, by suggestion, the temperature can be dropped from 3 to 4 in from fifteen to twenty minutes without the use of any drug or the induction of any chemic change, that we know of, in the body. Even so where we have a subnormal temperature, by working on the emotions, we can raise the bodily temperature a number of degrees in a few moments. While suggestion is not an important part in the treatment used by Dr. Turck, yet we can not eliminate it from any process on the living human body, even where the patient is apparently unconscious. The facts are there is no such thing as unconsciousness short of death. I have proved that, in my experiments in the administration of anesthetics, I was able to get a response from patients under the most profound anesthesia, simply by keeping in touch with them when they were going into the anesthetic state. So Dr. Turck's remarks and conduct with the patient must have a direct effect in the resuscitation.

Dr. JAMES G. KIERNAN—I do not want unduly to swell the neurologic trend of the discussion at the present time, yet I can not but take issue with the position that local tissue change irrespective of nerve action underlies the results, as Dr. Turck has claimed. This seems to be turning back the page of pathology to the days of Broussais when such a doctrine led to an abuse of venesection because fever was regarded as a result of such local change. Fever, as the researches of

Ott of Pennsylvania, have shown, is primarily set up by an increase of heat production beyond that of heat dissipation. An agent from within or from without deranges the harmony of the thermotaxic, thermogenetic and thermolytic apparatus by which in the initial stage the metabolism of the tissue are usually increased temporarily, this increment being greater than that generated upon the restricted amount of nutriment. Once established, the fever continues not from excessive production but from an altered relation between heat production and heat dissipation. Fever is not a fire kept up by an excessive oxidation of the constituents of the economy. Thus heat production may really be subnormal, yet the bodily temperature may be at high fever heat. The thermotaxic centers of the brain maintain the balance between heat production and heat dissipation so as to keep the temperature at 98.4 degrees F. In fever these thermotaxic centers are disordered; it is mainly the basal thermotaxic which are so affected that disturbance of the relation between heat production and heat dissipation produces a higher temperature. Since the peripheral terminations of the sensory nerves influence a thermolytic center by reflex action they constitute important factors in heat regulations. It seems to me, therefore, from the description given by Dr. Turck, that the comparative rapidity with which this treatment acts would imply such a reflex action on certain vaso-motor centers and on certain heat-regulating centers, because the condition of surgical shock is essentially one of extreme heat inhibition. To reverse that condition excitation would be physiologically indicated along the line stated by Dr. Turck. He could thus excite a large number of centers quickly through the stomach. It would seem that a reverse physiologic process would be desirable, and if there be need to stimulate the thermo-excitatory centers, it can be done better by a method of this kind than by a procedure implying merely local thermic excitation, which is very slow. As to the ultimate origin of this stimulation, in all probability, like all nerve force, it is allied to vibration. But be that as it may, to refer it simply to a local chemic action would be going a long way to accomplish a small result. Furthermore, transmission of heat must be more or less through the nervous system, and not direct.

Dr. WILLIAM A. PUSEY—In the interest of orthodox physiology and physics, I would ask Dr. Sudduth and Dr. Kiernan if they mean to maintain that the heat of the body is not the result of metabolic changes of exactly the same character as those that produce by oxidation the heat in an ordinary fire? I may have misunderstood Dr. Sudduth, but my understanding of his remarks was that the nervous system not only regulated heat, but was of great importance in the production of it; that the production of heat in the body was not, at all time, simply a question of the transformation of physical energy. Am I right?

Dr. SUDDUTH—You are correct.

Dr. PUSEY—The position is so contrary to the accepted doctrines of physics that it seems to me it should not be allowed to pass unnoticed. I accept all that Dr. Sudduth and Dr. Kiernan say with regard to the influence of the nervous system in regulating temperature and know that we may have all sorts of aberration of temperature when the heat center is interfered with. I accept the statement that the heat of the body is merely a form of energy—that is the point I am maintaining—but to assume that the nervous system can produce heat without a material foundation for it, can evolve *de novo* and from nothing material, is a position that it seems to me should not be allowed to pass unchallenged in this Academy.

Dr. KIERNAN—I would ask Dr. Pusey, without attacking his position, whether he believes in such a doctrine as correlation and conservation of energy.

Dr. PUSEY—I certainly do. It is because the positions enunciated are in conflict with this universally accepted law of the conservation of energy, that I take exception to them. I will gladly agree with the proposition that the nervous system is the thermostat, but that it is anything more than a very significant part of the human furnace is a proposition which is so contrary to the accepted laws of physics and physiology that with the shades of Michael Foster staring me in the face I can but protest against it.

Dr. D. W. ROGERS—Exactly what Dr. Pusey has said is something that came into my mind. No one will deny from the experiments that have been made during the last twenty-five or fifty years, that heat is a form of vibration, and that by pounding a piece of iron we can get it red hot. As Dr. Pusey has said, the heat generated in our body comes from the food which we take into it. The idea of calling the nervous system a thermostat is an excellent one. We might consider the body an automatic furnace, regulated and controlled by electric devices. Regarding the experiments of Dr. Turck, the hot

water which he pours into the stomach supplies the place of heat made in a normal condition of the body by the chemic processes controlled by the nervous system, and this heat is not taken up by the body simply through an increased stimulus to the nervous system, but by the transmission of vibrations from the hot water to the tissues of the body itself. Mental processes, it is true, have much to do with the production of heat, inasmuch as these processes control the nervous system, control the impulses going to various parts of the body, and if a heat inhibitory center is excited (we are supposing, for instance, we have a heat inhibitory center) the metabolic processes in various parts of the body would be checked, and the heat would be lessened.

Dr. WILLIAM L. BALLENGER—I have seen neurasthenic cases with cold skin, feet and hands, and I have seen them come out of this condition of shock or collapse by simply following deep breathing exercises for a few minutes. Undoubtedly others have seen the same thing. I narrate the above as suggestive. It is one of the ways in which the temperature of the body may be regulated. Dr. Turck's experiments upon animals are very instructive, showing the physical changes which take place in the blood in conditions of shock, and the changes which occur under the influence of heat applied to the stomach. His work is deserving of praise and commendation.

Dr. TURCK (closing the discussion)—I have presented these experiments and clinical observations just as they appeared, and it is impossible at present to explain the phenomena completely. But there are facts here that can not be disputed. First, the congestion of the abdominal viscera in shock, and this congestion is apparently commensurate with the loss of temperature and also with the lack of tone of the nervous system. To completely analyze these phenomena would require more knowledge than we have at the present time; but the facts are stubborn, that we can not apparently experimentally produce a profound shock without the occurrence of congestion and that the reduction of such shock does not occur until we reduce the congestion and distribute blood over the surface. The blood that is being distributed over the surface is warm blood. Energy is transmitted and as this energy is carried on we see the effect upon the arterioles. I could not recite all the experiments here, because I have previously published some and others are to follow. Let us take the simple introduction of water into the colon; we often produce a condition of congestion rather than of reduction. The patient feels the shock of such a procedure. He is momentarily stimulated, but soon relaxes into a state of congestion, the hands and feet become cold, and the patient will feel weak. Whereas, if we use water of high temperature the reverse condition is produced. We have a vasomotor stimulation. Inasmuch as water at a high temperature, introduced directly into the viscera is contraindicated, we use this method of introducing it through a tube, and if I may use another term, the absorption of that heat is constant. I have presented these facts as possibly opening up further investigation in determining the exact cause of the phenomena of shock and also the *rationale* of the reduction of shock.

INTESTINAL ANASTOMOSIS.

Read before the Illinois State Medical Society, May, 1897.

BY JACOB FRANK, M.D.

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The subject which I am about to touch upon is an ever interesting one. I would like to relate the early history of our instructors in surgery, in the line of intestinal anastomosis, but were I to attempt such a task I would be called a monopolist of time. Suffice it for me to state, that they, even 150 years ago, realized the necessity of some speedy and safe method for dealing with this most important branch of surgery. They were evidently not satisfied with the suture method, as is manifest by their numerous attempts to call unto their aid mechanical means, such as steel rings, rawhide, turnips, bone, catgut, rings, gelatin, etc. Denan, in an article in "Receuil de la Société Royale de Médecine de Marseille," l'an 1826, described his device for intestinal anastomosis, consisting of steel rings connected with a spring, and laid stress upon the pressure necrosis to be obtained from

the spring. To accuse our predecessors of futility of effort, even though their labors seemed apparently in vain, would be doing them a great injustice, for had we not the results of their trials we would probably travel over the same course, and, after all, our present and most modern contrivances are simply improved and newly evolved measures.

Permit me to carry you into a more modern era, a period of time which is fresh in the mind of every surgeon, *i. e.*, 1888, when Senn, with his decalcified bone plates, opened the path for the exit of the Czerny-Lembert suture. The plates, although used quite generally for a time, were not deemed applicable in all cases, and served the purpose of stimulating us to further improvements.

In 1892, Murphy surprised the surgical world with his metallic button, which reduced the length of time required to perform an intestinal anastomosis to about thirty minutes. I believe I will be upheld by all present in the statement which I am about to make, and that is, were Murphy's button soluble we could wish for nothing better. But since it is not it will always create a certain degree of fear in the minds of surgeons who are about to introduce the same, this said fear being substantiated by the reports which come in every now and then, of an obstruction following its use; less often, an ulceration through the bowel into the peritoneal cavity. That contrivance which will answer all the essential purposes of the button and which has added to it the great advantage of at least partial solubility, will sooner or later displace it. I beg to quote from Dr. Murphy's article his claims for this contrivance. They are:

- 1, Time, reducing the duration of the operation to at least half its former length;
- 2, extreme simplicity of technique;
- 3, automatic retention of position;
- 4, entire independence of sutures;
- 5, it produces a pressure necrosis and adhesion of surfaces at the line of necrosis;
- 6, it insures perfect apposition and therefore obviates the danger of displacement;
- 7, its applicability to the lateral as well as to the end-to-end approximation;
- 8, it produces a linear cicatrix, thereby insuring a minimum of contraction;
- 9, edge-to-edge union of same intestinal coats.

I claim for my contrivance all the above good qualities, with but one exception and a few additions. The first difference is, that while the claim, "entire independence of sutures" could be maintained, it is not, as it has been strongly impressed upon me during my series of experiments, that a few Lemberts never do any harm, and the good that follows their use more than compensates for the two or three minutes required to insert them. Besides, I have on several occasions found it necessary to use a few Lembert sutures with Murphy's button. I also claim for my contrivance, lightness, which is of great importance, as the intestines can float it, and this obviates a possible bend or spur, and last but not least, is the partial solubility of the apparatus, leaving but a small piece of soft rubber tubing (the rubber tube can be split in two longitudinally if required) to pass away, which is not apt to cause obstruction nor ulcerate through the bowel.

Since the last publication on this subject I have had the pleasure of receiving the good news of a successful gastro-enterostomy with the aid of the decalcified coupler, performed March 16, 1897, by Dr. McCandless of St. Louis. The rubber tube passed

on the thirteenth day. The patient left the hospital on the twenty-fourth day after the operation.

I wish also to add a successful case of end-to-end anastomosis, with the coupler, for strangulated hernia, eight inches of gangrenous bowel being resected. The operation was performed by Dr. Kramps April 13, 1897, at St. Elizabeth's Hospital, in the presence of Drs. Hall, Wallace and Leland. The rubber passed after forty-eight hours and the lady, who is 49 years of age, is well and attending to her household duties.

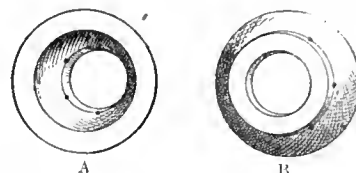


FIG. 1.—Decalcified bone collar. A, inside view; B, outside view; natural experimental size.

Up to three months ago the contrivance had not, to my knowledge, been used upon the human subject. It is more gratifying to me to have others attain good results with the coupler than were I to obtain them myself. I have been called upon to operate for strangulated hernia seven times in the past eleven weeks, but was unfortunate in always getting at the operation before strangulation had gone on sufficiently to demand resection of the bowel, and as all the cases made an uneventful recovery I have nothing to regret.

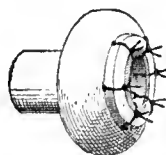


FIG. 2.—Bone collar sewed to rubber tubing.

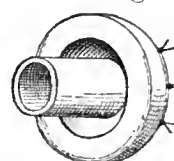


FIG. 3.—Inside view of collar with rubber tubing sewed on.

The apparatus consists of two decalcified bone collars (Fig. 1) with six needle hole perforations at the apex or shoulder of each collar, and one piece of ordinary pure gum rubber tubing, seven-eighths of an inch in length and five-sixteenths of an inch in diameter, the kind used for drainage. It is prepared for use in the following manner: A collar is slipped over a piece of rubber tubing of the dimensions stated, until the apex is brought to a level with the end of the rubber tubing, when an ordinary medium-sized curved needle, threaded with No. 8 braided silk, is carried through each opening and tied; this, as can readily be seen fastens the collar to the tube; the other collar is next fitted snugly to the one already

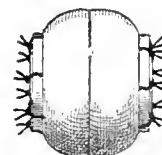


FIG. 4.—Decalcified bone collars sewed to rubber tubing ready for use.

fastened, and is then in like manner sewed to the other end of the tube and placed in absolute alcohol until they are to be used. The rubber tubing to which the collars have been sewed, being hollow, serves subsequently for the passage of the intestinal contents after being placed *in situ*. (Fig. 4.)

It will be observed that the bases of the collars, which are formed into a broadened rim, are being held firmly in apposition throughout their entire circumference. Now the intestinal ends are brought over each collar and crowded within the line of junction

of the two; of necessity the latter are forced apart, and the rubber tube is put upon the stretch, thus affording pressure of adequate amount to cause a necrosis of interposed intestines. The collars dissolve in due course of time, but a small piece of rubber tubing is left in the intestinal canal to pass off with the feces (Fig. 10).

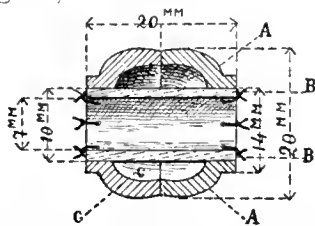


FIG. 5.—Longitudinal section. AA, collar; BB, rubber tubing, 10 mm. in diameter; C, cavity in collar; 7 MM, inside diameter of rubber tubing; 20 MM, length and width of collar.

The collars are carved out of sound, very compact bone, which is obtained from the lower hind legs of 4-year-old oxen. The collars are now subjected to the decalcifying fluid, which consists of a 10 percent. solution of absolute hydrochloric acid, and are removed from this fluid in six hours and placed under a stream of cold water for half an hour to remove the salts which have formed. They are then placed in a fresh decalcifying fluid of the same strength, and the process is repeated until they are completely deprived of their calcareous constituents, when they are washed with cold distilled water, so that all traces of acids and phosphates are removed and the collars have acquired an almost transparent appearance. Then they are practically dehydrated by treatment with pure cologne spirits, and finally, immersed in absolute alcohol, which renders them sufficiently tenacious for their purpose.

Having described the apparatus, its mode of preparation and construction, the experimental work upon dogs is next to be explained. As nearly as possible the same aseptic and antiseptic precautions were

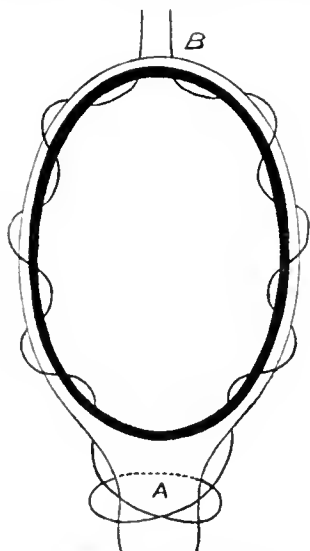


FIG. 6.—Murphy's running thread.

observed with regard to the hands, instruments, field of operation and dressings as modern surgery teaches us to observe in a laparotomy upon the human subject. The dogs that were fed upon fluids prior to the operation gave less trouble at the time and thereafter than dogs otherwise fed. A dose of castor oil given the evening before the operation always

cleanses the intestinal tract, and the dogs seem to do better after this.

The general technique.—A median incision from three to four inches in length is made either above or below the umbilicus, the small intestine is drawn out through the wound and the part to be excised is gently freed of its contents by drawing it between the

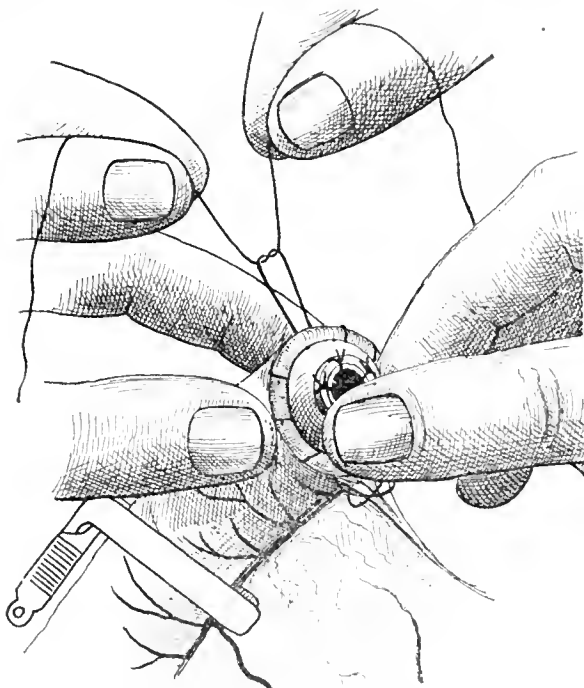


FIG. 7.—Manner of introducing collars.

thumb and index finger, when an intestinal clamp is placed at each end of the portion to be cut away, care being taken not to cut too close to the clasp, for if this is done there will not be enough gut to bring over the collars, which will necessitate the removal of the clamp farther back. The main mesenteric branch supplying the excised portion is first ligated with a No. 9 silk. From two to five inches of gut may be resected, according to the fancy of the operator.

Upon severing the intestine, it will be observed that

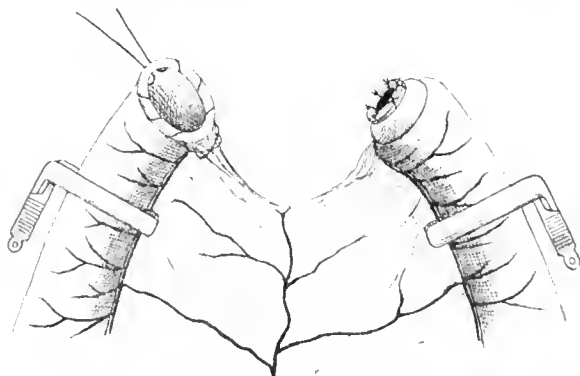


FIG. 8.—Showing collar in place in one end, the running suture in the other.

there is an eversion of the edge of the bowel, and also a contraction, producing a circular constriction at the end of the intestine; this can be easily overcome by inserting a finger into the lumen of the gut and retaining it there for a minute or two, thus producing temporary paralysis, and allowing a much easier manipulation of the parts; this stretching of the gut must

be gently performed, otherwise the peritoneal covering will split longitudinally. The everted mucosa should be curetted away for the following reasons: 1. I have satisfied myself that it plays no part in the healing process. 2. The running thread of Murphy (Fig. 6) is more easily applied, and the danger of merely taking up the mucosa and not the other coats is done away with. 3. It permits of nicer coaptation, as, without curetting, the mucosa pops out between the couplers as a pulpy mass. A straight or curved needle threaded with No. 6 silk is used for inserting the puckering string (a description of which can be found in the *New York Medical Record*, Vol. xlii, p. 673, 1892) to fasten the intestine about the rubber tube after the



FIG. 9.—Anastomosis completed, showing Lembert suture.

former has slipped over the collars. The puckering string is similarly inserted into the other intestinal end, and the coupler, having been previously prepared as described, is taken out of the absolute alcohol in which it was placed. The operator slips an intestinal end over one of the collars, to the line of junction, at the same time gently spreading the collars apart to facilitate the easy access of the gut. An assistant takes charge of the ends of the puckering string, and when the gut has been brought over the collar he makes one knot, and draws down until his puckering ligature strikes the rubber tubing, which he will perceive by the resistance offered; the tube



FIG. 10.—Rubber tubing showing puckering thread in center and sutures at ends after bone collars had dissolved. Experiment No. 4.

will not generally permit a too tight drawing of the puckering ligature on account of its resiliency, but to make absolutely sure that the tube is patulous, the end of a forceps or sterilized nail may be passed through the lumen; if this is found pervious the assistant finishes the tying of the puckering string. The other intestinal end is then slipped over the other collar and also tied. Of course, at this stage nothing can be inserted by which to determine that the tube is not shut off, but, after having tied one side, the assistant will know positively when he strikes the tube. The ligature is cut off short and the clamps are immediately removed, when the operated portion of the

bowel will be slowly distended with gas. An interrupted or continuous Lembert suture should be taken around the border, with an intestinal needle threaded with a No. 2 silk, to make the work more secure. (Fig. 9).

The rent in the mesentery may or may not be sewed. In those cases that were sewed, catgut was used; any bleeding vessels should be tied with catgut. The intestine is returned into the abdominal cavity as nearly as possible in a straight line, the site covered with omentum, and the abdominal wound closed in the ordinary manner. The wound is powdered with iodoform and a collodion dressing applied; gauze and cotton are placed over this, and then the bandage.

In the *Journal of Medicine*, January, 1897, will be found a detailed report of the experimental work. 17 Lincoln Avenue.

THE CAUSES OF DEATH IN ABDOMINAL SURGERY AND THEIR TREATMENT.

BY J. WESLEY BOVÉE, M.D.

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Great advances have been made in abdominal surgery during the past two decades and the mortality rate has been very materially reduced. As a fair illustration of this progress hysterectomy might be mentioned and may be said to have changed from an unjustifiable operation with a mortality rate varying from 80 to 90 per cent., to one of the most common of abdominal operations having a fatality of about 5 per cent. It is not necessary to state that this wonderful change is the result of the peculiar special attention devoted to this line of work. But contentment should not exist with a death rate following operation in this region, slightly less than that of unoperated cases. So far as it is directly due to surgical operations we should endeavor to reduce it to zero, and not until then will we be able to rest contented. The complete abolition of the mortality rate of abdominal operations will probably be encumbered with more difficulty than besets the arctic explorer in his attempts to reach the north pole.

We can hope to approach perfect results only by carefully studying causes of death in the individual cases and striving to apply the knowledge thus acquired.

Many deaths may be directly attributed to lack of skill on the part of the operator and assistants and it is to be hoped that with the constantly increasing advantages at the command of the younger element of the profession, together with the decided tendency of the age to specialism, that untrained, pragmatic operators, if they exist, will not invade the domain of abdominal surgery. But the most experienced and skilful have a considerable death rate, very low, it is true, but higher than they themselves desire; yet it is from this class of workers we must expect the methods for still greater success. Of course a small percentage of deaths after these operations has been due to intercurrent diseases, but it can not be denied that some of these sufferers yielded to the disease more readily or perhaps directly because of the operation. There is little doubt that ether will cause pneumonia when administered for surgical purposes and I have seen cases of phthisis that closely followed abdominal or pelvic disease and operation. This I

have noticed in a number of cases of hysterectomy for uterine fibroids and in cases where there was considerable shock, hemorrhage, sepsis or other complication, that for a time severely taxed the recuperative power of the patient. Whether there was any relation between the disease for which the operation was done and the subsequent lung involvement can not now be stated. I am inclined to blame the operation rather than the disease for the appearance of the tubercular infection, but as yet we are not warranted in absolutely tracing this cause and effect.

Whenever possible, and usually it is, a careful study of the condition of patients before subjecting them to such an ordeal as an abdominal operation, is imperative.

Systematic autopsies on fatal cases will furnish valuable information for future use. In this way we can find why we failed to save our patient and thus be fore-armed for another case nearly similar. We have had occasion to note this in cases of chronic suppurations of the adnexa and of the vermiform appendix. Occasionally we will find an extra collection of pus behind the liver or even over by the spleen in appendicitis and oftentimes collections of pus exist in the liver and kidney in puerperal sepsis.

The causes of death from these operations may be conveniently divided into five classes, viz.: 1, operation and complications; 2, bad condition of the patient before operation; 3, intercurrent diseases; 4, bad after-treatment, and 5, accidents.

Many operations are done at a time when death seems imminent from sudden severe hemorrhage, as in ruptured ectopic pregnancy or severe gun-shot wounds of the abdomen, or from bowel obstruction or pressure from large tumors, or even, from prolonged suppuration or acute sepsis. Many different injuries may demand immediate section and these cases will necessarily increase the mortality rate of laparotomies. In these cases very little time is at the disposal of the operator for investigation of the condition of the patient before operation, other than a very superficial one that determines his decision to operate without loss of time, and usually during it haste is one of the most important features of his work.

Many times the abdominal condition is not the only one threatening life and in many cases the risk from anesthesia is greater than from the presence of an abdominal tumor. Oftentimes, too, uranalysis may reveal the presence of kidney suppuration at the same time as pyosalpinx or other form of pelvic or abdominal suppuration. Again a large abdominal tumor may have caused prolonged and strong pressure on the lungs, heart, abdominal blood vessels and other portions of the body and have caused a considerable relaxation or atonicity of those structures. If this be the condition and the tumor removed, then there exists great danger of engorgement of the veins thus relieved from pressure and of resulting death from heart exhaustion. We have previously referred to this more in detail in a paper published in *The Virginia Medical Monthly*, 1892, xix, 101.

Concerning the operation nearly everything devolves upon the operator, and the manner in which he performs the operation will usually govern the result. The principal complications of intra-peritoneal operations are shock, severe hemorrhage and sepsis. It is usually one of these three that causes the fatal issue in the unsuccessful cases and its work is generally not long delayed. Death from shock usually occurs some time within the first 72 hours.

Severe primary hemorrhage may prove fatal during the operation or within a few hours afterward and secondary loss of blood may occur at any time during the convalescence and be sufficiently severe to cause death. Fatal cases of secondary hemorrhage as late as from twenty to forty days after operation have been reported. Sepsis resulting from infection during operation may prove fatal after the first day or may be introduced in wound dressings some days later and then hasten the patient's death.

Other conditions produce fatal results, though less frequently, and generally at a time more remote from the operation. Of these mention might be made here of bowel adhesions producing obstruction, injuries to the various viscera, as liver causing hemorrhage not noticed at time of operation, kidney or ureter causing either hemorrhage or urinary extravasation with subsequent infection, or perforations of the intestine that through negligence or necessary haste, have been overlooked. I have been surprised in practicing experimental surgery on the ureter in dogs by the severe hemorrhage that often follows section of this duct and its nutrient vessels.

While separating adhesions of tumors to bowel it is easy to injure that tube and if the wall be friable, as often is its condition when attached to suppurative masses, necrosis may later produce an opening through the bowel wall, even though sutures have been employed for reinforcement. Small openings accidentally made in the omentum during operation may admit and strangulate a loop of small intestine, thus terminating life. A considerable number of autopsies have demonstrated this as the cause of death. Urinary and fecal fistula may cause death by exhaustion. We had a death from fecal fistula three weeks after operation and recall one case, not our own, in which death was produced a few weeks after operation, by a fistula in the lower end of the abdominal wound discharging fecal matter and urine. In incarcerated hernia there is great danger of exhaustion following diarrhea that sometimes attends the liberation of the bowel. We had one case in which there was obstruction of the bowel before operation and immediately after it was finished the bowels began to move, twenty-three movements occurring within the next six hours and during the remaining hours of life, a constant discharge from the bowel continued in spite of vigorous treatment to check it. It also terminated a case of volvulus for us in 1891, on the day following operation. Ventral hernia in the line of incision of the abdominal wall caused death in a case not long since in the practice of a surgeon of this city, about the fifth day after operation. She was thought to be suffering from la grippe and the hernia was never suspected, but the autopsy readily revealed the cause of death. Shock is produced in some degree, in every surgical operation, but many causes contribute to it. Anesthesia alone in prolonged operations may be sufficient to produce a fatal degree of shock. Hemorrhage, already mentioned, though slight, may have a like effect. Mutilation of vital organs is a frequent cause and removal of large tumors, by taking a large amount of blood from the circulation in some cases, as well as by bleeding the patient into her own veins as a result of removal of the pressure from large abdominal veins, and from heart, lungs and other viscera, has a similar tendency.

One of the most potent causes is slowness of decision and execution on the part of the surgeon. The

very slow surgeon will probably not have nearly as good results in severe cases as does the quick-thinking and rapid-working one. Exposure of viscera during operation is a frequent cause of fatal shock and this is, of course, very materially aggravated if temperature of the operating room be low. I have repeatedly seen abdominal surgery done in rooms having a temperature of scarcely 60 degrees F. The danger of this is certainly very apparent to all.

The ureters have been injured during operations followed by urinary extravasation and discovered only at the autopsy. These canals have often been unconsciously ligated as in hysterectomy or the removal of a large intra-ligamentous cyst. The peritoneum has often been badly injured and bowel adhesions occurred often causing obstinate obstruction that was relieved by secondary operation, but more often has resulted fatally. The author has lost one case in this manner after secondary operation and Marcy, of Boston, has reported very unpleasant experiences of this kind. The absorption of ptomaines, following this impairment of bowel movement, often results in death. An irritable stomach may prevent the taking by the mouth of sufficient nourishment and these cases are not the best for bowel feeding, consequently gradually increasing exhaustion ends the drama. Some patients are panic-stricken soon after operation and can not well be controlled, gradually wearing themselves out. Others may be attacked with insanity in some form that may or may not terminate fatally. These conditions always render recovery doubtful. The effect of ether on the kidneys or lungs often leads to a fatal termination by producing defective respiration, pneumonia and by urinary suppression. Chloroform, aside from its action on the heart and lungs, may also produce anuria.

If the preparation of a patient for operation be neglected we may here have furnished a fertile cause of death a few hours or days after operation. Insufficient or extreme purgation are not a part of the proper preparation of patients for operations of this kind. In one of the author's cases that is now recalled, operation was compulsorily postponed, as within a few hours immediately preceding the time set for the operation eighteen bowel movements resulted from over-purgation, and the patient, though usually strong, fainted on rising from the bed. One week later the operation was successfully done. So also must the after-treatment not be improper. Fatal bowel adhesions may result from the long postponement of the use of purgatives, especially if severe pelvic or abdominal adhesions existed before operation. Injudicious diet has caused no small number of deaths weeks after operation.

Enough has been said earlier in this paper concerning the influence of intercurrent disease as a factor in the production of a fatal result to abdominal surgery, but we must ever be alert for organic diseases intercurrent or concurrent with this work. It is easy to overlook the possibility of such an occurrence until death has placed its hand on our patient. It is not to be understood that they necessarily prohibit such important surgery, but that they are always to be given sufficient consideration.

The accidents always besetting the abdominal surgeon are varied and numerous, and serve to keep him constantly on guard. They are by no means unavoidable in many instances. They will always complicate the work of the inexperienced and careless surgeon

far more than one careful, wide-awake and experienced. In fact, a very large proportion of accidents in this line of surgery are the direct result of improper surgery. A very common one is secondary hemorrhage. This often follows removal of the spleen, kidney or a uterine appendage. I must acknowledge having lost a case in this manner in spite of a second opening of the abdomen. The cause of this accident is, of course, improper ligation of the blood vessels severed in the operation, or too much freedom of movement allowed to the patient after the operation. Too much tissue, besides the blood vessels, is included in the ligature, followed by shrinkage of the stump. This allows the ligature to slip off or, by the lessened pressure on the vessels, the blood to be forced out through their cut ends. Both these results are facilitated by a restless patient moving suddenly and vigorously about the bed, and perchance getting out of bed when the eye of the nurse is directed elsewhere.

After this quite casual recital of the principal causes of the mortality incident to abdominal surgery, it may not be out of place to point out some of the procedures that will assist in lessening the proportion of cases that do not survive operation. In doing so I regret I can offer no new suggestions that have been found worthy of note. It may be the principle of some surgeons to refuse operation to some cases that do not appear to have much chance to survive it, even though they are in a practically hopeless condition if left without surgical treatment. They, no doubt, believe they are doing more for the reputation of surgery in pursuing this course. While not agreeing with men of that opinion, I am not prepared to say I am right and they are wrong. Certainly, their mortality rate should be much better than that of the operator who will do for any living person all his skill and experience will permit. As many times death has resulted from insufficient knowledge of the real condition of the patient at the time of the operation, it follows that to be very familiar with the physical condition of a patient before operation is an essential feature of abdominal surgery. The principal organs of the body should be studied, both as to their function and organic condition. In the vast majority of cases, the operator has an abundance of time for careful study before operation. The detection of the localized tumor or other abnormality is not sufficient, but careful exploration should be made of all the principal organs of the body. The condition of the kidneys, heart, lungs, liver and gastro-intestinal canal are particularly important, and when possible, the function of these organs and their accessory structures should be normal or nearly so, before an operation is performed. This will assist in the after-treatment, as well as lessen the susceptibility to shock. A healthy, vigorous organ or system of the body is less easily influenced by shock, ptomain absorption, etc., than is one that is sluggish, incompetent or impaired. Urinalysis is a very important matter in this work. We have learned that an examination of the urine that tells of the presence or absence of albumin, the specific gravity and reaction of a specimen voided by the patient, is of no earthly consequence. We must know the amount of solids passed by the kidneys in twenty-four hours, the presence or absence of renal casts, and whether any abnormal ingredients are present. The urine must be drawn by catheter to prevent its being contaminated by extraneous matters, and we must know how much these points are modified by insignificant conditions. Urin-

alysis is a perfect index of the kidney function, and oftentimes will tell us much about other organs that might not be noticed by any other kind of examination.

After we have carefully studied the condition of the patient we turn our attention to the operation, upon which depends greatly the result. We should always know when to stop, and not to place upon the patient a greater load of shock and other handicaps than she can stand and recover under. Preparations should be made in every instance for rapid and proper operation. As very few are competent to administer anesthetics, special attention should be given to the selection of the anesthetizer. Many deaths are directly due to the anesthetic, and therefore we should carefully study the action of the anesthetic upon the patient. The most intelligent and best informed assistant should be the one to give the anesthetic; trusting this part of the operation to nearly any one that can be procured is extremely reprehensible.

The author has found the admixture of oxygen with chloroform to be very satisfactory. The amount of time consumed in giving the anesthetic is important and, of course, the rapidity of the operator will to a great extent control this. Careful and clean surgery should always be done, but no time should be used during an operation for study. The operator should be quick to appreciate the work before him in any case, and to do it in the shortest possible time consistent with good work. In cases in which we have reason to expect much shock it is very important to do everything to prevent it. The heating of the operating table by hot applications in the way of hot water pipes or hot water bags is of untold value. The temperature of the room should be about 85 degrees F., and every assistant well trained to the work. In this way only is rapid work possible. Some of the principal points to be remembered by the surgeon are to do as much of the work as possible by sight, to expose no viscera not to be removed, either to contamination with discharges in the field of operation or to the outside air. Drainage is oftentimes necessary, and probably if more drainage was practiced more permanent cures would be secured. Close all peritoneal tears if possible, and thus remove danger of intestinal adhesions; endeavor to leave no bleeding surface. It is not necessary to wait until the patient has been removed from the operating table to begin the use of stimulants. Very frequently a liter or less of normal salt solution run under the breast of a woman during operation will turn the course of her condition toward recovery. I am firmly convinced that I have seen a great many women saved by the prompt use of this agent on the operating table. I have seen bad cases recover in which artificial respiration was necessary throughout nearly the whole operation. If clean surgery has been done, when shock lessens convalescence begins and continues steadily. If intestinal tears be made during operation they should be isolated completely, that the peritoneal cavity will not be infected, and repaired as soon as possible. If the bowels are kept moving by cathartics adhesions are not so apt to occur. Over-feeding and under-feeding are bad for these cases, though the latter is the less harmful. We must not feel that our patients are out of danger when the bowels have been moved once, for many cases of bowel obstruction have been noticed as late as the second or third week, when all seemed serene, and rapidly proved fatal. Fecal fistula following operation is, to say the least, a very disagreeable complication

at all times, and if large and connected with the small intestine, will perhaps kill the patient. We very vividly remember a fistula connecting the ileum with the vagina that proved fatal about three weeks after operation.

Ureteral and kidney fistulae may cause death by infection of these organs. Those connecting with the bladder will usually close spontaneously if that viscus be properly drained.

Sepsis is a very difficult condition to contend with. Many of the operations are for this cause, and a good many die from it that were infected during or following operations for other causes. As bacteriology is making such praiseworthy progress in sero-therapy, we can with reason hope for the successful treatment of this condition in some such manner as is being applied to puerperal sepsis.

But at present we are almost powerless against it, and the patient who has already undergone the ordeal of an abdominal operation has very little chance against it. Fortunately, we have it to contend with far less often than formerly. We must not allow this opportunity to pass for saying a good word for the infusion of normal salt solution in these cases of sepsis. It is certain we have had cases in which it acted almost magically both in reducing temperature and improving the condition of the pulse. We need say nothing more concerning accidents, except that good judgment is required, and that in ligating blood vessels in the abdominal cavity it is advisable to include in ligatures as little of the tissues about vessels as possible, thus preventing the tendency to secondary hemorrhage.

DISEASES OF RAILWAY MEN CAUSED BY THEIR OCCUPATION.

Read by title at the Third Annual Meeting of the American Academy of Railway Surgeons, held at Chicago, Ill., Sept. 23, 24, 25, 1896.

BY J. F. PRITCHARD, M.D.

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All occupations nearly affect the human economy in some peculiar manner. Where there arises a strain of the physical system we find diseases affecting the muscles, joints, bones, etc., and when the strain is mental the nervous system is found involved. These facts are so common that they are truisms and need no demonstration.

We would expect to find among railroad men a complication of diseases from the very nature of the occupation. There is no doubt of intense mental strain at times, and the general muscular system is subject to a degree of fatigue almost past endurance, which must produce its effect; but I find upon investigation that but little attention has been paid to the subject, and my only hope now is to direct your attention in this direction in order, if possible, to reach some clear conclusion regarding the effect of occupation on railway men, and its ultimate effect in case of injury.

The following, quoted from a stray medical publication, shows evidently that others have been giving this subject attention.

"Neurologists are watching with great interest a new expression of nervous malady which has appeared since the introduction of the Broadway Cable cars and the Brooklyn trolley system. With the exception of Chicago there are no cities having so much street traffic as New York and where these methods of trans-

portation are in operation. A nervous state unlike that which is excited by great noise or sudden danger has developed in several gripmen employed on the Broadway road and among the motormen of the Brooklyn trolley lines.

The constant lookout for collisions in the overcrowded district below Canal Street in Broadway keeps the gripman in a state of extreme nervous tension from the hour he goes on his car until he goes off duty. Besides keeping an eye open for visible trouble his mind dwells on possibilities that are under his feet. He does not know when there is to be a pooling of interests between the grip and a broken strand in the cable which will whisk him along the street into trucks, smashing wagons, frightening people, and exasperating the city fathers. This nervous strain results first in wakefulness, then in loss of appetite and extreme irritability; after this a tremor in the facial muscles. At the end of a week, says the medical examiner, all of these symptoms disappear and do not come back for ten days, but afterward the intervals are regular, about a week apart. Seven days in a state of nervous terror and seven days in a healthy state apparently. These symptoms apply only to men of nervous, nervo-sanguine or bilious temperaments. While present in other temperaments they are not pronounced."

I am informed that on some English railways where very fast trains are being run, only young men as engineers are employed. After running for a length of time they can not make the schedule, and as there is a fine for delay of mail at the rate of one pound (\$5) per minute it seems to be important that the train reach its terminus on time. Why are experienced men unable to do this? Is it not from some depressing effect on their nervous system?

I have three notable examples of the influence of their occupation as engineers.

The first was an engineer on passenger trains. He never had an accident but developed severe neuralgic pains in various parts of his body, notably his head and back; was troubled with chronic cough also, and finally was pensioned on light duty on account of his disability until the road was sold, when he returned to duty on a branch line, but suffered at once from severe girdle pain and great lassitude, which finally developed into an epilepsy with gradual softening of the brain. He is now at times unable to walk, has regional paralysis, is unable to talk at all, and can live but a short time. This man is a pensioner, was discharged from the army for disability affecting the lungs, but recovered and to my personal knowledge had charge of an engine for nearly twenty years. I am satisfied that his present condition is largely due to his occupation and the nervous strain attending it.

In the second, also a passenger engineer, and one of the best, he had the misfortune to run into a washout without injuring any one except some few slight scratches, although the train was very badly wrecked. After a month or more he was set to work as a conductor, but made a failure of that as he seemed to be unable to comprehend the time-card. He could not stay on an engine when running as he seemed to become paralyzed with fear. He was given a position in a round-house and shop, which position he now fills, but he can not run an engine because of a return of his nervous symptoms, although fifteen years have passed since the accident referred to. In every other respect he is in perfect health.

In case third, also an engineer of the first-class, while running a passenger train on a branch line collided with some cattle and his engine was thrown off the rails, but no damage done. He has never since been able to run on any fast train, and is now pensioned on a short branch line where he does effective work. He informs me that he becomes nervous and unstrung when running fast or on the main line, and in deference to his wishes he has been kept on easy work since his accident, now nearly sixteen years.

I will refer to but one or two more of this class as showing in my opinion the effect of mental strain due to occupation. A case reported by Charles S. Potts, M.D. Mr. A. R., age 28 years, a railroad engineer, was perfectly well until three weeks previous to coming to the hospital. At that time while attempting to save a man from being run over he had a narrow escape himself. Since this he has been very nervous and excitable. He complains of restlessness at night, frequently walking in his sleep, palpitation of the heart, headache, and of being confused mentally. There were also dyspeptic symptoms which he says did not exist before.

The *Brit. Med. Jour.*, says that there is reason to believe that at all times there are men on the line who are working very near the breaking strain. We may in regard to this mention three well-known instances which at the least show the tension under which work is carried on. A station master seeing a man run over on the line, himself fell down dead upon the platform. Here was a shock which permanently made his heart stand still; and how many times had not that man's heart stood still before? We may feel perfectly certain that if the major shock could kill, the minor daily shocks of a railway life must have greatly damaged a heart under the influence of the nervous system.

Two trains collided at a junction. It was either the fault of the drivers or the rails, certainly not the signalman. The signals were right; yet when the box was entered the signal-man was found to have gone mad and had to be taken to an asylum, where he remained for long. He was broken utterly by the horror of the dilemma. But what shall we say about the smaller dilemmas which every hour of his working life he had to solve? Did they not also have an effect, although a lesser one, on the brain?

A few years ago it was found that the sickness rate among signal-men of certain lines was becoming excessive, and it was determined to do away with the system of leaving to one man the whole responsibility of taking charge of a signal-box. At great expense every box along the line was supplied with two men. Great evils were prophesied. It was thought the men would talk and lark and neglect their duties. This did not happen but the sickness stopped. Under the shared responsibility they no longer broke down. If then, as seems to be indubitable, railway strain can have definitely injurious effects upon the nervous system it becomes an important question for inquiry whether this nervous derangement at all frequently has the effect of impairing the nutrition of the heart. Upon this special point we do not at present possess sufficient information to warrant the expression of a definite opinion.

Now, while these cases are extreme and well marked, as a matter of convenience and for a basis from which to make deductions, I think we can fairly say that they are all due to occupation. And while all railway men of this class may not have similar experiences yet

they all have similar mental strain from constant watching to avoid teams on grade crossings in country and town, more particularly with fast trains where time must be made regardless of every other consideration, and also to avoid crushing track-walkers. By these I mean trespassers on the track. Have you ever ridden on an engine when ahead you see a man walking in the middle of the track as unconcernedly as though on a promenade in the park? He is going your way. The engineer puts his hand on the air valve, watching the man intently, but not slackening speed, waiting to see him leave the track. He next blows an alarm with the whistle but does not apparently attract attention. He is now so close that he can not stop, but he makes the effort, reverses his engine, puts on the emergency brake and, when he is just on the man, turns his head away to avoid the sight, but the man steps off. Yet the mental and nervous strain is just as great as though he had killed this individual. If the trespasser happens to be a child or an intoxicated man, usually he is a subject for an inquest with all of the usual senseless blame and criticism. Every engineer has more or less of this to bear, and as a consequence there must of necessity be nervous disturbances of varying degrees of severity in this class of railway men, although I am not aware that they have been made a separate study up to the present time.

I find a great deal of complaint of backache among all classes of railway men. I think it is mostly muscular, from the mere muscular strain of maintaining equilibrium from rapid movement of the trains. Especially is this true of freight train crews and where men are obliged to be on their feet in the various duties of their work. I have not been able thus far, however, to note any unusual number of kidney diseases, but this may be modified by more extended observation. Certainly they complain of a frequent desire for micturition, an indication pointing to congestion of the kidneys, but it is so difficult to keep any considerable number of men under continuous observation, more particularly on western roads, that I at least am not prepared to say that their occupation may not be a potent cause of kidney disease.

From the very nature of the occupation we would expect digestive difficulties of all kinds with attendant diseases. Twenty minutes for a meal is the limit of time allowed in any case. The train men always have some duty to perform after the train stops or before starting which cuts out five minutes or more. They rush in, bolt their food, rarely knowing what or how much they eat. All aboard, the train starts, the men are intensely occupied with their work, and food remains either fermenting in the stomach or digesting but slowly with the subsequent troubles. I can conceive hardly of a human stomach that could digest food under such circumstances, yet many of these men appear to become accustomed to this method. Still I am sure from my contact with them that many of them suffer in this manner. In this connection I note two serious and finally fatal cases of stomach disease among very many minor ones. These two men give somewhat similar histories and required constant attention, yet they both finally died from exhaustion at about 40 years. I am well aware that digestive diseases are very common among all classes of people, but do not find such diseases prevalent among young men in any other occupation.

The second part of this paper, referring to the in-

juries to railway men and their prompt recovery or otherwise, could be easily answered if we can admit the first, viz., that railway men as a class are more subject to neurasthenia and some other serious diseases than men of similar ages in other occupations. It is very positive that men under constant nervous tension bear injuries badly; and my observation is that their prompt recovery is in proportion to their length of service. This rule, if we may so call it, admits of exceptions, but I think by investigation you will find it to be a fact.

This brings up a question in legal medicine which is important, viz., traumatic neurosis. Can we say positively that a railway man suffering from any of the forms of traumatic neurosis, that his disease was caused by the injury, or was it not in existence and the injury merely brought it to light? Is it not more probable that under nervous strain for years his nervous system was diseased and that this shock merely called the attention of his physician to it? I am strongly of the opinion that if we can carefully investigate individual cases, eliminating all pseudo cases, we will find this to be the case.

One writer in summing up a paper on traumatic neurosis says, "It can not be denied that neurasthenia when produced by overwork, exhausting disease, or any of the many recognized causes for such a condition, may cause great suffering and disability when only subjective symptoms are present, and these cases would seem to prove that traumatism should be placed among the causes." I would reverse this method and say, that the disease was existent previous to the traumatism and that the injury merely called attention to it. The symptoms of this neurosis are merely accentuated by the traumatism but not caused by it. How many cases are noted in which the symptoms are out of all proportion to the injury, and in what other manner can they be explained? Many cases of so called railway spine, and in fact all forms of neurosis, can be easily understood on this basis of reasoning.

I had only hoped in this paper to call the attention of the society to this line of study, and hope it may be a means of originating a collective investigation that may make this whole question clear. I would suggest that it be made a line of study for this learned society as I know of no better means by which to settle it.

FRACTURES OF THE FEMUR.

Read at the Third Annual Meeting of the American Academy of Railway Surgeons, held at Chicago, Sept. 23, 24 and 25, 1896.

BY E. M. DOOLEY, M.D.

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The subject we have before us may justly be considered a trite one. It is one with which we are all apt to have experience of one kind or another. Some we may call fortunate, others unfortunate experiences.

With the advent of the penetrating X rays it behooves all surgeons to make a special effort in the diagnosis and treatment of fractures of the long bones.

My object in bringing this subject before you today is not with the idea that anything new or startling may be shown in the diagnosis and treatment of fractures of the femur. But my experience as regards injury to this particular bone has been more or less extensive, and I have a few observations to make which may be of interest to all. Surrounded as the femur is, especially at the upper extremity, by large

and powerful muscles, there are times when it requires the utmost care and precaution on the part of the surgeon to determine definitely the existence or non-existence of a fracture. Under such circumstances we can not be too careful in our examinations if we would assure ourselves of a correct diagnosis, and a correct diagnosis is the only means by which an intelligent prognosis can be given. I believe in all cases where it is difficult to observe after careful examination any definite sign of fracture, and the latter is suspected, we should insist on the administration of an anesthetic. With spasm relaxed we are often enabled to locate crepitus and in cases of impaction our measurements can more accurately be made. I have seen some very grave mistakes made by men who justly bear reputations as surgeons, which I am confident would not have occurred had their patients been examined under anesthesia. As regards fracture of the neck of the femur, I think that in most cases where such are suspected, an anesthetic should be given and the examination be thoroughly made. Due care should be used, however, to guard against the possibility of breaking up an impaction.

I have had unfortunately within the short space of a month in my own practice two cases which a careful examination without anesthesia failed to reveal what ultimately proved to be a fracture.

In one case I had in consultation with me one of the best surgeons in my neighborhood, and together we measured the patient carefully and could detect no shortening. The position of the limb was normal, rotating and flexing, although it gave more or less pain to the patient and failed to give any definite sign of fracture. Our diagnosis was contusion, and we told the patient he would be well in about ten days. This occurred about two years ago and the patient still uses crutches and has about two and one-half inches shortening on the injured side. The second case passed from my hands to the hospital, where under anesthesia a fracture was discovered.

No bone in the skeleton is more influenced by the action of the muscles and yet it is surprising often to see how little attention is paid to the importance of muscular contractions. In saying this I do not intend to convey the impression that surgeons of today treat fractures of the femur without in some manner or other extending the limb for the purpose of overcoming muscular contraction. But it has been evident from some of the results we have seen that an effort has not been made to overcome muscular contraction in a scientific manner. Our efforts to overcome muscular contraction by extension should be directed against those contractions as they are liable to occur. Several muscles whose combined action tends toward one direction displace the fragment. It may or may not be possible to use extension sufficient to overcome these contractions. We have besides the situation of the fragment, another factor in the peculiarity of the patient. This latter in my opinion is more important than is usually conceded. We see some with the proverbial muscles of iron, the degree of contraction necessarily being in proportion to their tonicity. It is quite reasonable to understand, therefore, that a fragment of bone likely to be displaced by an ordinary muscle is likely to be more displaced by one exhibiting stronger powers of contraction.

We use extension to overcome the contraction of the long, powerful muscles of the thigh, or in other words, to overcome the muscles displacing the lower

fragment. We elevate in the hope that we may bring the lower fragment in apposition with the upper.

Before we would enter into an intelligent discussion of the treatment of fractures of the femur, it becomes of utmost importance to review the pathology as it generally occurs. I think that fracture of the shaft at the upper one-third offers the most advantageous means of applying our knowledge for the bettering of the patient; and for that reason principally, and also in order not to infringe on the time of others here, I will confine my remarks on the pathology to this particular form of fracture.

Recall for a moment the anatomy of the upper one-third of the femur and we find an abundance of muscular attachments so that at first thought it would seem difficult to determine the exact direction the upper fragment is most liable to take in complete fracture just below the lesser trochanter. By dividing the muscles into two groups, one set being posterior, the other anterior to the great trochanter, we have a simple and exact method of determining the position of the upper fragment. We find, however, that the action of the posterior set of muscles is not in proportion to offset the action of the anterior, partly due to the nature of the muscles themselves, the larger ones acting as a cushion to the bony parts, rather than as a powerfully contracting tissue to assist in the movements of that portion of the body, and partly also due to the relative points of insertion. The fragments being acted upon as a lever of the second class, naturally the muscles inserted at the lower point exert a more powerful influence on the movement of the fragment. When a complete fracture occurs just below the lesser trochanter, the contraction of the *psaos magnus* and *iliacus* are exerted to such a degree as to almost entirely overcome the action of the *glutei* and remaining posterior set of muscles. The usual result is the tilting upward and rotating outward of the upper fragment. The lower fragment naturally slips behind and the contraction of *quadriceps*, *extensor*, *adductor*, *gracilis*, *biceps*, etc., causes the lower fragment to draw upward, the result being shortening of the entire limb.

To illustrate this I have with me an excellent pathologic specimen. It represents a fracture at the upper one-third of the shaft just below the lesser trochanter. This specimen emphasizes the necessity for elevation and extension if we would have the fracture unite on a straight line and not have a result of two and one-half inches of shortening.

I have no history of this case, but it is quite apparent from the result shown here that the fracture was treated without elevation or extension.

It is quite evident that the upper fragment was drawn forward by the *psaos magnus* and *iliacus*, and that the lower fragment was drawn upward by the long powerful muscles of the thigh. As this was a complete fracture and directly transverse, I see no reason why it could not have been properly reduced under complete anesthesia. With muscles relaxed and elevation and extension applied, it might have resulted in a perfect union of the fragments without shortening.

One question as regards the treatment of fracture of the upper one-third of the shaft of the femur, has, I must confess, often puzzled me, and that is, what is the proper amount of elevation to use in order to have the lower fragment in apposition with the upper, or at least to have the shaft of the lower fragment take the same direction as the shaft of the upper fragment.

We know that in the case of children good results have followed the raising of the entire limb to a vertical position or at a right angle to the direction of the body. Fairly good results in adult cases have followed the use of the double incline plane with Buck's extension where we have a much greater angle, and I have seen good results follow the use of the Volkman slide.

I think it is a well known fact that the best results have been obtained in young patients; various reasons are given, but to my mind the increased amount of elevation is one of the most important factors.

I do not think it essential or advisable in the case of adults to elevate the limb so as to place it in a vertical position or at right angles to the body, but I do claim from the pathology of the fracture that in the great majority of cases more elevation is required than is generally given.

One object we have in making extension and that is, not that the entire limb may be as long as before, but that it may not be shorter than its fellow. I recall a case in particular which aptly illustrates my meaning. A young man, age 19, acting as a brakeman on a freight train, was brought to the hospital with fracture of the shaft of the left femur, and who had at the same time a fracture of the acetabulum of the right hip. We were confronted with an irreducible dislocation of the head of the right femur and an oblique fracture of the shaft of the left. An attempt to make sufficient extension on the left side to reduce the amount of shortening to a minimum would, without doubt, have resulted in a longer limb for the left than for the right. Hence, although our results might have been more perfect as regards the union of the fracture, yet it would have been less acceptable to the patient.

By simply steadying the right side by means of sand bags so arranged as to keep the line as near like the original as possible, and by using a double incline plane without extension for the left side, we obtained ultimately a good result. For although the patient was perhaps a little more than two and one-half inches shorter in stature than before, yet he was finally enabled to walk with scarcely any appreciable limp.

In my hospital service I noticed that nearly every patient treated with the Volkman extension apparatus complained constantly of pain in the heel. I tried every imaginable way to relieve the pain and have the extension continued, without success. This was particularly the case with the small boys who invariably tried to reach the foot of the bed, and thereby defeat the purpose of extension. Having had occasion since then to treat several boys for fracture of the femur, I succeeded very nicely with a modification of the Volkman slide.

First, I removed the metallic splint and foot rest, I had the little patient's stocking and shoe put onto his foot. The stocking was cut off at the shoe top, so as to leave the leg bare. Then with some adhesive plaster I strapped the shoe and leg as high as the knee, then a screw was inserted into the heel of the shoe to which was also attached a transverse piece of wood to slide along the board beneath, and to assist in keeping the foot upright. A cord was tied to the screw and extension weights attached. All of those treated in this manner never once complained of pain in the heel. In this way I was able to use more extension weights without distress to the patient. The results, I am happy to say, were very gratifying.

One word I wish to say in regard to fracture of the femur occurring in elderly people. I think it is our duty to have these patients able to leave their beds as soon as possible, and to this end I do not think there is a more serviceable appliance than a spica made of plaster of Paris, always carefully padded with cotton.

In the treatment of compound fractures, I think that, wherever it is possible, they should be converted into simple fractures by thoroughly cleansing the opening, closing with sutures if need be, and healing with an antiseptic dressing. I have seen some excellent results follow this method of procedure, and am heartily in favor of it wherever it can be done.

DISCUSSION.

Dr. M. GARDNER—It has been my fortune to see a number of ununited simple fractures in the right limb, and I do not know whether other surgeons and employes of the companies have met with these cases; we have had three on our system in two years; they have been in the hands of good surgeons, men competent to attend to business, but union did not take place, and the result has been we have been obliged to make a compound fracture and wire it.

Dr. COLE—I have had three cases of ununited fracture of the femur, two of them I wired without satisfactory result, and I would like to know—because that is a mooted question in the profession—the experience of those who have had these cases as to the results obtained in wiring ununited fractures of the femur.

Dr. GALBRAITH—I call to mind a very interesting case: A conductor sustained a simple fracture of the thigh. I forget which leg now; he was placed in a hospital and treated by a very good man; the usual methods were employed, but he failed to get union. He cut down and wired it and put it in a plaster of paris dressing and it remained some ten or twelve weeks; there was no tendency to repair, the splint was replaced and remained about six weeks I think, and after removing the splint on examination it was found there was a false union; it was a railroad case, and the surgeon wrote me concerning the man's condition, and a little later, probably two weeks, I visited his hospital and advised cutting down and sawing off the bones and using Wyeth's device in the usual method; the limb was put into a plaster of paris cast, at the end of ten weeks the dressing was removed and we had succeeded in getting an excellent result; and I believe invariably the use of this in the thigh, and more especially in the leg, is much better than the wires or any other strong suture; I think better results will be obtained by its use than by any other method; it certainly holds the bone in better position and maintains better apposition and rest to the parts. The great difficulty in those cases where wire has been used, is that the regenerative process that goes on is so violent as to be continuous and resolution does not take place till so late that the callus becomes softened.

Dr. LEMEN—I have had varied experience with the cases that I have used wiring. I must say that it has never been very satisfactory to me. I find that where you have to cut down and wire in ununited fractures, it requires at least twelve weeks of immobilization before you can expect union; the patient becomes impatient and the surgeon becomes impatient; in a case that I have had recently I kept it up for thirteen weeks and there was as much of an artificial joint at the end of that time where I used my wire as when I began. I had another case in which there was a compound comminuted fracture of the femur; the laceration of the soft parts was very extensive, and one portion of the bone was split off from the other two between three and a half and four inches long. I did not have to do much cutting in that case because the external wound exposed the interior wound completely. After washing it out thoroughly instead of using wire I simply took silkworm gut and put it around in three or four places, binding very much as the old farmer binds his sheaves of wheat, and I never had a better result in any case. I believe instead of using the silver wire, unless the fracture is almost transverse, and it is a very rare occurrence in my experience to have an ununited fracture of the femur where it is almost or completely transverse, if the first cardinal principle which should be regarded in the treatment of the fracture, is observed, simple apposition, the muscles themselves retain it in position; an oblique fracture gives the most trouble and is the one most likely to be ununited. In any oblique fracture of the femur where it is necessary to use wire you can use the silkworm gut; I put it entirely around the bone, periosteum or anything else,

bring it as tight as I can, tie it in three or four knots, dress with aseptic dressing, immobilize it. The great reason that we have ununited fractures in most of the cases is that we do not immobilize our fractures, and as I have stated to our Society for two or three years, the treatment of fractures of all kinds is the simplest thing; there are three cardinal principles that should be observed and we will rarely have bad results; the first is, diagnosing make out the fracture and the condition of affairs; the second is apposition; the third the retaining in apposition—and your results should be perfect.

Dr. REED I want to add one more cardinal principle which is highly important in the repair of fractures, and that is we must have in addition to apposition and holding in position, the disposition on the part of the economy to repair. I remember a case which was injured on the Baltimore & Ohio railway some twelve years ago in which there was a transverse fracture which I knew was properly adjusted and held in apposition because it was placed in the hands of one of the best surgeons in that section of the country, in which there was no repair whatever, that was operated on, and still no union, the subject of which sued the company for damages; and the company had to pay a good many thousand dollars in that case. I began to feel that something had been left undone, something that I ought to have done. After experience has taught me that in those cases where there is non-union it is nine times out of ten the result of the failure on the part of the economy to repair the bone, except in those cases where there has been a portion of the connective tissue or muscles interposed between the ends of the bone. I have operated on quite a number of cases for non-union and in, I will say at a rough guess, perhaps 50 per cent. of those cases there has been an interposition of connective or muscle tissue in between the end of the bone, and when that is there there can not be union; but on the other hand when there is no foreign substance between the ends of the bone it is due to a lack on the part of the economy to replace new bone, and when that is the case I do not care whether you wire the bone or whether you hold it together with silkworm sutures or what you do, it will not repair. In a number of these cases in which we have made careful union, in which we have sutured the bones together with various sutures, we have had no repair whatever, no disposition to repair. One case I recall: The fracture had been immobilized for ten or eleven weeks, and in cutting down we found no disposition to repair whatever; it was like an entirely new fracture, not even absorption of the end of the bones; it is not the fault of the surgeon, but the fault of the economy or the tendency to repair in the person who is injured, which should be taken into consideration; and I believe in a large majority of these cases where there is non-union it is often the fault of the persons themselves, not what they do, but a constitutional condition which prevents the repair of the bone.

Dr. HERNDEN—The remarks of Dr. Reed call up a point in my mind and that is the failure on the part of nature to provide for the repairs. I believe myself, from some experience in that direction, that is true, and I would like to speak of a case in particular which will help the author of the paper. We all feel sympathy and admiration for the fellow who owns up to the corn. I wish to speak of this case because I fully agree with him? It was a peculiar case. A wealthy man in our vicinity, and in fact about the only one we have around there, was visiting in Minneapolis, and fell through a skylight in the hotel, the skylight to the library, struck on the steam radiator; he was severely shocked and it was thought he would not live—and I think the condition of shock is a barrier in the process of repair in a fracture wherever received; he received a compound comminuted fracture of the forearm; he also received a fracture of the thigh or femur. Dr. Hague of Minneapolis, an eminent physician, and a professor in one of the colleges there, were called and diagnosed an intra-capsular fracture of the hip, and put him under treatment, carrying out immobilizing of the hip joint and the whole body for about a little over two months and then declared that there was a repair of the fracture. Dr. Hague wrote to me subsequently that the case was one of those unusual cases where recovery had been achieved where the fracture had occurred within the capsule. The man got homesick and came home on a bed. The doctor had taken off the immobilizing appliance but had a weight and pulley still attached to the limb, because he wanted to maintain his glorious result—the doctor wrote he had achieved a result that was remarkable, he felt proud of it, and wanted that I should keep up the extension so there should be no shortening—and there was no shortening that I ascertained on examining the man. I took off the weight and pulley, threw the weight over the bed and told him, "You never

had any fracture of the capsule, Dr. Hague to the contrary." On examination the joint was soft, weak and exhausted, the fracture in the arm had not healed nor the bones united; this delayed the fracture of the arm, and the fracture existed in the thigh, not the hip. I speak of this to emphasize this point that the processes of repair may be delayed by shock or other systemic condition. On examination I found no shortening, but I found a splitting fracture of the thigh, commencing at the trochanter extending down eight inches. I could pass my fingers—he was thin—between the fragments and push out the lower end of one fragment. Not being content to let the diagnosis remain with myself pitted against Dr. Hague and the professor, I called in three prominent and competent surgeons. They agreed with me. I made an appliance holding the fragments in apposition and got a good result under heroic systemic treatment. I wrote to Dr. Hague and gave him what I thought was the history of the case from the beginning. I said, "You have not achieved a grand result, you have achieved a grand sort of ignorance." He sent me the affidavit of the Professor stating that there was crepitus, no doubt about the fracture being in the capsule, I was a foolish man to speak of the splitting fracture, I was simply stating something that did not exist. We had some more correspondence about it; I wrote him that the surgeons that examined it were eminent, and the four of us concurred, no question about it, and each of us passed our fingers under the fragment of bone. I said, "That is where you got your capsule—it never was an intra-capsular fracture." I have brought up the case to emphasize the point made by Dr. Reed and to help our Dr. Dooley as to the diagnosis in such cases. I have myself been very much bothered sometimes, and I think Dr. Hague and his friend must have been bothered when they made that diagnosis.

Dr. MAYO In reply to Dr. Cole's inquiry in regard to wiring fractures I would say that in one case of ununited fracture the result was unsatisfactory. In a number of instances I have wired compound fractures, or at a secondary operation wired for the relief of deformity due to improper union. One fault in wiring is that while you can hold the ends of the bone in position, muscular action has a great tendency to cause angling or bowing, which is hard to prevent. About a year ago I saw a silver bone splint in Baltimore, used both by Tiffany of the University of Maryland and Halsted of Hopkins Hospital. This splint is composed of silver, is about three-fifths of an inch wide with screw holes at frequent intervals. A piece of this splint can be broken off the right length, laid so as to cover the seat of fracture, and on the sound bone each side, and with silver screws firmly anchored in position. It is claimed that this can be sealed and left permanently. A recent case is reported in the *Annals of Surgery* where this was done successfully in a case of ununited fracture which had been previously operated upon several times, with failure. I have used this on one case with great satisfaction; the case was a septic one and I packed with iodoform gauze and eventually removed the splint. I was surprised on removal to see how tightly the screws were held in the bone at the end of a number of weeks.

Dr. SCOTT—I wish to say a word on Dr. Reed's remarks relative to the nutritive influence in connection with fractures, especially in fractures of the femur. I think a great deal more attention should be paid to that especial point by the railroad physician than is usually given. Recently, upon my recommendation, the general manager of my road has taken steps for the purpose of employing a better class of labor on our road. We have heretofore had no examinations made scarcely, and while we have had some examinations made in the transportation department, we have not had any in the road department, and have had a great many fractures from that department; our general manager has given instructions that the foreman or the road master should employ none but comparatively young, able-bodied men. While that seems to be an injustice to the old class of laborers, yet it is nothing but justice and is a protection to our company to employ such laborers. I believe that on account of this step we will be saved some of this trouble and it may save the company thousands of dollars at the same time.

Prof. RIDGON When the general surgeon treats a case of fracture and fails to get union, and wires it and fails to get union, he sometimes comes to the orthopedist for help. That leads me to feel I have some right to take a part in this discussion. There is one point omitted in the question of treatment for repair of fracture. As I understood Dr. Reed's point of defective nutrition, he means defective generally and not local. I should take exception if it were defective locally.

Dr. REED—It may be either or both.

Prof. RIDGON I will cite two cases: Henry D. Sands of New York; treated for fracture of the tibia, non-union; he was wired, non-union; then afterward it was operated on by

Dr. Frank Hartley of New York, and failure to get union; he was sent to me. I took off the splint and in six weeks there was good union. The other case was treated by William T. Bull of New York City; there was a local defect, not general; after wiring and getting no union, the case came to me. I took off the splint and treated it and in four weeks there was a good solid union. The point I would make is this: These cases, and all the cases I have happened to see, have been treated by plaster splints. I would not say that plaster splint makes non-union, but I say in many cases of non-union the effect is due to constriction of the fractured region. When the constriction was removed, when the local congestion was reduced at the point of fracture, union took place. I believe a fracture should not be constricted.

Dr. GALBRAITH—In view of the fact that our discussion is placed on record, I wish to take some exception to Dr. Lemen's remarks; possibly I did not understand his meaning. If my memory serves me right, he cited the fact that all there was to do was to secure and maintain apposition and that in all cases you would secure a perfect result. Now I may be in error in this; if I am I will go no further. If I am correct I should like to say something concerning his treatment.

Dr. LEMEN—I think you understand me correctly; my statement was this: Diagnose your fracture, place it in position, retain it in position, trust to nature, your results are perfect.

Dr. GALBRAITH—I will cite a case and I will be much obliged if the gentleman will advise me regarding the treatment. A lady, 18 years old—she is under my care at the present time—met with an accident in a railroad collision, receiving a fracture of the right clavicle near the shoulder joint, a fracture of the left clavicle near the middle, a fracture of the scapula, a simple fracture of the middle portion of the humerus and a compound fracture of the elbow joint. Repair has taken place at all seats but the third of the simple fractures; there was a rupture of the muscle and I have some deformity of the clavicle and scapula and a non-union at the point described. And I would like to know in a case of this kind, how any man can apply a dressing, how he can secure a perfect apposition and maintain it by any surgical dressing or surgical appliance? The great difficulty in making positive statements of this character is that we may in a short time be confronted, as oftentimes happens when a railroad is sued, with the statements especially of an able man like Dr. Lemen; he is an able surgeon and inasmuch as he has taken this positive stand how can we avoid conflict when we are not having the best results in practice?

Dr. LEMEN—There is just one remark that I would make in addition—and yet I doubt the propriety of making it a matter of record—but I have always looked first upon science and results to be the first consideration, the first duty in the position that I have always occupied, and I do not feel that I should have my views, honest convictions restricted for the mere fear that perhaps it might not suit the railroads or the selfishness of the other corporations that I might work for. I believe we should rise above these things; we should stand upon a higher plane than to allow for one moment the position that we occupy toward a corporation to prevent us from righting ourselves in regard to scientific facts. I perhaps am a little more outspoken than the most of men, but it is due to my bringing up and I perhaps can not help it—built that way.

Dr. GALBRAITH—I do not think the Doctor understood the gist of what I wanted to convey. It was not for the protection of the corporation nor the individual, it was the protection of the surgeon himself. I have a deformity in this case and a non-union, and I do not know how anybody could overcome the difficulty and secure better results than I did; certainly could not apply any dressing, could not secure apposition, on account of the serious complications and multiple combination of the fractures. It was not for the purpose of protecting any corporation it was simply the individual. I do not feel I am responsible for the result I have got in this case. While the deformity is slight, there is some.

Dr. LEMEN—I believe that it is true in our profession as well as others, there is an exception to all rules and the exception very often proves the rule. But I was speaking about general results.

A Doctor's Button.—A badge as an international insignia for physicians has been recently proposed. It is a button in the form of a circular shield, in the center of which is a modified form of a Maltese cross, opposite the arms of which are the letters "M. S. O. H.," meaning medicine, surgery, obstetrics and hygiene. The button is of gold, and the cross is of red. This may be unnecessary, as the profession is "of the people, for the people and by the people."

COMPOUND COMMUNUTED FRACTURE AT THE KNEE—REPORT OF A CASE.

Read at the Third Annual Meeting of the American Academy of Railway Surgeons, held at Chicago, Sept. 23, 24, and 25, 1896.

BY W. A. WARD, M.D.

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Compound injuries of the knee have at all times been considered most serious in character, more especially when complicated with fracture; in the latter the knife and saw have been considered indispensable, their absence fatal to the life of the patient.

Thus Erichsen (System of Surgery) in speaking of this class of injuries of joints, says: "This is more especially the case when the knee is the articulation injured; extensive laceration of this joint, more particularly complicated with dislocation or comminution of the bones, being cases for early amputation." Later Dr. Ashurst (International Encyclopedia of Surgery) in discussing "Conditions calling for Amputation" places it more mildly by the remark, "Compound fractures into the knee joint may be considered a cause for amputation," yet when taken in connection with the text may almost be considered imperative.

Since the days of antiseptics, which may not inaptly be termed the New Surgical Dispensation, surgeons have become bolder and conservative treatment has in a measure supplanted the more radical, with varying degrees of success. Each successful case undoubtedly carries with it one or more practical points; and, if the report of the following accomplishes that purpose, the object of this paper will be fulfilled.

S. M., aged 38, Finn, laborer, married. On March 13, 1896, while at work at the base of an ore pile on the P. & C. docks at Conneaut Harbor, about 2:30 P.M., was injured by a mass of frozen ore which rolled down the side of the pyramid and caught his left knee between it and an ore bucket. He was at once conveyed to his home about half a mile distant, and surgical aid summoned. On arrival found Drs. Baker and Tower present. Told them I had been requested by an official of the company to take charge of the case. Had been telephoned for and word returned I could not come, which was a mistake and accounted for my tardiness, as I had only a few moments before received word. Patient was under chloroform, and the doctors assured me that "the head of the tibia was comminuted and the joint open, that finger could be readily passed into the joint through the external wound and fracture plainly felt; that they had adjusted fragments and sutured external wound." By palpation the diagnosis of comminuted fracture was readily confirmed, the head of tibia being broken into at least three pieces; also dislocation of head of fibula with transverse fracture of shaft about an inch below. Inspection also revealed a wound on extero-posterior surface, along lower border condyle of femur, some three inches in length. After explaining to friends the serious character of injury, that amputation might be required, etc., was willing to make an attempt to save the limb, and so decided. The wound was dressed with iodoform gauze, limb placed on a double incline plane well padded with sublimated gauze, and a padded Levis splint anteriorly, bandaged, and patient conveyed to bed. Morph. gr. $\frac{1}{4}$, to repeat as necessary. Corrosive sublimate solution was freely used from first to last.

8 P.M. Knee and limb swelling, making bandages tight, considerable pain. On removing bandages blood welled freely from wound, which was gaping and stitches tense. Hemorrhage was readily arrested, parts cleansed and redressed. Ice bag applied over knee, which was protected by a folded towel placed underneath bag.

14th, 9 A.M. Still oozing, swelling increasing, limb inclined to roll inward, pain severe notwithstanding morphia. Complain bitterly from slightest motion of the body, evidently splint not meeting requirements and some other device loudly called for. Redressed wound and adjusted as well as possible, ice bag continued.

2 P.M. Assisted by Drs. Tower and Baker, removed double incline plane, bathed limb thoroughly, cor. sub. sol. not forgotten, and placed in a Smith's anterior wire splint with a foot piece; adhesive strips applied to sides of leg and fastened to

foot piece in the ordinary way for extension, splint extending over fully two-thirds of thigh, limb being supported by a continuous series of strips of a common roller bandage 2½ inches wide, whole length of splint, fastened upon either side by pins and then suspended in a Salters cradle. Sutures removed and wound drained by iodoform gauze crowded well into joint, over which was placed iodoform gauze and sublimated cotton, held in position by the strips of bandage supporting limb. Ice bag replaced and morphia as necessary.

15th, 10 A.M. Very little pain since yesterday P.M. Pulse 90, temperature 99.6, tongue coated, bowels inactive, enjoys his pipe, had a fair night. Wound oozing, dressings soiled. Comp. cathar. granules (Whitbeck's) ii, repeat in evening if necessary.

16th, 9:30 A.M. Pulse 90, temperature 99, no action of bowels. Comp. cathartic pills ii every six hours until bowels move.

17th, 9:30 A.M. Pulse 90, temperature 99.6, a costive movement of bowels. Soda et potass. tart. a tablespoonful once in four hours until proper action secured.

18th, 10 A.M. Pulse 90, temperature 99.

19th, 9:30 A.M. Pulse 90, temperature 98.6.

20th, 10:30 A.M. Pulse 90, temperature 98.4. Outer dressing to wound unsoiled for first time.

21st, 10:30 A.M. Very comfortable. Ice bag discontinued.

22d. In redressing wound omitted drainage.

23d. Very little swelling of knee.

25th. For past two days had had a severe pain in middle third of leg, commencing about 5 P.M. and continuing into the night. Pulse 80, temperature 98.4, tongue coated, hydrarg. chlo. mit. gr. ss. once in three hours for three doses (from which bowels moved thoroughly), quinia sul. gr. ii every three hours. Quinia continued for two days with complete relief.

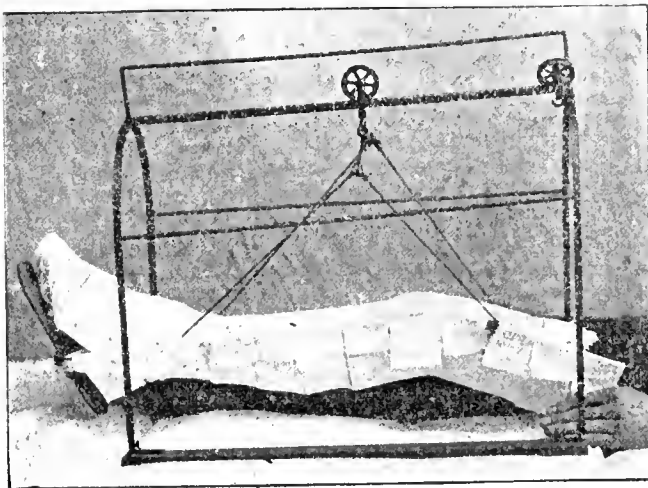


FIG. 1.—Appliance for support of fractured knee.

April 15. Wound closed.

20th. Osseous union fair, motion of joint more than expected, flexed and extended knee quite a number of degrees. Limb heretofore kept slightly flexed, readily straightened. Bathed thoroughly and placed in plaster Paris cast. On the next day (21st) to my surprise found patient dressed, sitting in a chair. He at once commenced getting about on crutches and progressed rapidly.

May 3. Complained of pain in lower third of leg, inner side. Cut off cast, and union appearing good, omitted splint of any kind, simply a cotton compress and bandage. Motion from extreme extension to very near right angle.

The pain continued, sometimes in leg, at others in foot, or in both, of a very severe character, notwithstanding treatment, which was both general and local; among the latter liniments, blisters, cupping, massage, etc., until July 2, when an interrupted galvanic current was used with marked relief, repeated on the 5th, and no complaint since, although it was again used on the 13th. At latter date motion was nearly complete, and used only a light cane in walking.

There is a little deformity on outer side, owing to excessive callus formation and undue prominence of head of fibula, otherwise the result is as complete as could be wished.

In reviewing the management it is unnecessary to comment on the strict antisepsis which was maintained, the drainage or antiphlogistic of cold as applied by the ice bag. To do so would only be to repeat what has oft been reiterated heretofore; but to the mechanical device, which, to my mind, proved a strong link in the chain leading to the result, I wish to call special attention, not that there is anything in it new or original, for there is not.

The Smith wire splint, with the attached strips of bandage as applied, afforded a bed and support to the limb, held it firmly and secured perfect rest and repose for the injured parts. The facility or ease by which the wound could be reached was also important, to accomplish which we had only to loosen a couple of the strips upon that side, turn them back underneath, or if soiled remove entirely and replace with new, take away the dressings, which were then entirely free, bathe, or do whatever necessary, apply fresh dressings and readjust the strips, all without any handling or moving of the limb whatever; a great convenience, as it was deemed advisable to redress at each visit for some ten days, on account of oozing, and at longer intervals thereafter until healed. Pus was not at any time visible. Strips were carefully examined each

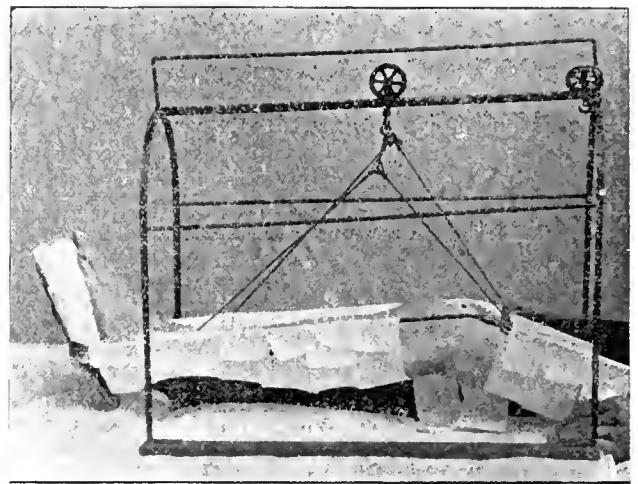


FIG. 2.—Support for fracture of knee. Bandages loosened for dressing wound.

day, to see that each remained properly adjusted, or all bearing equally. When we desired to inspect the sides or posterior surface at any point, we loosened one or even two strips on one side; if more desired, readjusted ones already loosened, and proceeded as before. For the anterior surface, simply lifted the covering which had been folded and loosely laid thereon.

By the Salters cradle, in which it was suspended, extension was maintained by the heft of the limb and the pitch of the incline, and thus kept uniform. If the patient moved up in bed (he could readily do so himself unassisted), or if from any cause slid down, the pulley automatically rolled up or down the incline, creating no disturbance. When the patient was moved to the right or left, the position was immediately accommodated by the swivel by which the cross bar was attached to the pulley, thereby affording quite a range, or even allowing the bolstering of the patient without the least inconvenience.

By the cord and hook in the ceiling, or a gallows placed by the side of the bed, the extension is main-

tained by the obliquity of the cord. If increased, then extension is increased; if lessened, extension lessened, until at the perpendicular it becomes null, and if perchance it passes beyond, then we have a crowding; therefore, to have uniformity of extension by this means, it is necessary to secure your patient against any sliding up or down, a very uncomfortable thing for him, but not required by the cradle, hence its advantages. The cradle I have found of inestimable value in severe injuries of the leg necessitating confinement to the bed, no matter what kind of splint was used.

It will be noticed that with the exception of April 20, when passive motion was made simply as a test, the joint was kept in perfect quietude until the removal of the plaster splint, May 3, after which patient was instructed to gently exercise it each day—another refutation of the idea of motion, either passive or otherwise, being essential against ankylosis.

DISCUSSION.

Dr. SCOTT—I happen to be one among the number who believe it is all right to use chlorid of mercury in the joints. While that practice is condemned by some of the leading surgeons, I believe it is justified under certain circumstances, and I believe as a railway surgeon in using chlorid of mercury in the joints. I have used it in the cranium and I believe it can be used in the joints. When we consider the fact that a majority of the wounds which we have to treat in joints are infected when we are first called to see them, full of dirt and various foreign substances, and owing to the fact that we may have some difficulty in removing all foreign substances, all sources of infection, it is justifiable to use an antiseptic for the purpose of destroying those germs that remain. I believe it is good principle and good practice all the way through, and as I said a moment ago, I presume the Doctor's treatment was successful largely on account of the fact that he used drainage and the wound was fortunately situated for the purpose of getting good drainage. In a similar case of my own, a young physician—a young homeopath, by the way—who was afflicted with pulmonary tuberculosis in an advanced stage, but continued the practice of medicine, while whipping his horse one day was kicked on the knee, and the result was a compound comminuted fracture of the tibia which went through the skin and the synovial membrane about an inch and a half long; the lower half of the patella was simply pulverized. I was called to see the man in a short time after the accident. On examination I found the injury I have described, also a lot of dirt on the wound; found some bits of underclothing in the wound, and having gotten him in proper place, I made the opening larger and irrigated the wound thoroughly; and by the way, I believe we can not clean a wound of this character without the use of water in a stream; I do not believe we can clean it by sponging or dropping or anything of that kind, but it needs a good strong stream of water to flow into the cavity in order to flush. I used the bichlorid of mercury, just as the Doctor has stated; after I got through I was not satisfied with the opening that existed in the joint, I stitched up part of it because it would not be of service to me, but I made two openings on either side near the lower part of the joint as far back as I could go, put on the drainage, left a piece of iodoform gauze to the front, placed the limb in an inclined plane, gave the patient a little medicine, I forget what; although he was a homeopath, I think I treated him by the usual methods—he did not ask any question about what he should have and left him alone; changed the dressing every three or four days, but the result was something surprising, because I was afraid his pulmonary trouble would have some influence on the result. The patient, however, seemed to get no worse during the time he was laid up with this injured joint, and finally made a good recovery, got excellent motion, hardly a bit of sepsis connected with the case. I think the good result in my case was due chiefly to the openings referred to, the excellent drainage and perfect cleanliness and antiseptics combined.

Dr. REED—I was very much pleased with the Doctor's paper and also very much interested in the remarks of Dr. Scott, but I must take some exceptions in reference to one point which each of them recommend, both in the paper and in the remarks on the paper, and that is in reference to drainage. I most fully concur with them that asepsis or antiseptics is one of the secrets of success in the treatment of joint injuries, as well as other

injuries, but as to the use of drainage it is a question in my mind and one which I seriously question, except when you have something to drain. I do not believe drainage adds one particle to the recovery of an injury to a joint or to any other traumatism unless you have absolutely something that you want to drain. If you have suppurative of a joint, I should undoubtedly use drainage. But my experience is that the use of drainage in joint injuries is absolutely useless unless you have something to drain. I used to use drainage in almost every injury, whether of the joint or any other part of the economy, but during the last three or four years I have almost entirely discarded drainage, except when I have had a reason for it. In amputation of the limb I do not use drainage, further than the use of a little gauze for two or three days to assist by capillary attraction the discharge of the liquids as they accumulate, and after that take it away, and in the treatment of joint injuries—and I have had a good many—I have discarded drainage unless I have something to drain. If I adhere to the principles of asepsis or antiseptics I do not have suppurative, hence there is no use for drainage, and I believe you get along as well with asepsis or antiseptics and mobilization. Because when you have drainage you have an opportunity for the introduction of germs into the wound which you do not have if you do not have drainage. And so I must take exception to it, and I base my exception on personal experience as well as the experience of others who were at one time advocates of drainage and have discarded it.

Dr. E. WYLLIS ANDREWS—Admitting the tendency of modern surgery to abolish drainage, yet possibly it is not true that this applies to traumatism equally with the wounds which the surgeon makes in operating. The experiments of Robb and Schimmelbusch have clearly shown that we never really sterilize the skin in its deeper parts. In other words, while we may sterilize the surface of the skin so that it is not possible by mere contact to infect, yet that same skin a few hours later will be septic, because out of its glands material has been poured which carried with it microorganisms, therefore I must say as Dr. Reed has done, surgeons are drifting away from drainage as far as possible, because experience has shown that the moist serum about wounds in every case in twenty-four hours is septic. It is necessarily true that the wound becomes septic where the drainage tube comes out. Why should we assume from that that wounds made through dirty clothing or with blunt or sharp objects themselves septic, should not be subject to the same rule? The writer states that he did not open this wound for twenty-four hours after seeing it, probably because it began to show sepsis, and that would indicate immediate drainage, if not flushing. The knee joint is so complicated that it may almost be said to contain separate pockets, the bearing of which is that to drain a knee joint thoroughly a large number, or more than one opening is invariably necessary, as Dr. Scott has shown. In his case he found for complete drainage it was necessary to make two openings. In order to thoroughly drain a knee joint it is necessary to make several openings; exit must be supplied from six points: one each side of the patella above the condyle; one on each side of the lower border of the condyle, because fluid will gravitate there, and a pair of drainage or a single drainage tube will be necessary well above the patella.

Dr. SCOTT—Dr. Reed made the point that he never used drainage unless he had something to drain. I agree with him, and that is a good rule to practice in general surgery, but I want to make this point: in the knee joint we may have something to drain. Whenever we have a compound comminuted fracture involving the knee joint we have something to drain and if you stitch up your wound the opening in your synovial membrane may close up, you have a sufficient source of irritation there by way of traumatism to cause an outpour of the synovial fluid, even if you have no blood, and you may have both. I believe, laying aside the question of direct infection or the danger of infection following, it is better for that joint that that fluid should escape, and you know it is good practice in simple inflammation of the knee joint to let out the fluid under the skin, and if that is the case in simple uncomplicated inflammation of the knee, why is it not good practice in injuries of this character to let that fluid out? I believe it is the best practice by all means to get that fluid out of there or give it free opportunity to escape.

Dr. REED—I know that the Doctor has taken the ground which has been taken by many eminent surgeons, and a position that I have taken myself in the past but which I have discarded because I find I get along just as well and better without it. We admit that in a compound or comminuted fracture of the knee joint that we have or may have the blood serum, etc., exuding into the joint, but is it necessary for us to drain under all circumstances? Now I say I am in favor of

drainage when necessary, but unless it is necessary I do not want to drain; for instance we have an involved joint lopping off of the condyle in the elbow, does any one think of opening the elbow in a fracture of that joint, and everyone must admit that in that fracture there is blood and serum in the joint. Nobody ever thinks of opening it: yet those cases get well without disturbance or interference of the motion because of immobilizing the joint; the patient gets well and we do not have much trouble with it. I take that as a cause for not opening the joint. If we take the Doctor's argument in question and say because there is blood and serum exuding into the synovial membrane this is a reason for drainage, when we have a condyle fractured and there is exudation of blood and serum we should drain, but we do not drain but depend upon absorption. So in any joint I do not drain and I have better results, unless I have septic material or something of that sort, that would cause a destruction of the knee joint. I base this on my experience, not for argument. I say in my experience in this line of surgery and in treatment of the injury to the knee joint I get better results when I do not drain than when I do, unless I have suppuration or something that is destructive to the knee joint which will not absorb.

Dr. WARD—It appears I have only been attacked on one part of my platform, and that is drainage. I use my drainage just as I do anything else; when I think it is called for I use it; if not, I do not. If in a given case I have a large amount of oozing, dressing completely soiled through every twenty-four hours, I keep it open; just as soon as it becomes reduced in amount to where I think it safe I remove my drainage and allow my wound to heal. The point also to which I desired to call attention was the appliance, the comfort and convenience of my dressing. I do not know of a man that has ever used such an appliance that would consent to use a double-incline plane for injuries of the leg or knee joint. I have not tried it in fractures of the femur, but I never put it on a person yet but what rejoiced in the comfort it afforded, after having had some other dressing upon the limb.

BURNS AND SCALDS.

Read by title at the Third Annual Meeting of the American Academy of Railway Surgeons, held at Chicago, Ill., Sept. 23, 24 and 25, 1896.

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In our work as railroad surgeons we are often called upon to treat burns and scalds in their various forms and degrees, and nearly as often find an unsatisfactory state of affairs regarding the condition of the patient. The severity of the burn, its first treatment by rough hands, and the time since the infliction of the injury are all important factors. These, together with some hints as to methods of treatment, will be considered.

Often we find a patient begrimed from head to foot with coal dust, oil and cinders, suffering with a severe burn, received hours before, with the injured member drenched in machine or engine oil and wrapped in dirty, oily waste, and an internal drenching of whisky or brandy. This condition must be met promptly, and here begins the tiresome task of cleansing and rendering the parts aseptic. These are the times that try our patience.

With no means at hand to dress wounds in an emergency, especially when "out on a run," our engineers and firemen can not be blamed for doing the best they can; on the other hand, it is a wonder why there are not more serious results following an improper first dressing that has remained for hours favoring, if not producing, sepsis. With modern surgery we are able to meet these emergencies successfully and bring about satisfactory results. How best to do this will claim our attention.

As far as the conditions, treatment and results of burns and scalds are concerned, it is not deemed advisable to lay down any different line of treatment, they are in all things practically identical: therefore the term burns will include both burns and scalds.

While many of the earlier authors classify burns, according to the extent of the injury, in six degrees, the simpler classification—three degrees—is here adopted for the sake of brevity and the further reason that we believe the distinctions in the six degrees are practically unnecessary, and are in a measure confusing. The classification adopted is as follows (International Encyclopedia of Surgery, Ashhurst.):

First degree. Hyperemia, erythema; irritation or inflammation of the skin without vesicles.

Second degree. Vesication; inflammation of the skin; formation of vesicles or bullæ.

Third degree. Eschars; gangrene, superficial or deep, involving the skin or other subcutaneous tissues; carbonization of part or of entire body.

In the first degree there is rarely any constitutional disturbance (it is true that a severe case of sun burn may prove fatal), the diffused redness of the surface, some tingling or smarting pain, and occasionally some swelling are usually the only symptoms manifest; yet in rare instances the internal complications are a serious factor, depending on the patient's constitution, individual peculiarities, the impression on the internal organs being made through the media of the sympathetic and sensory cerebro-spinal nerves. Exfoliation is complete within a few days and the skin is again normal. These symptoms are also found in burns of the second degree, but intensified because of the greater heat producing them, and in addition there is serous effusion and the formation of vesicles, following the intense hyperemia, either appearing at once or within a few hours; in some cases they continue to form for two or three days. It often happens that the vesicles burst because of the rapid effusion; when this occurs the epidermis lies in shriveled whitish folds on the super-sensitive, inflamed skin, causing pain and uneasiness, and when touched this inflamed, raw surface gives rise to intense pain. Sometimes the usually transparent serum is streaked with blood. When there is no ulceration we may find the epidermis replaced in from five to ten days.

The severity of the burn, the condition of the nervous system and susceptibility of the patient influence the constitutional disturbances. Some authors affirm that in this degree, "in severe cases shock with prostration, even immense prostration, is always present." In our experience, typical second degree cases have been treated with shock and prostration practically absent. Death may be instantaneous from collapse, or perhaps more properly neuro-paralysis, from syncope and suffocation (rarely met with in railroad injuries). If death is not sudden (in the common acceptance of the term) it may be prolonged for hours or days and result from collapse, coma, bronchitis, pneumonia, etc., thoracic lesions, lesions of the abdominal viscera, enteritis, hemorrhage, peritonitis, exhaustion, gangrene, septicemia, etc. With intestinal complications, death may result from ulceration.

The definition given of burns of the third degree indicates plainly the prominent symptoms; the eschars vary in depth and extent; the destruction of tissue, depending on the degree of heat and duration, may be of the skin only, or all the soft and bony tissues of a part may be destroyed. This total carbonization, while not common, could easily happen to one pinioned under a wreck.

If the person survives the shock, we have a group of grave conditions to battle with; severe as are the lesions appearing in the second degree, they are not

to be compared to those now under consideration. Shock is so pronounced that the question often arises. Can anything be done? I have had in my experience cases in which the burned surface was so extensive, the burns so deep, the shock so intense, that it seemed almost useless to try to do anything except relieve the suffering. Recovery did take place, convincing us that while there is life in the body, no matter how severe the injury, our efforts may be rewarded with a life saved. In this class of burns, the constitutional symptoms are usually manifested very early. We may find our patient comatose, from cerebral congestion, with a speedy death. Often there is general congestion of the internal organs, especially the lungs and kidneys. *Albuminuria is always present.* During the intense inflammation, suppuration is active, and the sloughs are rapidly cast off, leaving an exquisitely sensitive ulcerated surface rapidly covered by granulation.

During the process of suppuration, the patient is apt to suffer from exhaustion, intensified by venous or arterial hemorrhage. The nerve centers, intestinal canal and kidneys are now liable to inflammatory changes. At this time, too, albuminuria is produced. This symptom, albuminuria, is not always noted by writers on burns. In this connection, Dr. Thomas George Morton of Philadelphia, says: "The early presence of albumin in the urine has long been recognized, but not so generally as might have been expected, for even quite recently systematic articles have appeared on the subject, supposed to cover the entire question, without a word having been said upon this important pathologic change."

Among the complication of burns, we have intestinal inflammation and ulceration, varying from simple irritation, with perhaps diarrhea, to the stage of ulceration and extensive destruction of tissue. The respiratory organs are often involved. Laryngitis following the inhalation of steam, with marked symptoms of edema of the glottis, dyspnea and intense pain. In burns of the neck and chest pneumonia and bronchitis are frequent complications. In addition to these there are the purely local complications, which include erysipelas, gangrene, deep sloughing and dangerous hemorrhage.

Among the most dangerous complications which can possibly arise, is that of a severe burn occurring at the same time that other injuries are inflicted. This is a condition of affairs which pertains almost exclusively to railway surgery. It is a subject on which the text-books generally do not even touch. No graver complications in emergency practice can confront the surgeon than that of a severe crushing or other injury such as daily occurs, complicated with an extensive burning of the surface of the body. The complication is made graver if, as not infrequently happens, there is considerable hemorrhage. In such a case the shock impression is greatly intensified and the probabilities are that the patient will speedily succumb. In any event it is the duty of the surgeon, however hopeless the outlook may seem, to take immediate and vigorous action with a view of saving or prolonging life. The question here would inevitably arise as to which form of injury most seriously threatens and consequently requires first attention. Steps to prevent further hemorrhage, attention to the condition of the heart and nerve centers, bringing about reaction from shock and removal to a suitable place for further attention, would seem to be the chief

immediate indications and perhaps in the order named. It is impossible to lay down definite rules for the guidance of the surgeon beyond these general considerations. Here, as elsewhere, his own good judgment, common sense and ability to apply quickly and correctly his knowledge must govern. The ideas advanced and rules of practice laid down in the management in this class of injuries by the older writers, are at the present day modified only to such an extent as our modern surgical practice has been changed by a better understanding of antiseptics, coupled with a better understanding of certain reflex nervous phenomena incident to traumatism of the surface of the body. As danger to life in burns of the first degree is in direct ratio to the amount of surface involved, so also are the congestions of the internal organs in large measure directly proportionate to the same cause.

This statement is not invariable or absolute, inasmuch as the danger to life due to these congestions, which not infrequently go on to an actual inflammation, are often very materially modified by the nervous temperament of the patient. A patient of marked nervous impressionability, susceptible to the immediate effects of pain, with a surface burn amounting to little more than an erythema involving perhaps half the surface of the body, if he does not die early from shock may subsequently die of pulmonary edema, pneumonia, bronchitis or some gastro-intestinal complication, death being directly traceable to inflammation of the mucous membranes of these organs, this in turn being directly due to paresis of the vasomotor nerves.

With reference to the treatment in these cases, too much stress can not be laid upon the importance of careful antiseptics. The wounds are always of necessity, when first observed, in a septic condition, and this applies with a special force when the subjects are train men engaged in the discharge of their duties. It is not sufficient to know that chemical antiseptics and germicidal lotions should be used. We must carefully discriminate as to the class of these agents to be employed in a given case. To illustrate, in a case which recently came under my observation, in which the patient's hands were both burned over the entire dorsal and palmar surfaces, the burns on each hand being of equal severity and involving the entire thickness of the integumentary covering, I tried the experiment of treating one hand with dressings of carbolic solution and caron oil, and the other with iodoform dusted over the entire surface after a careful washing with carbolized water. The recovery of the hand thus treated with dry iodoform considerably antedated that of the other. It would be obviously unsafe, however, to attempt this dressing in a burn involving a large portion of the surface of the body. A medical friend of mine, who is an ardent advocate of aseptic and antiseptic methods, recently killed a patient with an extensive burn involving the arms, neck and part of the trunk, by washing and afterward freely applying a bichlorid solution of the strength of 1 in 2,000.

The management of these cases involves many considerations. There is no department of practice which is more justly entitled to be denominated emergency practice than the management of the class of cases under consideration. We have to consider the prognosis not only with reference to life, but with reference to the probability of severe and lasting injury

to the nervous system in its relation to certain vital functions and also the probability of serious deformities, which may by prompt and rational treatment be wholly or in part averted, but which at a later period are extremely difficult to overcome. Of prime importance in the treatment is the necessity of making the involved portion as nearly as possible aseptic.

To accomplish this, the clothes having been removed in a warm room, all blebs should be punctured, shreds of clothing and other debris carefully removed; the surface carefully washed and mopped with some mild germicidal solution, preferably boro-salicylic solution, or the standard Thiersch's solution, the whole carefully enveloped in multiple layers, first of borated lint and absorbent cotton, covered with rubber tissue, with either bichlorid or iodoform gauze, constituting the outer layers, held in place lightly by a few turns of a roller bandage. Among the newer remedies applicable in these cases there is one much vaunted and very justly so. I refer to euophen, which may be used in the form of powder, gauze or a 3 to 5 per cent. ointment; with reference to the latter preparation (the ointment) while it is almost uniformly recommended, I seriously question whether its use is consistent with strict antisepsis. Euophen has the advantage over iodoform of being non-odorous, practically devoid of danger from toxic effects and, according to some authorities, is better than iodoform in promoting rapid healing, especially in suppurating cases. The exclusion of atmospheric air is a *sine qua non*. This was accomplished by the older practitioners in the use of applications of oil followed by layers of cotton batting. Since the antiseptic era, we know that these dressings constitute a nidus for the harboring and propagating of the various forms of bacteria. For the relief of pain and for its action in sustaining the enfeebled heart the use of morphia and atropia administered hypodermically is perhaps the best remedy to be employed. The use of ammonia, brandy, strychnia and camphorated oil is recommended to stimulate the heart before reaction has set in, but in my opinion in a large number of cases the judicious use of morphia and atropia is most satisfactory. For the relief of pain in superficial burns the use of bicarbonate of soda in solution as a topical application is strongly advised and in many cases where more elaborate treatment is impossible this is *par excellence* the treatment to be employed. The dressings should not be changed too frequently unless the character of the case necessitates the employment of special measures, such as the application of silver to redundant granulations, stimulating applications to promote the granulating process, skin grafting, special posturing, the use of splints or other retentive apparatus to overcome a tendency to cicatricial contraction.

Thiersch's method of skin grafting is probably beyond comparison the best, when such means are indicated. One of the commonest mistakes made in cases of severe burns is the neglect to use the positive means within our power to prevent cicatricial contraction. The tendency to this contraction, especially in the flexures of the joints, should be constantly borne in mind. The great difficulty in overcoming a deformity of this character by operative procedure at a subsequent period, and the comparative ease with which the deformity can be avoided, justifies us in severely condemning the surgeon who from carelessness or want of proper knowledge allows it to occur.

It is true these contractions to some extent occur in deep burns, in certain localities, in spite of the most skilful attention which can possibly be rendered. Pains-taking care in the management of granulating surfaces, stimulating them when necessary, and hindering their too rapid growth, the transplantation of skin, fixing the position of the parts with a view to antagonizing the constant tendency to contraction, are all means which, when intelligently made use of, are calculated to get the best result. After the formation of a new skin, massage frequently and systematically applied together with a reasonable stretching are useful adjuncts.

In these cases constitutional measures should be adopted according to indications; this includes looking after the alimentary tract, the nervous system, the use of general tonics, good food, bathing and outdoor exercise as soon as permissible.

The prognosis in cases of burns and scalds varies with reference, 1, to the degree and extent of the injury; 2, with reference to the age, sex and individual peculiarities of the patient, together with the manner in which the accident occurred; and 3, the surroundings of the patient during the progress of treatment, the time when the first assistance was rendered and the intelligent application in detail of approved methods.

A CLINICAL STUDY OF THE SABULA FOOD POISONING EPIDEMIC.

Read before the Iowa State Medical Society, Marshalltown, May 21, 1897.

BY A. CRAWFORD, M.D.

MILES, IOWA.

The most extensive and serious outbreak of food poisoning ever recorded in the history of Iowa, occurred in the eastern part of Jackson County, in the fall of 1895. On September 11, at a farmhouse three miles from Sabula, there assembled about three hundred guests to witness a marriage ceremony and partake of the good things provided for the occasion. Within a few weeks thereafter, over one-third of the entire company were sick and seven deaths had occurred.

That the disease had its origin at the wedding, could not be doubted, as there was absolutely no serious sickness among the scores of families who were not present on that occasion, nor had the health of the community been better for years, than during the month preceding the epidemic. The house at which the wedding occurred is well located, and there is no history of disease having existed there for many years. The water supply was drawn from a deep well drilled in the rock and so located that drainage or surface water could not contaminate it. The well was in constant use by the family and servants, while all remained in their usual health until after the wedding. An effort was made to show that the disease had been carried to the wedding by some guests from a distance, and that the crowded rooms and heated atmosphere favored the rapid spread of the virus. That it was not thus carried is shown by the following facts: 1. No such disease existed at the home of any of the guests. 2. No case occurred among the scores who were engaged in caring for the sick, during the five weeks following the outbreak, excepting such nurses as had also been wedding guests.

At the beginning of the sickness, the writer was strongly impressed with the idea that the food was the source of infection, and as his investigations advanced,

he became fully convinced that such was the case. When the first few cases were seen, it was thought we might be dealing with a late manifestation of ptomain poisoning, but as the cases continued to come down, this theory was seen to be untenable. It soon became evident that the disease was the result of the ingestion of food infected by some pathogenic micro-organism, the exact nature of which was yet to be determined. No examination of the food could be made, as the first cases did not come under observation until one week after the wedding, but the testimony of the guests was such as to convince the most skeptical that the meats were not in prime condition. The ham was served in sandwiches and, I have reason to believe, was thoroughly cooked. The turkeys were killed the day preceding the feast, some of them were cooked the same day they were killed, while others were kept in the cellar until the next day and then baked in the oven. The chickens were killed the day preceding the wedding, cooked in the usual manner, and as soon as cool enough to be handled, the meat was removed from the bones, chopped, and placed in common earthenware jars. These jars were set on the cellar floor, and allowed to remain there until brought up to be served, more than twenty-four hours afterward. The servants state that no ice was used about the meats, and that the cellar was badly infested with flies. The weather was extremely hot, the mercury ranging between 90 and 100 degrees F. The pressed chicken was too soft to be sliced, so when served had to be dipped out of the crocks with a spoon. That the chicken was undergoing decomposition, the following letter from one of the guests, a man of unquestioned veracity, would seem to establish beyond doubt: "*Dear Sir:*—The general, and I think I may say the universal, comment here is decidedly against the food, and I believe that most of them would so testify on the stand. My own experience is this: I put a piece of the chicken, or at least what I supposed was chicken, into my mouth and it was so absolutely filthy, slimy and putrid to the taste that I spit it out and ate nothing else." I might add many more such statements, coming from the most reliable people in the community, including the officiating minister and his wife, but this is unnecessary. That some of the guests detected nothing wrong with the meat, I am free to admit, and the only explanation that can be offered is, that it was not all equally bad. A few of the sick denied having eaten any of the meats, but these exceptional cases may be explained by the contamination of other articles of food or drink.

An effort was made to direct attention to the ice-cream as the probable source of infection, but a careful investigation failed to sustain this claim. The cream was furnished by a vendor in Sabula, and as only a part of the quantity prepared was sent to the wedding, the remainder was disposed of to parties in the town, all of whom remained well.

A peculiarity of this epidemic was the great variation in time between the ingestion of the food and the first symptoms of disease. A careful study of forty-five cases, most of which were under the writer's care throughout the entire period of their illness, gives the following data: Of the cases, 50 per cent. came under observation between the fourth and tenth day after the wedding. Almost all of these began to feel ill on the fifth or sixth day, but many of them were able to continue their vocation for a week longer. Three taught school for a week after the first symp-

toms appeared. Between the tenth and twentieth day, 30 per cent. more came down, while the remaining 20 per cent. continued in their usual health until between the twentieth and twenty-eighth day. Those that became ill during the third and fourth week, were apparently as severe cases as those that were taken sick earlier. In 75 per cent. of the writer's cases, the highest temperature was reached on the first or second day after coming under observation. The average temperature, when first seen, was 102.8 degrees F. The highest temperature reached was 105.4 degrees F. The average duration of the fever was eighteen days from the date of the first visit. The mildest cases were feverish for a day or two only, while in the most severe cases the temperature did not reach normal for forty days. Over 20 per cent. of the sick were not confined to their beds, but assisted in caring for those who were more seriously ill. A few of the mild cases were apparently as well as usual in ten days, but the larger number remained weak and miserable for a much longer time.

The appearance of the tongue varied in different cases, and in the same case at different stages of the disease. In most there was a heavy white coating; in others it was brown, while in some it was denuded of epithelium, and was dry and cracked. Of a few patients, the tongue was so swollen as to make speech difficult. A fecal taste was complained of in some, and I found patients scraping the tongue with a knife to get rid of this very offensive symptom. Vomiting was present in 50 per cent. of the cases, while it was very persistent and troublesome in about 10 per cent. Diarrhea was present in about 30 per cent. of my cases, the passages being mostly of a greenish color and a very offensive odor; but constipation was the rule, and laxatives or enemas were often called for. Tympanites was not a prominent symptom and in but a few cases required treatment. Hemorrhage from the bowels was not met with in any of my cases. Epistaxis was noted in 18 per cent. A rash was present in six cases out of the forty-five. In three of these, only two or three spots were discovered, while in the others the rash was more abundant and characteristic. Profuse sweats were a striking feature of the disease, and the odor was so extremely offensive that frequent changes of clothing were necessary for the comfort of the patients. In 15 per cent. of the writer's cases, delirium was present, but in most of the cases it was of a mild character and of short duration. In the fatal cases, this symptom was constant toward the last. No serious pulmonary complications occurred, and only in a few cases was cough a troublesome symptom. Pain was the most prominent symptom in 75 per cent. of the cases. Some patients located their pain in the region of the umbilicus; others suffered but little from abdominal pains, but intensely from pain in the muscles of the extremities. The writer saw cases where the arms were almost as useless as if paralyzed and were exceedingly tender to pressure. In one instance, he found the patient with mustard drafts upon the forearms, so intense was her suffering. Swelling of the muscles was noticed by some. Dr. Pettit of Cedar Falls, who had two of the victims under his care, reported such a case to the writer. Hypodermics of morphin were necessary to control the pain in a number of cases.

The mortality was 6 per cent. All the fatal cases were under 30 years of age and four were between 14 and 20. Two deaths occurred in the third week, three

in the fourth, one in the sixth and one in the seventh. The last death was from perforation of the bowels. There was evidence of profound toxemia in all the cases that proved fatal.

In two cases postmortem examinations were made under the supervision of the President of the State Board of Health. The first body examined was that of a girl of 14 years, who died about the end of the third week. The following is a brief history:

L. W., aged 14 years. Always enjoyed good health. She was taken sick the fourth day after the wedding but continued in school a week longer. She consulted me six days after she began to feel bad, when I found her temperature 103 degrees, pulse 134. She complained of very severe pain in stomach and bowels; pain in eyes; general aching; nausea, etc. Between this and the date of her death sixteen days later, the temperature ranged between 100.2 and 104.2 degrees, often fluctuating 2 or 3 degrees in twenty-four hours, but with no regular curve. Constipation continued until the last week, when a very troublesome diarrhea set in. The passages were of a slimy character, green color and very offensive odor. Hypodermic injections of morphia were necessary to give relief from the severe abdominal pain. The immediate cause of death was progressive heart failure, the result of the profound toxemia.

At the postmortem examination the heart and lungs were found to be in a normal condition. The liver was decidedly enlarged, soft and lighter in color than usual. There was some enlargement and softening of the mesenteric glands and ulceration and softening of the cecum. The mucous membrane of the colon, for three inches below the cecum, was found to be injected and softened but showed no ulceration. The kidneys were healthy; the spleen enlarged, softened and very friable. The stomach presented evidences of inflammation throughout, but no ulceration. The duodenum was normal in appearance and pancreas healthy.

Portions of the various organs and of the muscular tissue were sent to the State bacteriologist and to Chicago for microscopic examination.

The second case was that of a young man of 18 years of age, who had been sick for six weeks. During the third week his temperature declined to a point but little above normal, and it was thought that he would soon be out of danger. A severe nervous shock occurred at this period, and his temperature soon rose to 104.2 degrees and continued high until death. Early in his sickness he suffered considerably, but after the relapse he did not complain of anything. Delirium of a mild character continued during the closing weeks.

The postmortem examination showed the heart and lungs to be in nearly normal condition. The liver was enlarged as was also the spleen. The cecum and colon were ulcerated throughout their entire length, but there were no perforations. In the small intestine there were patches of inflammation but no ulceration.

Sections of the muscular tissue and of the various organs were sent to the State board, to Dr. Le Count of Chicago and to Dr. Hildreth of Cambridge, Mass., for microscopic examination.

The report of Dr. William Royal Stokes of the Boston City Hospital, who examined the specimens sent to Cambridge is very full and complete. His anatomical diagnosis is as follows: Typhoid fever; bronchio-pneumonia; general infection with the pneumococcus. This report is in harmony with that made to the State board by Professor Bay. Dr. Le Count reported embryonal trichinae, when the specimens from the first case were sent him, but undoubtedly failed to find confirmatory evidence from his examination of the second, as he made no report.

Late in the fall the writer treated ten cases of typhoid fever, all of which occurred in families where one or more of the wedding victims resided. Nine of the patients were taken sick between the sixth and ninth week after the outbreak, at a time when nearly all of the other sick were convalescing. All these were typical cases of typhoid no symptoms being wanting—and were in striking contrast to a similar

group of the wedding victims. But two cases were seen outside of these homes, during the succeeding six months, so that no doubt could exist regarding the source of infection. If we accept the conclusion, that the malady was typhoid, we must admit that it was a very peculiar manifestation of the disease. One of the leading physicians of Clinton treated three cases as remittent fever. Two other physicians, after seeing a number of cases, independently reached a diagnosis of trichinosis. Dr. Le Count of Chicago assured the writer there could be no doubt about the epidemic being one of trichina poisoning. Dr. Pettit of Cedar Falls had two cases under his care and reached the same conclusion. Two of the local physicians made a diagnosis of relapsing fever, while others preferred to wait until the evidence was all in before making a positive diagnosis. Some of these physicians have treated scores of cases of typhoid during the past twenty years, and it seems strange that they failed to recognize the nature of the malady. If the specific bacillus of Eberth is insisted on as being essential to the production of the disease, it remains and must ever remain a mystery, how the meats became infected therewith, as there had not been a case of enteric fever in the community for nearly a year prior to this outbreak.

The treatment, it is needless to say, was determined largely by the diagnosis.

SURGERY ONE HUNDRED YEARS AGO.

AN HISTORICAL STUDY

BY DR. GEORGE FISCHER.

DEDICATED TO THE GERMAN SURGICAL ASSOCIATION.

TRANSLATED FOR THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION
BY CARL H. VON KLEIN, A.M., M.D.

VII.—THE RISE OF GERMAN SURGERY UNDER AUGUST
GOTTLIEB RICHTER.

(Continued from page 1078.)

No other German physician's style compares with Richter's; not one of them writes so beautifully, represents so clearly and instructs in such an amiable manner and with such a brilliant manner as Richter. He holds the reader so spell-bound that he can not stop. In his classic representation, clearness of expression and freedom of judgment he far surpasses his contemporaries. Later writers, like Dieffenbach and Stromeyer, can scarcely approach him. What he desired is contained in the preface of his work on "Ruptures," in which he says: "I wish to write a book which comprises the entire sphere of the art of surgery in a compact, but complete, explicit and concise form, a book void of all learned adornment, simply useful and for the express purpose of a surgeon, a book as simple as nature. It is much easier to talk scientifically than to converse on experiences. My intention is not to appear learned, for I am not writing for the learned, but exclusively for practical surgeons, wishing to be useful, instructive and plain to them. Greatly do I desire that there be not a single page in my book from which the practical surgeon can not learn something of use at the bedside of the sick." When, seventy years later, Dieffenbach published his "Operative Surgery," he extolled Richter's style by exclaiming: "Would that mine were such a book as his!" We press Dieffenbach's hand for the glowing tribute he accords his old friend, Richter. He, the genial operator, who recognized the best sur-

geons only by the clearness of their ideas and the simplicity of their presentations—for the best surgeons have ever been the best writers and are known by their style—thought Richter's writings worthy of being used as model lessons in the schools. In ingenuity and explicitness he found no German surgeon who could equal Richter, and thought his doctrines and principles still formed the foundation of German surgery; and everything that he wrote, as well as the style of his writings, he considered unexcelled, least of all, the art of presentation. Even when advanced in years, Richter wrote with genial ease and certainty, nowhere to be found in other works, so that Kurt Sprengel, in the year 1805, remarked: "Who of us medical writers living has ever attained Richter's style of writing, to say nothing of excelling it?" There was no trace of learning by citations. The histories of the bedside were brief and contained only the most essential parts, for nothing was more tiresome and boring to him than a dry, lengthy statement of a case, with all the minor uninteresting points; on the other hand, he always expressed his reasons therefor. His penmanship was elegant.

In duty bound to German surgery, we will review *Richter's Complete Works*, but will not, however, give an account of the contents of all of them, as they will again appear later. Nearly all of the short articles were published in Latin in the Commentary of the Göttingen Society of Sciences, but could be obtained in German by the public in general in the surgical library.

1. De prisca Roma in medicos suos haud iniqua. Doctor dissertation. Sept. 12, 1764. Six sheets. In it the assertion of Plinius is refuted that Rome was without physicians for 600 years, as well as the later assumption that this circumstance must be considered as a proscription instigated by Cato, who hated the Greeks and their physicians. Since Cato's time physicians were plentiful, although they possessed but little knowledge of science.

2. Casus medicus intumescens et callosi pylori cum triplique hydrope. Four sheets, one copperplate. October 1, 1764. The pamphlet contains the description of a cancer of the stomach of a deceased patient, and of the section showing the condition of the part affected; nothing else of importance.

3. Varias cataractam extrahendi methodos succincte exponit are the introducing words of his address as professor. Three sheets, one copperplate. 1766. Richter upholds David's idea (1745, described 1753) of removing cataract by extracting the lens, and gives the advantages of this method over that of pressing down the same, which is more successful only when the eye lies very deep in the socket and is very movable.

4. De dignitate chirurgie cum medicina conjugenda. Lecture held Oct. 11, 1766.

5. Operationes aliquot, quibus cataractam extraxit, describit. Eighteen pages. This work, written for his uncle's 75th birthday (Feb. 4, 1768), records the cures by extraction, of two patients afflicted with a cataract.

6. Observ. chir. Fasciculus I continens de cataracta extractione. Göttingen, by Dieterich. 1770. 158 pages. (Chir. Bibl. I, 157.) In the same are thirteen chapters on the method of the operation, means of making the eye firm, a knife for making an incision in the cornea, how to cut through the capsule, the extraction of the lens, the adhering cataract, prolapse of the vitreous humor, affections of the pupil, callous cataract, ripe and unripe cataract, conditions after the operation; besides this, ten observations.

7. Obs. de bronchotomia et de herniis. In N. Comment. R. Soc. Gott. T. II., p. 54, read Aug. 3, 1771 (Chir. Bibl. III, 328).

8. Chirurgische Bibliothek. Fifteen volumes. Göttingen, by Dieterich 1771-1797. With two volumes by Dr. Witting, giving index of names and table of contents. Translated into the Dutch language by Professor Jacobs. It is not easily comprehended now-a-days, what great influence this journal exerted toward the perfecting of German surgery. Everything new and the best possible that appeared in England, France and Germany, was offered in part to our countrymen, very minutely described and bound in a handsome cover. England is represented by some of her best talent, among them: B. Bell,

Bromfield, Cheselden, Else, Gooch, Hill, Home, W. and J. Hunter, Kirkland, A. and D. Monro, Park, Pott and White. Among the French we find Chopart, Desault, Demours, Deschamps, Levret, Louis, Morand, Petit, Percy, Sabatier and Saviard: from other foreign countries, there were Acrel, Camper, Scarpa and others. Besides these the journal contains clippings from the best foreign journals: the transactions of the Parisian Académie des sciences, the Académie de Chirurgie, of the Academies of Vienna, Dijon, Sweden and of the Society of Physicians in London; then there are accurate extracts from the Philosophical Transactions, Medical Transactions, from the Journal de Médecine and many other things. We call special attention to the fifth chapter.

9. Obs. de morbis sinuum frontalem. In N. Comm. T. III. p. 85, read April 4, 1772, (Chir. Bibl. III, 337).

10. Treatise on the Extraction of Cataracta, with copperplates. Göttingen, by Vandenhoek, 1773, 216 pages. The former Latin writings are made the basis, but considerably augmented and improved. This work is of great value in as much as the German surgeons have been won over to perform this operation, which had almost entirely been banished from the science of surgery and left to the wandering oculists. It was hard for them, though, to begin at a time when the laity, as advertised by the charlatans, who always promised the best results with the greatest assurance, was accustomed to demand the successful issue of an operation at the hands of the surgeon, a matter which seemed to depend on him alone, and every unsuccessful operation was thought due to his unskillfulness.

11. Obs. de amaurosi. In N. Comm. T. IV, p. 77, read Feb. 6, 1773 (Chir. Bibl. III, 344.)

12. De opportuno herniotomiam peragendi tempore. In N. Comm. T. V, p. 56, read May 14, 1774 (Chir. Bibl. III, 354.)

13. Obs. de staphylomate. In N. Comm. T. VI, p. 57, read March 18, 1775. (Chir. Bibl. III, 634.)

14. De herniis incarceratis. In N. Comm. T. VI, p. 67, read December 9, 1775. (Chir. Bibl. III, 634.)

15. Obs. Chir. Fasciculus II. Göttingen 1776, 134 pages, contains works published heretofore on the following subjects: Hernias, cirsocele, tracheotomy, diseases of the nasal cavities, amaurosis, staphyloma. The chapters on the extraction of cataracts and polyps are new. (Chir. Bibl. IV, 312.)

16. Obs. de pterygio. In N. Comm. T. VIII, p. 50, read March 8, 1777 (Chir. Bibl. IV, 486).

17. Treatise on Fractures, Part I, 1777. Part II, 1779. Göttingen by Dieterich, with copperplates. Dedicated to King George III. (2d edition 1785; 792 pages.) Being a young man Richter did not dare to come forward with a text-book on surgery, but wished first to make a test of his power with this work. It was ranked with the best and caused scientific surgeons to attend to ruptures instead of the ignorant barber surgeons. Dieffenbach very truthfully remarked on this work: "His book, now yellow with age, contains a wealth of experiences, and, indeed, his style of presentation has no equal."

... it is a wonderful book and his most valuable production; what he describes, it seems as if you could see it in reality before you." In spite of these great merits, we must confess that principally the practical side of this branch was developed, of course, so completely, that later on but little was added, but neither anatomy was sufficiently considered, nor self-research noted in it, which fact Richter modestly confirms. He relied mostly on the works of Arnaud, Petit, Louis, Morand and Günz. This book established his fame abroad. In France it became known by Professor Rougemont's translation, was highly prized by Desault and B. Bell, as well as warmly recommended in their lectures.

18. Herniam incarcerationum una cum sacco suo reponi per annulum abdominale posse, contra chirurgum Gallum cl. Louis monet 1777. (Chir. Bibl. IV, 559.)

19. Report on Professor Siebold's cutting through the symphysis pubis according to Sigault in case of serious childbirth. Read February 21, 1778. (Chir. Bibl. IV, 578.)

20. Obs. de fistula lacrymali in Comm. T. I, p. 100, read May 9, 1778. (Chir. Bibl. V, 261.)

21. De agarico officinali. Progr. 1778. (Chir. Bibl. V, 698.)

22. Obs. Chir. de cancro mammarum et cataracta. In comm. T. II, p. 25, read Feb. 20, 1779. (Chir. Bibl. V, 517.)

23. De fractura cranii. Progr. 1780. (Chir. Bibl. V, 701.)

24. De remediis antiphlogisticis externis. Progr. 1780. (Chir. Bibl. V, 709.)

25. Obs. Chir. Fasciculus III. Göttingen 1780, 111 pages. Contains a chapter on pterygium, fistula lacrima, cancer of the breast, on rare diseases of the breast, cataract, agariis, and on skull fractures, use of exterior antiphlogistic methods. Most of the above chapters had been issued in separate copies. (Chir. Bibl. V, 697.)

26. Obs. chirurg. In comm. T. III, p. 25. 1780, contains

chapters on amaurosis, fractures, atresia of the vagina, hare-lip, ptosis and pressure on the skull.

27. *Elements of Surgery*. Seven volumes with 45 copper plates, Göttingen by Dieterich, 1782-1804. This work, begun at a time when Richter had already taught and practiced surgery for fifteen years, was of the greatest importance to German surgery and in the arrangement and representation of the material no other could come up to it. This book was to form a mean between the useless brevity of a compendium and the prolixity of a treatise which went into the minutest details. Fractures and luxations have been omitted and of the instruments; only the most useful ones and least known are illustrated. The book was used by all the physicians and surgeons, from new editions published and translated into various languages, viz.: into the French by Morel, the Italian by Brera and Volpi, and into the Russian by Peken according to an order given by the Imperial Medical College.

28. *Medical and Surgical Notes* Especially made at the Public Free Academical Hospital. First volume (with one copper plate and seventy-one histories of patients. Göttingen by Dieterich, 1793, 315 pages. Reprinted in Linz in 1794. Translated into English by Thomas Spens.

29. *Surgical Meditations*. In Loder's *Journal of Surgery*, Vol. i, 1797. Cases of sphacelus, hernia and tumor of the stomach.

30. *Historia aegrotorum quorundam*. In *Comm. T. xv*, p. 29, read Feb. 21, 1801.

31. *Obs. de phthisi pulmonali operatione chirurgica sananda*. In *Comm. T. xvi*, p. 3, read March 9, 1805.

32. *De usu purgantium in febrilibus nervosis*, read April 28, 1810.

33. *Medical and Surgical Notes*. Vol. ii, 1813, 178 pages, Berlin. A posthumous work published by his son George August Richter.

34. *Special Therapy*. Twelve volumes, 1813-1836, Berlin. A posthumous work, published by his son, G. A. Richter. (Translated into Latin by Wallroth.) This work is not entirely the father's inasmuch as the son made various changes, but did not set apart his additions and so there are parts that clash with the elder Richter's views.

Richter was the best teacher of surgery in Germany. Although he founded no institution, probably on account of the lack of surgical material in Göttingen, still whole generations of physicians owe the basis of their education and intellectual bearing to him. There was not a single important city in Germany that did not contain one of Richter's pupils within its environments. His teaching talent was unapproachable. To believe this assertion we must abide by the judgment of his most prominent contemporaries (Blumenbach, Mitscherlich, Himly and Stieglitz). From the beginning of his career, Richter exhibited a great talent of expressing and explaining the deepest things in the simplest and clearest way. With a dramatic skill peculiarly his own, he pictured the whole course of a disease and knew how to revert the young minds ever tending toward hypothesis to simplicity, nature and experience. To every one, the disease on which he discoursed became plain: most masterly the symptoms and course were delineated, particular stress being laid upon the embarrassments of the physician and on the difficulties of treatment. Richter's principal aim was to dwell only on the practically useful doctrines. The effect of his very animated deliverance, yet free from all gestures and any affectations whatsoever, is said to have been extraordinary. The students were lost in admiration; even when less interesting subjects were presented they showed no fatigue and left the lecture and clinic highly satisfied and confident of being able to help themselves when placed in tight places at the bedside. Even those who had been educated at other universities and practiced in large hospitals, considered themselves here transported to the pure source of practical knowledge. On account of this real practical aim, no one did more than he to cause students to throng to Stoll's clinic in Vienna and young physicians to travel to London

and Edinburgh. Even if he was charged with neglect of demonstrating operations on cadavers, for which, however, the facilities were scanty, he had a greater chance to display his wonderful teaching power; the most difficult operations he made clear and apprehensible by means of a strip of paper or a chalk line. With a few bones on the desk before him, he would present a subject so graphically that all could grasp it like a vivid picture and he always had a large audience, while his colleague, in spite of expensive preparations, had but a few listeners. Richter took care not to establish a general set of maxims, because he knew that a single case might overthrow the theoretical structure, which had been founded on so many preceding cases. Self-sufficiency, bold, common assertions and authoritative decisions which he considered a reliable proof of ignorance, were repugnant to him; the experienced physician is often uncertain and undecided and only in the study-room and in the shop of the quack is he sure of his art. He frankly acknowledged it when he discovered a former idea to be incorrect; he knew that we often err, when we believe ourselves to be most certain. "I am liable to make a mistake, no matter how carefully I have searched for the truth; but I promise my readers, that if I detect any errors as I proceed, I will be the first one to rectify them." Richter was contented to work in a small sphere; although his hospital contained only fifteen beds he wanted no more. His principle was, "that not the number of patients make a practical experienced physician and that it does not depend upon seeing the sick, but to observe them. Strength does not come from eating, but from assimilating. One case thoroughly studied is worth more than 150 hastily glanced at: nature is not complacent enough to show herself naked to any one who casts a superficial glance at her." Richter proves, that highly talented natures do not require a great quantity of material to achieve much. Dieffenbach thought of him: "No one ever saw with better eyes in so limited a space and no one ever expressed in a more fitting way what he saw." How keen Richter's observation was, even when a young man, is shown by the following instance of ophthalmology: In a case of amaurosis he saw the retina several times in the white background of the eye and plainly discerned here and there red blood vessels and spots. This phenomenon he soon perceived on the entire retina and then again on only half of it.

Some of his contemporaries criticised Richter because he disregarded certain branches considered indispensable now. The proof for this criticism, Blumenbach and others succeeding him found in the following passage taken from the *Surgical Journal* (vii, 131): "A knowledge of polite literature is in nowise essential to the surgeon, and may be very detrimental to him if he takes the time of his solid occupations and devotes it to the study of polite literature, and moreover, it forms a convenient screen for the block-head. When it became the fad among the medical writers to adorn their works with quotations of ancient Latin and Grecian poets, science was almost at a standstill. The best Latin scholars among the physicians were from the beginning not the best practitioners. Not he who reads much, but he who thinks much, will be a good practical physician. A great mass of undigested facts obtained from books is a positive detriment to a practitioner." To credit Richter with this passage is wrong, because it then represents a repro-

duction of the Englishman, Kirkland's, views. But taking for granted that Richter did fully coincide with them, it is essential to have read both his own and his colleagues' writings in order to understand that when he flourished his whip he had a right to do so, although his derision was at times exaggerated and consequently misinterpreted. With a certain amount of eagerness the great untalented mass magnifies the slightest errors on the part of these great men until they assume the proportions of huge sins, while their accomplishments are thereby forgotten and dwindle away. Richter may not have been learned according to the opinion of his times. We certainly consider him a most highly cultivated surgeon, for he was master of the entire literature existing then, as verified by his *Surgical Journal* and his work on the "Principles of Surgery." He was as proud of resurrecting an old forgotten truth as to discover a new one; even if he himself reaped no fame, science was nevertheless benefited. Just vice versa was the case with the great discoveries that were born daily and died daily; a new instrument or a new operating method did advertise the name of the inventor, but often did not promote the science of surgery. For one to be able to write a truly valuable text-book Richter thought he ought not only to be an experienced and intelligent surgeon and a well-versed author, but also a "very learned" surgeon who is thoroughly familiar with the whole science of surgery. He never neglected to preface his lectures with a list of the best works on the subject in question. But he hated all vain learned ostentation and considered the so-called literature of the ancients mere finery, that everybody could acquire who would sit down a few hours and select that which best suited his fancy. Thus originated his ironical remarks in some of his critiques; for instance, of Percy's work on the "Scissors": "It is impossible to penetrate the dense obscurity which shrouds the origin of the scissors (What a pity!) An impenetrable cloud covers that period when these instruments were first used in surgery (Sad! however, a piece of work for our medical antiquarians). Hippocrates, who mentions sounds, lancets, needles, forceps, hooks, etc., does not say a word of any scissors (It is deplorable!)." It was indeed wrong for him to occasionally sneer at botany, minute anatomy and physiology; for instance, he thought "that the anatomist was seldom able to follow the courses of the acids and foods through the system, and if in pathology nothing were permissible but what was approved by the anatomist, then very little would be done." Also it was wrong that he manifested no interest in some theoretic investigations, as the microscopic investigations of pus and blood, which, being too theoretic, he considered of no value or practical use; neither the knowledge of the spontaneous cure of aneurysms, because on account of its rare occurrence it could not be depended upon and no means existing to produce it. Whether he used a microscope at times has not been divulged. As an excuse for him we might say that physiology then was not closely allied to practical medicine and had not been blended with it. For years, Richter perceived that his uncle's vast amount of knowledge was of no benefit to science; and Baldinger, his well educated colleague, was so crammed with knowledge that he did not know how to use it, except in publishing a medical journal and recommending it to his pupils. (Once he published in the same the music of the four "Ranz des Vaches" as an important therapeutic measure to use in cases of

homesick Swiss patients!) Baldinger, inclined to be rather talkative, often imprudently railed at Richter's studies and thought that, beside theoretic subjects, especially the lectures of old physicians, of which three excelled all others and which he presented as the most important types of that century—namely, Uncle Richter, his colleague Brendel and Professor Triller of Wittenberg—should be brought to the notice of young medical students. No wonder that Richter, a man possessing real practical talent, who had harvested the fine crops of practical surgery in England and in France, not only ridiculed the immense learning of Baldinger, for whom he had no sympathetic feelings, but, smiling in a self-conscious way at the honorable position he had attained in the two great sciences, surgery and medicine, he disdainfully remarked on his colleague's works. His judgment on the auxiliary branches of science was often more affected than a true issue of his convictions, mostly caused by Baldinger's low scoffing. Even if he tended more toward practical medicine instead of theoretic topics, he was well versed in most of the auxiliary sciences, which were indispensable to him when court physician, and often asked advice of his colleagues concerning points unintelligible to him and new discoveries in the same. His son as well as other students he advised not to neglect these studies, and was greatly pleased when they passed a good examination in them. How greatly some failed to appreciate the extent of Richter's learning is shown by the following example: Some one asked a student where the artery could be pressed together in case of the exarticulation of the upper arm, and was surprised to receive the correct answer, believing that Richter was not capable of teaching such knowledge. With him there was nothing like one's own experience: "Thirty pounds of argument do not prove as much as one grain of absolute experience. . . . It is unpardonably bold to oppose experiences on theoretic grounds. The most improbable, incredible occurrence is occasionally true, the most convincing argument false. Experiences must be disproved by experiences." Once when a by-stander defended from experience a dental instrument displeasing to him, Richter complacently listened to him and frankly acknowledged that he had no experience in dental operations. It is not without interest to note that the same criticisms which Richter's contemporaries often passed unjustly upon him, regarding the auxiliary sciences, also befell Desault. Also his taunts on unfruitful learning have been misunderstood by many of his pupils.

Richter was an excellent physician as well as surgeon. Thus he confirmed his oft-repeated assertion that no one can be a fine surgeon who is not also a physician. Whoever saw and heard him at the bedside hesitated which most to admire in him, the penetrating physician or the operating surgeon. Yet Richter was incapable of giving a new rise to the medical sciences, although at that time, when he was more engaged in the practice of medicine than surgery, that science was in a deplorable condition and he had to ask J. Hunter, who had not yet received his degree of surgeon, to demonstrate the theory of inflammation and phlebitis. Richter even occupies a lower round of the scientific ladder as a physician than a few of his contemporaries, the Hanoverian Wichmann, for instance, who asserted that a careful and accurate diagnosis was the main thing, while Richter claimed that general therapeutics should be the physician's guide.

The special conditions were a matter of little consequence to him, because a physician can often successfully treat a case according to its general nature, and in the practice of medicine the important feature is the skill to generalize.

On the whole the diagnosis of all diseases is the *non plus ultra* of science and a perfect diagnosis therefore an unattainable ideal; but the practitioner may console himself that he can now and then successfully and absolutely cure diseases without having made a special diagnosis. Both volumes of his "Medical and Surgical Notes" prove Richter a physician. His models in medicine were the English and Schroeder of Göttingen, but particularly Stoll of Vienna, whom he respected most highly. In revising his "Therapy" some of his achievements for medicine were: The introduction of opium in various diseases and the administration of tartar emetic in small and frequent doses; he also restored purgatives to their rights, recommending them in nervous fevers, restricting them in gastric fevers, etc. He in nowise disdained household remedies and preferred to accept a medicine from a peasant than from an empirical physician. He hated unnecessary hypotheses and systems, which changed so frequently in medicine, for which reason he did not prize that science as highly as the more positive one of surgery. When young, he thought more "of the surgeon, with knife in hand, resolute and confident of his art, than the doctor, with pencil in hand, doubtful and irresolute." He then believed that: "All in all, medicine had done as much harm as good," being based mostly on conjectures. Free from all prejudice, he made his observations regardless of any system and thus we are enabled to see things just as we wish to see them. The period during which the systems held full sway were considered by him the most unfruitful for practical medicine. His opinions on the same appear in connection with the following article on "The Human Intellect," a sample of Richter's graceful literary style:

On the Human Intellect.—It is surprising how different the susceptibility of the intellect is in comparison with reason and proofs. Upon one person a proof makes a deep impression, on another none whatever. It is with the internal senses as with the external. One considers something beautiful, the other does not. Do we ever find three people agreeing on the resemblance of a portrait?

Indeed, the same person at one time may be convinced of a matter, while at another time he will laugh at the same; thinks something beautiful today which at some other time he thought ugly.

What nonsense people have believed since the beginning of the world: and not weak ones either, but very sensible people. I might declare that there is not a single sensible person who does not believe something which another sensible party ridicules.

We now consider ourselves very wise, but our descendants will surely wonder how we could have believed so much non-sensical stuff.

It all depends upon the first impressions, the habits, preconceived opinions, passions, physical and moral dispositions, etc. Poor human intellect! How can we depend upon you?

There are established facts which no one can doubt. Three times three are nine. Everybody in Europe, Asia, Africa and America believes that. But few of such truths are found in medicine. In it we have mostly possibilities. And so the wrangling in medicine will likely never cease. But about what are physicians wrangling? Let the philosophers do as much quarreling as they please, not even a crow would be disturbed thereby. But the contests among physicians are on life and death (Med. chir., Notes ii, p. 1).

On systems in medicine. For some time the system trade has been flourishing among German physicians. Regarding this business we Germans are still hucksters. The English rid themselves of their damaged goods by sending them to us; we brush them up a little, sell them as the latest styles and the

English laugh at us. This at least was the case with Brown's system.

It is, however, a very easy thing to manufacture systems. To make investigations, to discover new truths, to promote science requires brains, talent and effort. Systems, however, as they are now in circulation, can be arranged in the smoking room over a pipe of tobacco and then cleaned out.

Surely he does not know nature who spends his time making systems. Therefore I always consider him a very narrow-minded person who makes systems. That is the reason why all young beginners like systems.

There is also a little advantage in the manufacture of systems. We believe him who builds a house a more skilful artisan than he who hews only a stone or a timber for the same.

But what constitutes a system? I think that any one who wishes to arrange a system must necessarily, 1, be able to explain all the functions performed by the human body; 2, the effects of the medicines on the body, and 3, be thoroughly familiar with the nature of the disease. Unfortunately, we know very little of all these things. Hence, is it not madness to construct a system? Is it not like one who attempts to build a palace by putting together a few stones and some pieces of wood? Truly, to write coherently on matters of nature is next to a physical impossibility.

Thus is explained the feeling of the system-manufacturers that there is always something lacking here and there. Every one helps himself as much as possible by erecting and patching, the one in one way and the other in another; and finally each one has manufactured a system of his own, clashing with that of his neighbor.

But all patching and propping is of no avail. The first gale will blow the little structure over. So many of these little huts have been wrecked, that I should imagine they would get tired of building them. No system has been more extensively published than Brown's; and stood but a few years when it began to show cracks above and below.

The harm done practical medicine by this mania for systems is unlimited. But as long as the system remains confined to the study rooms, it is comparatively harmless. If applied at the bedside, though, its effects may be terrible.

This system mania has become very general, consequently, on the whole, a very bad thing.

Everyone tinkers at and patches his own system; not one concerns himself to increase the amount of useful truths, the chapter of remarks on human nature. It may be boldly said that for several years no good medical book has appeared in Germany. Bacon of Verulam says, that as soon as a science is begun to be treated according to systems, only little is generally achieved.

Also on the physician, the system mania has its evil effects; it produces *self-sufficiency*. He sits in his own room and explains everything according to his own satisfaction and conviction; and believes everything correct for which he finds his own explanations. Note the language used by these physicians in their writings; how boldly they contradict, how positively they assert, how fearlessly they articulate, how imperiously nature is treated. This can never be the language of the experienced physician, who daily discovers errors in his ideas. The physician who is conscious of making mistakes, is liable to be more careful and so errs less frequently. He who thinks he can not err, is audacious and careless, easily makes mistakes and does much harm; and I think that the experience of modern times has proven this.

I have some fault to find with our modern systemizers. No one can understand the language they employ; so that it seems to me as if their entire productions abound only in new technical words, terms and modes of expressions. When I read such works I sometimes feel as if I were reading the "Annulus Platonis." If any one has anything new and important to say, he would surely like to have it understood. One can express much that is common and familiar in obscure language and thereby give himself the appearance of having written much that is important and new. Try to translate these writings into plain, intelligible German and you will find my remark verified.

In short, the time has not come to construct a system of medicine. All that we can do now is to gather material for the construction. But then, after centuries, he, who might try to erect such a structure, must be a man of extensive talent and consummate experience. (*Ibid.*, p. 3.)

With the beginning of Brown's system, Richter's relations toward his pupils changed. These considered themselves above their teacher and insolently looked down on him as well as all others who did not uphold

the prevailing system and use the new technical terms. It was indeed honorable in him that he remained true to his convictions and did not allow himself to be misled by the decreasing number of his listeners, but he deserves censure that he did not acquaint himself with it, so as to refute it scientifically. But Richter did not protest, except with irony or silence. The students soon noticed that the subjects on which he spoke had not been thoroughly investigated by him. Whether he would have been capable of scaring the crows and jays away and hindered the students in their epidemic of going over to Brown's system will be left undecided; he as one of Germany's most prominent teachers ought however to have made the attempt in the interests of science. The times during which this system flourished filled him with mistrust toward the entire English medicine. He found in the writings of the English mostly shallow knowledge and coarse empiricism, and perceived with regret that this English nonsense had turned the heads of many Germans. When the intoxication of this error had passed away, Richter's good judgment was appreciated and the students attended his lectures as heretofore.

As Richter's special surgical teachings will be discussed in subsequent chapters, we will now bid farewell to the man who was once prized as the father of German surgery and ophthalmology. We have sadly neglected him! Even if our reason places the name of August Gottlieb Richter far below that of John Hunter, our hearts will beat for our countryman, the German surgeon, and forever honor his name!

(To be continued.)

ASSOCIATION NEWS.

AMERICAN MEDICAL ASSOCIATION.

Official Report of the General Sessions of the Forty-eighth Annual Meeting, held in Philadelphia, Pa., June 1, 2, 3 and 4, 1897.

(Concluded from page 1148.)

JUNE 4. FOURTH GENERAL SESSION.

The Association met at 10 a. m., and was called to order by President SENN.

The minutes of the preceding session were read and approved, after which Dr. JOHN B. HAMILTON of Chicago, delivered the Address on State Medicine. He selected for his subject "Prevention of Tuberculosis." (See page 1110.)

Dr. HENRY D. HOLTON moved that a vote of thanks be extended to Dr. Hamilton for his very interesting and able address.

Seconded and carried.

The next thing in order was the report of the Committee on Nominations, which was read by Dr. E. E. Montgomery, at the request of the Chairman of the Committee, Dr. Walker, who had left the city.

REPORT OF THE COMMITTEE ON NOMINATIONS.

Mr. President and Members of the American Medical Association: Your Committee on Nominations beg leave to report that they have made the following nominations of officers for the ensuing year:

President—Dr. George M. Sternberg, Washington, D. C.

First Vice president—Dr. Joseph M. Mathews, Louisville, Ky.

Second Vice president—Dr. J. L. Thompson, Indianapolis, Ind.

Third Vice-president—Dr. F. H. Wiggin, New York, N. Y.

Fourth Vice-president—Dr. T. J. Happel, Trenton, Tenn.

Treasurer—Dr. Henry P. Newman, Chicago, Ill.

Assistant Secretary—Dr. W. A. Jayne, Denver, Colo.

Librarian—Dr. George W. Webster, Chicago, Ill.

Chairman Committee of Arrangements—Dr. J. W. Graham, Denver, Colo.

Board of Trustees—Dr. J. T. Priestley, Des Moines, Iowa; Dr. Joseph Eastman, Indianapolis, Ind.; Dr. Truman W. Miller, Chicago, Ill.

Judicial Council—Dr. D. W. Crouse, Waterloo, Iowa; Dr. T. D. Crothers, Hartford, Conn.; Dr. Wm. T. Bishop, Harrisburg, Pa.; Dr. R. C. Moore, Omaha, Neb.; Dr. G. B. Gillespie, Covington, Tenn.; Dr. C. H. Hughes, St. Louis, Mo.; Dr. Ida J. Hieberger, District of Columbia.

ANNUAL ORATIONS.

On General Medicine—Dr. J. H. Musser, Philadelphia, Pa.

On General Surgery—Dr. J. B. Murphy, Chicago, Ill.

On State Medicine—Dr. S. C. Bussey, Washington, D. C.

Delegates to the International Medical Congress at Moscow: G. S. Mitchell, J. E. Hyndman, Charles Dennison, A. M. Miller, H. L. E. Johnson, George M. Sternberg, D. L. Huntington, A. Marcy, Sr., H. D. Holton, Thomas MacDavitt, I. N. Quimby, George R. Fowler, J. B. Murphy, T. Mortimer Lloyd and Gilbert I. Cullen.

On motion, the report was unanimously adopted.

Dr. C. A. L. REED—Relative to the list of delegates to the International Medical Congress at Moscow, I rise to make an inquiry at this time as to the expediency of designating delegates to the British Medical Association at its next meeting in Montreal. I understand, Mr. President, that an official communication has been promulgated from that organization that the medical profession of the United States is not expected or wanted at Montreal. Under those circumstances I do not believe it comports with our dignity as a body to designate or appoint delegates who desire to attend this meeting.

PRESIDENT SENN—For the information of Dr. Reed, the Chair desires to state that an official communication has reached him asking for the appointment of a delegate from this Association to the British Medical Association, and with your permission, I will appoint Dr. Henry D. Holton to represent the American Medical Association at Montreal.

Dr. BULKLEY read the following report from the Executive Committee:

REPORT OF THE EXECUTIVE COMMITTEE.

The proposal to restore the former policy of the Association in favor of offering annually to members a gold medal for meritorious scientific work, having already been approved by the Association and recommitted for elaboration of details, the Executive Committee respectfully recommends:

1. That the design of the medal shall contain the seal of the United States, or a seal of the Association to be hereafter designed, on one side and an Esculapian staff on the other, together with the name of the recipient of the medal and suitable inscriptions.

2. That the commercial value of the medal shall not exceed \$50.

3. That a standing committee on Prize Medals consisting of three members of the Association, shall be elected by the Executive Committee as follows: One for one year, one for two years, and one for three years, and thereafter one be elected yearly to hold office until, in either case, the successor has been duly elected. In no case shall a member of the Executive Committee hold a place on the Committee on Prize Medals.

4. That competing essays shall be typewritten or printed and shall bear no mark revealing their authorship; but instead of the name of the author there shall appear on each essay a motto, and accompanying each essay shall be a sealed envelope containing the name, address and motto of the author and bearing on its outer surface the motto of identification. No envelope is to be opened by the committee until a decision has been reached as to the most deserving essay, and the other essays have been returned to their respective owners. The committee shall have authority to reject and return all essays in case none have been found worthy of the Association medal. Competing essays must be in the hands of the committee not later than March 1 of each year.

5. The committee shall report to the Association at the last general session of each meeting and the medal shall be publicly awarded by the President with suitable ceremony.

It was moved and seconded that the report be adopted.

Dr. WILLIAM T. BISHOP—While I think it is all right to accept the report of the committee, still it ought to be amended. I do not think it comports with the dignity of this Association, inasmuch as we do not know what the medal would indicate, and I think \$50 is ridiculous. I would therefore move, as an amendment, that \$100 be substituted instead of \$50.

Seconded by Dr. QUIMBY and carried.

Dr. BULKLEY then read the resolutions regarding railroad transportation previously introduced by Drs. Happel and Powell, which were referred to the Executive Committee, saying that the Executive Committee had approved them.

Dr. WILLIAM H. DALY moved the adoption of the resolutions. Seconded.

Dr. W. T. BISHOP—I must object to the passage of these resolutions. I hardly think we are prepared to turn the Association over to the control of the railroads. It is not the proper thing. I think the committee of three to be appointed will cover everything that is necessary as regards the coming meeting, and that we need not wait until 1899. It is too far off. The best thing to do is to simply drop the matter. The question is entirely one of business methods, and I hardly think we can hardly accomplish any good. I think it puts us in a very unpleasant position.

Dr. I. N. QUIMBY—We should not be in too much hurry in deciding this question. I do not think Dr. Bishop caught the animus of these resolutions. I think they are excellent. They do not in any way, as far as I can see, conflict with the dignity of the Association, nor do they delegate any power to the railroads. The gentleman who introduced the resolutions merely wants to put the railroads on their mettle in relation to the place of meeting. For instance, if we are going to have a meeting in New York city, the railroads running into this city would be asked by the committee in charge as to the rates they would offer to our members, whether they will or will not give us half rates. This leaves the matter with the place of meeting. I hope every member will vote for the adoption of these resolutions. They are in the right direction.

Dr. COULBOURN of Alabama—Mr. President: I believe I have a right to speak on this subject. It was myself who made the great commotion regarding railroad rates for this Association at a previous session. The best thing in the world to build up the Association is to secure railroad rates. We have been fighting and petitioning and passing resolutions, and what does it amount to? We have not been favored with the reduced rates that have been accorded to other assemblies. I came from Alabama and have been unable to avail myself of any advantages in this matter whatever. In discussing this question of railroad rates among my friends, I have met very, very few who are opposed to obtaining them. These resolutions outline the best plan whereby we can obtain reduced rates for 1899.

Dr. W. H. DALY—The opposition to these resolutions is made by men who came here on passes.

At this point there were cries of question! question!

The President then put the motion to adopt and the resolutions as approved by the Executive Committee were unanimously passed.

The Secretary read a preamble and resolution from the Section on Ophthalmology regarding ophthalmia neonatorum, and on motion of Dr. QUIMBY, the resolution was adopted.

Dr. BULKLEY read the following report of the Executive Committee:

Notice of amendment: The Executive Committee, in response to a request from the Section on Dental and Oral Surgery, recommend that the name of the Section be changed to that of "Section of Stomatology."

The Executive Committee reports as follows its election of officers: Chairman, Dr. William E. Quine of Chicago; Vice-chairman, Dr. Edward Jackson of Philadelphia; Secretary, Dr. L. Duncan Bulkley of New York.

Additional members of Executive Council: Dr. C. A. Wheaton, St. Paul, Minn., and Dr. H. Bert Ellis, Los Angeles, Cal.

Dr. JOHN B. ROBERTS of Philadelphia—I desire to offer the following resolution:

Resolved, That 3,000 copies of the act of incorporation, as mentioned by the Trustees in their report, and the by-laws as at present in force, be printed for the use of the members.

Seconded by Dr. QUIMBY, who said: "I think the constitution and by-laws ought to be printed together, as it will take very little more money to do this. I therefore move, as an amendment, that the by-laws and constitution be printed with the Act of Incorporation." Seconded.

Dr. ROBERTS—I accept the amendment.

Dr. WILLIAM T. BISHOP—As a further amendment, I would suggest that we include the Code of Ethics.

Dr. ROBERTS—I have no objection to that.

Dr. L. D. BULKLEY—Mr. President: I rise to a question of privilege. Is this not new business, and ought it not to pass through the hands of the Executive Committee before being considered here? "All new business shall be referred to the Executive Committee without discussion." This is one of the by-laws under which we are working, and I would like to hear from Dr. Davis on this point.

Dr. N. S. DAVIS—We have adopted a by-law which requires that all propositions for appropriation of money shall first go to the Trustees of the JOURNAL and receive their approval. While this is not directly an appropriation of money, it practically amounts to it, and if we are working under our by laws

it should first go to the Board of Trustees of the JOURNAL for their sanction. The reason for the adoption of such a by-law was that there must be some guard against the appropriation of money.

Regarding the other question as to whether all new business should first go before the Executive Committee or Business Committee, I think it is correct. I think it hits both ways.

Dr. TANNEYHILL moved that the matter be referred to the Board of Trustees with authority to act. Seconded.

Dr. DALY then offered a substitute, that the Board of Trustees be requested to carry this matter out. Seconded.

Dr. TANNEYHILL accepted the substitute.

Dr. H. A. HARE—I would ask, before we proceed to direct the Board of Trustees to make a large expenditure of money, whether it would not be wise to consider if we have money to spend in this way. To print and issue 3,000 circulars or pamphlets will cost a good deal, and as Dr. Davis has said, the object of having a by-law on this point is to refer such matters to the Board of Trustees in order to protect the Association from voting funds which it does not possess.

Dr. W. H. DALY—I do not suppose the whole thing will cost more than \$200, both for printing and sending them out. Personally, I am willing to leave this matter to the discretion of the Board of Trustees.

Dr. I. N. QUIMBY—Everybody knows that the Board of Trustees are men of good sense, and if we have not got the money to spend they will not order this work done.

Dr. JAMES F. HIBBERD—Why not place the matter in the hands of the Board of Trustees and let them act as they think best.

Dr. N. S. DAVIS—If you want to accomplish this object why not pass a resolution requesting the Board of Trustees and the JOURNAL to publish the Constitution, the charter and the by-laws in the JOURNAL, and then it will go to every member of the Association. (Applause.)

The President then put the substitute, as offered by Dr. DALY, which was carried.

Dr. H. BERT ELLIS gave notice that at the next meeting of the Association in Denver he would offer the following amendment to the constitution and by-laws:

ARTICLE IX. Conditions for further representation. "Any State or local medical society, or other organized institution whose rules, regulations and code of ethics agree in principle with those of this Association may be entitled to representation on the advice or agreement of the Judicial Council."

Dr. WM. BAILEY of Louisville—I wish to offer a short resolution.

Resolved, That a marked copy of the JOURNAL containing the address of Dr. W. W. Keen be sent to each member of the House and Senate of the United States. Seconded.

In this connection I wish to say that the senator from my State recently elected as the successor of Joe Blackburn is the only regular physician in the Senate of the United States, as I understand it, and one who is opposed to the passage of the Anti-vivisection Bill, and he being a representative of our profession in the Senate, I shall bear him testimony that this Association desires him in the interest of humanity to fairly represent his profession.

THE PRESIDENT—Would it not be well to refer it to the Board of Trustees?

Dr. H. L. E. JOHNSON of Washington—I am afraid that if a marked copy of the JOURNAL is sent to the individual members of the House and Senate it will not be read, and like most other things that are sent to Senators and Representatives, it will be thrown into the waste basket.

Dr. — of Pennsylvania—I do not think there is any necessity of sending a whole copy of the JOURNAL containing Professor Keen's address, but think it better to send the senators and representatives a reprint from the JOURNAL copy of the address. I agree with the last speaker that if this course is not pursued, and a copy of the JOURNAL is sent them, it will find its way into the waste basket. I would therefore offer that as an amendment. Seconded.

Dr. BAILEY accepted the amendment.

Dr. WILLS of California—I think it a great deal better to extract from Professor Keen's address his reference and remarks on the Anti-vivisection Bill and have it sent to the senators and representatives in as brief a form as possible. I think that it will be read if this is done.

Dr. TANNEYHILL—I think the resolution offered by me yesterday covers the whole ground in regard to anti-vivisection, and I move that this question be laid upon the table.

Seconded and carried.

Dr. JAMES T. COULBOURN—I move that the Secretary be requested to ask the railroads for the Denver meeting to extend our railroad certificates for at least ten days. My rea-

son for making this motion is this: I asked our passenger agent why we were not granted more time, and he informed me that we could have it if we had asked for it. The Secretary says he positively asked for an extension of time, but that they would not give it to him.

Seconded by Dr. Daly.

Dr. LISTON H. MONTGOMERY of Chicago—I move to amend by making it thirty days.

The motion was amended was seconded and carried.

Dr. L. D. BULKLEY gave notice that he would move an amendment as follows:

"That all new business shall be introduced not later than the third day of the General Session."

Seconded by Dr. Daly.

The Secretary read the following:

Resolved, That a committee of three be appointed to cooperate with the Committee of Arrangements to secure the best possible railroad rates for the Denver meeting.

On motion the resolution was adopted.

This Committee consists of Dr. H. L. E. Johnson, District of Columbia; Dr. Chas. A. L. Reed, Ohio, and Dr. Henry D. Holton, of Vermont.

The following are additional delegates to the International Medical Congress: Dr. J. Henry Woods of Brookline, Mass.; Dr. John L. Hildreth and Dr. E. Stevens of Cambridge, Mass.; Dr. F. C. Valentine, New York, N. Y.; Dr. E. S. Talbot, Chicago, Ill.; Dr. W. P. A. Bonwill, Philadelphia, Pa.; Dr. Nicholas Senn, Chicago, Ill., and Dr. J. D. Thomas of Pennsylvania.

The following are the officers of Sections, as handed to the Secretary:

Section on Ophthalmology: Chairman, Dr. Harold Gifford, Omaha, Neb.; Secretary, Dr. Robert Randolph, Baltimore, Md.

Section on Physiology and Dietetics: Chairman, Dr. Randall Hunt, Louisiana; Secretary, Dr. A. H. Tuttle, Massachusetts. Executive Committee: New member, Dr. A. P. Clarke, Cambridge, Mass.

Section on Dental and Oral Surgery: Chairman, Dr. G. V. I. Brown, Duluth, Minn.; Secretary, Dr. Eugene S. Talbot, Chicago. On the Executive Committee, Dr. J. L. Williams, Boston.

Section on State Medicine: Chairman, Dr. I. N. Quimby, Jersey City, N. J.; Secretary, Dr. Arthur R. Reynolds, Chicago, Ill. Executive Committee: Drs. Liston H. Montgomery, Chicago; C. H. Shepard, Brooklyn, N. Y.; and Elmer Lee, New York.

Section on Obstetrics and Diseases of Women: Chairman, Dr. Joseph Price, Philadelphia; Secretary, Dr. C. Lester Hall, Kansas City, Mo.

Dr. JAMES T. COULBOURN—I would ask whether a vote of thanks has been offered to the local profession and the citizens of Philadelphia for entertaining us, also to the press.

THE PRESIDENT—There has not.

Dr. COULBOURN—I move that a vote of thanks be extended to the local medical societies of this city, to the citizens of Philadelphia, to the press, and to all others who have been instrumental in entertaining us and making our visit a very enjoyable one. Seconded.

Dr. I. N. QUIMBY—I would suggest that Lea Bros. & Co. be also included in the vote of thanks, as we were admirably entertained by them.

Dr. I. N. LOVE—Mr. President: I would suggest that the Secretary be instructed to carefully look over the list of entertainments we have received and the various courtesies extended to us and include them specifically in one resolution.

Dr. COULBOURN—I will accept that as an amendment.

Dr. LOVE—Speaking to the resolution, I know that I voice the sentiments of every man present in favor of its adoption, because never in the history of the Association have we had a better meeting from every standpoint. The Sectional meetings have been well attended and the entertainments have been admirable. In short, we have had a combination of science and sociability, and I do not believe there is a place anywhere on earth where there is more an atmosphere of sentiment and of science than in this City of Brotherly Love. We have all had manifestations of it this week. (Applause.)

Dr. DALY—We know that the Secretary is a very busy man, and I hope that Dr. Love will write these resolutions as he winds a facile pen. I will heartily second them.

The Secretary subsequently submitted the following resolution:

Resolved, That we most heartily thank the Committee of Arrangements, with Dr. H. A. Hare, their Chairman, for the magnificent manner in which they provided for the comfort and pleasure of the members: the University of Pennsylvania, the Jefferson Medical College, the Medico-Chirurgical College, the

Women's Medical College and the Polyclinic for the excellent entertainments and the provision for clinical instruction which each offered in the greatest abundance; the Philadelphia County Medical Society, the Philadelphia Medical Club, the Howard Hospital, the firms of J. B. Lippincott Co. and Lea Brothers Co., Dr. John V. Shoemaker and wife, Provost C. C. Harrison and wife, and especially the Ladies' Entertainment Committee for the charming and highly enjoyable receptions and the ample opportunities for pleasure and profit not only to the members, but also the ladies who accompanied them. Especially do we desire to return our thanks to the business men, the hotel proprietors and the Atlantic City Medical Society, with particular mention of Dr. P. Marvel, the Chairman of the Committee, for a most wonderful opportunity to visit under the best auspices that City by the Sea, and to learn for ourselves its excellent position to give health and recreation to the invalid and the weary business man.

Dr. N. S. DAVIS—I am not quite willing to let this occasion pass without a word. The first convention I went to, to help form the Association was by the old stage coach, and it took longer to go over the hills of Pennsylvania, in and around the corners of it, to get from the village of Binghamton and the Susquehanna and the Chenango Rivers to New York City than it does to go from Chicago to San Francisco. I mention this to show you that the world has progressed. I have followed the meetings of the Association with the utmost interest and with the greatest possible pleasure from the foot of Bunker Hill Monument to the Golden Gate, and from Minnesota to the Gulf of Mexico, round and round. These meetings and the meetings of our State Society have been my pleasure excursions: they have been the only vacations I have ever taken. (Applause.) They are vacations that bring me in touch with my brethren from every quarter, and enable us to stir each other up by thoughts, by contact mind with mind, man with man, and woman with man, if you please. (Applause.) It gives us an elevation, infuses a bonyancy that lifts us out of our ruts at home. When we return to our homes and resume our practice we do so with fresh vigor, with greater confidence. (Loud applause.)

At the conclusion of Dr. Davis' remarks, three hearty cheers were proposed and given to Dr. Davis and the American Medical Association.

The resolutions of thanks were then adopted unanimously by a rising vote.

Dr. Fowler of Brooklyn, moved that the action taken by the Section on Surgery and Anatomy, in the matter of the Senn Medal, be approved by the Association.

Seconded by Dr. Quimby.

Dr. BULKLEY—I am afraid that there will be some confusion with reference to awarding these gold medals, and before any action is taken I think the matter should be carefully considered. I therefore move that it be referred to the Executive Council and not be acted upon hastily here.

Seconded and carried.

Dr. F. W. McRAE of Atlanta—In order to facilitate the work of the Association, it is the sense of this body that our general meetings hereafter should be held at 11 instead of 10 o'clock. And furthermore, that in the future entertainments shall be so arranged as not to interfere in any way with the general sessions or with the work of the Sections. No man appreciates more than I do the magnificent entertainments we have had here, and the success of this meeting in every particular. The Nominating Committee was informed by the Chairman of the Committee of Arrangements from Denver that Colorado and the City of Denver would lavish at least \$10,000 on us next year for the purpose of entertainment. I would request that in the future the Association be entertained in the evenings, or after the meeting has adjourned, and not during the meetings of the Sections and general sessions. I make this as a motion. If some such resolution is not passed, we will sooner or later become a social rather than scientific body. Seconded.

Dr. I. N. QUIMBY—This matter is already fixed by the by-laws in reference to time, and therefore the resolution is out of order.

Dr. McRAE—It is not an amendment to the constitution, nor does it conflict with the by-laws or the constitution. It is simply the sense of this meeting.

Dr. I. N. LOVE—This matter can be arranged by the officers of the Association communicating with the local Committee of Arrangements, and if the officers and secretaries do their duty, there need not be any expression from this body. Our Section work will not be interfered with. At this meeting the Sections have been crowded and have been magnificent successes. I appreciate the sentiment of my friend, Dr. McKee, and believe it is in the right line, but I do not think an expression in the form of a resolution is necessary.

Dr. W. H. DALY—I differ with Dr. Love relative to the work of some of the Sections. The sectional meetings have been interfered with, and it is a wonder to me how my friend, Dr. Bulkley has been able to do so much work on the Executive Committee. I must confess that I have neglected some of the work of the Sections in order to attend social matters.

Dr. I. N. QUIMBY—I move that the motion be laid on the table. Seconded and carried.

Dr. WILLS of California offered an amendment to Article IV of the By-laws to take effect at the Denver meeting. (Not handed in.)

Dr. BENJAMIN LEE of Philadelphia extended a cordial invitation to the members of the Association to be present at the twenty-fifth anniversary meeting of the American Public Health Association, to be held in Philadelphia October 26 to 29, 1897.

President SENN—One of the pleasant duties of your retiring President on this occasion is to introduce your President elect. The honor has been conferred upon a man worthy to occupy the highest position in the gift of the American profession—Surgeon-General STERNBERG, better known as Dr. Sternberg. He has not only been a very able and faithful public officer, but for a long time has devoted his time and attention to scientific investigation. His name is familiar wherever medicine is taught and practiced. I have great pleasure in introducing to you my successor, Dr. GEORGE M. STERNBERG. (Applause.)

Dr. STERNBERG was very cordially received. He spoke as follows:

Mr. President and Fellow Members of the American Medical Association:—I assure you I feel very deeply the honor you have conferred upon me. I have a high appreciation of this honor. I had not anticipated that I should arrive at any such distinction at this time, and it is especially pleasant to me to have been elected your President at this Jubilee meeting, where the profession is so well represented, and I feel and believe that there are some here today who will be present at the centennial celebration of the American Medical Association. Those gentlemen who are young enough to live to that time will, I trust, appear upon the platform and tell the American physicians of that day what they saw in Philadelphia fifty years before: that they had seen Dr. Davis, the founder of the Association, on this platform and had heard his voice ringing through this hall in a most eloquent address.

In speaking now of our reception by the city of Philadelphia, I feel that I am rather at a disadvantage at this moment. I can not add to what has been said by Dr. Love and Dr. Davis as to our magnificent reception here. We all feel that it has been the most successful meeting in the history of the Association, and it may be fifty years before there is any thing that will surpass it. Certainly nothing has been left undone that could possibly have been done to conduce to the interest and success of this Jubilee meeting.

In acknowledging the honor that you have done me there is one thought that comes to me which makes me feel a little bit uncomfortable, and that is that next year I shall have to prepare a Presidential Address, and when I consider the ground that has been so ably covered by Dr. Senn regarding the history of the Association, when I remember what Dr. Davis has told you about its early organization, and what Drs. Hamilton and Keen have told us regarding preventive medicine and surgery, I feel that there is very little left for me except to mount my hobby, and most of you know just as much about that as I do now. However, I shall leave that question for future consideration. Thanking you for your kindness, I hope to meet you all in Denver. (Applause.)

Dr. LISTON H. MONTGOMERY—I think there has been one matter overlooked, and that is the report of the special committee regarding the Department of Public Health. I understand that our efficient Chairman, Dr. Wingate, is ready to make this report.

Dr. U. O. B. WINGATE of Milwaukee, then read the report of the Special Committee on the Department of Public Health, as follows:

REPORT OF THE SPECIAL COMMITTEE ON THE DEPARTMENT OF PUBLIC HEALTH.

Mr. President and Members of the Association:

At the last meeting of the Association, held at Atlanta, Ga., your Committee on the Department of Public Health, which was appointed in 1891, with the object in view of securing the passage of an Act of Congress creating a National Department of Public Health with a Secretary of Public Health in the Cabinet of the President of the United States, made a report of progress through its Chairman, the late and lamented Dr. Jerome Cochran of Alabama. That report suggested that it

was impossible to attempt to secure the passage of an act creating a cabinet officer, and recommended the drafting of a Bill in which the powers of the Marine Hospital Service, which was already a Department of Public Health with important public health functions under the existing laws be enlarged, and that such a department should be so created as to require coöperation with the various State and Territorial Boards of Health; that report was accepted and its recommendations adopted, and in addition the Chairman was authorized to add to the committee by appointing an additional member from each State and Territory.

Your Chairman was appointed by the President of the Association to succeed the late Dr. Jerome Cochran in October last, and in looking over the field found that it was impossible to get either the 54th Congress, or the special session thereof, to take any action on such a measure, so he has appointed the additional members of the committee, a list of which may be found published in the JOURNAL for Jan. 16, 1897, and which is appended herewith, and has drafted a Bill which is presented herewith. Your committee recommends the continuance of the committee with power to have the aforesaid named bill amended to meet requirements, but not to change the general purpose thereof, and to introduce the same into Congress at its discretion, and that the members of the Association be requested to do in their power for its passage.

Your committee desires to report that out of the \$400 appropriated for the use of the committee, \$305 remains unexpended, and that it is possible that more than that sum be required to aid in the attempt to get the measure passed.

Respectfully submitted,

U. O. B. WINGATE, Chairman.
LISTON H. MONTGOMERY,
WM. BAILEY,
CHARLES DENISON,
H. L. E. JOHNSON,
W. B. ATKINSON.

} Com.

MEMBERS OF COMMITTEE ON NATIONAL LEGISLATION, AMERICAN MEDICAL ASSOCIATION.

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|---------------------------------------|---------------------------------|
| Saunders, W. H., Alabama. | Jones, Paul T., Mississippi. |
| Jeiks, Jas. T., Arkansas. | Lewis, E. R., Missouri. |
| Ruggles, C. A., California. | Mitchell, A. H., Montana. |
| Denison, Chas., Colorado. | Crummer, B. F., Nebraska. |
| Crothers, T. D., Connecticut. | Watson, I. A., New Hampshire. |
| Wear, I. N., Dakota. | Quimby, I. N., New Jersey. |
| Bishop, L. A., Delaware. | Atkins, F. H., New Mexico. |
| Johnson, H. L. E., Dist. of Columbia. | Ferguson, E. D., New York. |
| Porter, J. Y., Florida. | Fuller, F. T., North Carolina. |
| Holt, Wm. F., Georgia. | Culbertson, J. C., Ohio. |
| Watkins, W. W., Idaho. | Dodson, O. M., Oregon. |
| Davis, N. S., Illinois. | Atkinson, W. B., Pennsylvania. |
| Montgomery, L. H., Illinois. | French, Chas. H., Rhode Island. |
| Hibberd, J. F., Indiana. | Croft, T. J., South Carolina. |
| Priestley, Jas. T., Iowa. | Lindsley, J. B., Tennessee. |
| Taylor, N. J., Kansas. | Barker, W. L., Texas. |
| Bailey, Wm., Kentucky. | Clift, Frederic, Utah. |
| Formento, F., Louisiana. | Holton, H. D., Vermont. |
| Garcelon, A., Maine. | McGuire, Hunter, Virginia. |
| Rohe, G. H., Maryland. | Eagleson, J. B., Washington. |
| Walcott, H. P., Massachusetts. | Cook, J. R., West Virginia. |
| Maclean, D., Michigan. | Wingate, U. O. B., Wisconsin. |
| Hewitt, C. N., Minnesota. | Staver, E., Wyoming. |

[For full text of Public Health Bill see next page.]

It was moved that the report be received and the Committee continued. Seconded.

Dr. HOLTON—I notice from the report of the Committee that a portion of the fund appropriated for their expenditures has been expended, and I believe the report states that possibly a little more money may be required. In view of this, I move that the Board of Trustees be authorized to allow such an additional sum as in their discretion they may deem wise.

Seconded and carried.

Dr. I. N. LOVE—I desire to make the motion, that in future all committees having reports of public interest, and particularly matters pertaining to legislation, be instructed to make their reports on the second day at the General Session. It is unnecessary for me to say that important legislative matters should not be presented here when there is a paltry fee to consider them.

Seconded and carried.

There being no further business to come before the Association, President SENN said: I thank you for the distinguished honor conferred upon me in electing me your President last year. I also wish to thank you for the uniform courtesy extended to me. I congratulate you on the success of this meeting, which has been characterized by harmony of action and by the good work accomplished. I am now ready to entertain a motion to adjourn.

On motion, the Association then adjourned.

A BILL to Establish a Department of Public Health and to Define its Duties.

Be it Enacted by the Senate and House of Representatives of the United States of America in Congress assembled:

SECTION 1. That there shall be established a Department of Public Health, the duties of which shall be to collect and diffuse information upon matters affecting the public health, including statistics of sickness and mortality in the several States and Territories; the investigation by experimental and other methods of the causes and means of prevention of disease; the collection of information with regard to the prevalence of infectious, contagious and epidemic diseases both in this and other countries; also the causative and curative influence of climate upon the same; the publication of the information thus obtained in a weekly bulletin; the preparation of rules and regulations for securing the best sanitary condition of vessels from foreign ports, and for prevention of the introduction of infectious diseases into the United States, and their spread from one State into another, which rules, when approved by the President of the United States, shall, in so far as they are consistent with the existing laws, be adopted and enforced as quarantine regulations at the various ports of entry in the United States, and so far as applicable to interstate commerce to prevent the spread of disease from one State or Territory into another or the District of Columbia, be, and become additional regulations thereof: the advising and informing the several departments of the government on such questions as may be submitted by them to it, or whenever in the opinion of the Department such advice and information may tend to the preservation and improvement of the public health.

A special report of the said Department of Public Health, relative to such action as will most effectually protect and promote the health of the people of the United States may at any time be required by the President of the United States.

SEC. 2. That the Department of Public Health shall be under the control and management of a Commissioner of Public Health; said Commissioner of Public Health shall be appointed by the President of the United States, by and with the advice and consent of the Senate, and his term of office shall be six years; he shall be a regularly educated physician holding a diploma conferred upon him by a legally incorporated medical college in the United States; he shall have had at least ten years' experience in the practice of medicine, and shall be learned in sanitary science, and shall hold a membership in one or more reputable sanitary or medical associations in the United States.

He shall be entitled to a salary of \$5,000 per annum, and his necessary traveling expenses.

That the Commissioner of Public Health shall semi annually on the first Tuesdays of April and October of each and every year, and at such other times as he may designate, call to meet in the city of Washington, D. C., an advisory council to be composed of the secretary or executive officer of each State and Territorial board of health, and one officer learned in the law, detailed by the Attorney-General of the United States from the Department of Justice; and that the necessary traveling expenses of the said advisory council incident to their attendance on the meeting of the said council shall be paid on vouchers to be furnished by the Secretary of the Treasury, said meetings not to include more than six days at each session, unless a longer continuance shall be authorized by the President of the United States.

That the Commissioner of Public Health may appoint an Assistant Commissioner of Public Health, who shall be a physician in good and regular standing in the medical profession, and skilled in sanitary science, and fix his salary at not to exceed \$3,500 per annum and all actual and necessary traveling expenses incurred in the performance of his duties as Assistant Commissioner in said Department. All officers and persons in the service of the United States, detailed to perform any duty under the provisions of this act, or any existing act, of the Congress of the United States providing for quarantine against diseases, or to prevent diseases from spreading within the United States, shall not receive any additional compensation except for actual and necessary expenses incurred in the performance of such duties, such expenses to be approved by the Commissioner of Public Health or his assistant, and to be paid on vouchers provided by the Department of the Treasury.

It shall be the duty of the Commissioner of Public Health to preside at all meetings of the said advisory council, and in case of his absence on account of illness or any other unavoidable cause, it shall be the duty of the Assistant Commissioner of the Department so to preside.

SEC. 3. That the Department of Public Health hereby created

shall succeed to all the powers and duties now and heretofore conferred upon the Marine-Hospital Service, or any officer thereof, by any law of Congress, except as hereinafter provided, and shall occupy the building now occupied by the Marine-Hospital Service for its offices, and shall have under its exclusive control and management all offices, officers, laboratories, appurtenances and property of whatever name and nature, which are lawfully in possession of the said Marine-Hospital Service at the time of the passage of this act, but it is hereby provided that there shall be in said department a bureau to be known as "The Bureau of the Marine-Hospital Service," which shall be under the exclusive control of the Commissioner of Public Health, and all laws governing the appointment to official positions in said Marine-Hospital Service, and to promotions in said service, shall continue in full effect, and all funds now or hereafter appropriated for the Marine-Hospital Service by Congress shall continue to be disbursed under the supervision of the Commissioner of Public Health by the direction of the Secretary of the Treasury until otherwise provided by law, it being the intent and purpose of this act to continue the Marine-Hospital Service and to confer all duties relating to quarantine and the public health upon the department hereby created.

SEC. 4. That whenever any department of government, or the executive of any state or territory, or the Commissioners of the District of Columbia, or the health authorities of any State, shall request information from the Department of Public Health in regard to any matter pertaining to the protection or promotion of the public health, said department shall promptly furnish such information as it may have on record, together with any necessary or pertinent advice; and whenever any information shall be received by the department which the interests of the public health require should be promptly communicated to any department of the government, or to any state officer, such information shall be forthwith furnished to the respective department or officer.

SEC. 5. That the department shall take such action, by adopting and enforcing such rules, and by correspondence or conference, as will tend most effectually to secure the cooperation of State, municipal, and local boards of health in establishing and maintaining an efficient and accurate system of notification of the existence and progress of contagious and infectious diseases, and of vital statistics in the United States, and said department shall also, by cooperation with the proper health authorities of foreign nationalities and municipalities, endeavor to extend to the United States a reliable system of international notification of the existence and progress of such diseases as cholera, yellow fever, typhus fever, smallpox, bubonic plague, or any other dangerous or contagious disease which may, in the judgment of the department, seem advisable to consider.

SEC. 6. That in sending notifications to, and receiving reports from, the different States or Territories in the United States, the department shall conduct all correspondence through the State and Territorial health authorities, and all information intended for local use received by the State or Territorial health authorities, shall by them be forwarded to the local boards of health, or health authorities, within their jurisdiction, and all reports and information received from local health authorities, and local boards of health, shall pass through the office of the State or Territorial health authorities to the said Department of Public Health.

SEC. 7. That the department shall, when in its judgment it may deem it necessary and proper, make such additional rules and regulations as are necessary to prevent the introduction of infectious and contagious diseases into the United States from foreign countries, or into one State or Territory, or the District of Columbia, from another State or Territory or the District of Columbia, and when said rules and regulations have been made they shall be promulgated by the said department subject to the approval of the advisory council, and the President of the United States, and enforced by the sanitary authorities of the States, Territories, municipalities, and local boards of health, where the State, Territorial, municipal, or local health authorities will undertake to execute and enforce them, but if the State, Territory, municipal, or local health authorities shall fail or refuse to enforce such rules and regulations, the President of the United States shall execute and enforce the same, and shall adopt such measures as in his judgment shall be necessary to prevent the introduction or spread of such diseases, and may detail or appoint officers for that purpose.

SEC. 8. That it shall be the duty of said department to perform all the duties in respect to quarantine and quarantine regulations, which are provided for by this act, or by any existing act of the Congress of the United States, and all duties in regard to the prevention and spreading of diseases throughout the United States as provided for in this act, and to obtain

information of the sanitary condition of foreign ports and places from which contagious and infectious diseases are, or may be, imported into the United States, and to this end the consular officers of the United States at such ports and places as shall be designated by the Commissioner of Public Health, shall make weekly reports to the department of the sanitary condition of the ports and places at which they are respectively stationed, according to such forms as the Department of Public Health shall prescribe; and the Commissioner of Public Health shall also obtain, through all sources accessible, including State and Territorial sanitary authorities throughout the United States, weekly reports of the sanitary condition of ports and places within the United States, and shall prepare, publish, and transmit to collectors of customs, and to State and Territorial boards of health, and through them to municipal health officers, and other sanitarians, weekly abstracts of the consular sanitary reports, and other pertinent information received by him, and shall also, as far as he may be able, by means of voluntary cooperation of State and Territorial authorities, and through them municipal authorities, public associations, and private persons, procure information relating to the climatic and other conditions affecting the public health.

SEC. 9. That it shall be unlawful for any merchant ship or other vessel, from any foreign port or place, to enter any port of the United States, except in accordance with the provisions of this act, and with such rules and regulations of State, Territorial and municipal health authorities as may be made in pursuance of, or consistent with, this act; and any such vessel which shall enter, or attempt to enter, a port of the United States in violation thereof, shall, upon conviction of the Master thereof, forfeit to the United States a sum to be awarded in the discretion of the court, not exceeding \$5,000, which shall be a lien upon said vessel to be recovered by proceedings in the proper district court in the United States. In all such proceedings the United States District Attorney for such district shall appear on behalf of the United States, and such proceedings shall be conducted in accordance with the rules and laws governing cases of seizure of vessels for violation of the revenue laws of the United States.

That any vessel, at any foreign port, clearing for any port or place in the United States, shall be required to obtain from the consul, vice consul, or other consular officer of the United States at the port of departure, or from the medical officer, where such officer has been detailed by the President of the United States for that purpose, a bill of health in duplicate, in the form prescribed by the Department of Public Health, setting forth the sanitary history and condition of said vessel, and that it has in all respects complied with the rules and regulations in such cases prescribed for securing the best sanitary condition of the said vessel, its cargo, passengers and crew; and said consular, or medical, officer is required before granting such duplicate bill of health, to be satisfied that the matters and things therein stated are true; and for his services in that behalf he shall be entitled to demand and receive such fees as shall by lawful regulations be allowed, to be accounted for as is required in other cases.

The President of the United States in his discretion is hereby authorized to detail any medical officer of the government to serve in the office of the consul at any foreign port for the purpose of furnishing information, and making the inspection, and giving the bills of health hereinbefore mentioned. Any vessel clearing and sailing from any such port, without such bill of health, and entering any port of the United States shall, upon conviction of the Master thereof, forfeit to the United States not more than \$5,000, the amount to be determined by the court, which shall be a lien on the same to be recovered by proceedings in the proper district court of the United States. In all such proceedings the United States District attorney for such district shall appear on behalf of the United States; and such proceedings shall be conducted in accordance with the rules and laws governing cases of seizure of vessels for violation of the revenue laws of the United States.

SEC. 10.—That the Commissioner of Public Health shall from time to time, issue to the consular officers of the United States and to the medical officers serving at any foreign port, and otherwise make publicly known, the rules and regulations made by him, to be used and complied with by vessels in foreign ports, for securing the best sanitary condition of such vessels, their cargoes, passengers and crew, before their departure for any port in the United States, and in the course of the voyage; and all such other rules and regulations as shall be observed in the inspection of the same on the arrival thereof at any quarantine station at the port of destination, and for the disinfection and isolation of the same, and the treatment of the cargo and persons on board, so as to prevent the introduction of cholera, yellow fever, leprosy,

bubonic plague, smallpox, or other contagious or infectious diseases; and it shall be unlawful for any vessel to enter said port to discharge its cargo or land its passengers except upon a certificate of the health officer at such quarantine station, certifying that said rules and regulations have in all respects been observed and complied with, as well on his part as on the part of the said vessel and its master, in respect to the same and to its cargo, passengers and crew; and the master of every such vessel shall produce and deliver to the collector of customs at said port of entry, together with the other papers of the vessel, the said bills of health required to be obtained at the port of departure, and the certificate herein required to be obtained from the health officer at the port of entry; and that the bills of health herein prescribed shall be considered as part of the ship's papers, and when duly certified to by the proper consular officer, or other officer of the United States, over his official signature and seal, shall be accepted as evidence of the statements therein contained in any court of the United States.

SEC. 11.—That the Commissioner of Public Health shall, and at such times as he may deem necessary, examine the quarantine regulations of all State and municipal boards of health, or detail an officer of the said department to make such examinations, and shall cooperate with and aid all State, municipal and local boards of health in the execution and enforcement of the rules and regulations made by the Department of Public Health under the provisions of this act, or any other act of the Congress of the United States providing for a quarantine against disease, and to prevent the introduction of contagious and infectious diseases into the United States from foreign countries, and into one State or Territory, or the District of Columbia, from another State or Territory, or the District of Columbia; and all rules and regulations made shall operate uniformly and in no manner discriminate against any port or place; and at such ports and places within the United States as have no quarantine regulations under State, Territorial or municipal authority, where such regulations are, in the opinion of the Commissioner of Public Health, necessary to prevent the introduction of contagious and infectious diseases into the United States from foreign countries, or into one State or Territory, or the District of Columbia, from another State or Territory, or the District of Columbia, and at such ports and places within the United States where quarantine regulations exist under the authority of the State, Territory, or municipality which, in the opinion of the Commissioner of Public Health, are not sufficient to prevent the introduction of such diseases into the United States, or into one State or Territory or the District of Columbia, from another State or Territory or the District of Columbia, the Commissioner of Public Health, if in his judgment it is necessary and proper, shall, with the advice and approval of the advisory council, make such additional rules and regulations as may be necessary to prevent the introduction of such diseases into the United States from foreign countries, or into one State or Territory, or the District of Columbia, from another State or Territory or the District of Columbia, and when said rules and regulations have been made and approved by the President of the United States, they shall be promulgated by the Commissioner of Public Health and enforced by the sanitary authorities of the State, Territories and municipalities, where the State, Territorial or municipal health authorities will undertake to execute and enforce them; but if the State, Territorial or municipal authorities shall fail or refuse to enforce said rules and regulations, the President of the United States shall empower the Commissioner of Public Health to execute and enforce the same and adopt such measures as in his judgment shall be necessary to prevent the introduction or spread of such diseases, and may detail or appoint officers for that purpose. The Commissioner of Public Health shall make such rules and regulations, with the advice and consent of the advisory council, and approved by the President of the United States, as are necessary to be observed by vessels at the port of departure and on the voyage, where such vessels sail from any foreign port or place in the United States, to secure the best sanitary condition of such vessel, her cargo, passengers and crew, which shall be published and communicated to, and enforced by, the consular officers of the United States. None of the penalties herein imposed shall attach to any vessel, or owner, or officer thereof, until a copy of this act, with the rules and regulations made in pursuance thereof, has been posted up in the office of the consul, or other consular officer of the United States, for ten days, in the port from which said vessel sailed; and the certificate of such consul, or consular officer, over his official signature, shall be competent evidence of such posting in any court of the United States.

SEC. 12. That on the arrival of an infected vessel at any port not provided with proper facilities for treatment of the

same, the Commissioner of Public Health may remand said vessel, at its own expense, to the nearest National or other quarantine station, where accommodations and appliances are provided for the necessary disinfection and treatment of the vessel, passengers and cargo; and after treatment of any infected vessel at a National quarantine station, and after certificate shall have been given by the United States quarantine officer at such said station that the vessel, cargo and passengers are each and all free from infectious disease, or danger of conveying the same, said vessel shall be admitted to entry to any port of the United States named within the certificate. But at any ports where sufficient quarantine provision has been made by State, Territorial or local authorities, the Commissioner of Public Health may direct vessels bound for said ports, to undergo quarantine at such said State, Territorial or local station.

SEC. 13.—That whenever it shall be shown to the satisfaction of the President of the United States that by reason of the existence of cholera, yellow fever, or other infectious or contagious diseases in a foreign country, there is danger of the introduction of the same in the United States, and that notwithstanding the quarantine defense, this danger is so increased by the introduction of persons or property from such country that a suspension of the right to introduce the same is demanded in the interest of the public health, the President shall have power to prohibit, in whole or in part, the introduction of persons and property from such countries or places as he shall designate, and for such period of time as he may deem necessary.

SEC. 14.—That whenever the proper authorities of a State or Territory shall surrender to the United States the use of the buildings and disinfecting apparatus at a State quarantine station, the Commissioner of Public Health shall be authorized to receive them and to pay a reasonable compensation to the State or Territory for their use, if in his opinion they are necessary to the United States.

SEC. 15. That whenever necessary there shall be purchased or erected, under the orders of the Commissioner of Public Health, with the approval of the Secretary of the Treasury, suitable warehouses with walls and enclosures, where merchandise may be unladen and deposited from any vessel which shall be subject to a quarantine or other restraint, pursuant to the health laws of any State, at such convenient places therein as the safety of the public revenue and the observance of such health laws may require.

SEC. 16. That whenever the cargo of a vessel is unladen at some other place than the port of entry or delivery under the foregoing provisions, all the articles of such cargo shall be deposited, at the risk of the parties concerned therein, in such public or other warehouses or enclosures, as the collector of customs shall designate, there to remain under the joint custody of such collector and of the owner or master, or other person having charge of such vessel, until the same are entirely unladen or discharged, and until the articles so deposited may be safely removed without contravening such health laws. And when such removal is allowed, the collector having charge of such articles may grant permits to the respective owners or consignees, their factors or agents, to receive all merchandise which has been entered, and the duties accruing upon which have been paid, upon the payment by them of a reasonable rate of storage, which shall be fixed by the Secretary of the Treasury for all public warehouses and enclosures.

SEC. 17. That the master of any vessel employed in transporting passengers between the United States and Europe, is authorized to maintain good discipline, and such habits of cleanliness among the passengers as will tend to the preservation and promotion of health; and to that end he shall cause such regulations as he may adopt for this purpose to be posted up, before sailing, on board such vessel in a place accessible to such passengers, and shall keep the same so posted up during the voyage. Such master shall cause the apartments occupied by such passengers to be kept at all times in a clean, healthy state; and the owners of every such vessel so employed are required to construct the decks, and all parts of the apartments, so that they can be thoroughly cleansed; also to provide a safe, convenient privy or water-closet for the exclusive use of every one hundred passengers. The master shall also, when the weather is such that the passengers can not be mustered on deck with their bedding, and at such other times as he may deem necessary, cause the deck occupied by such passengers to be cleansed with chlorid of lime, or some other equally efficient disinfecting agent. And for each neglect or violation of any of the provisions of this section, the master and owner of any such vessel shall, upon conviction thereof, be severally liable to the United States in a penalty of one hundred dollars, to be recovered in any circuit or district court

within the jurisdiction of which such vessel may arrive, or from which she is about to depart, or at any place where the owner or master may be found, or to imprisonment for a period of not less than thirty days, or by both fine and imprisonment, in the discretion of the court.

SEC. 18. That whenever the evidence shall appear conclusive to the President of the United States that cholera, yellow fever, typhus fever, typhoid fever, smallpox, diphtheria or other plague, exists in any State or Territory, or in the District of Columbia, to such an extent that there is great danger of the spread of such disease into other States, Territories, or the District of Columbia, by means of vessels and vehicles engaged in the transportation of goods, passengers, and the United States mail, by land and water, or by persons traveling, on foot or otherwise, he is hereby authorized to call together the Commissioner of Public Health and advisory council to take such action as may be necessary to prevent the spread of such disease from one State or Territory into another, or from any State or Territory into the District of Columbia, or from the District of Columbia into any State or Territory, and the Commissioner of Public Health shall make such rules and regulations, by and with the advice and consent of the advisory council, and the approval of the President of the United States, as may be necessary to meet the emergency, and all such rules and regulations shall have the force of law, and supersede all other rules, laws or regulations for the time being at the place designated, and any one violating any such rules and regulations shall, upon conviction thereof, be subject to arrest and imprisonment for a period of not less than thirty days. The Commissioner of Public Health may temporarily employ such inspectors and other persons as may be necessary to execute all rules and regulations adopted as aforesaid to stamp out and prevent the spread of such disease.

SEC. 19.—That the Commissioner of Public Health or any one appointed by him may, with the approval of the Secretary of the Treasury, select suitable localities for establishing stations on rivers and other lines of interstate commerce and travel by railroads, and may cause to be erected necessary temporary buildings for the disinfection of passengers, baggage, cargoes, vessels and vehicles, and may enforce such rules and regulations relating thereto as may have been, or may be, prescribed therefor.

SEC. 20.—That the Secretary of the Treasury is authorized whenever a conformity to such quarantines and health laws requires it, and in respect to vessels subject thereto, to prolong the terms limited for the entry of the same, and the report of entry of their cargoes, and to vary or dispense with any other regulations applicable to such reports or entries. No part of the cargo of any vessel shall, however, in any case be taken out or unladen therefrom otherwise than is allowed by law, or according to regulations and rules adopted and promulgated by the Commissioner of Public Health under the provisions of this act, or any existing act.

SEC. 21. That the Commissioner of Public Health and the advisory council, created under this act, shall devise such means and methods as they may deem most effective to control and exterminate all domestic diseases transmitted by contact, such as phthisis pulmonalis or tuberculosis, diphtheria, scarlet fever, smallpox, leprosy and all diseases dangerous to the public health. That the said Department of Public Health may, under the direction of the Commissioner of Public Health, make investigations, both in the United States and, if necessary, in foreign countries, into the nature, origin and prevention of contagious, epidemic and other diseases, and the causes and conditions of particular outbreaks of disease in the United States, and in order that said experiments may be made, the Commissioner of Public Health shall, if necessary, enlarge the laboratories of the Marine Hospital Service, erect and maintain such other laboratories as may be necessary, and to equip said laboratories with the best appliances obtainable for investigation into the causes of disease and how to prevent and obliterate the same.

SEC. 22. That the Commissioner of Public Health may engage the services of experts, not to exceed six in number, in such laboratories in the United States as are best adapted by location, equipment or special fitness, to aid the Department of Public Health in making investigations, the pay to be allowed such experts to be fixed by the Commissioner of Public Health. It shall also be the duty of the said department to investigate the best method for the disposal of sewage, the protection of public water supplies, to ascertain the best sanitary methods, to investigate all matters which relate to the public health, and to gather statistics relating to marriages, births, and deaths, and cause of death, and when the same can be done without prejudice to the public service, the President of the United States may detail officers from the several departments of the

government for temporary duty to act under the direction of said department, to carry out the provisions of this act, and all other acts of the Congress of the United States providing for a quarantine against disease and to prevent the spread of any disease within the United States.

SEC. 23.—That the Secretary of the Department of Agriculture, and the Commissioner of the Department of Labor shall respectively furnish for the use of the Department of Public Health such information as they shall from time to time gather upon the following and kindred subjects, viz.: 1. The investigation of foods; also drugs and wines, their standard purity and their adulteration. 2. The transmission of disease from animals to man and from man to animals, such as tuberculosis, glanders, etc. 3. The statistics of climate with relation to infectious and other diseases. 4. The statistics and conditions relating to consanguineous and other marriages liable to produce physically and mentally defective offspring; and any information leading to race improvement through better marriage selection than obtains at present. 5. The statistics relating to child labor and to confined and unhealthy occupations, etc.

SEC. 24.—That it shall be lawful for the Commissioner of Public Health, when in his judgment it may seem necessary to confer upon any municipal or local health officer, or health authority, through the State or Territorial authorities in which he may have jurisdiction, power also to enforce the provisions of this act and any rules and regulations made in pursuance thereof, and any person who shall knowingly disobey or violate any order, rule or regulation made pursuant to the authority herein conferred, shall, upon conviction thereof, be deemed guilty of a misdemeanor punishable by a fine of not less than \$500 or by imprisonment for a period of not less than one year.

SEC. 25.—That the Commissioner of Public Health shall make an annual report of the operations of the Department to Congress with such recommendations as he may deem important to the public interest; and said report, if ordered to be printed by Congress, shall be done under the direction of the Commissioner of Public Health, and that all mail matter of whatever class relative to the Department of Public Health and its duties, and addressed to the Commissioner of Public Health and indorsed "Official Business, Department of Public Health," or mailed by said department, shall be transported free of postage; and if any person shall make use of such indorsement to avoid the payment of postage in his private letter, package or other matter in the mail, the person so offending shall, upon conviction thereof, be deemed guilty of a misdemeanor and be subject to the penalty prescribed by the existing law.

SEC. 26.—That the Commissioner of Public Health is authorized to appoint for duty not to exceed six sanitary inspectors, at a salary not to exceed one thousand eight hundred dollars per annum each, and their necessary actual traveling expenses; at least two of these inspectors shall be experts in quarantine matters, two shall be skilled bacteriologists, and one shall be an expert statistician. The Commissioner of Public Health is authorized to employ one chief clerk at a salary of one thousand eight hundred dollars; one clerk of class three at one thousand four hundred dollars; and one clerk of class two, at one thousand four hundred dollars; and four clerks at one thousand dollars each, one messenger at eight hundred dollars, one stenographer at eight hundred dollars, one watchman at six hundred dollars per annum.

SEC. 27.—That any officer, or person acting as an officer, or agent at any quarantine station, or other person employed to aid in preventing the spread of disease, who shall wilfully violate any quarantine laws of the United States, any of the provisions of this act, or any of the rules and regulations made and promulgated as provided for in this act, or any other act of the Congress of the United States providing for and regulating quarantine against disease, or to aid and prevent the spread of any disease within the United States, or any lawful order of his superior officer, or officers, shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine of not more than five hundred dollars, or imprisonment for not more than one year or both, in the discretion of the court.

SEC. 28.—That when any common carrier or officer, agent, or employe of any common carrier, shall wilfully violate any of the quarantine laws of the United States, or the rules and regulations made and promulgated as provided for in this act, or any other act of the Congress of the United States regulating and maintaining a quarantine against disease, and to prevent the spread of disease within the United States, such common carrier, officer, agent, or employe shall be deemed guilty of a misdemeanor, and shall upon conviction thereof be punished by a fine of not more than five hundred dollars or imprisonment for not more than two years, or both, in the discretion of the court.

SEC. 29.—That any person who shall wilfully violate any rule or regulation made and promulgated by authority of this act, or any other act of the Congress of the United States, providing for a quarantine against disease, and to prevent the spread of any disease within the United States, shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine of not more than five hundred dollars or imprisonment for not more than two years, or both, in the discretion of the court.

SEC. 30.—All convictions for the violation of any of the provisions of this act, or any other act of the Congress of the United States, providing for a quarantine against disease, and to prevent the spread of any disease within the United States, shall be tried in the district wherein the offense was committed, and it shall be the duty of the United States district attorney for such district to appear on behalf of the United States, and all trials and proceedings shall be conducted in accordance with the rules and laws governing criminal cases triable in the United States courts.

SEC. 31.—That all rules made and promulgated, adopted and published pursuant to the provision of an act entitled "An act granting additional quarantine powers and imposing additional duties upon the Marine Hospital Service," approved Feb. 15, 1893, shall remain in force until the same are annulled, changed, or modified, as provided for by this act, and other acts of Congress providing for quarantine against diseases, and the spread of any disease within the United States.

SEC. 32.—That all rules and regulations made and promulgated to enforce the provisions of this act, or any other act of the Congress of the United States, providing for a quarantine against disease, and to prevent the spread of any disease within the United States, shall be approved by the President of the United States, and when approved by him shall have all the force and effect of law.

SEC. 33.—That the Commissioner of Public Health shall annually submit to the Secretary of the Treasury, for transmission to Congress, estimates of the expense necessary to maintain properly the Department of Public Health for the ensuing year. That there shall be, and hereby is, appropriated out of the moneys in the Treasury and not otherwise appropriated, the sum of \$75,000 for the purpose of this act. The sum of \$1,000,000 already appropriated and known as an emergency fund to be expended by the President of the United States or the balance thereof not already expended, shall be a fund and held and expended at the discretion of the President of the United States in the execution of the provisions of this act.

SEC. 34.—Sec. 1, Chapter 19, Supplement to the Revised Statutes, Vol. 1, second edition, revised and continued (page 637) is hereby amended so as to read as follows:

Sec. 1. *Be it enacted, etc.,* That medical officers of the Marine Hospital Service of the United States shall hereafter be appointed by the President, by and with the advice and consent of the Senate, and no person shall be so appointed until after passing a satisfactory examination in the several branches of medicine, surgery and hygiene before a board of medical officers of said service. Said examination shall be conducted according to rules prepared by the Commissioner of Public Health and approved by the advisory council and the President.

SEC. 35.—Sec. 4,796 and 4,802, Revised Statutes of 1878, Chapter 66, laws of 1878, Supplement to Revised Statutes, Vol. 1, second edition, revised and continued: "An act to prevent the introduction of contagious or infectious diseases into the United States."

Paragraph 9, chapter 130, laws of 1875, same supplement: "An act making appropriations for sundry civil expenses of the Government for the fiscal year and for other purposes."

Sec. 7, chapter 156, laws of 1875, same supplement: "An act to promote economy and efficiency in the Marine Hospital Service."

Chapter 51, laws of 1890, same supplement: "An act to prevent the introduction of contagious diseases from one State to another, and for the punishment of certain offenses."

Chapter 300: An act amendatory to the aforesaid, passed August 18, 1894.

Chapter 114, Supplement of the Revised Statutes, Vol. 2, laws of 1893: "An act granting additional quarantine powers and imposing additional duties upon the Marine Hospital Service," and all other acts, or parts of acts, inconsistent herewith, or repugnant to the provisions of this act, are hereby repealed.

SEC. 36.—This act shall take effect sixty days after its passage, within which time the Commissioner and Assistant Commissioner may be appointed.

Let us have a Department of Public Health!

SOCIETY PROCEEDINGS.

Illinois State Medical Society.

Abstract of the Proceedings of the Forty-seventh annual meeting, held at East St. Louis, May 18, 19 and 20, 1897.

(Continued from page 1152.)

SECOND DAY—AFTERNOON SESSION.

NON-MALIGNANT STRICTURES OF THE RECTUM.

A paper on this subject was read by Dr. A. E. HALSTEAD of Chicago.

A non-malignant stricture of the rectum was defined as a pathologic condition in which there is a permanent and progressive narrowing of the rectal canal as the result of an alteration in the rectal wall, primarily depending upon a loss of tissue, from ulceration or from trauma, the immediate cause being a contraction of the inflammatory tissue that has been substituted for the normal mucous membrane and musculature of the rectum.

Syphilis was undoubtedly the most frequent cause of rectal stricture. Authorities, however, do not agree as to the percentage of cases that should be considered of syphilitic origin. Out of 99 cases of stricture, Allingham found 52 that he regarded as syphilitic. Eugene Frankel found in 7 out of 9 cases of rectal strictures evidences of syphilis. Kelsey in 76 non-malignant strictures found 17 that he regarded of venereal origin, these including strictures which followed gonorrheal or chancroidal ulcerations. In 70 cases of stricture tabulated by Cripps from the records of St. Bartholomew's Hospital, only 13 had a distinct syphilitic history or presented other signs of syphilis. Poelchen collected 222 cases, 96 or 43 per cent. of which were regarded as syphilitic.

Stricture of the rectum is far more common in the female than in the male sex. In 367 cases collected by Ball, 276 were women and 91 men, *i. e.*, a ratio of 3 to 1.

Treatment.—The various measures that have been advocated from time to time for the relief of cicatricial rectal stricture were classified as follows: 1, dilatation, *a*, gradual, *b*, rapid; 2, electrolysis; 3, internal proctotomy; 4, external proctotomy; 5, inguinal or lumbar anus; 6, plastic operations and anastomosis; 7, excision, *a*, perineal, *b*, sacral.

These various measures were then taken up and discussed at length.

The author closed his paper with a report of two cases of rectal stricture in which permanent cures were obtained by amputation of the strictured portion of the gut.

SYMPHYSIOTOMY

was the title of a paper read by Dr. FRANK B. EARLE of Chicago, in which he emphasized some of the most important points and gave a brief report of a case, the favorable outcome of which had led him more ardently than ever to support a procedure which he believes has a legitimate field in obstetrics.

Indications.—Division of the symphysis, for the purpose of increasing the pelvic diameter, has been proposed for, *a*, irreducible brow presentation, *b*, impacted occipito-posterior, and *c*, in face presentations with the chin posterior, when it was impossible either to flex the head or rotate the chin anteriorly, and where version was contra indicated. It was most valuable where the disproportion between the head and pelvis was moderate, *i. e.*, in the flattened and generally contracted pelvis. It might also be resorted to with advantage in extreme contraction, 7 cm., with death of the fetus, in order that embryotomy might be performed.

Situation.—It should not be performed with a conjugate vera of less than 2.6 inches, 6.5 cm., or above 3.5 inches, 9 cm. Neither should it be performed if the fetal heart tones indicate extreme exhaustion. It should be done as an operation of election and not after repeated ineffectual attempts to deliver by forceps or version. One of the chief reasons why the maternal and fetal mortality was high was because few of the disproportion cases were recognized prior to the onset of labor.

Technique.—The patient is prepared as for celiotomy, placed in the dorsal position with an assistant on each side. The first step should be the introduction into the bladder of a straight metallic catheter or sound, in order to push the urethra and bladder away from the part to be incised. The second step is to locate the symphysis by the depression above, and this could be materially aided by flexing and extending the limbs. It should not be forgotten that the symphysis is occasionally situated laterally.

After the symphysis is located an incision should be made, to extend from above the joint almost down to the clitoris, and the retro-pubic tissues pushed carefully away. Instead of then passing the probe-pointed bistoury, or the Galbiati-Harris

knife posteriorly and dividing the entire pubic joint, as was originally proposed, only the minor pubic ligaments should be severed, from above backward and the sub-pubic ligament dissected and pushed downward, as fully described in the *American Journal of Obstetrics* in 1894. By this method the sub-pubic ligament could be separated from the arch sufficiently to permit the desired degree of separation and undue stretching of the fascia, through which pass important structures, is avoided. This is important, as the danger of laceration, hemorrhage and sepsis is greatly diminished. After the joint is severed and the ends protected by gauze, the question to be determined is whether the patient should be permitted to deliver herself or whether labor should be terminated. Both practices are in vogue, but preference is given to the latter. Except in hospital practice, symphysiotomy is not usually decided upon until after futile attempts at forceps or version have been made and the mother and child reduced to a state of threatened exhaustion. Under these conditions it would be dangerous to wait for spontaneous delivery and even when the operation is an elective one it would seem more rational to terminate labor by forceps or version, than to subject the patient to the prolonged dangers of shock and sepsis. During delivery by *any* method the hips must be firmly supported in order not to endanger the sacro-iliac ligaments. After the completion of the third stage there remain the closure of the incision and any lacerations that have occurred in the genital tract.

The chief dangers to be combated are sepsis and hemorrhage. Regarding the former, it need only be mentioned that in the elective operation it is a preventable accident and should not, at this day, be classified as dangerous. In reference to hemorrhage, it should be stated that it is frequent, many times alarming, and occasionally a fatal accident. Enormous hemorrhage is reported by many distinguished operators, and nearly all agree as to the difficulty encountered in controlling it. By the Harris method the conditions responsible for it are largely, if not completely, obviated.

Cesarean section is preferred by some to symphysiotomy because of an easier and more rapid convalescence, as well as from the fact that the mortality to the mother is about the same and the infant mortality less. Under the improved Sanger method the maternal mortality in section is 5 to 10 per cent. and the infantile 5 to 6 per cent.

Embryotomy, when attempted through a narrow pelvis while the head is yet unengaged, is one of the most difficult of obstetric operations. The mortality is a little less than in section.

Having considered the dangers and advantages as compared to other operations designed to terminate obstructive labor, the author suggested the following points of interest:

1. Many children are today being saved that a decade ago would have been mutilated.
2. Many children are today delivered at term, alive and capable of growth and development, who a few years since would have been prematurely delivered only to succumb during delivery or a few weeks following it.
3. The simplicity of the operation, the easy preparation, the ready consent of the patient and friends, render it possible of accomplishment, while the more formidable section would be either absolutely refused or fraught with greater danger.
4. Both maternal and fetal mortality compare favorably with that of induced labor, embryotomy and Cesarean section.

Dr. JOSEPH B. DE LEE of Chicago read a paper on

ASPHYXIA NEONATORUM, CAUSATION AND TREATMENT.

The author stated that the highest mortality that befalls the human race in one day occurs on the day of birth. Schultze estimates that 5 per cent. of children are stillborn, dying during labor, and 1.5 per cent. die shortly after birth as the result of the labor. Brothman states that in New York city from 1889 to 1892, over 16,000 children died from the labor or immediately after it. Dr. De Lee believes that this figure is not too large. Since in cases of suffocation of the pregnant woman the fetus dies first, because the mother abstracts oxygen from the fetal circulation, this and other conditions in the mother, as anemia, acute and chronic, heart disease, asphyxiation by gas, etc., are dangerous for the child. It is this that makes the prognosis bad for children delivered by Cesarean section from women who died slowly. After the sudden death of the mother the fetus may live, and if promptly extracted may recover. Only 6 per cent. of the hitherto reported cases have lived. Premature separation of the placenta normally implanted; this may happen during pregnancy, and then is almost always fatal to the child, or it may occur near the end of the second stage of labor, when the child may be born alive. The death of the second twin in utero is often caused by two early separation of the common placenta. Besides the signs of asphyxiation shown

by the fetus, external hemorrhage in the intervals between the births gives warning of the danger. Separation of the placenta when it is previa, or compression of the placenta by the breech or colpoxynter used to stop hemorrhage, causes asphyxia. When the placenta is torn by manipulation, anemia is added to the asphyxia, and these are further aggravated by the anemia of the mother, all of which explain the high fetal mortality in placenta previa. Several other causes of asphyxia neonatorum were referred to by the author.

Coming to the treatment, paramount in importance is the recognition of asphyxia beginning while the child is still in utero, and fortunately this is almost always possible. One of the first signs of fetal danger is the decrease in the number of the heart beats. A steady slowing to 100 per minute, and certainly if below this, points to impending fetal danger. In some cases there is an increase in the number to 160 or more. This usually comes after the diminution has been pronounced, and betokens impending death from paralysis of the vagus. It may be primary, however, and should then be accorded the same significance as slowed heart's action. Irregularity of the heart tones, occurring in the intervals between pains, is also significant, and impurity of the first sound of the fetal heart carries important information to the experienced ear.

The second diagnostic sign is the passage of meconium. In breech cases this is of little value unless the breech is high up, and in the other presentations the sign should be accorded significance only when the meconium is fresh.

Another sign, but one that shows that the asphyxia has already become serious, is feeling, seeing or hearing respiratory movements made by the child. When the breech is half delivered one often sees the gasps made by the child. After podalic version the foot can sometimes be seen to move with the respiratory action. In one case the effect of fetal hiccup was thus observed. The obstetrician should recognize the causes of asphyxia and avoid them.

According to the author, there are three grand principles governing the treatment of asphyxia neonatorum: *First*, maintain the body heat; *second*, free the air passages from obstruction; *third*, stimulate respiration or supply air to the lungs for oxygenation.

Of all the methods of artificial respiration, only three have proven of service in the author's hands—compression (rhythmical) of the chest, the Schultze swinging and mouth to mouth insufflation with the tracheal catheter. Asphyxiated children and children delivered by severe operative procedures should always be watched for the first hours and days after labor. Their lungs not seldom fill up and cause secondary asphyxia. Such children are often found dead in their cribs; or they may never have cried vigorously, whining pitifully till death, when a more or less extensive atelectasis pulmonum is found. These children are much more subject to icterus and to sepsis, especially the intestinal and bronchial forms.

Dr. CARL E. BLACK of Jacksonville read a paper on

INFILTRATION ANESTHESIA.

He said it has now been five years since the method of anesthesia by infiltration was first introduced to the profession by its originator, Dr. C. L. Schleich of Berlin. He began the use of Schleich's solution with a distinct prejudice against it, but now its merit had forced him to continue using it. After doing a considerable number of minor operations by the method of infiltration, he was called upon some months ago to operate upon a much debilitated patient for tubercular peritonitis, which he did with satisfaction. To give the patient an anesthetic would have been hazardous, and it was decided to try the method of anesthesia by infiltration. He had made a considerable number of operations under anesthesia by infiltration, among them three abdominal sections, and found it very satisfactory. The patients suffer almost no pain and escape all the distress incident to general anesthesia. The giving of a general anesthetic is always accompanied by some depression, and in some cases when ether or chloroform are given, even for minor operations, there is marked depression and shock which is due to the anesthetic. The giving of a general anesthetic produces different effects on different patients, varying from almost imperceptible depression to marked shock or sudden death. The element of shock even in case of a major operation is much modified, to the advantage of the patient, by avoiding general anesthesia. Local anesthesia by infiltration or any other method can never entirely supplant ether and chloroform, but there is a large number of operations which can be performed more expeditiously and with greater safety by local anesthesia, and we should not fail to give our patient the benefit of these advantages. Recently he made an operation for appendicitis by this method with entire satisfaction, the patient making a rapid recovery. It seems to him that primary

cases of appendicitis can easily be operated on early, before any pus formation, by this method, with great advantage to the patient.

Dr. LYMAN WARE of Chicago read a paper on

SYPHILITIC NEURO-RETINITIS.

During an experience extending over many years the author does not recall a single case of syphilitic neuro-retinitis following thorough and prolonged antisyphilitic treatment, by which he meant treatment given more or less continually for two or three years, then irregularly or intermittently for ten or twelve years more. Mercury he believes to be curative, while the iodid of potash in the early stages is only palliative. Syphilitic neuro-retinitis was never a disease that terminated spontaneously in perfect recovery. Without treatment it was sure to end fatally. The most skilful treatment, when begun at an early stage of the disease, might prevent a fatal termination in many cases; yet life was frequently rendered miserable and sad by partial or total blindness. While there were many who consider large doses of potash as the only remedy in nerve syphilis, and while the author believes it of great value in rapidly arresting the disease in some severe or dangerous cases, yet he does not think it compares with mercury in eradicating the syphilitic poison.

The paper closed with a report of five cases.

Dr. WILLIAM E. CASSELBERRY of Chicago read a paper entitled

MEMBRANOUS RHINITIS, DIPHTHERITIC AND NON-DIPHTHERITIC.

He said membranous rhinitis, also termed croupous rhinitis and rhinitis fibrinosa, is an acute inflammation of the nasal passages accompanied by a white membranous exudate which covers the whole or part of the inflamed mucosa. A membranous exudate frequently forms in consequence of chemic or electro-cauterization of the turbinated bodies, but this condition differs essentially from genuine membranous rhinitis. The exudate is thick, gray-white in color, confined to the immediate vicinity of the cauterized site, which it overlaps somewhat, shading off to a thin white edge a little distance from the center of the most intense inflammatory action. If this pseudo-membrane be forcibly detached on the second day it redevelops; if allowed to remain it becomes incorporated with the eschar produced by the canter, and the whole will separate spontaneously like an eschar about the fifth day. From an etiologic point of view we may divide so-called membranous rhinitis into two types, diphtheritic and non-diphtheritic. Corroborative evidence of the identity of the diphtheritic type of membranous rhinitis with true diphtheria is occasionally obtainable in a definite history of exposure to infection while in attendance upon diphtheria patients.

It is seen that a liability to the dissemination of diphtheria lurks in the diphtheritic type of membranous rhinitis; it doubtless escapes medical observation and treatment, many times being regarded by the parents of the affected children merely as a "cold," while in reality, from etiologic and pathologic standpoints, it is a veritable diphtheria, differing only in degree rather than in kind.

Nevertheless, one is not justified in assuming all cases of membranous rhinitis to be diphtheritic, for in many the most careful search has disclosed only cocci. The crucial test lies in the microscopic examination of a culture, which should be deemed imperative in every case.

Pathology.—The structure of the pseudo-membrane is similar to that which occurs elsewhere in diphtheria. Microscopically it is composed of proliferated epithelial cells in a fibrous network.

Symptoms.—The symptoms are much the same for both types of the disease, and are ushered in by dryness and fulness of the nostrils with persistent tickling; later a free discharge, watery at first, but becoming thick and tenacious. By the third day an exudate will have formed which, if torn away by forceps, leaves bleeding points and soon reforms. The fibrinous deposit may occur in one or both nostrils and may embrace any or all parts of the passages, extending a variable distance backward. It rarely embraces the throat, although it may do so, or rather in these instances it seems to originate in conjunction with acute infectious pseudo-membranous inflammation of the faucial and post-nasal tonsils. Much discomfort ensues from the total occlusion of one or both nostrils and from the excoriation and tumefaction of the anterior nares, the external nasal appendage and upper lip being at times so red and swollen as to suggest erysipelas. In fact, it is likely that the micro-organism of erysipelas may be one of those capable of producing membranous rhinitis.

(To be continued.)

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It would greatly facilitate the prompt delivery of the JOURNAL to those members of the Association living in large cities, if they would kindly furnish this office with their street address in those cases where it is omitted from the wrapper of their JOURNAL, as we have been notified by the postmasters of the larger cities that second-class mail matter not having street address, would be placed in the general delivery to await call.

SATURDAY, JUNE 19, 1897.

AFTER THE JUBILEE.

The effect upon the profession of such a gathering as that at Philadelphia, can scarcely be properly estimated at the time; indeed just such a medical meeting has never been held in this country.

When, for instance, in the history of the ASSOCIATION have so many leaders of the profession of one country been congregated? Were there ever better arrangements for the comfort of the entire company? Were there ever such a variety of professional papers? Was there ever a meeting in which the Sections were better attended? Were ever such clinics planned by the profession of any city, as were given by the teachers of Philadelphia during and following the great convention? The true answer to these questions, when fully considered, must result in assigning to the Jubilee meeting of the AMERICAN MEDICAL ASSOCIATION in Philadelphia an epoch-marking place in American medical history. Nor is the physician himself, as an individual, influenced.

As a painter returning home from an outing must bring home moss and specimens, and a poet, sentiment and images, so the physician returning from this reunion brings home tender recollections of the meetings with his old friends in the profession and a keener professional insight resulting from the sharper contests in the Sections, the new ideas advanced by the experimenters, the improved methods shown him by busy clinicians and the

adaptation of modern pathologic views to hospital and college construction. And the auxiliary meetings! The Academy of Medicine! The Medical College Association! The Conference of State Boards of Examiners! The American Medical Temperance Association and the veterans composing the Rocky Mountain Medical Association, the latter, alas, a constantly diminishing body! All these had pleasant and profitable reunions, and all were animated by the spirit of the founder of the AMERICAN MEDICAL ASSOCIATION, which sought by professional union to foster higher professional aims, to stimulate individual excellence and personal purity of character.

Valete! Fratres Philadelphienses vos palmarum fertis. Salrete! Fratres Denveri vestri labores difficiles sunt.

THE VETO OF THE OSTEOPATHY BILL.

The Governor of Illinois, the Hon. JOHN R. TANNER, has interposed his veto between the osteopathy bill and the public. The bill had slipped through the Senate unnoticed and unopposed. Some stir was made in opposition in the House, but there was not sufficient time to organize the profession, and the bill passed the House by a vote of 82 to 43.

The following members of the House of Representatives voted for the bill; let the profession take notice:

Anderson, Allen of Vermilion, Alschuter, Atchison, Avery, Bailey, Barnett, Barricklow, Bartling, Booth, Bovey, Brannen, Brignadello, Bristol, Buckner, Busell, Busse Robert C., Butler, Cochran, Compton, Conlee, Daugherty, Dewoody, Dickson, Dinnen, Edelstein, Ely, Farrell, Flannigan, Fuller, Funk, Galligan, Garver, Hammers, Hart, Houghton, Kilcourse, Kinche, Ioe, King, Kolstedt, La Monte, Large, Lathrop, Laub, Lovett, Lyon, McEniry, Merriam, Merrill, Metcalf, Montgomery, Morris, Murdock, Murray of Clinton, Needles, Novak, O'Donnell, Organ, O'Shea, Parrish, Perrottet, Perry, Powell of Cook, Quanstum, Rowe, Salmans, Schwab, Sharrock, Shepard, Sherman, Sterchie, Suttle, Tisdell, Torrence, Trousdale, Trowbridge, Wathier, Weidmaier, White, Wilson, Wood, Wylie.

Dr. J. A. EGAN, the Secretary of the State Board of Health, worked hard against the bill, as also did Dr. J. W. PETTIT, the Chairman of the Legislation Committee of the State Medical Society, and Drs. KREIDER and BARTLETT of Springfield, but to little avail.

The slimy thing then crawled to the Governor's office, where in a few days its sponsors sought audience with the Governor, to urge him to put life into it by affixing his signature.

The Governor set a day for the hearing. In the meantime Dr. PETTIT was not idle; medical societies and individual members of the profession throughout the State sent letters and telegrams urging a veto. The day came and the osteopaths, men and women, came into the Governor's office headed by an able lawyer, Senator BERRY, as attorney, and the dubious "homeop." E. H. PRATT of Chicago, both of whom spoke. The Governor asked Dr. EGAN to answer their arguments, which he did, Yankee

fashion, by propounding some questions; among others: "What is osteopathy?" an interrogatory which proved a "poser" to the able Senator. The Governor then very promptly decided in favor of the profession and against the osteopaths. All honor to the Governor!

THE IDEALS OF THE ASSOCIATION.

There is in Dr. SENN'S Presidential address, published in a late issue of the JOURNAL, a suggestion that may not favorably impress some of the ambitious juniors in the profession. The idea that six to ten years of active practice should precede participation in the proceedings of the ASSOCIATION may not be a popular one in these days, when the most recent graduate is ready to accept the highest professional positions, and as a rule perhaps considers himself more up to date than his older associates sobered by experience. It is not necessary to assume that this is especially an age when young men are most to the front, but it is an undeniable fact that the tendency to regard age and experience as entitled to special consideration is not so prominent as formerly, and that the "atrocious crime of being a young man" does not exist in any professional or social code of the present day. Youth, and possibly inexperience, has all of its natural advantages in its favor and is reaching out for more. The result is, to some extent, a loss of dignity and of some other desirable qualities, and it is a question whether we are not losers rather than gainers by the change.

Taking this view of the case there is certain reasonableness in Dr. SENN'S recommendation. Six to ten years is not an excessive lapse of time in which to gain the experience that ought to finish off the second period of a medical education, after which any man of ordinary ability should be better fitted to edify his fellows with his professional contributions; and when it is a question of speaking with authority on practical subjects where only experience can give one a right to offer original facts, the wider that experience the better, provided that it is combined with an adequate knowledge of the results of the experience of others as found in the literature of the special subjects discussed. The suggestion of Dr. SENN that the young physician select the subject of his early literary work from the primary branches of the science of medicine: anatomy, physiology, histology, chemistry, pathology and bacteriology (understanding by this, really scientific work in these lines), and "reserve his efforts in writing on practical subjects until he has acquired sufficient experience to speak authoritatively," is on the whole, sensible advice, and he points out plainly the evident profitableness of such a course. It is not to be supposed that he would absolutely forbid the giving to the profession of valuable early experiences, unique medical or surgical cases, etc., when such occur,

but even these if worth anything will keep and be better for mature consideration. A caution in this regard might well be given to the older as well as the younger members of our profession. Premature publication of cases has, it is to be feared, been the cause of much useless or worse than useless therapeutic and surgical interference. The temporary good effects of serious operations, prematurely reported without taking into consideration the essential element of time in estimating their effects, has had, it is possible, in our imitative and enthusiastic days disastrous consequences upon many victims who might otherwise endured evils under which they had at least found life still tolerable and desirable. Perhaps if Dr. SENN'S further advice as to preparation for the discussion of papers that are read were less needed, if it were a generally appreciated fact that, as he says, it is usually more difficult to discuss a paper intelligently than to write one, and if the discussion itself always exercised a judicious censorship, this might not be so much the case. It is easier and generally pleasanter to commend than it is to criticise, though the latter practice would often be more profitable both to the criticised and to the profession and the public. It is not specially meritorious to cultivate an amiable weakness and the consequences may sometimes be disastrous.

What Dr. SENN says about honesty in reporting the unfavorable as well as the favorable results, ought to need no special endorsement, but should be accepted as only a statement of a self-evident moral truth. The need of its occasional reiteration, however, is none the less, and it was not out of place in his address. The same is equally true of his remarks on much of the medico-political discussions that have occurred in times past, and which have too often been utterly unprofitable and even actually damaging to the standing and scientific reputation of the organization. The ASSOCIATION should first of all be a scientific body; it holds a peculiar position as the most prominent medical society in the country and the higher its scientific reputation before the public and generally, the better for our profession.

The ideals of the AMERICAN MEDICAL ASSOCIATION can not be too elevated and it is well that its President should impress upon it this fact. It is a satisfaction that the session just closed was one that has, it is believed, been an advance in a scientific point of view over prior meetings and in all respects a creditable and successful one.

THE FOREIGN CULT IN AMERICAN MEDICINE.

The latest published utterance of a recently deceased American naturalist, who was second to none in the specialties he had adopted, and was furthermore one of the most philosophic and broadest in his culture, was a protest against a tendency that appears to exist

among scientific students to overestimate the value of the study of the infinitesimal and the culture of Europe as compared with our own. If this is true amongst scientific men it is much more so in medical circles, and his essay may well serve to point a moral for the consideration of our profession. At the present time it is still the fashion to consider no medical education complete without a visit to European medical centers, and there is a certain prestige to a practitioner who has "hospitirt" in the lecture rooms of Berlin or Vienna, or other transatlantic university city. It is assumed that wisdom has been absorbed, whether the sojourn was brief or lengthened, and the question of acquaintance with the language, or of actual study, is seldom or never raised. There are many who claim this prestige who would fail to understand twenty-five consecutive words of a lecture delivered in any other tongue than their own, and whose attendance might have been as well in Moscow or Bucharest as in Berlin or Paris, for any good it has done them. There are others, somewhat better fitted, who enter laboratories and pick up a certain amount of knowledge, which they might have better learned in their own country, and ever after claim the distinction of an acquaintance and familiarity with the great lights of medicine abroad that they turn to their financial profit by advertising it amongst a wondering clientele. Having too often had no experience, and leaving their own land in the callow state of recent graduation, they are liable to only imbibe one-sided and false notions, to the disparagement of their country and its scientific standing, the more so, since by exploiting these on their return they think they contribute to their own glory by shining in the reflected light of their illustrious European acquaintances. There is, of course, another class who honestly admit that a European trip is more for pleasure than business, and a certain number who actually utilize it adequately and estimate it at its proper worth. These, however, are largely special students, and often those who have already done scientific work that has given them a standing, it may be, even abroad. It is abundantly true that an American who is properly fitted can learn something abroad, as the converse is also true that the European could learn something here, if he only could get that fact into his consciousness. Too many, however, of the freshly made doctors, who finish off with a European trip, derive from it no intellectual benefit whatever; their principal acquisitions are liable to be a certain deterioration of morals and a large amount of additional conceit. In time, under wholesome home influences, this will probably wear off, but it is no advantage to have had it exist and it must leave to a proper minded individual an unpleasant reminiscence.

With those who really profit by European study no one would need to quarrel, but for the fact that even

among these there are some who, through want of mental balance or some other defect, come back with an undue estimate of themselves and a disparaging opinion of their own country and countrymen. A "certain condescension in foreigners," humorously noted by Lowell, can be endured, recognizing the fact that it is generally a characteristic of second rate individuals, but to have it encouraged by the peculiarities of our own compatriots is not at all gratifying and is much less endurable. It almost makes a little medical jingoism seem desirable to counteract the silly egotism that tries to magnify itself at its country's expense.

Professor COPE's protest against the undue magnification of microscopic research is also valid in medicine; we have the same tendency to correct. Section cutting and staining learned abroad no more makes a pathologist than it does a biologist, and it is in medicine, as in science, not less really scientific to observe properly with the naked eye than "through a brass tube furnished with lenses." The overestimation of the latter method is responsible for the waste of much patient work and expense, and this is especially true in medical science. What we need is not less careful pathologic work, but more and better clinical observation to guide and interpret it, and it is easier to make a trained microscopist than a really skilled clinician. As it is, however, it often happens that a manual skill and dexterity in microscopic work is valued above far more important and difficult accomplishments, simply because it is more showy and requires the use of elaborate paraphernalia that are beyond the reach of the many. There has been a large amount of imposition upon the medical public in this way, as is shown by the records of much so-called pathologic work in the past. It is to be hoped that there will be less of this in the future, but this result will be brought about more by a correct appreciation of the greater value of good and thorough clinical observations than by anything else. It is worth while to occasionally emphasize this truth.

There is a possibility of becoming eminent in medicine without a European polish to our professional education, but there is a slowness in certain quarters and certain individuals to recognize this fact. Indeed it is even now a matter of surprise and comment amongst some high European authorities that there should be such a lack of recognition, but it is not their interest to complain. The time, however, will come when American centers of medical education will draw European students, and at the present rate of progress it may not be so very far distant. The sooner it appears the better, and we can best aid its coming by discouraging the dishonorable depreciation of what is really good in our own country, and the too prevalent cult of a foreign fantasy in matters of medical science and education.

CORRESPONDENCE.

Food in Diabetes. A Reply to Dr. Cutter.

FORT ASSINNIBOINE, MONT., June 10, 1897.

To the Editor:—The communication of Dr. J. A. Cutter, published in the issue of the JOURNAL for May 29, should not pass without a reply.

In this letter he states "my plan of treatment has been to stop the fermentation of any kind of food in the alimentary tract because such fermentation produces carbonic acid and other paralyzing gases and these gases act directly on the liver and help to increase the production of sugar." (The italics are mine.) This is certainly important if true and, being unable to find any reference to this point in the various works on physiology accessible, I would beg Dr. Cutter to name his authorities for such a surprising statement.

"Again," he says, "American morphologists have shown for over thirty years that starches and sugars promote alcoholic and acetic acid fermentation in the stomach and bowel."

Unfortunately for this statement, Foster's Physiology does not recognize the occurrence of any such condition as alcoholic and acetic acid fermentation in the bowels and, furthermore, it is difficult to understand what "morphologists" would have to do with such a purely physiologic problem; since "morphology" is defined by the Century Dictionary as "The science of the external form and internal structure of animals and plants."

Again he says, "Victor Hugo, in 1862, in his great work 'Les Misérables,' called attention to the kinship of consumption and diabetes and to the rôle that sugar and sweets play in acid fermentation and as a cause of these two diseases." (The italics again are mine.)

It is certainly somewhat extraordinary for a physician to appeal to a layman as an authority on a professional subject and, after we had supposed that Koch had definitely settled the etiology of consumption, to have sugar brought forward as the *fons et origo mali* in the production of two such dissimilar affections as diabetes and tuberculosis. One shudders to think of the awful possibilities lurking in a morsel of sponge cake or box of bonbons.

Dr. Cutter also says, "as to prognosis, a young woman in 1888 with not a large percentage of sugar is living today. I do not know what her condition is, but she is living and I judge in fair health." Permit me to call Dr. Cutter's attention to an admirable article by Dr. Wadsworth, published in the New York Medical Record for May 29, 1897, on the diagnostic value of sugar in the urine in diabetes mellitus. In this article he reports his observations on eleven members of one family, all of whom showed sugar in the urine—in one instance as much as 10 per cent. All of these individuals were previously ignorant of the existence of any abnormal condition and enjoyed good health, the most marked case remaining apparently healthy during an observation lasting over six years. Dr. Wadsworth concludes his article by saying, "Basing my conclusions on the cases I have reported and four other cases which came under observation, three of which were only temporary, I think it should be clearly understood that the presence of sugar in the urine, regardless of the amount is not in itself sufficient to warrant a diagnosis of diabetes mellitus." This point I have endeavored to emphasize in the articles which have recently appeared in the JOURNAL. I am tempted to question the diagnosis of the case quoted by Dr. Cutter and am firmly convinced that far too many patients with sugar in the urine are unnecessarily subjected to the mental suffering, medication and restrictions usually consequent to a diagnosis of diabetes mellitus. I believe that test-tube diagnoses are much too common and that unwarranted conclusions are too hastily reached. Sugar occurs in the urine as a result of many conditions, and, of these, true diabetes is one of the least fre-

quent. A diagnosis based simply on urine analyses without reference to the katabolic condition presented by the patient I should consider as wholly untrustworthy.

Dr. Cutter believes in an exclusive beef diet as a panacea. In this he is opposed by all physiologists to whose works I have access.

Medical men may be surprised to learn from Dr. Cutter that "it has been considered by the profession that beef causes uric acid conditions which lead to coma and death." The production of uric acid is greatly increased under a meat diet but that it is generally believed that this body is capable of producing coma and death, I am not willing to admit. Dr. Cutter denies that he has ever "seen uric acid coma and convulsions caused by beef" and so far as I am able to learn no one else has either. The large amount of nitrate of urea observed so frequently by Dr. Cutter has no bearing whatever on the case, any specimen of urine from cases of fever or wasting disease giving it. Since Dr. Cutter claims credence by virtue of his experience with this disease it may not be out of place for the writer to state that he has been working on this subject over six years and that the case recently reported *in extenso* is the one most carefully studied among several observed during that period.

Dr. Cutter calls for the experience of others as well as myself. In such a necessarily brief communication as this I can do no better than quote the words of Dr. Prescott, published in the Boston Medical and Surgical Journal, Sept. 3, 1896, in which he says, "In looking over the literature of the subject (diabetes) I found there was one man who had a large experience and who was assistant to a man who had even greater experience, Dr. Grueber of Nauna, which is a sanitarium in Coblenz, Prussia. Dr. Grueber has seen 187 cases and the man under whom he worked had seen 3,000 cases. He reports one case which I will read as it is rather instructive as showing what can be done even if it goes against our preconceived ideas.

"Man, 39. Father and sister died of diabetes and brother under treatment for it. For two years lived almost entirely on meat, fish and eggs, but was unable to tolerate so rich a diet and occasionally took bread and potatoes. When first seen was unable to walk, had a peculiar livid flush of the face, edema of the feet. Breath had the odor due to acetone, tongue and lips dry and cracked, constipated, urine 5 per cent. sugar, large in amount and acetone and diacetic acid present. As he thought diabetic coma on the point of developing he advised very little meat and fish, no eggs but as many potatoes as he liked and an ounce of bread per day. Much water was given and 20 drops of nitrous ether three times a day. In two days the urine contained 6.3 per cent. of sugar, very little acetone and no diacetic acid, thirst less and odor from breath scarcely perceptible. On fifth day a stricter diet, but allowed potatoes freely. In three weeks sugar 1.1 per cent., able to walk half an hour at a time, no abnormal thirst. This improvement had continued up to the time the case was reported, about three months. This case was given by Dr. Grueber as a typical one showing the results of the treatment advocated."

This case of Dr. Grueber is almost parallel with my own reported in the JOURNAL for May 8, 1897, but which was observed several years ago. Very respectfully,

EDWARD L. MUNSON, M.D.
Assistant Surgeon, U. S. Army.

Observations on the Semi-centennial Meeting.

DETROIT, MICH., June 7, 1897.

To the Editor:—The most careless listener to the exercises held in Philadelphia, June 2, 1897, must have noted the evolution of the Association from its primary objects.

As to membership: at first this included delegates from med-

ical societies, State and local, from hospitals, and from medical colleges. Now only delegates from medical societies are admitted. The interest of the medical colleges are looked after by the American Medical College Association: the parent organization is interested only as the colleges furnish adequately trained medical men for its membership. To this end it frequently admonishes, and encourages, but no longer takes colleges as such into its fold.

So with hospitals; Boards of Health, city, State and National: these have their representative societies local or National. Formerly the ASSOCIATION by its societies had a voice in regulating the practice of medicine; now State Boards with State authority attend to this duty.

Without going farther into detail it is clear that the only thing left, other than advisory, is the development of the science and art of medicine, and cultivating the spirit of National brotherhood. Thus it has cut loose from all financial interests, from all vested professional rights of any sort, and restricted its efforts to the gathering in the largest amount of professional research and after classifying, scattering it abroad through its JOURNAL. The JOURNAL is the center of its active life. This active life will be strong just as the Section work of the ASSOCIATION meetings is broad and thorough.

Such Section work can only be accomplished by the disinterested planning of Section Officers and members. The interests of the Section must be held of the first importance by each member of the same, in order that each may do his best. Each must see that such action will return the largest return for the expense and loss incident on attendance at ASSOCIATION meetings. Such return will be largest when there is no obstacle to work in the Sections during the entire day, reserving the evening for social commingling. Such Section work calls for the placing of the duties of the nominating committee in the hands of the present business committee; the restricting the President's address to fifteen minutes, and all public ASSOCIATION speeches to ten minutes, and discussions to five minutes. Really the only good purpose of the general meetings is to accept or reject committee reports, indulge in a few formal platitudes for the sake of seeing and hearing a few voices. No important business, or question of medical science or art can be discussed in a large public gathering like the ASSOCIATION. Recognizing this it has already made permanent committees so as to have its affairs thoughtfully studied and regulated. One hour a day should be ample to transact all general ASSOCIATION business, and the rest ought to be scrupulously assigned to the Sections. The placing of the nominations in the hands of the business committee would save the members much time and not a little temptation to wire-pulling. However it will be noticed by all that the power of the President of the ASSOCIATION has gradually diminished, until even now it is of far less importance than a chairmanship of one of the live Sections. It is also noticeable that in the best Sections there is no wire-pulling over the selection of officers. The prosperity of the Section depends so entirely upon the selection of persons who are able and willing to sacrifice themselves to promote the interests of the whole, that more deliberate thinking enters into their selection.

Clearly in its process of evolution the Sections of the AMERICAN MEDICAL ASSOCIATION are moving toward a time when to be an active member of a Section will be regarded as more desirable than an official position.

It is easy to see that such a state of things would leave a large increase of energy free for the real Section work: it is just as clear that in that day the power of the ASSOCIATION would be incalculable for good and as full of delight as of profit to its members.

The scientific medical men of the United States have the Sections of the ASSOCIATION absolutely within their control. If these Sections do not accomplish what they might desire, they have only themselves to reproach. Yearly it is noted they

are flocking in larger numbers to the Sections and fashioning them in accord with their purpose. They see in such a course a means of profit and pleasure to themselves nowhere else afforded.

Two reforms are imperative ere the highest development of the ASSOCIATION is reached. By the first the nominating committee is merged into the present executive committee. This adequately represents by a permanent body the Sections, and so the entire profession. The second changes membership to a single class, viz., those who are members of recognized medical societies, State or local, and who agree to support the ASSOCIATION's Constitution and By-Laws and Code of Ethics, and pay their annual dues. This latter would admit of an actual membership as great as that of all organized medical societies, while the existing machinery of the ASSOCIATION would accord to each equal rights and privileges. With such a backing the JOURNAL must needs become the most powerful in the world and lead the profession in its process of higher development.

In one respect the Sections of the ASSOCIATION have an immense advantage over the special societies, viz., in the inexhaustible source of membership. The recognized medical societies ramify into every part of every State; each member of these is eligible to membership in one of the Sections. Once actually in that Section he takes the place his talents and industry accord. If a real addition to its working force he stays, if not, he naturally finds the atmosphere uncongenial. In this manner, by operation of natural law, that which is good will be retained and the undesirable will vanish. The whole Section is really the examining board which each member of the Section must pass before he attains a comfortable membership therein. No matter how many are rejected the supply is never exhausted.

We all know the heart burnings, the disagreeable features of the methods adopted by existing special societies. We suggest that the methods of the Sections of the AMERICAN MEDICAL ASSOCIATION are more in accord with the laws of medical sociology and in the end more satisfactory.

It is granted that this method calls for the eternal vigilance of the real leaders, but this is essential in all coöperative work. Such leaders have appeared in several of the Sections, and others are rising in the rest, so that in the near future all will have as desirable a record as the ophthalmic.

Enough has been noted to support the claim that the AMERICAN MEDICAL ASSOCIATION enters upon the beginning of its second half century organized for better work than ever and with good hope of improving such organization, so as to vastly extend the bounds of its working membership, with a membership larger than ever and more devoted to the advancement of its interests. LEARTUS CONNOR, M.D.

PUBLIC HEALTH.

New York City's Lowered Death Rate.—The Bureau of Vital Statistics gives out the fact that the death rate of the first week in June is lower than for any corresponding week in the last twenty years. There were only 351 deaths during the lapse of four days, as against 636 in 1894 and 841 in 1895.

Money More Needed Than Food. Julian Hawthorne on the famine in India, says that "food is hoarded in the country and the starving ones only need money to save their lives." His estimate of the mortality is 8,500,000 out of a given population of 287,000,000, and this latter number is made to represent the wealth of lives in British India.

Precautions Against Smallpox.—The Board of Health of Boston have sent out a circular to the physicians of that city requesting especial care in the examination of all cases of chickenpox, and

that they be reported to the board. This precaution is taken owing to the possible danger of a mild case of smallpox (and this is the type of the cases recently discovered in Boston) being mistaken for chickenpox.

The Danger from Bovine Tuberculosis.—Dr. W. L. West of Ellsworth, Me., has reported to Dr. G. H. Bailey that two children of a man named Luther Bridges have recently died of tuberculosis, due to drinking milk from a cow which was found, when killed, to be the subject of extensive tubercular disease, largely localized in the udder. Five of Bridges' nine children are suffering from pulmonary tuberculosis and several are now, according to the report, fatally ill.

The Mortality Rate of European Cities.—According to the published Belgian statistics, Frankfort-on-Main leads the sanitary record, the mortality being only 15.6 a thousand. The Hague follows next with 16.6; then comes Edinburgh, with 16.8; Stockholm and Genoa, with 17; Copenhagen, 17.1; Turin, 17.2; Amsterdam and Hamburg, 17.8; Berlin, 18; Rotterdam and Nice, 18.5; London, 18.8 and Brussels, 18.9. Thus it appears that Nice has a larger pro rata mortality than Berlin, Edinburgh or Hamburg. Still this may be due to the invalid contingent disappointed in their search after health.

Not Altogether Irrational.—Mr. Arnold White, the philanthropist, as quoted by the *Medical Mirror*, says in regard to what he styles "the supply of the suffering," that "Foreign generals note the contrast between the physical renaissance of the continental generals and the fool's paradise in which England basks. Our separate caste of fighting men, our cult of sickness and worship of weakness, our heedless conversion of the rural population into pastry-faced townsmen, and our cheerful dependence for food products on healthy races and possible enemies, are matters that are watched abroad with delighted surprise."

Famine in China.—The secular press speaks of the "cruelly severe" famine in the north and east of Szechuen province, China. The relief commissioners saw a large number of decomposed bodies on the way to the thickly populated districts involved in the visitation, and a returned traveler reports that about half of the inhabitants of a stricken town had perished from either starvation or the resulting complications. The government has forwarded 120,000 piculs of rice, but is much hampered through want of transportation facilities. There are also more serious obstacles to benevolence, for many rich Chinese are so accustomed to accounts of famine and plague that they refuse to contribute. In Shanghai only 103 taels in money could be collected. It was given to the Protestant missions for distribution.

A Death from Yellow Fever.—The Columbian Line steamer *Advance*, from Colon to New York, arrived at quarantine June 11 with ship's crew and first cabin passengers all well, but a second cabin passenger attacked with yellow fever two days after sailing died a few hours before coming within jurisdiction. The statement was that none of the crew were allowed ashore at Colon, and that every night the vessel was moored away from its pier. Health officer Doty had no fears of a spread of the disease in New York or vicinity, as cremation of the corpse at Swinburne Island had been ordered, the ship was to be thoroughly disinfected, the forty-seven first cabin passengers were to be brought by steamboat to the city, there to be under observation, while the second cabin passengers were to remain five days at Hoffman Island. The *Advance* was subsequently allowed to proceed to her pier.

NECROLOGY.

JOB LEWIS SMITH, M.D., an honored member of the AMERICAN MEDICAL ASSOCIATION, who died in New York City June 9,

was born in the village of Spafford, N. Y., October 15, 1827. He prepared for college at the Homer Academy in Cortland County, N. Y., and entered Yale in 1847 as a member of the same class with President Timothy Dwight. A graduate in 1489 he began the study of medicine with Drs. Goodyear and Hyde and later with Dr. Caleb Green. Then he attended lectures at the Buffalo Medical School in 1851 and 1852, after which he went to New York and entered the College of Physicians and Surgeons, graduating in 1853. Dr. Smith then began the practice of medicine, giving special attention to the diseases of children. He was a worker for over twenty-five years in the Infant Asylum and the New York Foundling Asylum, constantly contributing to medical societies and periodicals. He prepared a general treatise on the diseases of children, which is regarded as a standard in this country, and which has enjoyed the honor of many translations. His reputation as an expert led to his appointment as Clinical Professor of Diseases of Children in Bellevue Hospital Medical College, and to his election as an active and honorary member of many medical societies. He was consulting physician to the children's class in the Bureau for the Relief of Outdoor Poor and physician to the Charity Hospital. Four daughters and two grandchildren survive him. His was a life of good works.

CHARLES O'LEARY, M.D., died at his home in Providence, R. I., June 1, of Bright's disease. Dr. O'Leary was formerly president for two terms, 1881 and 1882, of the Rhode Island Medical Society, and was at one time connected with the faculty of St. Mary's College, Emmetsburg, Md. While there he wrote a Greek grammar that for many years was the standard work in Roman Catholic colleges. He served as surgeon and medical director during the civil war. He was a graduate of the Long Island Medical College, in the class of 1860. During the time of his residence in Cincinnati he served as a professor of chemistry in the Medical College of Ohio and resident at the St. John's Hospital. For nearly twenty years he was surgeon of the Rhode Island Hospital. Two sons are physicians of Providence.

ASA P. POTTER, M.D., Boston, June 1, aged 62 years, a descendant from a long line of physicians back to William Potter, who was physician to Oliver Cromwell and Charles II. In 1857 he received the degree of M.D., from Dartmouth College; in 1864 entered the army as assistant surgeon; and in 1883 was elected professor of materia medica and therapeutics and lecturer on nervous diseases at the College of Physicians and Surgeons. He was a member of the Massachusetts Medical Society, the AMERICAN MEDICAL ASSOCIATION, for several years president of the Boston Therapeutical Society, and an honorary member of the Botanical Society of Italy.

HENRY E. TURNER, M.D., University Pennsylvania, 1836, who recently observed the sixtieth anniversary of his diploma, died in Newport, R. I., June 2. He was born in Greenwich, R. I., 81 years ago and early went to Newport, where for a long time he was city physician.

FRANCIS L. DICKINSON, M.D., of Rockville, Conn., died in New Haven, Conn., June 2. He was born in Chatham, Conn., in 1817, and was graduated from the Yale Medical School in 1840. He served several terms in the State Legislature and was a State senator in 1877 and 1878. He leaves two sons.

EDGAR A. KEELER, M.D., died at Little Falls, Passaic Co., N. J., June 7. He was a graduate of the College of Physicians and Surgeons, Baltimore, Md., class of 1880.

EDWARD SEAMAN BUNKER, M.D., died at Bath Beach, Brooklyn, N. Y., June 8, in his 57th year. In 1857 he was graduated from the Polytechnic Institute and for ten years remained there as a teacher of classics. In 1871 he received his degree from the Long Island College Hospital.

WILLIAM D. ALDRICH, M.D., Dartmouth, 1872, an active assemblyman of New York State, died June 4 at his home in Warrensburg. During the forenoon he complained of not feel-

ing well and retired. About 2 o'clock his wife visited his room and found his lifeless body.

W. H. STRANGE, M.D., died in Toronto, Canada, June 4. He rose early to go to Niagara, but died after only a three hours' illness. He was Deputy Surgeon General of the militia forces of the Dominion.

ROBERT SCOTT, M.D., of 325 East 69th Street, New York, died in the Presbyterian Hospital June 9, of cancer of the stomach. He was a Scotchman, unmarried, and a graduate of the Edinburgh University.

CHAS. E. ENGELS, M.D., Chicago, aged 35 years.—Karl Esch, M.D., Peoria, Ill., June 10, aged 37 years.—Robert Moffitt, M.D., Mt. Pleasant, Iowa, June 10, aged 30 years.—Thomas Aquinas Purcell, M.D., Holyoke, Mass., May 31, aged 36 years.—Joseph Waggoner, M.D., Ravenna, Ohio, June 7, aged 75 years.—E. J. Longshore, M.D., Scranton, Pa., June 7, aged 53 years.—H. C. McCarthy, Altoona, Pa., June 6, aged 56 years.—George T. MacCord, Pittsburg, Pa., June 7, aged 51 years.—Wm. H. H. Hutton, M.D., Surgeon U. S. Marine-Hospital Service at Detroit, Mich., June 14.

SOCIETY NEWS.

Congress of the French Society of Otology and Laryngology, Paris, May.—Moure terminated his address on ozena by protesting against the too frequent assumption that ozena is incurable. His treatment is merely nasal and retro-nasal antiseptic irrigations with sprays of the same and of oil after removal of the crusts when the patient wishes only to be relieved of the fetid odor. When more complete treatment is desired he adds vibratory massage every second day for a fortnight, then twice a week for a month, then once, and more rarely after this. The massage is followed by irrigation and removal of all the crusts and then with a spray of 5 to 25 per cent. nitrate of silver. He reports numbers of cures with this method sufficiently prolonged. It also enables the existence of complications to be determined and cured. General tonic treatment is necessary with it as indicated. Lue presented a couple of patients cured of empyema of the maxillary sinns by his new method, which he claims combines the advantages of other methods without danger of infection through the mouth and proves a rapid and complete cure for this obstinate trouble. He opens into the sinus through a large incision in the gum, resects the anterior wall, eures with extreme care with electric light and cauterizes with a strong solution of chlorid of zinc. He then makes an opening between the sinus and the nasal fosse and introduces a drain into this opening, passing through the nose and ending outside. After dusting the sinus with iodoform through the incision in the gum, the latter is then sutured with fine catgut and soon heals. The sinus is irrigated through the drain with iodoformed ether; later with solutions of formol and boric acid. By the end of the fifteenth or twentieth day the drain is removed and the patient is definitely cured. The subjects to be discussed at the Congress next year are "Acoustic Unity and Pathology of the Tonsils."

Congress of the French Obstetric Society, Paris, April.—Habitual abortions without appreciable cause, was discussed among the other subjects. Charpentier has succeeded in curing this tendency in plethoric women by applying leeches to the cervix, but he usually restricts his treatment to wet cupping over the kidneys. Metritis is a frequent cause, and he advises the cautery for such lesions of the cervix and curetting for metritis of the fundus. Lefour has succeeded by rendering the uterus tolerant by the insertion of an interuterine pencil for eight months to a year, with repose in bed during the menstrual molimen and the administration of opiates and bromid. The congress resolved to urge the creation of special services at Paris for infected obstetric cases and pregnant suppurating cases, and

also the examination of the midwives of the Benevolent Bureau. The subjects announced for next year are placenta previa and applications of the forceps to the superior strait in flat pelvis, with classic presentation. A blank for infant's bulletins was presented, with the normal curve of weight during the first year for comparison. It was asserted that an effectual way to increase the mammary secretion when a woman is unable to supply sufficient milk for one child, is to give her two or three more children to nurse. The greater the demand the larger the supply.

New Hampshire Medical Society.—The one hundred and sixth annual meeting of this Society was held in Concord, May 24 and 25, 1897. There were about one hundred and fifty present and fifty new applications for membership. The first day was occupied in the reading of papers, while at the evening session the members listened to an address on "Medical Expert Testimony," by Hon. William L. Foster of Concord, ex-Judge of the superior court, also to a scientific description of the X-ray with a practical exhibition of its application to surgery, by Prof. J. Milner Coit, Ph.D., of St. Paul's School, and Dr. Adrian H. Hoyt, General Manager of the Electrical Instrument Co., Penacook. On the second day a paper on "Causes and Recent Treatment of Neurasthenia," by John D. Quackenbush, M.D., of New London, and a paper entitled "When to Call a Surgeon in Acute Abdominal Affection," by George W. Gay, M.D., Boston, were presented. President Richardson read his annual address. The following officers were elected: President, Dr. Moses C. Lathrop of Dover; vice-president, Dr. George H. Saltmarsh of Laconia; treasurer, Dr. M. H. Felt, Hillsboro Bridge; secretary, Dr. Granville P. Conn of Concord.

Congress of Syphilography.—The Congress to Arrest the Spread of syphilis in Russia, recently summoned by the government, was attended by over 500 persons, including physicians, teachers, professors, heads of penal and other institutions, inspectors of factories, military and marine officers, etc. We note among the measures proposed, stricter supervision of the morals of the young, and cultivation of outdoor sports: education of the public to the dangers of syphilis by popular illustrated lectures, ably written pamphlets, etc.; soldiers encouraged to practice some trade; the adoption of a uniform blank for recording all cases, and for annual reports to a central bureau, suppressing names; rigorous physical examination by female physicians of prostitutes, and Tarnovsky urges the examination of the men who visit them. Foundlings should be fed artificially until six weeks have passed without evidences of syphilis, and syphilitic infants should only be given to syphilitic nurses. Rigorous and compulsory general medical examination of the employes in factories, public baths, etc., was also urged, with the organization of flying medical squadrons like those sent out a while ago to fight eye diseases. Fairs and large gatherings should have a special medical force provided. Home physicians of discharged syphilitic soldiers should be confidentially notified. With all this, strict professional secrecy is imperative, personal liberty respected, and to avoid inflicting a stigma upon the patients, there must be no specialism, but the hospitals, medical squadrons, etc., must examine all alike and treat all diseases. The proceedings are given in full in the *Ann. de Derm. et de Syph.* for April. The promoters are confident that the numerous practical and appropriate measures proposed bear the stamp of realization. They assume the coöperation of local benevolent societies in various ways and greatly increased gratuitous medical and hospital facilities.

An International Congress of Neurology, Psychology, Medical Electricity and Hypnology will be held in Brussels, Sept. 14 to 19. The addresses announced in neurology are: "Surgical Treatment of Epilepsy," Professor Winkler, Amsterdam; "Exophthal-

mie Goiter," Professor Eulenburg, Berlin; "Pathogenesis and Semeiology of the Reflexes," Professor Mendelssohn, St. Petersburg; "Influence of Delivery on Later Nerve and Brain Troubles in Children," Professor Anton, Graz; "Muscular Rigidity and Contractions in Organic Affections of the Nervous System," Professor Van Gehuchten, Louvain. Psychiatry: "Diagnostic Value of Prodromal Symptoms Preceding the Manifestations of Progressive Paralysis a long while," Professor Thomsen, Bonn; "Psychoses and Dreams," Dante de Sanctis, Rome; "Modifications in the Picture of Progressive Paralysis in the last Thirty years," Professor Mendel, Berlin; "Relations Between Psychoses, Mental Degeneracy and Neurasthenia," Lentz, Tournay. Medical Electricity: Semeiology Value of the Electric Reactions of Muscles and Nerves," Professor Doumer, Lille; "Therapeutic Value of Currents of High Frequency," Professor Bergonie, Bordeaux. Hypnology: "Therapeutic Value of Hypnotism and Suggestion," Milne Bramwell, London; "The Question of Criminal Suggestions," Professor Liegeois, Nancy. Applications for membership should be addressed to Dr. Crocq fils, 27 Avenue Palmerston, Brussels. Fees, 20 francs.

Twelfth International Medical Congress, Moscow.—The Czar has taken the Congress under his protection and the delegates are to be presented to him by the ambassadors from the various countries. All members of the Congress are to be carried free from the frontiers to Moscow and return, and no customs levied on instruments or small quantities of drugs. (*St. Petersb. Med. Woch.*, May 8.)

The program announced by the Section for Nervous and Mental Diseases is as follows: 1. Pathology of the Nerve Cell, Van Gehuchten, Belgium; Dana, New York; Van Giesen, New York. 2. Syringomyelia, Schultze, Bonn; Schlesinger, Vienna; Minor, Moscow. 3. Tabes Dorsalis, Obersteiner, Vienna; Pierret, Lyons; Erb, Heidelberg; Grasset, Montpellier; Althaus, London; Darkschewitsch, Russia; Borgherini, Padua; Eulenburg, Berlin; Benedikt, Vienna; Raichlino and Hirschberg, Paris. 4. Operative Treatment of Diseases of the Brain, Oppenheim, Berlin; Sachs, New York; Voisin, Paris.

Addresses on other subjects will be given by Lombroso, Turin; Crocq, Brussels. 1. Hallucinations and Fixed Ideas, Pitres and Regis, Bordeaux; Shaw, Liverpool. 2. Paralysis of the Insane, Binswanger, Jena; Althaus, Homen, Helsingfors; Muratow, Moscow. 3. Hypnotism and Suggestion, Bernheim, Nancy; Tokarski, Moscow; Robertson, Glasgow; Gorodichze, Paris. Other speakers: Morel, Ghent; Fürstner, Strasburg, Francotte, Liège; Shuttleworth, England; E. Christian, France; Meschede, Germany; Leyden, Berlin; Henschen, Upsala; Ballet, Paris.

The Section for Hygiene sends out the following program: 1. Scientific Principles applied to the judgment of potable Water, Hueppe, Prague; Vaughan, Michigan; Gintl, Prague; Jolles, Vienna; Buijwid, Craeow. 2. Physical Training of Youth; how best attained by school Gymnastics, Palmberg, Helsingfors; Baginsky, Berlin. 3. Investigation of mental Overwork in Schools, Wirenius, Petersburg; Baginsky. 4. Alcoholism from the standpoint of social Hygiene, Duties of the State and of Society in this respect, Felix, Bucharest; Bergeron, Paris; Korowine, Moscow. 5. Importance of first help Societies, Frey, Vienna. 6. Homes for the Poor in large Cities and homes for Artisans in industrial Localities, Nagyvany, Budapesth; Berthensen, Petersburg. 7. Conditions for the spread of Tuberculosis and measures to prevent it, Vaughan; Nocard, Paris; Ostertag, Berlin; Morot, Troyes; Buijwid. 8. Hygienic measures in infective Diseases and value of protective Vaccination, Hueppe; Bose, Montpellier; Kral, Prague, etc. 9. Organization of sanitary Statistics, Felix, Guttstadt, Berlin. 10. Importance of medical instruction for Women.

In the Section of Obstetrics and Gynecology, Pinard, Paris; Varnier, Paris, and Zweifel, Leipsig, will speak on Symphysiotomy. Leopold, Dresden; Hennig, Leipsig, and Varnier, on External Investigation. Bar, Paris, and Varnier on serum therapeutics in puerperal sepsis. Fritsch, Bonn; Leopold and Sänger, Leipsig, on the Connection between Gonorrhea and Puerperal Troubles. Colpotomy in diseases of the Adnexa, displacement and Neoplasms of the Uterus, Candela, Valencia; Doyen, Rheims; Dührssen, Berlin; Martin, Berlin. Gonorrhea, and its Therapeutics in the non-pregnant, Sänger, Leipsig; Truzzi, Parma. Surgical treatment of Peritonitis, Martin; L. Tait, Birmingham; Winekel, Munich. Value of the different methods of operating Carcinoma of the Uterus, in respect to relapses, Sänger; Tait; Winter, Berlin. Addresses on other subjects are announced by Chrobak, Vienna; Clarke, Boston; Sneguirew, Moscow, etc.

MISCELLANY.

Undoubtedly Antivivisectionists.—The American Pet Dog Club met at Wildhurst, N. J., June 10, and adopted a badge. One hundred and ten ladies were present, including delegations from St. Louis, Philadelphia and Atlanta.

Personal.—P. M. Woodworth, M.D., Chicago, has been appointed by Governor Tanner to the Lincoln Park Board. Joseph C. Gordon, M.D., of the National College of Deaf Mutes, Washington, D.C., has been appointed Superintendent of the Illinois Deaf and Dumb Institution at Jacksonville.

Alcohol and Suicide.—At the recent international Congress of Psychology Dr. Müller gave an interesting historic sketch of the etiology of self-murder and, by means of an elaborate series of statistics, traced to alcohol the primary cause of its marked increase of late years. The author estimates the number of suicides in Europe at 50,000 a year, thus showing that the evil is increasing at a greater rate than the population. The most favorite month for suicides is June, the least December. Early morning is chosen in preference to the night; the mechanic class furnishes the largest number of subjects, and the peasant the least. Dr. Müller considers brandy the most pernicious form of alcohol, and traces to its influence the blunting of those weapons which in the struggle for life are the most necessary to sustain the conflict.—*Westminster Gazette*.

Disease Contracted "In the Line of Duty."—The United States circuit court of appeals holds, in *Rhodes v. United States*, March 1, 1897, that although an applicant for a pension might have contracted the disease (here it was alleged to be catarrhal ophthalmia of both eyes) before he entered the service, yet, if he was cured of it, so that he was a sound man when he enlisted, and he subsequently contracted it again while he was in the service and in the line of duty, his statement to the latter effect will not be deemed false. The phrase, "in the line of duty," it further construes to denote that the disease must have been contracted as a result of his service, or as a result or by reason of the fact that he was in the service, making the service the cause of the disease, and not merely a coincident in time.

The Paris Horror.—The medical profession at Paris was sadly involved in the catastrophe at the charity bazar. Dr. Henri Feulard and his daughter and Dr. Rochet were among the victims; while the families of several other physicians, Nélaton, Nitot, Pique, Vimont, Le Sourd and Simon, lost one or more members. Dr. Feulard was a distinguished and popular dermatologist. The *Annales de la Société de Dermatologie*, of which he was secretary, and the reports of the dermatologic congresses contain many valuable contributions from him—always a leading spirit. His early, tragic death at 40 is a great loss to science and shock to his friends. It seems incredible that in the boasted "center of civilization," Paris, such a long time elapsed at the charity bazar horror before an ambulance arrived, the dead lying piled up on the sidewalk and the injured being carried into neighboring houses. It was an hour and a half, according to the *Figaro*, before the special emergency ambulances reached the spot. Among the 1,500 persons in the building there were about four hundred men, organizers of the fête, priests, etc., but all of the men managed to escape except three. Two of these were physicians; one, Feulard, had escaped but returned to save others, and ten of the 120 female victims were the wife, daughter or sister of a physician. The medical fraternity thus furnished a tenth of the victims.

Schlatter the "Healer" Dead.—Denver, June 6.—A dispatch to *The News* from El Paso, Texas, says that Francis Schlatter, who said he performed miraculous cures by divine power, was recently found dead in the foothills of Sierra Madre, thirty-five miles southeast of Casa Grande, in the State of Chihuahua.

hua, Mexico. He had been fasting, and apparently starved to death.

While in Denver, from August 22 to Nov. 13, 1895, about three hundred thousand people visited Schlatter. Francis Schlatter was an Alsatian peasant, ordinarily educated and intelligent, who came to this country several years ago and settled in Jamesport, Long Island, as a shoemaker. His record in Jamesport was good. He was addicted to no bad habits, made excellent shoes, paid his way and saved money. He was in love with a young woman, who, however, refused to marry him. In the society of the village he was known as a good fellow with queer views, who could "talk like a book." He had "visions," also, and had much to say about the great questions of life and destiny. But at this time he made no pretensions to the possession of any unusual powers. In 1894 he went to New Mexico, and was next heard of as a wonderful "New Messiah," with an extraordinary power of curing diseases. He at once became locally famous. It is said that he was imprisoned in that Territory for falsely claiming divine powers. However that may be he went to Denver in the summer of 1895, and his career there attracted widespread public interest. His presence made Denver the central point to which journeyed thousands of sick and afflicted from all over the country. Schlatter lived in Denver with Alderman Fox, and gave public "treatments" in a hall or theater, at which an admission fee was charged. Then there were "treatments" to all who came to Mr. Fox's house. He became known as the "New Messiah," and "The Healer." He blessed handkerchiefs, and it was said that any one touching these handkerchiefs would be "healed." "Fakirs" did a thriving business in this line. They advertised "blessed handkerchiefs" for the small sum of \$1, and raked in hundreds of dollars, until they were arrested by the authorities. Schlatter was wanted as a witness in this case, and many thought that he disappeared from Denver on November 13 because he did not want to testify. He left a note in his handwriting, saying:

Mr. Fox—My mission is finished. The Father takes me away. Goodby.

FRANCIS SCHLATTER.

After he disappeared from Denver Schlatter was reported at various times in the mountains of Arizona and New Mexico, and many weird stories were told of his flight. Many remarkable stories were told of cures made by Schlatter in Denver. On the last day he was in the city he "treated" no fewer than five thousand people. He did not profit in a worldly way by his months of self-imposed labors, which were of an extremely fatiguing nature. After the six hours daily spent in standing at the head of the line, clasping the hands of his visitors, he retired to the house, rested for a time and then set to work upon his mail, answering letters until long into the night. That mail is estimated to have amounted toward the end to over forty thousand pieces a day.—*N. Y. Tribune.*

Eulogy on Jerome Cochran, M.D.—Remarks in support of the resolutions offered, relative to the death of Jerome Cochran, M.D. (see JOURNAL, June 12, p. 1147) by W. H. Sanders, M.D., of Alabama.¹

The resolutions just read recite in very brief words some of the salient points in the character and life-work of a man who impressed himself to an unusual degree upon the times in which he lived.

A career such as his richly repays close study and analysis, for from it may be drawn not only wise lessons, but living inspiration.

A man's claims upon the homage of the world should be measured by two standards: 1. What he was. 2. What he did.

Let us apply these tests to the character and life-work of our deceased colleague, and see what tributes they demand.

Some of you knew him well, and therefore need not be told what he was.

May I be allowed to ask those who did not know him, to imagine a man somewhat below medium stature, and inclined to be stooped and bulky, with a face and head that plainly revealed a solid and well-poised character, with an eye that, though mild, yet unconsciously betrayed the intellectual strength that lay behind it; a man possessed of a mind cast in a heroic mold and one that had enriched itself by extensive conquests from every field of human learning, a man with genius to conceive and power to execute, a man dominated by lofty purposes and inspired by unyielding courage to pursue those purposes against odds however great, a man who stood upon the mountain tops of ethical philosophy and proclaimed in luminous and living words that truth should be

sought and right be done for their own sakes. I say, imagine a man endowed with these gifts and powers, and you have a feeble picture of what Jerome Cochran was.

In disposition he was gentle but courageous, unassuming but potential, tenacious of his opinions, but fair-minded and just, and when his judgment so dictated would agree with an enemy or differ from a friend with equal readiness and positiveness. But it was the man's mind that made the man! It stood forth serene and majestic, above prejudice or passion, undaunted by fear and unswayed by favor, and therefore reached its conclusions by the purest processes of logic, and having once reached them was as true to them as the mother to the child.

While in no sense an orator, he was more; a master of clear, lucid and forceful English; always ready for a polemical battle, he was never known to furl his colors or to suffer defeat in the presence of any antagonist. It is no wonder that such a man should have been the author of great conceptions and the architect of great achievements.

Born in Tennessee, reared in Mississippi, Alabama was the immediate theater of what he did. Being a profound student of sociologic science no doubt led him more than a quarter of a century ago, without a model to guide him, or so much as a blazed way through the wilderness of unorganized medicine that then existed, to conceive and formulate a scheme for organizing the medical profession of Alabama, which for wisdom of conception, for logical arrangement and completeness of detail, challenges the world for a superior. This scheme sprang full-grown from his fertile and masterful brain, and was not the result of a slow process of evolution, as is usually the case in similar schemes. The first great principle it proclaims is that the interests of the people at large is the object to be sought by organization, and not the interests of the profession. Another great principle it asserts is the members of the medical profession should control in sanitary matters, and so it is in Alabama. Throughout the length and breadth of the State no layman occupies a position on a board of health, the boards being composed of physicians alone. Out of the assertion and maintenance of this principle grows directly another, and one of the most stupendous importance, namely, the radical, practical and eternal divorcement of the sanitary interests of the people from political and commercial influence. Politics and commerce, therefore play no part in disturbing the enforcement of sanitary and quarantine laws in Alabama, a happy state of affairs due solely to the wisdom and foresight of Jerome Cochran.

These principles, with others I can not now mention, have already borne the richest and most beneficent fruits, some of which may be briefly summarized:

1. A coherent and efficient State Medical Association has been built up, with subsidiary and supporting societies in every county of the State, all being endowed in their respective spheres, with important legal and public health functions, and all exercising these functions under a perfectly uniform system of organization.

2. An efficient law for the collection of vital and mortuary statistics.

3. The ethical tone and medical knowledge of the great body of physicians of the State have been markedly elevated and enlarged, thus rendering the doctors more efficient and skilful when called to the bedsides of the sick.

4. Quacks have been almost wholly banished from the State.

5. Scientific principles, according to which quarantine should be proclaimed and practiced, have been formulated, resulting in complete abolition of the old shotgun system, based, as it often was, upon panic, and enforced in a thoroughly unscientific way, a change that has saved thousands upon thousands of dollars to the railroads and commerce of the State.

Were I asked what citizen of Alabama, living or dead, had done most to promote her interests, giving to the word its broadest and deepest signification, conviction and candor would compel me to answer, Jerome Cochran. Did time permit I would undertake to defend this proposition by an array of unimpeachable facts, but I must content myself by saying that he set into motion forces for good that will go on and on, continually gathering strength, until sanitary law shall reign supreme and enlightened medical science shall penetrate into every sick room of the State, with all of the attendant blessings that such a fruition will bring. Neither were the beneficent results of his labors confined within the boundaries of his own State, but, extending beyond, made themselves widely felt wherever there was occasion for the application of the principles of enlightened and advanced sanitary science.

As a member of the Yellow Fever Commission of 1878, and subsequently of a Board of Yellow Fever Experts; as a participant in national sanitary and quarantine conventions; as a member, and sometimes chairman, of the most important com-

¹ Received too late for publication in JOURNAL June 12.

mittees raised by this body, he always exhibited a grasp of mind and familiarity with details that easily placed him among the masters of the profession.

Lest you deem my words born more of enthusiasm than of justice, I beg to quote from some of the numerous replies received from corresponding boards of health when notified of Dr. Cochran's death. The first one from which I quote is by the eminent Secretary of the State Board of Health of this great Commonwealth; Benjamin Lee, who says: "The information of the death of your predecessor, Dr. Jerome Cochran, is received with sincere regret. I had the pleasure of quite an intimate acquaintance with the Doctor, and considered him one of the ablest sanitarians in the country."

The next one from which I quote is from the State Board of Health of Missouri, through its distinguished Secretary, Willis P. King, M.D., and the quotation reads as follows:

"WHEREAS, Dr. Jerome Cochran was one of the leaders in the application of the principles of sanitary science in this country, and has by his able efforts been of great benefit to the human race; therefore, be it

"Resolved, That this Board extend to his family and to the profession and people of Alabama, our sincere sympathy and condolence, and join with them in mourning the death of their able physician and eminent citizen."

Could a nobler tribute be paid any man than to proclaim that he had "been a benefactor of the human race?"

At a recent meeting of the State Medical Association of my State it was unanimously and enthusiastically resolved to honor the services of Dr. Cochran by the erection of a monument to his memory, and while we have not ventured to expect that our undertaking would, in any sense, become National in its scope, yet the sympathy and approval of the profession and people of the Nation would be to us extremely grateful.

It is contemplated to erect in the near future a monument to Benjamin Rush, one of the fathers of the profession in America, which, when erected, may be taken to represent the early period of American medicine.

Recently the veil has been drawn from a monument to one of America's greatest surgeons, which may be taken to represent the middle period of American medicine.

May we not hope that the monument to Cochran, when built, although not National in scope, may be taken to represent the modern period of American medicine—that period characterized by great advances in fraternal organization and in preventive medicine?

At the last meeting of this body he was one of us, but now his voice is hushed in death. Let us endeavor to perpetuate the principles it so ably proclaimed, and to cement in closer and tenderer ties that fellowship he had done so much to promote. To his death he went down with the same imperturbable coolness that had characterized him in every emergency, and without having invoked, until the last week of his life, any aid from that science to which he had been so devoted, to delay the approach of the pale messenger.

He sleeps in one of the cemeteries at Mobile, on that Gulf-shore he had done so much to protect from invasion by disease, and may we not hope that when awakened to appear before the final judge, the interceding angel will plead his great services for his fellowmen, and that like Abou Ben Adhem, "his name will lead all the rest."

New York.

ARTICLES OF INCORPORATION for the Hospital Saturday and Sunday Association and the New York Medical League were curiously enough signed on about the same day. May not congratulations be offered to both without suspicion of duplicity?

THE GRADUATING CLASS of the College of Physicians and Surgeons, New York, numbered only forty members. The class of 1847 exceeded this count by seventeen.

Hospitals.

YARMOUTH, Nova Scotia, will celebrate Queen Victoria's Jubilee by establishing a Victoria Hospital.—Colorado Springs, Colo., is to have a \$10,000 hospital for the Union Printers' Home. —The new City Hospital, Kenton, Ohio, was opened June 2.—The Buffalo (N. Y.) German Hospital receives \$5,000 from the estate of the late Gerhard Lang.—The hospital building recently added to St. Christopher's Home at Dobbs-Ferry-on-the-Hudson was dedicated June 5. It is the gift of the Epworth League of the New York District of the Methodist Episcopal church.—St. Mark's Hospital, New York city, treated 3,430 indoor patients from March 1, 1896 to Nov. 1, 1897. Of these 2,533 were cured, 635 improved and 67 died. Outdoor patients were treated to the number of 2,666. Of 1,200 operations performed during the year, 122 were laparotomies.

Societies.

THE NINETEENTH semi-annual session of the Southern California Medical Society was held at Santa Ana, June 9.—The Fox River Valley Medical Association held its sixty-fourth semi-annual meeting at Elgin, Ill., June 10.—The Vigo Medical Society held a meeting at Terre Haute, Ind., June 3.—The Des Moines Valley Medical Association met at Ottumwa, Iowa, June 17.—The annual session of the Maine Medical Association closed June 4. The following officers were elected: President, Dr. Wallace K. Oakes of Auburn; vice-presidents, Drs. E. A. Thompson of Dover, G. M. Woodcock of Bangor; corresponding secretary, Dr. H. B. Palmer of Farmington; recording secretary, Dr. Charles D. Smith of Portland; treasurer, Dr. A. S. Thayer of Portland; censors, Drs. W. B. Moulton of Portland, F. C. Thayer of Waterville, W. J. Maybury of Saco, E. M. Fuller of Bath, A. King of Portland.—The State Medical Association convened at Moreland City, N. C., June 9.—The 116th annual meeting of the Massachusetts Medical Society was held in Boston, June 8 and 9.—The Grand Rapids (Mich.) Medical and Surgical Society held a regular meeting June 7.—The St. Louis Medical Society of Missouri held a meeting June 12.—The Central Missouri District Medical Society met at Jefferson City, June 4.—The twenty-second annual session of the Grand River Medical Society was held at Chillicothe, Mo., June 4 and 5.—The Jasper County Medical Society met at Carthage, Mo., June 2.—The Erie County Medical Society met at Buffalo, N. Y., June 7.—The thirteenth annual meeting of the Third District branch of the New York State Medical Association was held at Norwich, June 8.—The Medico-Chirurgical Society of Central New York convened at Syracuse, June 3.—The Elmira (N. Y.) Academy of Medicine held a regular meeting June 2.

THE PUBLIC SERVICE.

Navy Changes. Changes in the Medical Corps of the U. S. Navy for the week ending June 12, 1897.

Surgeon M. H. Simons, ordered to the "Iowa" June 16.
Washington B. Grave, commissioned Asst. Surgeon from June 3.
P. A. Surgeon R. P. Crandall, detached from naval hospital, Norfolk, June 14, and ordered to the "Iowa" June 16.
Medical Inspector W. G. Farwell, detached from Special duty marine rendezvous, Philadelphia, and continue other special duty.
Surgeon D. O. Lewis, after completion of examining board, naval academy, ordered to the marine rendezvous, Philadelphia.

CHANGE OF ADDRESS.

Broughton, Geo. A., from Pomona to Chino, Cal.
Babcock, Robert H., from 34 Washington St. to 103 State St., Chicago.
Curry, William, from Nebraska City to Palmyra, Neb.
Cottrell, D., from 200 N. Clark St. to 279 E. Indiana St., Chicago.
Clements, Joseph, from 1719 Holly to 1113 W. 15th St., Kansas City, Mo.
Derwent, A. E., from Chicago to Elma, Ill.
Dalton, M., from Summerfield, Ill., to Fenton, Mo.
Gresens, H. C. W., from 688 Fullerton to 821 Lincoln Ave., Chicago.
Howard, Kate J., from 334 O'Farrell St. to 1410 Larkin St., San Francisco, Cal.
Korn, Abraham, from 734½ to 741 S. Halsted St., Chicago.
Loomis, M. M., from Chicago to Cascade, Ia.
Leahy, M. M., from 87 Washington St., to 6301 Wentworth Ave., Chicago.
Martheson, J. S., from 205 E. Ohio st. to 4050 Michigan Terrace, Chicago.
Rollins, F. H., from Chicago, Ill., to White Rock, S. Dak.
Taylor, P. K., from New York to Mineville, Essex Co., N. Y.
Wysor, J. C., from Montgomery to 82 Capitol St., Charleston, W. Va.

LETTERS RECEIVED.

Ascher, J. A., Freeport, Ill.; Ammonol Chemical Co., The, New York; Arlington Chemical Co., The, Yonkers, N. Y.
Brayton, A. W., Indianapolis, Ind.; Bowles, Marion K., Joliet, Ill.; Bidle, G. J., Philadelphia; Blischoff, C. & Co., New York; Battle Creek Health Food Co., Battle Creek, Mich.
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ORIGINAL ARTICLES.

PROGNOSIS AND THERAPEUTIC INDICATIONS IN CHRONIC DISEASES OF THE HEART.

Read in the Section on Practice of Medicine, at the Forty-eighth Annual Meeting of the American Medical Association, held at Philadelphia, June 1-4, 1897.

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For the purposes of discussion, the prognostic factors in diseases of the heart may be conveniently divided into three groups:

1. The condition of the cardiac valves.
2. The condition of the capillary and venous circulation.
3. The condition of the muscle of the heart and of the muscular coat of the arteries—especially of the arterioles.

Of the abnormalities of the mitral valve the obstructive lesion is more serious than that of insufficiency, provided the myocardium is in fair condition; a double mitral lesion is more serious than either single one. Obstruction at this orifice is serious in two ways; if it is due to vegetations on the free edges of the valves or on the margin of the orifice at place of attachment of the valves, these vegetations may be swept off by the blood current and form infarct of the brain with all its serious consequences; if the obstruction is due to stenosis of the orifice from fibroid contraction it throws great strain upon the left auricle, dilating it and causing serious obstruction to the pulmonary circulation and backward pressure through the right heart, causing general venous engorgement of the viscera.

In all mitral diseases careful study of the pulmonary circulation and the condition of the right heart is of utmost importance. Before evidences of pulmonary engorgement show themselves an accentuation of the second heart sound over the pulmonary valve, as compared to that over the aortic, gives the first signal that the left auricular wall is yielding to the strain put upon it and the auricle is not emptying itself as it should. Next in train come evidences of pulmonary congestion and pulmonary edema; then the right heart shows the strain that has been put upon it, first by incomplete emptying of the ventricle into the lungs, thus producing an inability of the right auricle to empty itself, and bringing about a venous engorgement of the various organs of the body. Careful study of the right side of the heart during this process generally reveals an increase of its size. In such conditions there is heard in the tricuspid region a soft systolic murmur; this sometimes occurs early, more often later in the disease, and is always of very serious prognostic import.

Of the lesions of the aortic valve, obstruction is generally less serious than insufficiency. Vegetative growths, causing the obstruction, are less often observed here than at the mitral orifice, but when present are just as dangerous in their possibilities; on the other hand the left ventricle normally has good hard work to do to throw its contents into the arterial system, where there is normally more or less resistance, and on that account its walls are thick and strong; a slight obstruction of the aortic orifice means a little greater effort, a little more muscular development, a compensatory hypertrophy and unless the obstruction increases that is all. Nevertheless, no patient with aortic disease, even though only slight obstruction, should be allowed to do anything to weaken or strain his left ventricular wall, especially as aortic valve disease is so frequently associated with arterial disease.

In aortic insufficiency we have the most serious form of valvular disease; it is not as we might almost say of aortic obstruction, an exaggeration of a normal state of affairs; on the contrary it is absolutely abnormal. As soon as the left ventricle has emptied itself and diastole begins, blood rushes back into the ventricle through the leak in the valve, and also rushes into it in its normal course through the mitral orifice; thus the ventricle becomes distended and dilatation occurs earlier than in any other form of valvular disease. Uncompensated dilatation is the most serious cardiac condition with which we have to cope.

Thus we see that valvular lesions are serious in proportion to the extent to which their existence brings about degenerative changes in the cardiac muscle. Let us turn our attention to the second group that I mentioned as worthy of study from a prognostic standpoint, the condition of the capillary and venous circulation. In health the blood circulates, within certain limits, at about the same rate and with about the same force, producing about the same degree of tension in the blood vessels. Now if the central source of the power that is the chief factor in keeping up the circulation is structurally weakened it shows that weakness in the peripheral circulation. All valvular diseases of the left side of the heart lead eventually to the same state of affairs, namely, a diminution in the amount of blood in the pulmonary circuit, congestion of the lungs, edema of the lungs, over-distension of right heart, venous engorgement, capillary distension, edema of various organs and effusion into the serous cavities. Sometimes the right heart yields, lets the tricuspid valve slip and relieves the impending edema of the lungs by causing over-distension of the systemic veins. The general edema becomes marked and the edema of the lungs comes as the terminator of life. We can perceive indications of failing circulation by study of the capillary circulation as revealed by the edema of the skin and subcutaneous connective tissue; by the diminution in

quantity of the urine and the occurrence in it of albumin, blood, casts, etc., indicative of congestion of the kidneys and, in cases of long standing, of cyanotic kidney; by the condition of the liver as revealed by physical examination of that organ; a large liver due to congestion shows that the left heart is weak and sometimes that the right heart is beginning to fail. If ever a pulsating liver is found it is generally indicative of tricuspid regurgitation and is of serious import. The occurrence of ascites in heart disease is associated with occurrence of general edema and is only another indication of the failing circulation, but is usually a comparatively late one unless there is associated disease of the liver or peritoneum; ascites occurring in the course of a case of heart disease under these circumstances (*i. e.*, absence of disease of the liver or peritoneum) is a sign of bad prognostic import.

Cyanosis, dyspnea, orthopnea and the physical signs of edema of the lungs, reveal the failure of capillary circulation in the lungs and are of very serious prognostic import; if in addition to these we also have signs that the pleural cavities are also filling up, the prognosis becomes so much the worse. When we also get the symptoms of edema of the brain or of effusion into the ventricles or between the meninges the prognosis is still worse.

All these various conditions, which I have briefly mentioned, are indicative of a failing circulation, and that means lack of muscular power in the walls of the heart and of the arteries. Even in the most serious form of valvular disease of the heart I do not give an absolutely hopeless prognosis until I have tried certain measures calculated to improve the musculature of the heart and of the arteries.

How are we to estimate the strength of the heart muscle? By the force and frequency of the heart's action, by the relative length and strength of the first and second sounds, by their relation as to intensity and duration of the pulmonary to the aortic second sound, by the size of heart as shown by percussion, by the position and character of the apex beat, by the condition of the peripheral capillary circulation and by the condition of the pulmonary circulation.

It seems plain to me that in a given case of disease of the heart the prognosis depends upon the condition of the muscles of the heart and of the arteries, and whether or not they are capable of being so improved as to compensate for whatever may have led to the present condition of failing circulation. If this be true, it is evident that the therapeutic indication is to institute such measures as will tend to improve the muscle strength of the heart and arteries and restore the normal circulation and prevent accumulation in the veins.

I think I can not do better than cite a case illustrative of almost every point that I have made.

March 5, 1897, I was called to see G. M., male, aged 48, American. Family history, good; personal history, rheumatism and alcohol; has had heart trouble for several years. Present condition: Temperature 97 degrees, pulse 110, respiration 30, cyanotic, anasarca, some ascites, marked dyspnea upon exertion, cough very irritating, no sputum.

Examination of urine: Amount 625 c.c., highly colored, strongly acid, sp. gr. 1029, urea 15.6 gm., trace of albumin, no sugar, 1 hyalin cast and 1 cylindrical in three slides.

Physical examination of chest showed some edema at bases of both lungs, especially of the left; a hypertrophied and dilated heart, the apex beat of which was diffused to a marked degree, being felt as a feeble wave over an area bounded by the left mid-axillary line, the upper border of the eighth rib, a line a quarter of an inch to the right of the anterior axillary line and the lower border of the seventh rib; the area of cardiac dullness was marked on the right by a line extending from a point at the upper border of the third rib a half inch to the right of the right edge of the sternum down to a point on the fifth rib, three-fourths of an inch to the right of the right edge of the sternum; here the cardiac dullness was merged into liver dullness. On account of the increase in size of the left lobe of the liver, it was impossible to mark out accurately the lower border of the right heart, but that of the left was on a level with the top of the eighth rib; the left edge of the heart was marked in the mid-axillary line at the bottom of the seventh rib in the anterior axillary line at the top of the sixth rib, gradually approaching the median line, until at the top of the third rib it was midway between the para-sternal and nipple lines. Palpation revealed an irregularly pulsating heart, feeble and wavy in its impulse, with a distinct diastolic thrill to be felt in the fourth and fifth left intercostal spaces between the sternal and nipple lines. Auscultation revealed that the sounds of the heart were not to be heard at all, but were entirely replaced by murmurs; the murmurs at the apex were of very slight intensity and grew distinctly louder as the stethoscope passed to the right and upward; in the mid-sternal region, at the level of the third rib, the two murmurs were very loud, the diastolic especially so. Very careful study of this heart enables me to say without going into further details of the physical examination, that there was insufficiency of the mitral valve, obstruction and insufficiency of the aortic valve and insufficiency of the tricuspid valve. The liver was tremendously enlarged, the area of dullness extending from the top of the fifth rib to a point two and one-half inches below the free border of the ribs; the left lobe extending over as far as the nipple line on the left side, was merged in cardiac dullness above, and extended downward in the epigastric region midway between the end of the ensiform cartilage and the umbilicus.

The physical condition of the heart was one of unquestionably organic lesion of the aortic valve, causing some obstruction and permitting tremendous regurgitation; of insufficiency of the mitral valve possibly due to disease of the valve, possibly due to the great dilatation of the left side of the heart; of insufficiency of the tricuspid probably due to the over-distension and dilatation of the cavities of both sides of the heart, especially the left, and to great thinning of the myocardium of the left ventricle.

I will briefly relate the treatment of the case and then give my reasons for the treatment.

Rest in bed, catharsis, restricted diet, diuresis, diaphoresis, massage, passive exercise and finally some active movements with resistance. In this case the Schott baths were tried without benefit.

Under the treatment outlined above the case has improved markedly; the anasarca and ascites and edema of the lungs have disappeared, with the slight exception of a very small amount of fluid in the abdomen and very slight remaining edema of the very base of the left lung posteriorly. The heart has diminished

materially in size, the apex being now in the sixth intercostal space a little to the right of the anterior axillary line, the borders of the heart having contracted proportionately. There is now some muscular quality to the first sound of the heart, the tricuspid murmur has disappeared and the heart beats regularly about eighty to eighty-six per minute. The liver still remains large but is smaller than it was.

The methods of the treatment were as follows: The rest in bed was absolute for the first six weeks, except when he was lifted in and out of bed for the purpose of the bath, while we were trying the Schott baths; the catharsis was produced by calomel followed by epsom salt, and bowels since kept free by saline cathartics, with an occasional dose of calomel; the diet was limited to milk, koumyss and malted milk for a month, and has since been gradually increased; the diuresis has been produced by the use of diuretin; some difficulty was encountered at first in producing diaphoresis; hot air failed, steam failed, hot pack failed but when we gave a steam bath preceded by a hypodermic injection of pilocarpin hydrochlorate 0.0035 gm. the diaphoresis was profuse.

The object sought and obtained by these procedures was to give the heart as much rest as an organ that works all the time can have. However, rest alone will not restore a weakened muscle to a normal condition; proper food and proper exercise are necessary to complete the cure. Where the muscle of the heart alone is implicated we may hope by long and careful treatment to restore it to a normal condition by exercises carefully graduated according to results. Some cases progress much faster than others. However, in a case where there is permanent valvular leakage, we must recognize the fact that that leak will always remain, and we must bend our energies to devising means for improving the circulation not merely by improving the strength of the heart muscle at one point and removing the fluid from the surrounding tissue and from the veins at another point, but by improving the musculature of the arterial system in general and of the arterioles in particular. Herein comes the benefit of carefully and scientifically administered massage. The muscles of the arteries and arterioles are so improved in tone and strength that they take up with renewed vigor their rhythmic contraction and relaxation and give to the blood current a new impetus all along the line.

It seems to me that herein lies the value of salt baths, carbonic acid gas baths and, when it is of value, of the undirected simple rubbing of the skin, in that the rhythmic contraction and relaxation of the arterioles is stimulated. Results are much more pronounced when the massage is administered with this definite object in view. By the massage we may also directly affect the movement of the blood in the veins.

To briefly sum up, we may state that in a given case of disease of the heart the prognosis depends chiefly on the condition of the heart muscle and of the walls of the arteries, chiefly of the arterioles; that the chief therapeutic indications are rest, removal of peripheral obstruction to the circulation and then the restoration and development by baths, massage and exercise of the muscular tissue in the walls of the heart and the arteries and arterioles, and the stimulation by these same means of the rhythmical contraction and relaxation of these muscle fibers.

THE USE OF DIGITALIN, WITH REFERENCE TO DOSE.

Read in the Section on Practice of Medicine, at the Forty-eighth Annual Meeting of the American Medical Association, at Philadelphia, Pa., June 1-4, 1897.

BY HENRY BEATES, M.D.

PHILADELPHIA, PA.

Early in my practice, circumstances found me active in that class of diseases which center about the circulatory system, and as a consequence, the much debated therapeutics of that remedial agent, *digitalis*, about which has incessantly waged a warfare of theory and discussion, engaged especial attention. Results were achieved which seemed to substantiate the claims of both advocates and antagonists, and presented a problem manifestly complex, and far from having been elucidated. On the one hand, cases representing a definite clinical type were markedly benefited, while on the other, apparently identical conditions were incapable of being favorably influenced, because of the occurrence of unpleasant symptoms which prevented the administration of the remedy in proper doses or in smaller quantities, sufficiently frequently to reestablish the lost circulatory equilibrium which was so urgently demanded, and what seemed to be facts confirmatory of each of the contending therapeutists, were thus confronted. Recognizing, in *digitalis*, a remedy possessing active principles of diverse nature, and realizing that in this respect it was not an exception to the vegetal kingdom in general, in which commonly one element of an organism possesses component parts varying greatly in the percentage of these, the opinion prevailed, that in this fact reposed the underlying determining causes of such manifestly contradictory therapeutics.

Observation clinically proved great variability in the effects of the crude drug itself, as well as the official preparations; some would control circulatory function without disturbing the digestive tract, while others developed the latter distress to such a degree as to compel the exhibition of smaller and consequently inadequate doses, the abandonment of the drug entirely, or the contemporaneous use of one or more of the group of cardiac stimulants as auxiliary, either of these being followed by indifferent results and failing to solve the mooted question. This led to the abandonment of the crude drug and its official preparations, and the employment of its alkaloidal derivatives or active principles. Concerning these as ordinarily procured from the shops, I found the same objection obtaining, viz., complexity of composition, *as manifested by variability of effect*.

Digitalin was recognized as a name applied to a glucosid, an amorphous powder and crystalline principles. Finally, the derivatives, digitin, digitalin, French and digitalin, German, pure, of Merck were studied, and their therapeutic powers which have stood the close scrutiny and clinical tests of years of use, will be submitted to your attention without further consuming time with the details leading to their recognition. The conclusions submitted are marked by so wide a departure from the generally accepted teachings regarding the value and use of this medicament, that it is felt that your consideration will not have been engaged fruitlessly. The special derivative employed, which forms the basis of this contribution, is digitalin (German, *pure*, of Merck). This, experience proves to be a simple, *i. e.*, individual alkaloid which is not contaminated by other active principles; therefore its

physiologic effects, other things being equal, are characterized by uniformity and definiteness.

It occurs as an amorphous powder, freely soluble in water and quite readily in alcohol, while in ether it is almost insoluble. These properties serve to distinguish it from another derivative known as digitalin French, Merck, also an amorphous powder which, in addition to its power to greatly stimulate the pneumogastric inhibitory function and augment the force of the cardiac contraction, possesses other features beyond the scope of this paper. However, it may be well to state that this latter principle is very sparingly soluble in water, a feature markedly in contrast with the remedy under consideration, freely in chloroform and alcohol and, like the German, slightly so in ether. The dose of the French is much less, *i.e.*, about one twenty-fifth.

With these brief preliminary remarks, your attention is invited to the consideration of dosage. Originally departing from the *utterly inadequate* but generally prevalent conventional one-hundredth and one-sixtieth grain doses, because practically no effects were secured, larger quantities were gradually and carefully exhibited and the effects closely observed. It was found ultimately, that one-tenth of a grain for the minimum adult dose and one-half grain as a maximum, were always, other things proportional, followed by definite and positive results. The administration of the drug, more or less constantly, for months and even years, in doses adapted, within these limitations, to the needs of the particular patient under treatment, is the basis upon which the statement is made.

One feature rendering this derivative especially valuable is the absence of a proneness to produce irritation of the digestive tract. The importance of this, in instances of advanced cardiac diseases requiring the larger doses, is self-evident. As to cumulative action, in no instance has so much as an indication presented itself, and after the long and liberal use under these conditions, it is proper and safe to assert, that that much debated property of digitalis is *not* possessed by this alkaloid.

Occasionally, where the larger doses, one-third and one-half grain, are essential, some gastric disturbances will occur, but the exhibition of pepto-hydrochloric acid, combined with a simple bitter and bismuth, overcomes the objection and permits the continuation of the remedy.

The scope and usefulness of this medicament is greater by far than appears at first glance. In all lesions of the heart, with the single exception of mitral regurgitation complicated with dilatation of the auricle, this drug is a *sine qua non*. The non-interference with the stomach, and its certain action upon the cardiac system and vaso-motor area, in the doses recommended, bring it into prominence when its achievements are contrasted with those of the usually employed official preparations. Its superiority can be better demonstrated by citing two cases which, beyond question, served as severe tests.

An adult male, 57 years old, was apparently in the last stages of eccentric cardiac hypertrophy, the ultimate result of a mitral regurgitant lesion of rheumatic origin. When first seen, the anasarca was so intense that the cutaneous structure of the lower limbs had ruptured in several places, and the oozing of serum was constant and troublesome. The scrotum and peritoneal cavity were much distended by the effusion, and the latter intensified the distressing dyspnea by me-

chanically preventing complete diaphragmatic action. Cough and profuse sero-mucoid expectoration were severe, while the inability to assume a recumbent position, and the loss of sleep and rest, were factors contributing to rapidly approaching death. He was under the care of excellent and skilled attendants, and *secundum artem* was treated with the conventional doses of the tincture of digitalis, the leaves, infusion and extract, in the vain endeavor to secure relief, but with the results just described. Four consecutive one-half grain doses of digitalin (German, Merck) were administered, each after an interval of two hours, with recognizable relief. Smaller doses, one-fourth grain, were employed at the same intervals for the next day, with results as surprising as unexpected. After some weeks, the sufferer was enabled to be about, and ultimately served as a night watchman for almost five years. During this period the remedy was taken almost continuously in from one-sixth to one-fourth grain quantities, three or four times daily. The periods during which the drug was stopped were never longer than two months, as by the end of that time, its necessity was indicated.

The other remarkable case is that of a lad afflicted with a mitral and aortic stenotic lesion. He is in his fifteenth year. Two years ago, when first seen, his distress was such that he practically lived in a chair. Edema to the middle of the thighs, cough, cyanosis, most distressing paroxysmal dyspnea in addition to the habitual, with emaciation and fast increasing asthenia, were the chief symptoms. Enormous eccentric hypertrophy had developed. The cardiac action was tumultuous, arrhythmic and feeble; the sounds indistinguishable. The usual official preparations of digitalis had been tried, one after another, and in the conventional doses. He was rapidly brought under the physiologic effects of digitalin (German) and promptly relieved from the agonizing distress. After some weeks of daily use of one-fourth grain doses he could slowly, but with comfort, be about. The dosage was carefully suited to his improvement and uninterruptedly employed until the present. He is taking little less than one-fourth grain with each meal serially, *i.e.*, for two consecutive days, then omitting one day, then resuming for two, and so on. What has been the result? On Saturday he rode his bicycle from the suburban town of Roxborough to the Washington Monument recently unveiled at the Green Street entrance to Fairmount Park, and back again.

Another class of cases in which really wonderful results are to be achieved, is that of senility. Here, where the whole venous system is so commonly the seat of passive hyperemia as indicated by prominently distended and tortuous veins such as the temporal, a group of symptoms impairing comfort and usefulness, usually presents in the form of shortness of breath upon comparatively trivial exertion, an annoying and somewhat paroxysmal cough, which subsides for a few hours after the expectoration of a small pellet of viscid mucous; inability to remember the usual details of daily duties (forgetfulness), a tendency to insomnia or at least interrupted sleep and vitality, constitutes a type especially amenable to this remedy. The cardiac phenomena accompanying this condition need not be related as they are so well known. If one-third to one-sixth grain doses are given in these cases, it is the rule to see the difficulties mentioned disappear, and a degree of normality reinstated amounting practically to health.

In more advanced senility, characterized by retrograde changes in the venules and associated degenerations, and in which the *arcus senilis* is established, where the premonitory phenomena of apoplexy occur and are indicated by such marked symptoms as confusion of the intellect, incomplete aphasia with facial and other partial but transient palsies, the drug is, *contrary to usual belief*, indicated. This position is assumed after years of careful observation, with results that can not be disputed. The symptoms mentioned are due almost entirely to degenerative changes of the walls of the blood vessels. The vasomotor constrictors have failed in their function and that condition so essential to normality—*circulatory equilibrium*—is lost. The peculiarity of the venous system in having the capacity for containing the entire volume of blood in the body is here well shown, and the tension and pressure, always present in this condition, ruptures the altered radicals, as well as interferes with the phenomena of nutrition. The indications for treatment are plain, both from the mechanical and vital standpoint; restoration of the weakened heart, as far as possible, and especially of the vasomotor tone. This, this remedy accomplishes, and in so doing, the circulatory equilibrium is established and the distending forces upon the friable venules proportionately removed. Again, nutrition is rendered possible and life prolonged under the influences of the drug. Today there are living individuals who have enjoyed immunity for from one to three years from symptoms which had long ago threatened destruction.

Another type of senility is constituted by albuminurics, who furnish examples of cyanotic kidney and who, with the usual concomitants of age, are additionally exhausted by the loss of albumin. This form of albuminuria greatly improves under the proper use of the remedy, and gain of flesh, strength and comfort is assured and pronounced. A typical instance is that of a gentleman, 67 years old, who, during the early summer of 1895, suffered from an advanced state of this condition. The surcharged venous system was marked and the loss of albumin such as to engender great weakness. Disability from this latter was almost total and he was invalided. He has been, and is taking, thrice daily one-quarter grain doses, and notwithstanding the occurrence eleven months ago of sarcoma of the tonsil, which is treated by fragmental removal as occasion demands, he is so far bettered as to be able to comfortably engage in the lighter duties of every-day life. Fatty or primary degeneration of the cerebral cortex, if treated in the incipient stages, seems to be checked for considerable lengths of time.

The muscular weaknesses and vasomotor phenomena of those who recover almost entirely from hemiplegia except in these particulars and whose cardiac tone remains impaired, are much benefited.

Its use in overcoming the vasomotor element of shock and in proper cases of disease requiring capital surgical procedures, in which by reason of a poor circulatory system an anesthetic is dangerous, has been successfully tried in a limited number of cases, but sufficiently to prove its value. The circulatory crisis of acute disease, such for example as is encountered in acute lobar pneumonia, can be overcome, and the author has twice within the last few months so done by administering 2 grains of this alkaloid within two hours. Sufficient has been adduced to permit of the following conclusions:

- 1, Digitalin (German, pure, Merck) is a derivative of digitalis, not contaminated by other active principles;
- 2, it possesses a uniform and unvarying strength;
- 3, it is relatively free from that property which produces gastric irritation;
- 4, is a powerful stimulant to the whole cardiac apparatus;
- 5, is a reliable and pronounced stimulant of the vasomotor system;
- 6, it does not develop cumulative action;
- 7, its adult dose ranges from the one-tenth grain as a minimum to one-half grain for a maximum.

TRUE (IDIOPATHIC) ANGINA PECTORIS. ITS ETIOLOGY, PATHOLOGY AND THERAPEUTICS.

Read by title in the Section on Practice of Medicine at the Forty-eighth Annual Meeting of the American Medical Association, held at Philadelphia, Pa., June 1-4, 1897.

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Case 1.—Mr. E., a merchant from early manhood, habits excellent, possessed of a fine constitution, never seriously sick, 60 years of age, consulted me in reference to a severe paroxysmal itching in his arms, vertigo, and torpid liver; these discomforts yielded to a simple line of treatment addressed to his liver, viz., frugality both in reference to the quantity and quality of his food, and much time in the open air. A few months afterward I was called to see him, in the early hours of the morning, on account of a severe and sudden paroxysm of bronchial and cardiac asthma. I found him almost cyanotic, with the most characteristic symptoms of asthma, and a scarcely perceptible and irregular pulse. The symptoms yielded readily after a hypodermic of morphia one-third gr. and atropia one hundred and twentieth gr. This was his first asthmatic paroxysm and there was no history of it in his family; he had only slight returns of it, but often from slight causes would have temporary palpitation of the heart, with profound disturbance of rhythm, but no evidence of organic disease. He also had great distress in the precordial region, agonizing pains over the left chest and down the arm. These paroxysms were traced to indigestion, worry, walking rapidly up hill, close confinement to office work, etc. I advised him to take a trip to California, be much in the open air, be prudent and frugal in his food, and give special attention to his bowels and the state of his liver. I furnished him with a written description of his condition, my diagnosis of the pathology involved and therapeutic indications for its treatment, so that in the event of having to call in medical aid, the physician could come to a quick knowledge of his needs. He first went to New York City and I advised him to call upon Dr. Austin Flint while there, show him my paper and request him to make a critical examination of his condition, especially of his heart, to see if there was any organic disease that I had failed to discover. A very thorough examination was afforded and Dr. Flint also had an opportunity to see my patient in one of his bad paroxysms; he endorsed the opinion expressed in my paper. Mr. E. was soon sufficiently relieved to start on his trip, was absent three months without any return of the paroxysm, and when he returned to Nashville had apparently recovered. He soon resumed his mercantile habits—close attention to the details of office business in an over-heated room, but little outdoor exercise, liberal indulgence in rich viands of the table, with recurrence of indigestion, paroxysms of palpitation and pectoral distress. I visited him one morning and found him cheerful and comfortable; he said that when seized with one of his spells the distress was so great he felt that one moment more would cause his death. This caused me such anxiety that I made an unexpected visit at 9 P. M.; he answered the door in person, expressed surprise at seeing me and said he "had not felt so well for several months." On my leaving he at once retired; his son occupied a bed in the same room and during the night was aroused by his father who remarked that he had gone into the library to see what time it was and found he had been sleeping two hours and was feeling so well he would not need any of the doctor's composing remedies. In about fifteen minutes his son thought he heard him move and raised up in bed to see, but as his father seemed to be asleep he gave himself no further concern. Early next morning the family servant came in, thought the old gentleman was very quiet, and found he was not only dead but rigor mortis was fully established. It was my opinion that

he died when his son heard him move fifteen minutes after twelve o'clock, and that his death was instantaneous, for the covers of the bed were not disturbed.

Case 2.—Chancellor S., a man of fine constitution, but delicate from studious habits, little exercise in the open air and torpid liver, was about 65 years of age; the pathology and symptoms of his sickness gave a clinical history parallel to that of Mr. E.; he died almost as suddenly. He had passed a quiet night, waked up at 4 A. M., and was dead in less than fifteen minutes, of a paroxysm of angina pectoris. He was not the subject of any organic disease of the heart or blood vessels, but in my opinion was poisoned with the product of mal-disintegration of the worn-out albumins of his own body—auto-intoxication.

Case 3.—Judge H., 55 years of age, had never been seriously sick, inherited a good constitution, was called upon to perform heavy and responsible duty under very discouraging circumstances: the needs in reference to his own health were neglected, his liver was torpid, bowels constipated, complexion sallow and mind depressed; after exposing himself one evening to inclement weather he was seized with a severe paroxysm of asthma—of bronchial tubes, diaphragm and heart—with intense pain in the left chest, shoulder and arm. His condition was so critical that I administered, hypodermically, morphia one-third gr. and atropia one one-hundred and twentieth gr.; this gave quick relief and he was soon asleep. There was no asthma afterward, but after three weeks he had seizures of the heart, with all the symptoms of angina pectoris, and died very suddenly in one of them. There was no organic disease of the heart or arteries.

Case 4.—Mr. F., 50 years of age, is the subject of many paroxysms of angina pectoris; he has a delicate constitution, a sensitive nervous temperament, is intense in application to business and sleeps badly. His seizures come suddenly with intense precordial and substernal pains reaching to the left shoulder and to the elbow, and with a cord-like binding sensation around the chest, labored breathing, dry tongue and fauces, cold extremities, pale face, distressed expression, pulse scarcely to be detected, a sense of impending death, totally helpless, accumulation of gas in the stomach and intestines. He can not endure to be moved, and any imprudence in food, emotional worry, or other strain upon the nervous system will provoke a paroxysm. There is no organic disease in the heart or blood vessels.

Case 5.—Mr. G. has for many years been the subject of angina pectoris. The seizures are sudden and he falls wherever he may be: can not be moved, is cold, pale, visage haggard, pulse irregular, rapid and scarcely perceptible, great precordial distress extending to the left shoulder and elbow. The relief comes as suddenly as the seizure: sometimes the attack is short, at other times lasts three or four hours, or longer; large quantities of gas in the stomach and intestines are always developed. He is torpid in his liver, while constipation and indigestion accompany a paroxysm. The exciting cause is imprudent indulgence in food.

The above cases furnish material for making the distinction between true and false angina pectoris; all systematic writers make this classification. Trousseau in his "Clinical Medicine," calls the true angina pectoris "idiopathic," the false "organic." We eliminate all organic disease of the heart and arteries from the discussion—fatty infiltration, fatty degeneration, stenosis of the gateways of the heart, valvular disease, hypertrophy and atrophy of the walls of the heart, dilatation or contraction of its cavities, atheromatous conditions of the heart or aorta, etc. These diseases may complicate true (idiopathic) angina pectoris and any further mention I make of them will be only as complications.

I claim that true (idiopathic) angina pectoris is a neurosis and may express itself in many forms—epilepsy of the heart, tetanus of the heart, asthma of the heart, chorea of the heart, syncope of the heart. The etiologic factor makes its impress upon the nerve centers that control the heart, arteries, capillaries and veins. The behavior of the muscles concerned in the circulation is determined by the exciting and immediate cause operating on the nerves and the nerve centers.

The etiology may be reflex from the alimentary canal, profound emotion either of pleasure or distress even from a dream; the most prolific cause is from auto-intoxication. We have in the manifold pathology included under the term *nremia*, a generic term given to the product of mal-disintegration of albuminoids—gout and rheumatism claim this form of paternity. When the kidney is afflicted with Bright's disease, and fails to excrete or there is a failure of any other emunctory in its excretory duty, the blood is loaded with these impurities; they act as irritants to the nerve centers and develop many forms and degrees of ataxia—the *coma vigil* of fevers, *subsultus tendinum* and the different convulsions; many varieties of ataxia are expressed in the heart, arteries, capillaries and veins when the vaso-motor nervous system is irritated with these impurities. Ramborg says the abuse of tea, coffee, tobacco, etc., or reflex action from the stomach or intestine, uterine and ovarian disease, or great and continued strain of the mind or emotions, are at times the cause of angina pectoris. The great John Hunter was the subject and finally the victim of this disease. He was in the habit of saying that his life was suspended upon any emotional whim that might happen to him. Sedentary life in close confinement and overheated air, and too liberal indulgence in rich food are the things that predispose to, and are often the exciting cause of angina pectoris; sometimes heredity is a factor.

We proceed now to analyze this neurotic disease: There are three essential factors pertaining to the nervous system concerned in the rhythmic muscular contraction of the heart—sympathetic, inhibitory and sensory (muscular-sensation); each of these is represented in maintaining physiologic equilibrium, not only of the heart but also of the arteries, capillaries and veins; it is through this nervous mechanism (nerve centers, nerves, ganglion and subsidiary nerve cells), that the katabolic force is dispensed and applied to the muscular tissue. According to the stimulus applied to the sensory factor, we will have a regular and normal rhythm, or some form of ataxia (a rapid or slow, a regular or irregular, high tension or low tension pulse), indeed all the modifications of the circulation are dependent upon and due to these nerve centers. In any case, when the sympathetic nerve centers prevail and cause the death of the patient, the heart is contracted, is empty; its muscular tissue is in a state of tonic spasm (systole), the inhibitory centers are practically paralyzed (diastole), and from its similitude we may call it a cramp colic of the heart, the arteries or the capillaries, for it is irregular peristalsis and may lead to a tonic or clonic spasm and closure of their lumen; on the other hand, if the sympathetic nerve centers from whatever cause are inadequate to balance the katabolism of the inhibitory nerve centers, the patient dies in diastole, with the heart cavities full of blood.

This want of physiologic harmony is often caused by auto-intoxication, a torpid liver and a failure of its disintegrating function in reducing the refuse albumin to urea; this establishes a diathetic condition which may show its presence under any trivial exciting cause, in a paroxysm of prurigo, asthma of the bronchial tubes, diaphragm, heart, etc.; all of these conditions are the offspring of the same parentage. When death is caused by angina pectoris the heart may be in systole, diastole, or *in statu quo*, according to whether the sympathetic or inhibitory nerve cen-

ters are affected, or both are alike impressed with the toxic cause, at the same time and to the same degree.

We give another path by which angina pectoris may be and often is caused; it is known that the heart does not receive its nutrition directly from the blood passing through its cavities (auricles and ventricles), but that there is a special provision made for its nourishment—the coronary arteries, capillaries and veins; and the same system of centers, nerves and ganglia (sympathetic, inhibitory and sensory) determine their action. Any cause that breaks the harmony of these katabolic forces, will interfere with the blood supply for the nourishment of the heart tissue; every grade of ischemia or passive congestion may be present, nutrition be impoverished, potential or stored force fail and molecular and dynamic work be suspended; gradual fibroid stenosis of the walls of the coronary arteries (senility), regurgitation of the blood to the left ventricle (from valvular disease of the aortic opening), preventing the adequate supply of blood to the coronary arteries; spasm of the muscular walls of the coronary arteries may make a complete closure of their lumen, giving syncope of the heart. If the closure is only partial, nutrition fails to the same degree, entailing a corresponding asthenia.

I wish here to demonstrate the nature of the homogeneous substance of which the capillaries are made and claim that they have the function of contractility, which is a vital property, while elasticity is a mechanical and physical property. All muscular tissue is composed of sarcois cells and these are built of sarcois molecules, and each molecule is a muscle endowed with the property of contractility. Nutrition is the highest assimilating function and consists not only in storing matter, but also of force (potential). Each molecule of a muscle is thus made vital with tonicity that is made manifest in contractility through metabolic disintegration. In order to realize this vital function it must be brought into relation with the nervous system, which is built up with nerve-cells made of nerve plasma, and this of molecules as its ultimate histologic analysis. We see and study muscular and nerve organs *en masse*, but when we analyze these two tissues in order to realize contractility, such as we have in the walls of the capillaries, the membrane of which it is made must consist of these two tissue molecules, viz., nerve and sarcois molecules. The nerve bioplasm, which forms a part of homogeneous membrane, is endowed with sensory, motor and inhibitory properties, precisely as we have claimed is due the nerve centers, nerves and ganglia which determine the rhythm of the heart and arteries.

If I am correct in this claim, we may have a systemic capillary spasm closing their lumen, which may be partial or general, constituting a *vis a fronte* obstruction and damming the blood back into the arteries and heart. In this way we may have a peripheral or visceral condition that will realize one variety of angina pectoris. This peripheral high tension of arterioles and capillaries will bring the heart and large arteries to a standstill, overfilled with blood, in which case death may be immediate. It produces a pathology in the walls of the capillaries and arterioles that simulates an epileptic seizure of them, or the inhibitory nerve influence may prevail over the sympathetic and then the reverse condition will be present, or the sympathetic (systole) and inhibitory (diastole) may be impressed by the exciting cause at the same time and to the same degree; then we will have their walls

in the condition of *in statu quo*—this simulates the cataleptic state.

What I claim is: That true (idiopathic) angina pectoris should be understood to be a generic term, covering many causes and many pathologies, but in every case it is a neurosis, in which the nervous system which determines and regulates harmony in the mechanism for the circulation of the blood, has been violated by some pathogenic cause. When we apply the above facts to the coronary arteries, arterioles and veins, we have another angina pectoris in which syncope is the pathologic factor. Syncope of an organ causes the suspension of the function of the organ; this is well illustrated in that form of aphasia (word blindness) in which the arteries, arterioles and capillaries supplied to the supra-orbital convolution of the brain are seized with a tonic spasm, and when it is relaxed and blood is again supplied to them, their syncope is relieved and their function is reestablished. The same behavior of nerve forces (sympathetic, inhibitory and *in statu quo*) which I have mentioned in other forms of angina pectoris, pertain to the coronary arteries, capillaries and veins. When the spasm of the coronary blood vessels is relieved, by whatever cause, and the blood again flows through them, the heart resumes its function just as we have seen in paroxysmal aphasia. The fibroid change in the walls of the coronary blood vessels in the senile heart, which is one of the inheritances of age, leads to a progressive diminution of their lumen and to a gradual ischemia, that leads to a formidable complication of idiopathic angina pectoris, but this fibrosis of senility is not strictly an organic disease; as its genesis is physiologic, we will reckon it as making the heart more vulnerable to the causes of idiopathic angina pectoris.

Porter has recorded experimental investigation in closure of coronary arteries of dogs. He found that complete closure was followed by arrest of the heart pulsations; but if one artery or a branch of it was closed, then there was irregular action or cessation of function, corresponding to the region of ischemia—the branches of the coronary arteries are physiologic, if not anatomic, terminal branches; on removing the obstruction the normal action of the heart was restored.

Résumé.—Angina pectoris, false and true:

1. The false—all forms of organic diseases of heart, arteries, capillaries and veins.
2. The true—idiopathic (functional).
3. The blended type—when the organic is a complication of the idiopathic.
4. The true angina pectoris is a neurosis and may express itself in many forms.
5. The nervous mechanism involved contains three physiologic factors: *a*. Sympathetic centers and nerves—systolic (efferent). *b* Inhibitory centers and nerves (sp. accessor)—diastolic (efferent). *c*. Sensory centers and nerves (vagus)—muscular-sensation (afferent).
6. Each of these physiologic factors is represented in the vaso-motor system of the centers, ganglia and nerves of the heart, arteries, capillaries and veins, and their physiologic equation determines the rhythmic harmony of the circulation in health.
7. From a chronic cause, a diathetic condition which establishes a vulnerability in the nervous system is produced—as in the mal-disintegration of nitrogen compounds and their failure of excretion, or some error in the product of the ductless glands, etc.—which on the action of some exciting cause will determine an explosive paroxysm of systole, or of diastole, or of

both at the same time, locking the sarcois substance *in statu quo*; this may be of the heart, arteries or capillaries, or of all at the same time; and in many cases the diaphragm and bronchial tubes are similarly impressed.

8. Symptoms of sensation: breast pang, dyspnea of the heart, sudden onset of precordial agony, pain extending from the heart to the left chest, shoulder and arm, sometimes to the right chest and shoulder; constriction of chest, an overpowering sense of impending death (all movements are dreaded lest they may precipitate that result), cold skin, deadly pallor, tension of arterial walls so that the pulse is arrhythmic, diminished in strength and volume; the paroxysm often lasts a few seconds, minutes or sometimes is protracted; in many cases eructation of gas is present and often a quantity of pale urine is passed.

Treatment.—This is properly divided into three indications: 1. Curative—to treat the predisposing cause (the diathesis). 2. Preventive—to avoid all exciting causes. 3. Emergent—to relieve the immediate paroxysm.

1. Study the conditions that have produced the diathesis—heredity, bad habits and environments, but especially the quality and quantity of the food, and fortify the patient against them.

The most fertile cause of this diathesis is the quantity of fulminating food—that which is rich in nitrogen; therefore, it is best to refrain from the use of a meat diet; fruits are especially indicated, and much outdoor air, change of climate, pleasant companionship, etc.; in cases having any suspicion of a syphilitic element, bichlorid of mercury and iodid of potassium are indicated; these remedies, also Fowler's solution of arsenic are of curative value in many cases of auto-intoxication from errors of metabolism and the products of the ductless glands.

2. The second indication of treatment is to avoid the exciting cause of the paroxysm (indigestion, torpor of the liver, constipation, auto-infection from the intestines), and look especially after the disintegrating function of the liver, in order that its metabolism of nitrogenous compounds may be reduced to urea—the physiologic diuretic; avoid physical strain, mental strain, emotional strain, and be discrete in personal habits and hygiene; be much in the open air, with invigorating environments and pleasant social contact; repetition of physical, mental or emotional activity begets automatism; therefore, vigilance with reference to these physiologic habits should be practiced, before they have cut grooves of activity into the nervous system.

3. The third indication of treatment is to relieve the patient from a paroxysm. The remedies do not aim to modify structure but to influence the function of the vaso-motor nervous mechanism. The following catalogue is a partial list of the medicines from which the physician selects: morphia, atropia, digitalis, strychnin, strophanthus, methylene-blue, veratrum viride, nitro-glycerin, nitrite of amyl, nitrite of sodium, hyoscin hydrobromate, etc., to be administered hypodermically when the emergency is great or by inhalation when practical.

We have in this list drugs that are prominent in their therapeutic virtues, from three points of view—astolic, diastolic and analgesic. Digitalis is eminently fitted to improve tonicity, regulate the rhythm of the heart, arteries and capillaries; it acts alike on the nerve mechanism, both of systole and diastole, it pro-

tracts the time of rest in the events of a rhythm and thus promotes the nutrition of their walls. But it is not safe to give it until the tonic spasm is relaxed, whether it is in the heart, arteries or capillaries; it would be equivalent to give ergot in parturition when the uterus or its cervix or the perineum is in a state of spasm, or to give medicine to promote peristaltic action of the intestine when a section of it was locked in a spasm of cramp colic, or to give strychnin in tetanus. When the condition justifies its use, it is without a rival in improving the rhythm of the heart and blood vessels and in securing relief to the cardio-respiratory distress.

Strophanthus improves the systole and diastole of the heart similar to digitalis, but in less degree; it differs from it in not impressing the arteries, capillaries and veins; therefore, it is indicated when the heart needs a spur to improve the vigor of its action and the lumen of the blood vessels is not offering any resistance.

Strychnin is another heart tonic, but it is so only as it improves the tonicity of the entire nervous system, and causes quick response in converting potential into kinetic dynamics; this is soon exhausted unless assimilative metabolism is sufficient to compensate the over-draught occasioned by the strychnin. These three remedies, strychnin, digitalis and strophanthus are invaluable cardio-vascular tonics with some latitude of difference in their therapeutic value; but when administered with proper discrimination of the pathology involved, they make more stable the results obtained by the next class of remedies; ethyl nitrite (nitrous ether), morphia and atropia, nitrite of amyl, nitrite of sodium, nitroglycerin, methylene-blue, hyoscin hydrobromate, etc. These fulminant remedies are complex in their molecular construction, unstable chemie equilibrium, and, notably, nitrogen is one of the elements present and the one that determines their wonderful physical and dynamic properties. These substances are remedies of great value, for quick results, in relaxing the high cardiac, arterial and capillary tension, whether it be that of systole, diastole or *in statu quo*. They reach their therapeutic virtue through the sensory pathway of the vagus, its ganglia and its center in the medulla. This constitutes one of the special distinctions of this class of remedies. Whenever there is a tonic or clonic spasm, whether it is in the heart and blood vessels, or the intestine, or any other viscus with muscular walls, relief comes from remedies that are analgesic (sensory-pathway). They are classed as stimulants to vaso-motor mechanism, but they are only so by unlocking the tonic muscular contractility, either systolic or inhibitory, through the sensory mechanism; then the rhythmic function is re-established. Nitroglycerin is possibly the best of the class, while not so prompt as nitrite of amyl, its effect is more enduring. A proper blending of the medicines above discussed, according to their therapeutic virtue, a general nerve tonic (strychnin), a vaso-motor tonic (digitalis) and the analgesic remedies (nitrite of amyl or nitroglycerin, etc.), give us theoretically, all that the most critical analysis of the indications involved and demanded in the treatment of the paroxysmal factor of idiopathic angina pectoris. I have at this time a patient, a woman aged 50 years, who at various times for the past ten years has been the subject of this disease. Her paroxysms realize all the characteristic symptoms, often with severe asthma and ataxia of the diaphragm, which has been relieved with morphia and atropia hypodermically; within the past

month she was seized with one of her paroxysms but one more urgent and critical; I administered hydropically, a combination dose of strychnin 1-40 gr., nitroglycerin 1-100 gr., and digitalin 1-100 gr., obtaining relief and very much more satisfactory results than the morphia and atropia had previously given.

ATROPHIC RHINITIS.

CANDIDATE'S THESIS FOR THE AMERICAN LARYNGOLOGICAL ASSOCIATION.

BY JOHN EDWIN RHODES, A.M., M.D.

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Atrophic rhinitis is a chronic inflammation of the lining membrane of the nasal cavities resulting in atrophy of tissues, with occasional corresponding changes in the bony structure, and the formation of crusts. It is frequently accompanied by ozena.

While all authorities are practically agreed as to the final sclerosis of the tissues in atrophic rhinitis, there are differences of opinion among observers as to the exact pathologic process by which such a result has been brought about. Is the atrophic condition essentially such from the beginning or is it preceded by hypertrophy? Manifestly, opinion founded upon clinical observation must be surrounded with difficulties. Patients are usually seen during some stage of the process and are seldom under observation from the inception of the disease; often the disease has extended over many years and a satisfactory history of it during the early stages can not be obtained. Occasionally observers have been able to follow the process from its beginning. Thus Schäffer found cases in which there had been hypertrophy for eight or ten years which was followed by atrophy. It is not uncommon to find in one side of the nares, hypertrophy of the turbinates and in the other atrophy; there frequently is also within one nasal cavity hypertrophy of the middle turbinated with atrophy of the lower, or vice versa—a condition observed also by Capart¹ and others. Again, it has been common, on inquiry, to find that the obstruction of the nasal cavities was the predominant early symptom. In our histories of 142 cases of private patients, I find one in which we observed the process from its inception. The patient was a girl, aged 15. She was only treated at very long intervals, so this could have had no bearing on the result. In this case the hypertrophy was well marked when the case first came under observation. Within two years atrophy had taken place, which subsequently became extreme. More² marked the coincidence of atrophic and hypertrophic rhinitis in eighteen out of eighty cases. I have but recently seen a well-marked case in which there was hypertrophy of the inferior turbinated upon one side and atrophy well advanced upon the other. In our list of cases I find several in which similar conditions existed.

J. N. Mackenzie³ believes that in this form of rhinitis we have the concluding stage of nasal inflammation, and that it is usually the sequel of a hypertrophic condition. In support of his position he traces the pathologic processes from an intumescent condition, resulting in the temporary obstruction of one or both nares. At first there is an engorgement of tissues mainly confined to the erectile spaces, with perhaps a slight cellular infiltration of the submucous tissues and an unchanged epithelium. When permanent swelling of the membrane has taken place the intercellular walls are changed into a dense

fibrous structure, encroaching more and more upon the erectile spaces, and a fibrous deposit in the submucous tissues compresses the glandular elements and gradually obliterates them. These conditions also invade the superficial layers, and the blood supply is interfered with, causing destruction of, or changes in the epithelial layer. In the obliteration of the erectile spaces he also observed in two specimens the presence in the spaces of masses of round cells; also in certain cases the formation of parietal thrombi and occasionally bulbous processes projecting from the walls of the cavernous sinuses. Finally the histologic condition seems to be a gradual atrophy of the different layers of the membrane, and as has been shown in the studies of Eugene Fränkel and others, we have presented to us a cirrhotic process in which the mucous membrane shrinks away by being changed into a fibrous connective tissue.

Browne,⁴ while willing to accede to a quite generally antecedent hypertrophy, in which there is an increase of the connective tissue elements, which culminates in fibroid shrinking, is of opinion that there are cases in which the process is atrophic from the beginning. Seiler's views coincide with this statement. Sajous⁵ is satisfied that atrophy is an occasional result of hypertrophic rhinitis, and that the pressure of dried secretions on the membrane is an important factor in the production of atrophy. The pressure of dried secretions can not be a constant factor, because in some cases of atrophy the secretions are either fluid or are easily removed. Atrophy has already begun in many cases and proceeded to quite an advanced stage, in which dried secretions have not been a feature. Over much of the membrane, especially at the anterior portion of the external wall of the nares, the crusts in many cases have never formed. It does not seem possible that, frequently at any rate, there could be sufficient pressure to interfere in any marked degree with the vascularity of the tissues. The increase of the crust takes place upon the surface of the membrane, and as it increases it is forced further from the membrane and the extreme, dry, contracting portion is upon the external free surface of the crust, the under part being usually moist and semi-liquid.

Delsaux⁶ believes that a simple chronic rhinitis is the precursor of atrophy, and does not admit that hypertrophy always precedes it. Ingals⁷ favors the theory that in most cases atrophy is the result of a previous hypertrophy. B. Fränkel⁸ also states that in most cases atrophy is the result of a preceding hyperplastic condition. Cohen⁹ affirms that in these cases we early find hypertrophy. A similar belief is expressed by M. Mackenzie.¹⁰ Abel¹¹ believes the *bacillus mucosus capsulatus*, causing a simple catarrhal inflammation, leads to primary hypertrophy and then to atrophy. On the other hand, Bosworth¹² does not admit that hypertrophic rhinitis is in any case the cause of the atrophic, but that the morbid changes are atrophic from the outset. Capart¹³ also believes that the disease is atrophic from the beginning and not the result of a preceding hypertrophy.

It was formerly quite generally believed that the syphilitic or strumous diatheses played an important rôle in the etiology of the disease. It is probable that these conditions may increase the susceptibility, and exercise some influence in its production, but the affection, in the majority of cases, develops in an otherwise perfectly healthy individual.

B. Fränkel¹⁴ says that a majority of cases depend on a dyscrasia, but recognizes the fact that there are other cases in which no such condition exercises any influence in developing the disease. Schäffer¹⁵ goes farther than this in stating that ozena is always due to struma or syphilis, hereditary or acquired. Clark¹⁶ has recently made an examination of 100 phthisical patients and 73 of them showed signs of atrophy. Strübing does not consider that predisposition is a factor of much importance, however, as perfectly healthy people get the disease. Beverly Robinson¹⁷ affirms that the presence of syphilis, struma or herpetism, are diathetic conditions which are efficient causes in many of the symptoms observed in this form of catarrh. Cohen believes that it is sometimes engrafted upon the strumous diathesis. M. Mackenzie, I believe, expresses the general sentiment of investigators, at present, in saying that the disease is not constitutional in the true sense of the word.

The statement of Abel that the disease is infectious is not corroborated by clinical experience, and animal experiment has proved that the crusts possess no infectious property. Neither is the disease hereditary nor congenital as shown by Zuckerkandl, who examined 252 skulls of children without finding a case of congenital atrophy. It can not be denied that we occasionally find two or more members of the same family who have atrophic rhinitis.

Bacteriology has been invoked to settle the question in regard to the odor of ozena as well as the etiology of the disease. Löwenberg's¹⁸ investigations showed the constant presence in the crusts in ozena of a highly pathogenic "cocco bacillus," large bacilli in short chains, or in masses, appearing as diplococci. Hajek,¹⁹ in his experiments, found immense numbers of bacteria of four or five varieties, in the secretions of ozena. In seven out of ten cases he found the pneumonia bacillus of Friedlander. In seven out of ten cases he cultivated a bacillus which he names the "bacillus foetidus ozenæ," which he believes causes the odor of the disease. The difficulty of mechanical removal of crusts is an important factor in the production of the odor, as it affords the bacillus ample time to develop, an assertion favored by the statement of Strübing, that fresh ozena secretions to not smell, and the odor is developed only when the secretion dries. The bacteria do not cause the disease, but simply the odor, and no bacteria are found in the membrane itself. Abel²⁰ examined sixteen cases of pure ozena in Strübing's clinic and decided that the cause of ozena was a well characterized bacillus. Since that time he has examined 100 cases and always found this bacillus. This is the same bacterium that was found by Löwenberg and Hajek. Fränkel believes that the odor is due simply to decomposition of the stagnant secretions. M. Mackenzie accepted Fränkel's earlier theory that it is due to fermentation. Krause attaches great importance to the degeneration of newly formed mucous cells and the production of fatty acids. Schuchard and Valentin affirm that atrophied membrane throws off a secretion which dries rapidly, becomes offensive, and emits the peculiar odor. This seems to be a purely speculative theory, as fetor may exist without atrophy; indeed, it sometimes occurs with hypertrophy. Baurowicz²¹ made an examination of fifty cases for bacteria. Fifteen of these were cases of atrophy, of which seven had fetor. In the fifteen cases only, he found the capsule bacillus of Löwen-

berg and Abel. As these were not found in other cases where suppuration or necrosis had taken place, they can not be considered the result of putrefaction. Belfanti and Della Vedova,²² from their experiments at the Institute of Serum Therapy, Milan, believe ozena is caused by an attenuated bacillus identical with that of Löffler but with virulence much lessened; this was found not only on the surface of the mucous membrane and in the exudate, but beneath it, and they believe it causes a chemical change in the secretion and a resulting atrophy. Vansant,²³ in a series of 100 cases, examined with special reference to the Klebs-Löffler bacillus, found twenty having chronic atrophic rhinitis. These bacilli and others were found in twenty-six different cases, of which eleven were atrophic. The presence of the bacilli was attributed to infection, a pathologic condition in the nasal chambers providing a suitable soil.

In other cases it is undoubtedly true that neglected or improperly treated catarrhal inflammation is the primary cause for a final atrophy. Certain anatomic and other conditions of the nasal chambers may possibly favor catarrhal inflammation, as, for example, abnormal patency of the anterior naris, and the "upturned nose," mentioned by Browne; deformities of the nasal cavities, congenital or acquired, which interfere with a blast of air sufficient for the removal of secretions; the neglect of children to blow the nose; the quality of the inspired air, or anything which lessens the sensitiveness of the membrane to the presence of foreign substances.

In our records of 142 cases in private practice, 80 were males, 62 females; the youngest was 6 years of age, the oldest 81; 58 were between 25 and 40 years of age, 37 were between 15 and 25, only three were under 10, 15 were between 40 and 50, and 8 were between 60 and 65. Of these cases, 55 complained of fetor, more or less marked. In 47 the sense of smell was impaired, in 20 there was anosmia. In 28 of the cases the hearing was affected.

The preceding history of the catarrhal condition before presenting themselves for treatment showed that they had suffered from seven to twenty-five years in seventy-two of the cases, and less than two years, in twenty-five. Only eight of the cases showed signs of tuberculosis, one of them being laryngopulmonary tuberculosis; in two there was a distinct scrofulous history; in five there was a history of syphilitic infection.

Symptoms.—Patients otherwise in excellent health may have atrophic rhinitis, with, perhaps, a history of catarrh extending over a period of months or years. In other cases this prolonged catarrhal condition has affected the general health. The main symptom is, in most cases, the formation of crusts in the nasal cavity, which are removed with difficulty. There is sometimes a history of stopping up of the nose, which is relieved when the crusts have reached a sufficient size to be expelled by vigorous blowing of the nose. Sometimes there is a sensation of dryness or irritation in the nose which the patient may try to relieve by picking or scratching the anterior portion of the septum and perforation may have resulted from the habit. A quite frequent symptom, as shown by our case records, is frontal headache. There is occasionally simply pain across the upper part of the nose. Hoarseness and a hacking cough are common. In many cases the hearing is affected, in some there is marked deafness. The sense of smell is frequently

obtunded or lost, and the sense of taste may be much impaired. Bleeding from the nose and occasional severe epistaxis are not infrequent symptoms. Sometimes there is complaint of dryness of the throat and naso-pharynx, although this condition may often be present and cause the patient little annoyance. Sneezing is not a common symptom. In a large majority of cases, however, the predominant symptom is the excessive discharge, either semi-liquid in character, or, usually, formed into crusts. Involvement of the accessory sinuses occurred only once in our 142 cases.

If ozena be present the odor may be imperceptible to the patient even in the most extreme cases. He usually, however, has either recognized the condition himself or has been informed of it by his friends. The odor is characteristic and once it has been detected can thereafter be readily recognized. In most cases the odor is perceptible only in close proximity to the patient, but I have seen cases in which the stench permeated the atmosphere of the entire room and remained long after the patient had quitted the apartment. The crusts vary in color, being a dirty, yellowish white, or brown, or they may be greenish, or almost black in color. They conform in shape to the portion of the cavity from which they have been detached. The outer surface of the crusts may be of a soft consistency or may present a tough, thick, hardened surface. The under surface of the crust is frequently of a soft muco-purulent character. The crusts on being torn away from the mucous membrane sometimes leave a bleeding surface beneath.

The general appearance of the patient may be changed somewhat by unusual broadening of the nasal bone and the alæ may be dilated. If the patient blow the nose vigorously the lessened resistance to the expulsive blasts of air may be readily detected by the sound and is quite characteristic of a roomy nasal cavity. On examination of the nasal cavities, their roominess is at once apparent. In many cases the lower turbinated bodies are so shrunken that the posterior wall of the naso-pharynx is easily seen. The middle turbinated body is quite normal, in many cases; usually it is atrophied, but it may be hypertrophied. Bresgen,²⁴ however, thinks that very often atrophy begins in the middle turbinated body and middle meatus, while the lower turbinated may remain normal. Crusts will be seen adhering to the turbinated bodies and the septum, more particularly at the middle and upper part of the cavity. The membrane is usually paler than normal, but on cleansing thoroughly the parts may become hyperemic for a time, probably from irritation of the cleansing process. The mucous membrane of the pharynx is apt to be dry, and covered with thick, tenacious secretion, and in the naso-pharynx there may be found a blackish crust closely adherent to the vault.

Diagnosis.—In the early stage an inspection of the nasal chambers may not reveal any striking change of the mucous membrane of the turbinated bodies, and the naso-pharynx may be quite normal. Sometimes fetor is present in this early stage. When shrinking of the membrane has taken place to any marked degree, the roominess of the nares becomes apparent, and the characteristic crusts are found. Fetor is present in a majority of cases in this stage. When the stench is a leading symptom, especially if it be found to proceed from one naris, a careful search

should be made for rhinoliths or foreign bodies, after a thorough cleansing of the passage.

In syphilis of the nose there is often a disgusting odor which might be mistaken for ozena accompanying atrophy. There would usually be a specific history, and a careful examination would probably disclose the presence of dead bone or ulceration in the nasal cavities. In these cases, too, the patient is usually conscious of the odor. The odor is removed by cleansing only temporarily, and it quickly returns. Michel's view that ozena is due to chronic suppuration of the accessory sinuses can not be sustained. The discharge in such cases may be accompanied by fetor, which proceeds from one nasal cavity, and the odor is present at the moment of the discharge from the sinus. This discharge rarely remains in the cavity sufficiently long to form crusts. The patient is deeply conscious of the fetor, inasmuch as the sense of smell is not impaired.

Prognosis.—If by a cure we are to understand a restoration of a fibrous structure to the function of the original turbinated body, we shall be obliged to accept the hopelessness of the conditions. I fully believe, however, that, in many early cases, by a vicarious activity of the unimpaired glands and vascular structures remaining in the membrane, the patient can be so nearly restored to his normal condition that symptoms will have been relieved, a restoration of function brought about to a degree, and treatment can be practically abandoned. In all cases relief can be obtained to a greater or less extent, but, in many, persistent treatment must be adopted, vigorous at first but less energetic later on, and persisted in for many months. When the odor has disappeared and crusts have ceased to form it may still be necessary to use some simple toilet daily, or less frequently, for years. As middle life is passed the odor usually disappears without treatment and all symptoms are alleviated. The sense of smell once lost, in these cases, can not be restored. If the hearing has become affected little can be done to relieve it.

Treatment.—The problem in the treatment of atrophic rhinitis is not only to remove the secretions, thus dissipating the odor temporarily, but also to prevent their reformation and to stimulate to a renewed activity those portions of the mucous membrane whose functions have not been altogether destroyed by the atrophic process. In times past the Thudichum douche has had many advocates, but since Roosa²⁵ published sixteen cases in which middle ear disease followed its use very many have abandoned it altogether. Hovell²⁶ condemns it because of the possible middle-ear involvement and the severe, persistent headaches that may be caused by the entrance of the fluid into the frontal sinus. If proper precautions are taken, however, it may sometimes be used with perfect safety. I believe that with the extreme roominess of the nasal cavity in marked atrophy, if a low pressure is used, the head held well forward, the mouth kept open, and an attempt to swallow be refrained from during the douching, the stream will flow into one nostril and out the other freely, and rarely, if ever, finds its way into the eustachian tubes. Simply sniffing water from the open hand through the nasal passages, preferably one at a time, the other being closed by pressure upon the ala of the nose, is better than the douche, because very little pressure is exerted in drawing the liquid to the naso-pharynx. I have usually employed this

method and very rarely have there been complaints of fulness of the ears following the washing. The Birmingham douche, which consists of a cup, with a nasal piece expanded near its opening can be used with comparative safety. The liquid is poured into the nasal passage with the head thrown well back and with the mouth open to prevent the entrance of the fluid into the throat. The head is thrown forward quickly and the liquid finds an easy exit. The whole surface of the nasal passages and the naso-pharynx can be reached in this way. The post-nasal syringe may be used where the crust can not be dislodged from the pharynx and naso-pharynx by the other methods. The coarse spray-producer is strongly recommended by Robinson, who condemns the douche. It may be used with perfect safety. In many cases, however, the patient can not remove the crusts satisfactorily by this method and is obliged to resort to one of the others mentioned. The crusts may be located by inspection and, after softening with spray or otherwise, they can usually be detached readily by means of an applicator wrapped with cotton. Little force should be used in detaching them. It is often advisable to have the patient wash out the nose for several days before attempting to make other applications. The wash should be warm and used by the patient two or three times a day. It is necessary certainly that the nose should be made clean and kept clean; this can best be accomplished by the employment of a wash that will both soften the crusts and disinfect the nasal cavities. The simple alkaline wash, a teaspoonful of salt in a pint of warm water, is a popular household cleansing solution, and quite as effective as some others. A combination may be used as follows:

| | | | |
|-----------------------------|----|----|------|
| Sodii chloridi | āā | 3x | 4000 |
| Sodii bicarbonatis. | āā | 5v | 2000 |
| Sodii salicylatis. | āā | | |
| Sodii biberatis, | āā | 5v | 2000 |
| Misce. | | | |

A teaspoonful in a pint of tepid water makes an unirritating alkaline solution.

McBride²⁷ favors douches and recommends as the best aceto-tartrate of aluminium, a 50 per cent. solution, using a small teaspoonful in a pint of water. Dobell's solution makes an excellent spray for cleansing purposes. A large number of medicaments have been suggested by different authorities, combinations containing sodium salts, carbolic acid, potassium permanganate, boric acid, chlorin water, hydrogen peroxid and others. The following formula has given me more satisfaction than any other. I have had it put up in tablets, one of which, dissolved in from one-half to two-thirds of a glass of warm water, makes a solution of proper strength. This not only cleanses the passages but the thymol destroys the odor:

| | | |
|-------------------------------|--------------------|-----|
| Potassii chloratis. | grs. iiss | 15 |
| Sodii bicarbonatis | grs. x | 60 |
| Sodii chloridi, C. P. | grs. x | 60 |
| Sodii salicylatis | grs. v | 30 |
| Sodii biberatis. | grs. v | 30 |
| Thymol. | grs. $\frac{1}{8}$ | 008 |
| Eucalyptol. | min. $\frac{1}{4}$ | 016 |
| Misce. Make one tablet. | | |

After the nares have been thoroughly cleansed, stimulating or alterative treatment should be instituted, according to the stage of the disease reached, and the susceptibility of the patient. It is here that many different remedies have been used and many methods tried, some with indifferent success, others

with very beneficial results. When the nares are clean I am in the habit of having the patient use a powder like the following:

| | | |
|-----------------------------------|-----------|-------|
| Sodii biberatis | grs. ij | 12 |
| Hydrarg. oxidi flav | grs. ij-v | 12.30 |
| Iodol. | grs. j | 065 |
| Cocain hydrochlor. | grs. iiss | 15 |
| Magnes carb. levis | grs. ij | 12 |
| Sacch. lactis, q. s. ad | grs. 100 | 650 |

The powder is quite impalpable and as it spreads over the membrane it dissolves readily without forming a pasty mass. About one and one-half grains should be used in each naris, two or three times a day. The yellow oxid of mercury is one of the best of the stimulating and disinfecting remedies. The iodol is a good disinfectant and the cocain, suggested for persistent use in this disease by Ingals, is highly recommended. The first effect of the cocain, when locally applied to the membrane, is to cause contraction of the blood vessels and an excitation of the mucous glands. If its use is continued for any length of time there is apparently paralysis of the vasomotor nerves, with dilatation of the blood vessels and increased nutrition of the parts. We have frequently observed slight hypertrophy of the nasal mucous membrane which, under the continued or excessive use of cocain, was greatly increased; and in other cases a simple congestion, without hypertrophy, subjected to the persistent action of cocain, which has resulted in a few months in marked hypertrophy. In the atrophic condition, then, where stimulation of the remaining healthy tissue is sought, we have a valuable remedy in cocain. It should be supplied by the physician and used in small quantities only. A prescription which would enable the patient to obtain it *ad libitum* should never be given. In none of our cases when used in such a formula as given above has it had any decided constitutional effects. We have treated many cases in this way with benefit, and, in two or three, extended treatment has resulted in restoration of the tissues, in appearance at least, to a nearly normal condition.

Among the other remedies that have been suggested in atrophic rhinitis, in various combination are: Berberin muriate, pulverized benzoin, pulverized galanga, pulverized tannic acid, menthol, iodoform, ichthyol, euophen, aristol and thymol. I have recently used in a few cases trikresoliodin, a preparation containing iodine in a free form. It is not escharotic and seems to be a very good antiseptic, stimulant spray. Sprays with a basis of liquid albolene, benzoinol or some other of the oils of a like character are often useful, especially if there be difficulty in removing the crusts, or in cases where their removal leaves a raw or bleeding membrane. There may be combined with it for disinfecting or stimulating purposes, carbolic acid, min. iij to v, to the ounce; menthol, grs. ij to x; oil of cloves, min. iij to x; oil of cinnamon, min. v to x; thymol, grs. $\frac{1}{8}$ to iij; ichthyol, grs. v to x, or other medicaments. The weaker solutions should always be used first and the strength should never be enough to cause much discomfort. It is well that these patients be treated by the physician two or three times a week for a time, in order that there may be certainty as to cleanliness, and as to the effect of the remedies prescribed. Thereafter less frequent consultations are advisable, and when once a proper line of treatment has been established the patient need be seen at rare intervals only.

Gottstein's tampons may be placed in contact with the mucous membrane and allowed to remain for a time daily. These are said to act as an irritant and stimulant to the membrane, and to destroy the odor. Franz Bruck²⁸ considers it the easiest method of treating ozena, but says that with tampons impermeable to moisture the effect is not so good. Hydrophil cotton is preferable, because it excites secretion and absorbs it. Inasmuch as only the dry secretions smell, the tampon must be renewed before the secretions again become dry, every two or three hours being sufficient in light cases. In the severer, he suggests that hydrophil gauze be introduced by a bougie, over the end of which the strip is folded, but it should not be large enough to prevent nasal respiration with the mouth closed. When this becomes filled with secretion it can be blown out and replaced by the patient. The effect is that an increased blood supply warms the air, the gauze catches the irritating particles and the inspired air is more freely moistened. I have recently made use of strips of surgeon's lint, introduced with flat probe, in a similar manner, and believe patients have derived much comfort from the treatment. Strübing²⁹ considers the treatment of great value, but he medicates the tampons with creolin, aristol, sozoiodol, etc., and recommends steam for cleansing purposes. Sängner³⁰ advises a curious method of treatment by means of a U shaped clock spring, with zinc plates attached, trimmed to fit the nares, leaving a space for air. His theory is that this causes rarefaction of air in the nasal passages in inspiration, dilatation of blood vessels, increased secretion and softening of crusts. Fränkel was the first to advocate the use of the galvanocautery, at white heat, over the site of the crust formation. Sajous³¹ favors the practice, as does Lennox Browne. Belfanti and DellaVedova,³² following out the therapy suggested by their investigations of the diphtheria bacillus in their cases, employed antidiphtheric serum in thirty-two cases, sixteen of which were said to be cured, seven almost cured, five improved, and four showing slow improvement.

Hartman,³³ following Shurly and Delavan, reports excellent results from the use of the galvanic current, the positive pole being placed at the nape of the neck, by sponge electrode, the negative to the nasal mucous membrane by means of pledgets of cotton wrapped around insulated wire, and well moistened. The seances were from five to fifteen minutes, three or four times a week. Capart,³⁴ and his assistant Cheval,³⁵ make extended reports of treatment of this disease by electrolysis. They introduced a copper or silver needle, on the positive pole, into the middle turbinated, and a steel needle through bone and membrane of the lower turbinated, of the same side. They claim that there should be 90 per cent. of cures by this method, and that often one sitting is sufficient. The current used is about twenty milliamperes, from seven to fifteen minutes. In 300 treatments they had no accident. Bayer, however, reports a case in which developed a hemorrhagic otitis media, followed by meningitis and death. They report disappearance of crusts and odor, and return of the membrane to its normal appearance. To those who have treated many cases of atrophic rhinitis their claims seem very extravagant.

G. Hunter Mackenzie³⁶ reports that he has succeeded well by curettement in a number of cases. He follows the operations with oily applications, as a

mixture of ichthyol and olive oil. Berens³⁷ reports good results from the use of undiluted ichthyol applied by a tampon in each nostril, and allowed to remain about fifteen minutes. This was followed by massage by means of a pledget of cotton wrapped on a probe and saturated with ichthyol.

Seiss³⁸ recommends a drachm of a 30 per cent. solution of peroxid of hydrogen, as a spray for each naris as a cleanser. When the crusts have been removed he uses massage by a probe wrapped with a cotton swab, well oiled, covering the whole area of the membrane rapidly for three to six minutes, care being taken not to denude the tissues. He follows this with stimulant applications, such as eucaphen, thymol, or cinnamon oil in albolene.

Skin grafts have been tried in these cases, but we can not hope for success in this treatment, inasmuch as it is an impossibility to replace the ciliated columnar epithelium by such grafts. The general health and hygienic surroundings of the patient should be carefully attended to.

It is no reproach to our profession if we shall not restore an atrophied membrane to its normal condition. There need be little discomfort to the patient or to others, if the disease is persistently and properly treated. Prophylaxis lies in the cure of the antecedent catarrhal condition.

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TRACHEAL INJECTIONS IN THE TREATMENT OF LARYNGEAL AND PULMONARY INFLAMMATIONS.

Read before the American Laryngological, Rhinological and Otolaryngological Society, Washington, D. C., May 1, 1897.

BY J. A. THOMPSON, M.D.

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The first physician who left us a record of a systematic study of intra-tracheal medication was Dr. Horace Green of New York. Long before the invention of the laryngoscope he had attained remarkable dexterity in passing a sponge probang, saturated with a solution of nitrate of silver, into either bronchus. His reports of his methods and results were so extra-

ordinary that the New York Academy of Medicine appointed an investigating committee to determine the truth or falsity of his statements. The committee agreed that he could and did employ the method described, but a majority condemned its use. With the invention of the laryngoscope there was no immediate revival of the method of direct medication in the treatment of laryngeal and pulmonary inflammations. It is only within the last few years, that occasional reference to this subject can be found in medical literature.

There are several reasons for the slow growth of this manner of treatment, in professional favor. The principal one is, that, few physicians are sufficiently expert in the examination and treatment of the upper air passages to employ it. As a rule they consider all lesions of the nose and throat as local, with but little influence on the health of the patient. This lack of appreciation of the importance of these conditions is largely responsible for the neglect of direct medication. Another reason for the limited use of intra-tracheal injections, is the mistaken opinion, that they are necessarily painful and irritating. Our ideas of the sensibility of the tracheal and bronchial mucous membrane, have been erroneously deduced from that of the larynx. Below the glottis, the nerves of sensation are few, and the membrane is not irritated by solutions much stronger than those we use in the larynx. While these reasons have been potent in preventing the more general knowledge and use of this method, there are other and much better reasons for the general use of direct medication in inflammatory diseases of the larynx, trachea, bronchi and lungs.

By the method of intra-tracheal injection we get the direct local action of the medicines on the diseased areas. In bronchi ectasis, no medicine given by the mouth, will prevent the decomposition of the secretions in the dilated bronchi. The odor and the absorption of septic material from them can not be controlled. A few tracheal injections will usually disinfect the cavities so that the odor disappears and the temperature becomes normal.

It is possible by intra-tracheal medication to produce a rapid and prolonged general effect. Anesthesia gives daily and hourly evidence of the rapidity with which volatile medicines are absorbed through the lungs, and their effect on the whole organism. From three to five minutes is a sufficient time for an expert to obtain chloroform anesthesia. You can produce as rapid an effect, and one much more durable, by injecting into the trachea, medicines which volatilize slowly at the temperature of the body. Where a dose of menthol had been given in this way, you will find the surface flushed in five minutes; the cold extremities have become warm and sometimes the patient breaks out in a profuse perspiration. This stimulating action lasts for hours.

Medicines used by tracheal injections are not changed by passing through the digestive organs into unknown compounds. For this reason we can be more certain of their action. No one would think of treating a tubercular laryngitis by internal medication alone. There is just as much reason for applying medicines of known beneficial, local action, directly to the lungs, as there is for using them in the larynx.

Where medicines are injected directly into the trachea they have no deleterious effect on the organs of digestion. Our valuable expectorants such as are used in acute and subacute catarrhal diseases, act in-

juriously on the stomach and intestines. The name of one class, nauseating expectorants, testifies to the universal recognition of this fact. The cure of a bronchitis by direct medication without interfering with nutrition is an advance in therapeutics.

Direct antisepsis can be secured by local medication. It is not possible to obtain this result by remedies given internally. We are prone to forget, that in tuberculosis, we are dealing with a mixed infection. In the stage of ulceration and breaking down of tissue infiltrated by tubercular matter, there is always a secondary infection by the germs of suppuration. It is to these, in all probability, that most of the fever, the night sweats, and the other evidences of sepsis are due. We do not attempt to disinfect a leg ulcer by medicating the stomach. It would be just as rational to do so as it is to attempt to disinfect suppurating cavities in the lung by medicine administered per os. In cases where tracheal injections can be tolerated, the antiseptic action of the remedies chosen will be very speedily shown, by the subsidence of the cough, by change in the character of the expectoration, and by the decline in the fever.

The administration of medicines by intra-tracheal injection, does not interfere with any other line of treatment. Diseases in other organs may be treated or tonics given, while local treatment of the lungs is being used, without any incompatibility.

Where medicines are given by the tracheal rather than by the esophageal route, we can relieve symptoms in hopeless cases without narcotics. We thus avoid their bad effects on nutrition. We also escape their secondary depressing action on the nervous system. A little menthol injected into the trachea will quiet a cough longer and more effectually than will a quarter of a grain of morphia given hypodermically.

Conditions not affected by constitutional medication can be cured by tracheal injections. Gummata in the lung, which resisted all other treatment, have been cured quickly and easily by direct medication of the suppurating cavities.

There are several conditions necessary for success in this method of treatment. The first essential is that the doctor himself be skilful enough in laryngology to do the work rapidly and delicately. The patient must possess a reasonable amount of self-control and be willing to follow directions implicitly.

It is probable that the medicines used for this treatment should be such as volatilize slowly at the temperature of the body. They should be soluble in the vehicle employed. The solutions used should not be too irritating. The most serviceable solutions are menthol, 2 per cent.; guaiacol, 1 per cent.; creosote, 1 per cent.; camphor, 2 to 3 per cent. Any of these may be combined. In acute diseases the menthol and camphor solutions are most efficient. In tuberculosis menthol and guaiacol give the greatest relief. Guaiacol gives good results in any septic condition in the lungs or bronchi. The vehicle used should be one of the light petroleum oils or olive oil. Alcohol and water are too irritating and produce violent coughing. There is ordinarily no spasm and but little cough or distress after an injection of the above solutions. The dose is from one to four drams. The diseases in which intra-tracheal medication will be of service must be determined by clinical observation.

I wish to present only a few deductions from my experience with this method of treatment during the last five years. The necessary condensation may

make my statements seem too dogmatic. All are based on cases actually treated and are deductions drawn from results thus obtained.

My first notable success was in pulmonary tuberculosis. In August, 1892, I began treating a woman with every symptom of this disease. Her attacks of coughing were so prolonged and violent that she frequently vomited and was unable to sleep at night. An injection of a solution containing menthol, 2 per cent., guaiacol, 1 per cent., at 4 o'clock in the afternoon would control the cough so that her dinner would be retained and she would get a good night's rest. The cough did not return, as a rule, until the following morning. The patient's symptoms entirely disappeared and treatment was discontinued. A little more than a year after she ceased treatment she became pregnant, and with the digestive disturbances incident to this condition, there was a return of the cough, vomiting and inability to sleep. The treatment by tracheal injection was resumed, again resulting in apparent cure. The pregnancy was uninterrupted and the patient has had no further occasion for treatment during the last four years.

In other cases of pulmonary tuberculosis, symptoms have been greatly relieved, but I have no other cures, where a sufficient interval has elapsed since treatment to make the statistics worth recording.

A few cases that I have seen, where the tubercular disease was making very slow progress, have not been benefited by tracheal injections. Where the diseased process is a chronic, not an acute one, the symptoms have been aggravated by the remedies used.

My next notable success in this treatment was in pulmonary syphilis. Fortunately, this is a rare condition, but there are some cases where gummata form in the lung in the tertiary stage, and where the disease is not controlled by constitutional medication. I reported a case of this kind in the *Medical Record*, Oct. 21, 1893. I have recently seen this same patient and there has been no recurrence of the trouble at the site of the original lesion.

In the first stage of acute bronchitis, where there is no secretion, tracheal injections have proven irritating. I have abandoned them at this stage and give something to induce free sweating instead. In the second stage, after free secretion has been established, intra-tracheal injections of menthol and camphor will relieve the cough more than any other treatment, and daily injections will shorten the attack at least one-half, as compared with cases treated by a stomach medication.

In chronic bronchitis there is no comparison between the two methods of treatment. The results are so much more rapid and satisfactory by intra-tracheal medication, that no patient, who has once been given this treatment, is ever willing to continue internal medication.

There is a condition rarely mentioned, often associated with chronic diseases in the upper air passages, which gives rise to many of the symptoms that we attribute ordinarily to chronic laryngitis. This is chronic catarrhal inflammation of the mucous membrane of the trachea. You will also frequently find in cases of acute bronchitis that the trachea remains inflamed, as can be seen by laryngoscopic examination, after all the physical signs of bronchitis have disappeared. This is especially true of cases where there is chronic rhinitis and laryngitis, as the underlying cause of the acute attack. This chronic inflam-

mation of the tracheal mucosa gives rise to more or less cough and a feeling of soreness, and sometimes to distinct pain in the chest. Physical examination in this condition shows no signs. It can only be detected by direct examination of the trachea, either by the laryngoscope or by the autoscopic method. Where this tracheal inflammation is coexistent with a chronic laryngitis, the ordinary treatment for laryngitis will fail unless combined with tracheal injections for the cure of the disease of that organ. Stimulant expectorants, given internally, have little influence on the course of a tracheal inflammation. Direct local medication ordinarily results in a very speedy cure.

Some cases of asthma are notably relieved by tracheal injections. The paroxysm is relieved for hours after the treatment. The bronchitis which usually accompanies this condition, is cured more speedily by direct medication than by internal treatment. Some cases of pulmonary emphysema have been given great relief by tracheal injections. The effect was probably obtained through the cure of the chronic bronchitis which usually accompanies this condition.

Where the remedies to be used are not irritating, it is not necessary to spray the larynx with cocain. The injection can be given while the patient takes a slow full inspiration. The process can be repeated until a sufficient dose has been administered. Where strong solutions or those irritating to the larynx are to be employed, that organ must be anesthetized. The tip of a properly curved tube of a syringe is then introduced between and below the vocal cords, during inspiration, and the whole dose given at once.

To an expert laryngologist there are a few technical difficulties in the treatment. There are none which need discourage the family practitioner and prevent him from attempting it. The method is useful in so many pathologic conditions frequently seen by every practitioner, that all should know of it and use it. When they do, they will learn as a few have already learned, that in the method of intra-tracheal injections we have a means of promptly relieving symptoms, and curing some diseased conditions that are not benefited by any other treatment.

THE STREPTOCOCCUS PYOGENES THE CAUSE OF DIPHTHERITIC CONJUNCTIVITIS IN A CASE OF MEASLES.

Read at the meeting of the Chicago Pathological Society, April 12, 1897.

BY H. A. BRENNECKE, M.D.

INTERNE IN THE COOK COUNTY HOSPITAL, CHICAGO.

The following case is thought to merit a somewhat complete report because it was diagnosed clinically as true diphtheria of the conjunctiva, by Dr. Cassius Wescott on the strength of the macroscopic appearance of the eye, whereas the microscopic examination demonstrated the absence of the diphtheria bacilli and the presence of the streptococcus pyogenes in short chains, not only in the eye but in the blood and various organs.

The case occurred in a boy three years old. The patient had been living at "The Home of the Friendless" from which a number of patients with measles had been brought to the Cook County Hospital into the service of Dr. W. L. Baum. The patient had been sick three days before admission, complaining of sore

throat, headache, slight coryza and had vomited once.

On examination the body was found well nourished, eyes with slight conjunctival injection, the expression was dull and there was photophobia, lachrymation and serous discharge from the nose. The pharynx was injected, tongue coated, tonsils enlarged, as also the cervical glands. The heart's action was accelerated. The lungs revealed numerous dry râles. The abdomen showed nothing of interest. Skin: On the face there were numerous crescentic, round and irregular "blotches" of a red papulo-macular variety, which became diffused over the entire body on the second day.

During the course of the disease the following observations were made: On the day of admission the pulse was 124, temperature 102.4, respiration 36; after this they varied as follows: pulse 130-160, temperature 101-105, respiration 40-48 up to the last day, when the pulse was 172, temperature 102.3, respiration 56-64.

On the fifth day an examination of the urine showed the presence of albumin and hyalin and epithelial casts. The conjunctiva of the right eye was markedly injected, particularly that of the palpebræ. The following day the injection was more intense, the lower lid much swollen and on eversion showed a heavy white exudate. On the eighth day both lids were edematous and their conjunctivæ covered with a heavy white membrane. The bulbar conjunctiva was injected and the cornea smooth and shiny. The discharge from the eye was abundant and milky. The left eye was unchanged.

At about the same time that the changes in the eye were noted, superficial ulceration about the alæ of the nose appeared, which gradually extended and caused an occlusion of one of the nares.

As the condition in the eye had been diagnosed a true diphtheria of the conjunctiva, repeated cultures were made on blood serum from the nose, eye and throat, but only micrococci, staining with Gram's method, were found, which grew in fine white translucent and yellow circular colonies. Direct cover-slip preparations made from the eye showed only micrococci.

On the tenth day the following note was made: Patient restless, often refuses nourishment, pulse rapid but of fair quality, respiration rapid, skin rough and dry and the back and shoulders as well as other parts of the body show diffuse irregular patches of red which do not disappear entirely on pressure. The nose is but little changed. The mucous membrane of the mouth shows irregular white patches. The eye is the same with the exception of a hazy cornea. Examination of the lungs reveals numerous subcrepitant and mucous râles diffusely spread, most marked over the lower lobes. A large area of dulness with increased voice sounds is found over the right lower lobe.

Death took place eleven days after admission. The postmortem examination was made twelve hours after death. Only the essentials are given here. The body was well nourished. The heart showed no changes except paleness. The trachea was ecchymotic. Both lungs contained numerous areas of consolidation of grayish red color and which reached a considerable size in the right lower lobe. The lung tissue around the smaller bronchi was infiltrated with blood. By pressure a muco-purulent fluid was forced from the bronchi. The spleen was firm, enlarged and mottled

on section. The kidneys showed fetal lobulation, the capsules peeled readily leaving a smooth surface, on section they were pale and the cortical markings were distinct. The mesenteric, cervical and peri-bronchial lymph glands were enlarged. The tissues about those of the neck were edematous. The right eye showed the lids swollen, their conjunctivæ covered with a dirty gray membrane and the cornea hazy. Cover-slip preparations made from the blood and stained by Gram's method showed streptococci.

The bacteriologic examinations were made with the aid of Dr. Geo. H. Weaver. Inoculations were made on blood serum from the following organs: the blood of the heart, the lungs, the cellular tissue and glands of the neck, the spleen, the kidneys, the right eyeball and the liver. The blood, spleen, kidneys and liver showed a pure culture of fine, white, circular, translucent flat-topped colonies. Cover-slip preparations made from each stained with Gram's and showed streptococci. The organism appeared in similar growths on 5 per cent. glycerin agar. Stab cultures in gelatin produced a fine globular growth along the puncture which became confluent and did not liquify the gelatin. Litmus milk was changed to a slight reddish color and was not coagulated. Bouillon showed a fine gray sediment leaving the medium above clear. Potato showed no visible growth in four days. The cultures grew more rapidly at the temperature of the thermostat; 5 c.c. of a bouillon culture two days old injected into a vein of the ear of a full-grown rabbit did not cause death. From the above peculiarities it was concluded to be the streptococcus pyogenes.

From the eye, lungs, glands and cellular tissues of the neck a second micrococcus with following characteristics was obtained. On blood serum, 5 per cent. glycerin agar and potato the colonies were heavy, circular and light yellow in color. Gelatin was liquified, made turbid and of foul odor. Bouillon was likewise rendered turbid and foul. It grew best at room temperature; 2 c.c. of a bouillon culture injected into the peritoneum of a rabbit produced no marked symptoms. It was concluded to be a saprophytic micrococcus.

Histologic examination of the various organs showed the following: In the right eye the cornea shows the epithelium destroyed, round cell infiltration into its tissues and there is also infiltration into the anterior chamber, sclera, ciliary body and optic nerve. On the outer surface of the sclera and cornea there is a layer of granular homogeneous material which in part takes the hematoxylin stain and shows extensive nuclear fragmentation and fibrin, evidently a superficial necrosis. The lung shows the changes of broncho-pneumonia. The spleen and the glands of the neck show an increase of cellular tissue. The heart, liver and pancreas show no changes.

Sections of the various tissues stained by Gram's method show streptococci in the vessels.

Summary.—The bacteriologic examination showed the presence of the streptococcus pyogenes in the right eye as well as the body generally. On account of the simultaneous ulcerative condition in and about the nose it can not be positively stated that the eye formed the atrium for general infection. On the other hand it is quite probable that the eye became involved by the streptococcus being brought there by the circulating blood. The primary atrium for infection may have been in the throat.

PURULENT PERICARDITIS WITH REPORT OF A CASE DUE TO TRAUMATISM.

Read before the Michigan State Medical Society, Grand Rapids, Mich., May 11, 1897.

BY FRANK W. GARBBER, B.S., M.D.
MUSKEGON, MICH.

Purulent pericarditis presents essentially the same chain of symptoms as those shown by a non-septic pericardial inflammation. The history of the case may point strongly in the direction of a purulent effusion, but the aspirator alone can determine positively the nature of the fluid. The disease may even run its course without such aids to diagnosis, as fever and edema of overlying tissue. A preëxistent or a co-existing ulcerative endocarditis, a pyemia, tuberculosis or an empyema, an abscess of the mediastinum, caries of the ribs, gangrene of the lungs, or a trauma may make evident the presence of pus, and are among the leading causes of purulent effusion into the pericardium. Pericarditis whether purulent or non-purulent is a secondary trouble, and is probably frequently overlooked by the physician.

The healthy pericardial sac of an adult holds from 420 to 630 grams. It is somewhat pyriform in shape and lies back of and to the left of the sternum, extending from the third to the seventh ribs with its broadest portion at its diaphragmatic attachment. Upon the greater or less distension of this sac, together with the intensity of the inflammation and the character of the exudate, depend the phenomena of pericarditis. As effusion takes place, the sac gradually distends from below upward, the area of precordial dulness broadening and rising as the quantity of fluid increases. The lungs are crowded back and to either side. The diaphragm is depressed. The dulness may extend from the xiphoid process to the top of the sternum, and from nipple to nipple. As the amount of effusion increases, the site of the heart's impulse is raised and carried outward, sometimes reaching as high as the third interspace. With encroachment upon the lung space come dyspnea, and an interference with the normal respiratory movements. The play of the upper ribs is increased and there is limited motion on the left. The lateral movements of the abdomen are lessened, the play of the left side being less than that of the right. Pressure upon the vena cava and the pulmonary veins tends to venous engorgement, and the dusky countenance so frequently seen. In the young, and where there are large accumulations of fluid there may be precordial prominence. There may be friction sound, and an intermission of the radial pulse during inspiration, at a time when there is no intermittent heart action. Accentuation of the pulmonary second sound is remarked as one of the most constant signs of pericarditis. If to the symptoms enumerated there are added hectic, sweating, and such other familiar signs of confined pus as are characterized by empyema, the diagnosis of purulent pericarditis becomes reasonably certain.

As far back as the seventeenth century, we find clinicians discussing the advisability of opening the pericardial sac for the relief of pericardial effusion. It was not until 1819, that the operation was first successfully performed. Romero of Barcelona operated by incision, in three cases, two of which recovered. In 1840 paracentesis was performed by Schuh for pericarditis due to cancer, the patient living six months after the operation. The first instance of tapping of the pericardium, in this country, occurred in the

practice of Dr. Warren of Boston, in 1852. These operations were all for the removal of non-purulent effusions, though tapping has been recommended and practiced until recent years for the relief of either class of cases.

The first authentic case I have been able to find of the treatment of purulent pericarditis by the scientific and reasonable method of incision and drainage, is found in the fifth number of the *Berliner klin. Wochenschrift* of 1881.

A boy ten years of age had suffered from empyema which failed of relief by tapping. Indications pointed to a pericarditis, which by aspiration was found to be purulent. Though several ounces of pus were removed by this method, no improvement followed, but rather increasing dyspnea, lividity and edema of feet and legs. Sleep became broken and the general condition poor. An incision into the pericardial sac, between the fourth and fifth ribs near the border of the sternum, was then made under the antiseptic precautions then in vogue. Two drainage tubes were placed in the opening and the wound inclosed in a Lister dressing. Prompt relief followed though recovery was retarded by co-existing empyema, which was finally relieved by incision and drainage.

Operation by incision and drainage was performed for the first time in England by Dr. Samuel West in 1883. Great success followed the operation. There was no deformity of the chest and only a very small scar remained.

In 1885, Michaeloff, after a preliminary tapping which was followed by slight improvement, incised the pericardium of an adult female in whom the purulent pericarditis seems to have been a sequela of Bright's disease. Temporary improvement followed, but the patient died a short time after the operation. Postmortem revealed a fatty degeneration of the heart with great dilatation.

In the same year, Gussenbauer resected five ribs and washed out the pericardial sac with a thymol solution. His patient recovered.

Davidson reported in the *British Medical Journal*, March 1891, two cases treated by incision and drainage. The first case was that of a boy of six in whom pyopericardium was secondary to necrosis of one of the metatarsal bones, and further complicated by pneumonia and a subperiosteal abscess of the eighth rib. A free incision was made in the fifth interspace, and eight ounces of pus were evacuated. There was some temporary relief but the patient died within a week. The second case occurred in a boy of seven, and followed a purulent pleuritic effusion which had been appropriately treated without giving any apparent relief. Examination revealed the presence of a pericarditis which proved to be suppurative. The sac was opened, free drainage established and the patient made an uninterrupted recovery.

Beekman and Stall report a case in which the pericardium was opened after trephining the sternum. Recovery followed.

Bronner relates a case of pericardiotomy in a girl of 11, which terminated fatally after twenty-five days.

Scott reported a case of pyopericardium (*New Zealand Medical Journal*, July 1891), in which he opened the sac, removed a large quantity of pus and irrigated the cavity with a solution of carbolic acid (15 to 1000). The operation was followed by complete recovery.

In the *International Medical Magazine*, June 1895,

Edwards gives the details of a case treated by incision and drainage. The patient was a poorly nourished and illy developed child of 6 who for a month had complained of pains in the left costo-sternal region. There were continuous fever, dulness over the precordial region, dyspnea, edema of face and ankles, and albuminuria. The operation was followed two weeks later by a purulent pleuritic effusion, the relief of which gave no signs of improvement, and the child died of exhaustion at the end of the third week.

Eiselberg of Vienna, reports a case which is of especial interest in connection with this paper, because like my own case, it was traumatic. A boy of seventeen received a stab wound which penetrated the pericardium. Pericarditis followed. Relief from the distressing symptoms was sought by tapping, but without permanent improvement. The cartilage of the fourth rib was accordingly resected, the pericardium exposed, and about two liters of sero-purulent fluid evacuated. The sac was irrigated, the borders of the sac stitched to the edges of the wound, and two drainage tubes inserted. The boy had completely recovered at the expiration of a month. Eiselberg insists on the necessity of stitching the pericardium to the lips of the wound to prevent infection of the pleura, a procedure which seems to have some theoretical warrant, but which in fact seems hardly necessary, as the danger of entering the pleural cavity through the fifth interspace at the point of election is very remote. If we draw a line from the left nipple to the end of the xiphoid process, bisect the line, and with this point of bisection as a center inscribe a circle with a radius of one inch, we shall inclose within this area a portion of the pericardium which in health is not covered by the pleural sac. This area is greatly increased in pericardial effusion.

The following are the details of my own case, the happy termination of which makes the indications for treatment in this class of cases none the more positive though encouraging, perhaps, to larger fidelity to fixed surgical principles, no matter what part is involved.

M. H., a healthy well-developed girl, aged 21 years, in a scuffle with some companions, ran a steel crochet needle into her chest about an inch to the left of the sternum and in the fifth interspace. The needle passed into the tissue, one and a fourth inches, and broke off. The accident occurred in the evening of Jan. 12, 1897, and the patient came to me within a few hours following. She was somewhat nervous, but apparently suffered no pain, while there was only moderate acceleration of the pulse. A small point showing the place of entrance of the needle was all that could be seen. Palpation did not reveal anything and an aseptic incision was made to a considerable distance into the tissue without disclosing anything. I therefore concluded that the broken end of the needle had not remained in the tissue, but had been lost in the excitement following the accident. Acting on this belief, the patient was sent home, with instructions to return again. The search of the following day convinced me that the needle was still there and the patient was advised to have an anesthetic and such operation as was necessary to relieve her. Her consent to such procedure could not be obtained however, until three days from the time of the accident had elapsed. There was at that time considerable rise of temperature and an increased pulse rate. A crucial incision was made, having the point of entrance of the needle, the point of intersection of the

lines of incision. The flaps were dissected back, and, after considerable search the end of the needle was found in the intercostal muscle flush with the costal cartilage. It required considerable effort to remove it, and it was found that the hook of the needle had carried a thread of cloth into the pericardium, into which it had entered and in which the needle had remained ninety-six hours. Septic pericarditis was feared, as there was already a temperature of 101 degrees and a pulse of 125. It was not thought justifiable at this time, to incise the pericardium. For the twenty-four hours following the removal of the needle, the patient's condition remained much the same, temperature and pulse not declining. On January 17, two days following the removal of the needle, the temperature began to rise and the pulse became more rapid, though there had been no chill. January 18, at 10 A.M. the temperature was 102 degrees; at 8 P.M. 103.5 degrees with a pulse of 140. The face became somewhat dusky, the lips bluish, and the tongue took on a heavy brown coating. There were constipation and much restlessness. She was unable to sleep on the nights of January 18 and 19. Up to January 21, much the same general condition obtained. There remained the same cast of countenance. The pulse remained regular but rapid. Both heart sounds were audible. There was no dyspnea, but great restlessness. There was unusual mental alertness. The eyes were bright. There was sighing at times. She had no appetite and was almost free from pain. There was an increase of the precordial dulness. A diagnosis of septic pericarditis was made and an incision with flushing and drainage advised and declined. On January 21, the temperature subsided and the pulse went down to 109. This period of apparent improvement lasted until January 25, when the temperature again began to rise and the area of precordial dulness to increase, indicating an increasing effusion. An operation was again urged, and, in view of the gravity of the case, accepted. Accordingly on January 26, with the able assistance of Dr. J. Vanderlaan and Dr. G. S. Williams, the wound for the extraction of the needle was enlarged, and an incision carried down through the intercostal muscle one and a half inches to the left of the sternum in the fifth interspace, keeping as nearly as could be to the point of entrance of the needle. A careful dissection soon carried us through the pericardium, which seemed to be attached to the anterior wall. About an ounce of thick pus and a considerable amount of puro-sanguinoform half clotted matter were evacuated. No effort was made to make extensive exploration, but the finger detected within the pericardium much soft fibrinous material which was easily broken down. The cavity was flushed with a saline solution and an iodoform wick inserted. No great shock was suffered. The temperature was normal on the evening of the day of the operation, with a pulse of 108, and never again went above 100 degrees. The patient made an uneventful recovery, being discharged cured just twenty-four days after the operation.

The extreme gravity of a case of purulent pericarditis warrants almost any measure that holds out hope of relief. When that measure is so well grounded a principle of surgery as that of the free evacuation of septic material whenever found, it is gratifying to find its application in practice followed by so encouraging results as a review of the preceding cases shows. Out of twelve cases here reported, some of which were

complicated with diseases in themselves necessarily fatal, there were eight recoveries. It is my belief that under proper precautions, pericardiectomy is attended by no greater danger than pleurotomy, and in cases uncomplicated by maladies tending toward a fatal termination, the results will be equally as good. It is the only procedure which justifies itself to the modern surgeon. The dangers attending incision and drainage are not to be compared with the danger of expectant inactivity, and I am certain that many of them are overestimated. Pericardiectomy offers the only chance for safety in these cases, and must take its place among the operations sanctioned by good usage and good sense.

159 Jefferson Street.

A NEW INCISION FOR THE SURGERY OF THE BILE TRACTS.

BY A. D. BEVAN, M.D.

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The subject of the surgery of bile tracts is of recent development. In 1867 Bobbs of Indiana performed cholecystotomy. In 1882 Langenbuch removed the gall bladder, cholecystectomy. In the same year Gaston suggested cholecystenterostomy, which was later perfected by the introduction of the anastomosis button by Murphy. In 1890 Courvoisier performed and advocated choledochotomy, and later the removal of stones from the cystic duct and hepatic duct were reported.

In the last five years the value and possibilities of the surgery of the bile tracts has been so thoroughly demonstrated, that it is today a recognized field to all men doing abdominal work.

A few years ago, when I began to do surgical work on the bile tracts, I carefully reviewed the topographic anatomy of this region. I was surprised to find how completely the subject had been neglected by both anatomists and surgeons. And here let me say a word in behalf of surgical anatomy. It is the boast of some surgeons of the present brilliant aseptic period that they ignore anatomic boundaries and anatomic reasoning in their operative work. It is so easy to cut and ligate and suture deep and superficial structures and obtain primary union, that a careful study of operative procedures is regarded often as unnecessary, and is as a rule neglected.

In surgical training, for the time being, anatomy is overshadowed by pathology, and as a result, the surgeons of today are better pathologists to be sure, but much poorer anatomists than the surgeons of the past generation. This is a fault which is often evident even in the work of eminent surgeons, and which must be corrected. A perfect mastery of the surgical anatomy is absolutely necessary for the performance of the best operative surgery in any field of surgical labor. This applies with special force to the surgery of the bile tracts, and yet many operations on this region are performed by men who have no clear idea of the anatomic relations of the parts or of the possible dangers, and who do not see the necessity of preparing themselves by cadaver study before undertaking such work. Such brilliant work as Kocher's teachings of making incisions in the lines of normal cleavage, as Bassini's hernia operation, as McBurney's and McArthur's splitting operation for appendicitis, as Hartley's removal of the Gasserian ganglion, as Mc-

Ewan's studies of mastoid disease and brain abscess, as Kraske's incision for removal of the rectum, are all results of anatomic studies applied to surgery; they are what might be called anatomic surgery and they demonstrate its value.

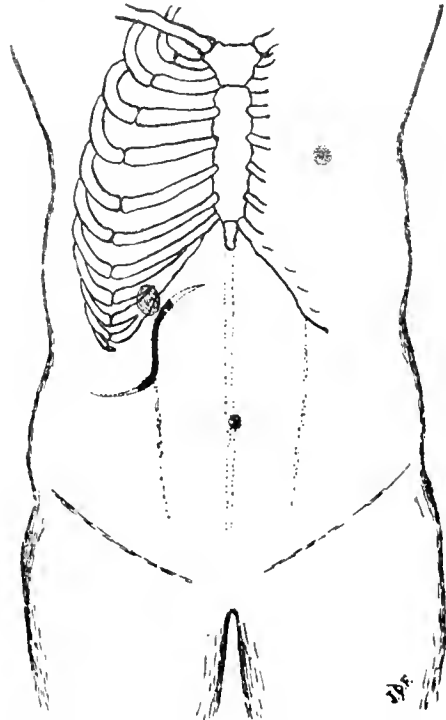


FIG. 1.—Heavy line the primary and light lines the extended portions of incision.

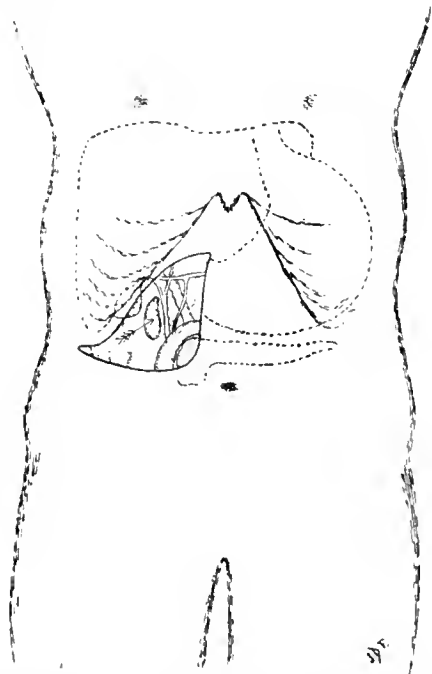


FIG. 2.—Abdomen opened and anterior layer of lesser omentum removed. Gall bladder, cystic, hepatic and common duct, portal vein, hepatic artery and branches in view. Arrow in foramen of Winslow.

With the objects of determining the best method of exposing the bile tracts for exploration and operative procedures, and for determining the position and relation of the bile tracts to other structures so that operations could be conducted with a minimum of danger to important structures, I undertook a series

of twenty dissections. In this brief report I desire to present not the entire results, but one of the results of my investigations, namely, the abdominal incision which is best adapted for bile tract surgery.

In my early clinical work I made use of the incisions which have heretofore been generally employed. First, the vertical incision along the outer border or through the substance of the rectus; second, the transverse or liver border incision of the Germans; third, the \neg shaped incision made up of an incision along the outer border of the rectus and one joining it at right angles; and fourth, the incision in the upper half of the linea alba for common duct work.

The objections to these incisions are many. They could be summed up in a few words. These incisions

The vertical incision along the outer border of the rectus answers very well for cholecystotomy, but does not give sufficient room for bile duct work unless made very long, and even then the edges of the incision are tense and much traction is required to expose the field of operation. The result of such extensive incision is to cut off the nerve supply of the right rectus muscle and thus weaken the abdominal wall. The \neg shaped incision can be made extensive enough to expose the bile ducts freely for operative work, but it is the most objectionable incision that can be employed. It is difficult to suture properly. It is difficult to obtain good union at the point where the incisions meet. I have seen necrosis of the sharp corners of the flaps at this point. It is prone to leave

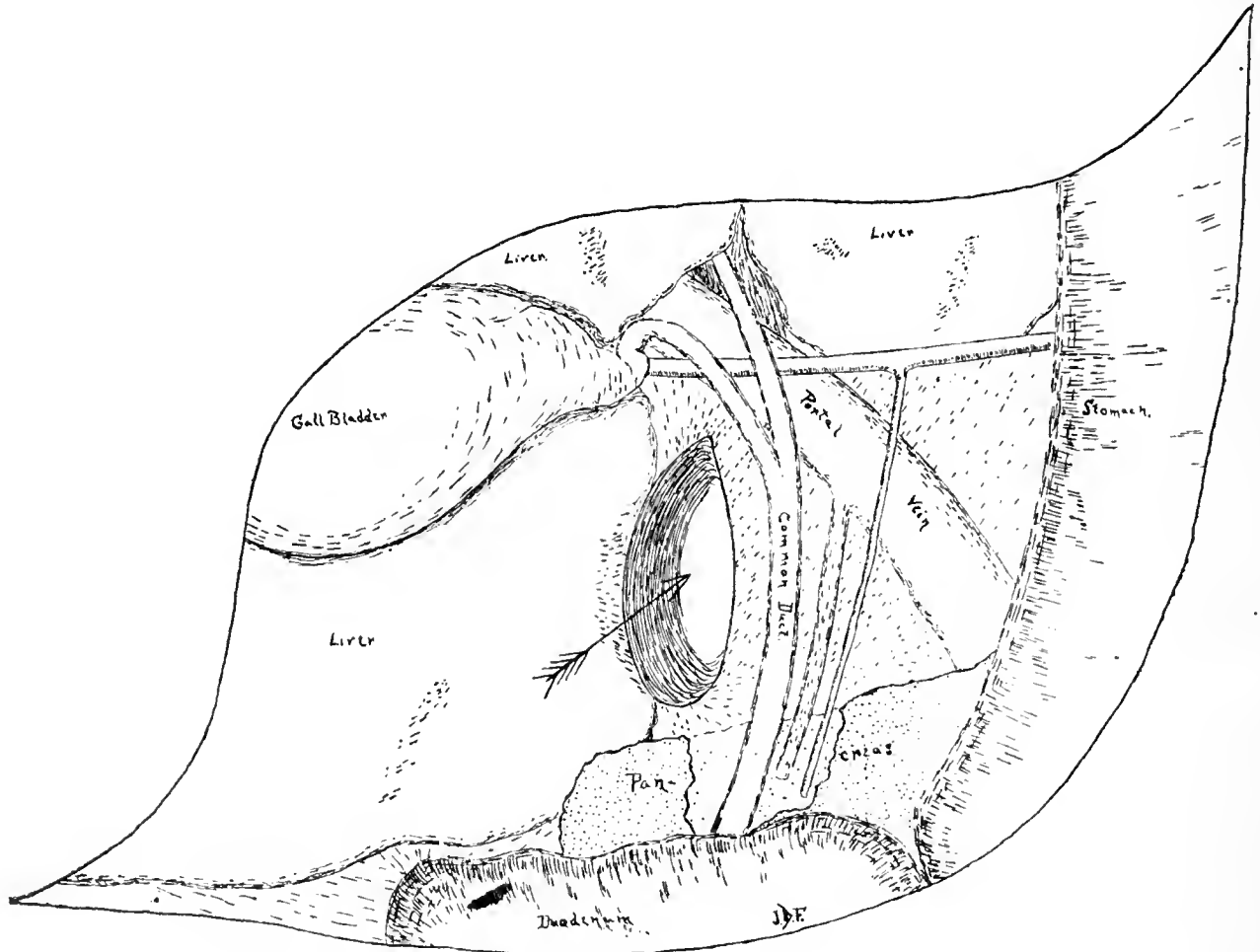


FIG. 3.—View of structures seen in incision after removal of anterior layer of omentum. Natural size.

do not give room for extensive work unless they are made very long. When they are made very long, they carry with them the danger of hernia. Every one who has done much common duct work must realize the difficulty of obtaining free access to the operative field through the incisions usually employed, and in spite of statements to the contrary, hernias after extensive incisions for bile tract procedures are not uncommon. No surgeon can tell before opening an abdomen for an operation on the bile tracts how extensive an operation may be required, and it is therefore desirable to adopt an incision which will be suitable for exploration and simple procedures and which, at the same time, can be readily extended to meet the demands of the most extensive operation.

a weakened abdominal wall. In my own limited experience I have had three hernias following this form of incision; two after nephrectomies and one after cholecdochotomy.

The transverse or liver border incision is not as objectionable as the two above mentioned, but it does not meet the requirements as completely as the incision which I shall describe. The incision in the upper part of the linea alba for work on the common duct is objectionable because it does not give free access to the gall bladder, and in many cases of common duct work the gall bladder also requires operative treatment. The problem which was before me in my dissections was to develop an incision which would answer for exploration and which, in case of need, could be

extended sufficiently to obtain free and easy access for the performance of any operation required, and at the same time this incision must impair the integrity of the abdominal wall as little as possible and carry with it a minimum of danger of subsequent hernia.

The incision which I have developed, I believe, meets these requirements, and as it can now be urged both from anatomic grounds and clinical results, I feel warranted in presenting it to the profession as a small but not unimportant contribution to the surgery of the bile tracts.

My incision should be divided into a primary portion and the extended parts of the incision. The primary part, which can be employed for exploration or simple cholecystotomy, is an italic letter *f*-shaped incision along or through the outer border of the rectus muscle, as shown by the heavy line in Fig. 1. This may be made from three to four inches in length. The extended parts of the incision are added to this when required. These extended portions are seen as the faint lines in Fig. 1. These extended portions can be made from an inch to three inches in length as the thickness of the abdominal wall and the character of the operation demand. When complete, the incision furnishes much freer access to the gall bladder and bile ducts than can be obtained by any other form of incision. The edges of the incision are readily held apart without tension, and the entire bile tract is freely exposed for examination and operative procedures.

Anatomically the incision injures a minimum amount of the nerve supply of the abdominal wall, because, even though the incision is made of great length, the extended parts of the incision run almost parallel with the nerve supply of the abdominal muscles. By a division of the rectus in part and of the internal and external oblique and transversalis muscles, the incision can be widely separated without tension. The fact that the incision is in close contact with the costal arch makes resulting hernia improbable, as a cicatrix in the upper part of the abdominal wall does not as readily yield and produce hernia as a cicatrix in the lower portion of the abdominal wall.

The following structures are divided in the incision: Skin, superficial fascia, external oblique muscle and aponeurosis, internal oblique muscle and aponeurosis, transversalis muscle and aponeurosis, rectus muscle, the transversalis fascia, which is here very thin, and the peritoneum. A few of the terminal branches of the intercostal nerves to the rectus are divided, and the anastomosis between the internal mammary and deep epigastric arteries in the substance of the rectus is divided and usually needs ligating. The incision should not be nearer than three-quarters of an inch to the costal arch.

When the complete incision is made the following structures can be seen as represented in Fig. 2: the liver and gall bladder above, the round ligament of the liver and the stomach to the left. The duodenum, the transverse colon and great omentum below. The transverse colon and omentum should be pushed downward, the stomach to the left, and the liver should be held up by the fingers of an assistant. We will then have exposed to full view the gastro-hepatic or lesser omentum, which contains the following structures between its two layers: the portal vein, the hepatic artery, the common, cystic and hepatic ducts, the gastro-duodenal artery and sometimes vein, the nerve supply of the liver and the lymphatic vessels

and several lymphatic glands. The foramen of Winslow is at the right free edge of the lesser omentum. These structures and their relations are well seen after the anterior layer of the lesser omentum has been removed, in Fig. 3. The left index finger can be passed into the foramen of Winslow and the extra-hepatic ducts palpated throughout their extent except the portion of the common duct covered by the pancreas.

It must be understood that as a rule in operations on the living subject that the normal conditions are altered by adhesions and changes in shape and size of the gall bladder and bile ducts, but after the separation of the adhesions the relations will be found practically as here represented.

In closing the incision, silkworm gut sutures should be passed through the entire wall, the margins of the wound approximated, and then before the silkworm gut sutures are tied, the abdominal muscles and aponeuroses are sutured accurately with buried catgut.

I believe that the incision which I here present is based upon good anatomic and surgical grounds and that its adoption will be a step in advance in the surgery of the bile tracts. It makes better work possible by giving freer access to the field of operation; it will enable the surgeon to work more rapidly and in some of the prolonged operations on the bile ducts this is a vital point. It will reduce to a minimum the dangers of hernia after these operations. It can be employed in all cases, in exploration, limited or extensive operations.

The accompanying plates were drawn from my dissections by Dr. J. D. Freeman of the house staff of the Presbyterian Hospital.

BLUE PYOKTANIN IN THE TREATMENT OF INOPERABLE MALIGNANT GROWTHS.

Read before the Georgia Medical Association, April 21, 1897.

BY HENRY R. SLACK, PH.M., M.D.

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There is no disease to which flesh is heir that so appeals to the sympathy of the physician as an inoperable case of cancer. Not even consumption's ghastly form is so dreadful to the patient and to the physician hopeless of results. The sufferer from tuberculosis is almost invariably buoyed up by an ever present but delusive hope that "as soon as I get rid of this heavy cold I will be all right," but the cancer patient is bereft of hope. He sees the vultures, Prometheus like, feeding upon his vitals, but has little hope of Hercules coming to the rescue.

Now, what are we to do in such cases? To dismiss them because we can not promise cures would be inhuman and cowardly. These patients should be treated on the same principles as those unfortunate beings afflicted with chronic nephritis, consumption or any other disease recognized as incurable. When the surgeon admits that his knife can promise no hope, he should bring to bear upon the case every other means to make it *yield* to scientific treatment. Even though he may not effect a permanent cure, if he can alleviate the excruciating pains, foster hope, and prolonging life make it more tolerable, he performs a duty worthy of his high calling and receives alike the gratitude of the patient and his friends, to say nothing of that highest of rewards, the approval of conscience that comes from a knowledge of duty faithfully discharged.

Since the work of Professor Von Mosetig of Vienna, and Dr. Willy Meyer of New York, with pyoktanin, Dr. Coley, by the inoculation of erysipelas, and Adamkiewicz, by hypodermic application of neurin, we labor "not as those who have no hope."

In January, 1891, Professor Von Mosetig presented a very instructive paper entitled, "A Contribution to the Treatment of Inoperative Malignant Growths," to the Vienna Society of Physicians, reporting on his experience with blue pyoktanin in such cases. Shortly after (April 25, 1891) appeared an article from Dr. Willy Meyer, in the *Medical Record*, "Notes on the Effect of the Anilin Dyes, especially Blue Pyoktanin, in the Treatment of Inoperable Malignant Growths." Dr. Meyer also has another article on the same subject in the *Annals of Surgery* for November, 1893. Here I wish to acknowledge my obligations to Dr. Meyer for kindly furnishing me his valuable reprints and a list of the literature of this subject.

Billroth, true to his instinct as a great surgeon, had little faith in the use of pyoktanin and did not believe it had any specific influence whatever. He asserted that it was merely the water forcibly pressed into the tissues that made them swell and unable to live. He reported that three of his patients got worse under its use and one died of sepsis.

Fortunately, Von Mosetig and Dr. Willy Meyer had better success, and my experience agrees with theirs, as a report of the following cases will show:

Case 1.—October 21, 1896, J. E. C., age 43, white, male, farmer. Father died of cancer. Complaints of sore throat and difficulty in swallowing for the last two months. Examination showed a neoplasm the size of a hickorynut on the dorsum of the tongue a little left of the median line. Has warty appearance and the papillæ all around are enlarged and indurated. Tumor can be felt from outside and submaxillary glands indurated.

October 24. Tumor growing. Pain extends further down throat and deglutition more difficult. Treated with Lugol's solution and gave gargle of same containing 2 m. carbolic acid to the ounce.

November 14. Tumor getting larger, covered with a mucopus and becoming more painful, especially at night. Necessary to use morphin in order to sleep.

November 19. Complaints that he could not sleep last night, as it seemed he would choke to death. Iodin doing no good, ordered blue pyoktanin pencil and powder. Dr. F. M. Ridley saw the case in consultation. Decided inoperable and approved of the trial of pyoktanin.

December 8. Patient has been to Atlanta and consulted six surgeons of that city, including two ex-presidents of this Association, one of whom he heard remark, "It is cancer. Prognosis bad; not one chance in a hundred from operation and he will not live until New Year." Necrosis has begun, odor very offensive. The tumor now is as large as a hen's egg and very painful. Can hardly use tongue enough to articulate his words. Treatment: Parenchymatous injection of 1.5 c.c. of a 2 per cent. solution of blue pyoktanin and gave patient pencil to apply daily.

December 12. Patient says he has not suffered so much as before using paint and can talk a little plainer. Treatment: Injection of 1.5 c.c.

December 19. Has suffered very little pain. Can talk without difficulty. Necrobiosis has set in and the tumor has diminished considerably. Injected 1.5 c.c.

December 22. Patient improving. Small nodules beginning to drop off and under them granulating surfaces appear. Reduced about one-fourth. Injected 1.5 c.c.

December 27. Feels much better. Does not have to use morphin at all. Injected 1.5 c.c.

Jan. 2, 1897. Improvement continues. Tumor not one-half as large as when I began parenchymatous injections. Injected 1.5 c.c.

January 9. Patient feels much relieved. Cachexia nearly all gone. Fetid odor no longer present. Appetite returning and anxious to try solid food, which was allowed. Injected.

January 12. Tumor has reduced to less than one-fourth of the original size. Patient eats solids and swallows without difficulty. Color good and strength rapidly returning. Injected.

January 16. Improvement continues. Injected.

January 23. Feels no inconvenience from neoplasm, which is not now over one-sixth of the original size. Says, "I am about well now." From then until February 28 he received only one injection weekly. I was called to New Orleans and was absent two weeks, during which time the patient took cold and I found on my return that the neoplasm had grown some. Gave two injections weekly and necrobiosis at once began.

April 17. Tumor diminishing in size, though somewhat painful. Pain was relieved by injection of the pyoktanin solution. June 15. Still under treatment and doing well.

Case 2.—Jan. 23, 1897. R. H., age 37, colored, female. Has had seven children, no miscarriages. Family history negative. Now has a four months' baby and since birth of this child lochia has continued. During last four months of last pregnancy had occasional hemorrhages. Patient fairly well nourished, though much weaker than after birth of other children. Prescribed injection of bichlorid of mercury, 1 to 4000, aromatic sulphuric acid and elixir calisaya, as an astrigent tonic, and told her to return in a week prepared for an examination.

February 3. Patient says, "Do not bleed so much, but still have bad smelling discharge." Examination showed a large ulcerated cauliflower neoplasm enveloping the entire cervix and extending well up the posterior portion of the body of the uterus. It was as large as a small orange and bled freely when touched. Dr. Cason saw case with me and agreed that it was an inoperable carcinoma.

Treatment: Washed out vagina and washed off the neoplasm with solution of bichlorid of mercury, 1 to 2000, and gave parenchymatous injection of 2 c.c. of a 2 per cent. solution of pyoktanin. I also gave the patient wash of bichlorid of mercury to be used daily, after which she uses 6 c.c. of 1 per cent. solution pyoktanin.

February 9. All hemorrhage has ceased and patient feels better. Injected 2 c.c.

February 12. Discharge not so offensive as before; pain has diminished. Injected 2 c.c.

February 16. Improving; necrobiosis established and nodules are supported by smaller peduncles. Injected.

February 19. Improvement continues. Injected.

February 23. Patient says when she injects the bichlorid of mercury wash, small pieces of flesh from the size of rice to a pea are washed out. While treating, a nodule size of a large pea dropped off. Surface presents healthier appearance.

I have continued parenchymatous injections of 2 c.c. of the pyoktanin twice a week ever since. During my absence Dr. Cason kindly continued treatment and has since seen it several times. The size of the tumor is steadily diminishing and the patient now (April 17) suffers absolutely no inconvenience.

Case 3.—April 6, 1897. Mrs. S. A. J., age 47, white. Had eight children, youngest 3 years. Family history negative. First trouble occurred when nursing last child. Three years ago noticed lump in right breast, size of a marble, that grew steadily; breast was removed in May, 1895, and all healed up but a little place the size of a pea, but this remained hard and in October began to ulcerate. Poorly nourished woman with recurrent cancer of right breast; open, ulcerating wound, 10 cm. long by 3.5 cm. wide, eroded edges; erosions being in some place 2 cm. deep. The whole wound is covered with necrotic tissue and the cavities filled with a fetid, cancerous secretion. The glands of the axillary region are indurated; painful and cancerous nodules depend from the wound near the axilla; the induration extends up to the clavicle and patient complains of pain in neck and on moving arm.

Treatment: Cleansed wound out thoroughly with hydrogen peroxid and then bichlorid of mercury; gave parenchymatous injection of 2 c.c. of the 2 per cent. solution pyoktanin and then dusted the wound over thoroughly with a 2 per cent. powder.

April 10. Has not suffered so much since using paint and sleeps better. Treated.

April 13. Rests easier now and has better use of arm. Treated.

April 17. Complaints of some pain, but after the injection this disappeared. There is softening in the injected area and general appearance of wound and patient has improved. June 15. Still under treatment and improving steadily.

I have two other patients under treatment; one carcinoma of the uterus and the other of the breast; both are improving. There seems to be a reasonable probability of the ulcerating uterus healing, at least the improvement since I began treatment with pyoktanin (March 15) is marked.

A word as to the technique of the treatment, which

varies with the location. The injection should be made under strict aseptic and antiseptic precautions. The skin where the needle is to enter should be thoroughly cleansed with bichlorid solution. The needles may be long, short or curved, but must not be of too small caliber and should be boiled after using.

I used the large hypodermic syringe and injected from 1 to 2 c.c. of a 2 per cent. solution. This is more than twice as strong as recommended by Drs. Meyer and von Mosetig. The patient is given the pyoktanin pencil, 1 per cent. solution or a 2 per cent. powder, as the case may require, to apply daily.

Thus far I have seen no untoward effects from its use. I always employ Merck's because I can rely on its purity. The only objection to it is that it stains everything with which it comes in contact, but what is the soiling of linen when compared with the following advantages? 1, its analgesic effects are marked, as patients soon rest easily without the aid of morphin; 2, "the improvement of the function of the part involved." The man who could hardly speak so as to be understood talked without difficulty after the third injection; 3, the improvement in general health which has taken place in all five of my cases; 4, the element of hope that is added to the life of suffering man, brightening the remainder of his sojourn.

While I do not claim to have cured my patients, still I have relieved their pain and rendered them less burdensome to themselves and their friends. I agree with Dr. Meyer in von Mosetig's conclusions, "that it has been proved by practice, that parenchymatous injections of inoperable malignant growths with pyoktanin can produce disappearance of malignant tissue, though in exceptional cases, and can heal neoplastic ulcerations."

Pyoktanin, when properly used, is certainly a palliative treatment for cancer that deserves an honest, hopeful trial, for by its use many have been relieved and some cured.

LITHOLAPAXY.

SUCCESSFUL REMOVAL FROM THE BLADDER OF A GIRL OF SIXTEEN OF A CROCHET NEEDLE THREE INCHES LONG, IMBEDDED IN A MASS OF URIC ACID AND LIME PHOSPHATE.

Read by title at the meeting of the American Surgical Association, held at Washington, D. C., May 4, 1897.

BY W. S. FORBES, M.D.

PROFESSOR OF ANATOMY, JEFFERSON MEDICAL COLLEGE; CLINICAL SURGEON TO JEFFERSON MEDICAL COLLEGE HOSPITAL, PHILADELPHIA, PA.

I am indebted to my friend, Dr. C. C. Moyer of Hartleton, Pa., for this patient, a girl 16 years old, short in stature, light in weight and delicate-looking. She had been suffering from severe vesical trouble for fourteen months. Dr. Moyer said he had sounded her bladder and discovered a large vesical calculus. On the 30th of March last, I placed her in the Jefferson College Hospital. On examination there was no difficulty in confirming Dr. Moyer's statement.

Recalling that the relative frequency of stone in the bladder of men to women is as four to one, a fact due, no doubt, to the ease with which an ordinary nucleus can escape from the short and easily dilated urethra of the female, I expressed my surprise at finding so large a calculus in so young a girl. Dr. Moyer had asked her if at some time something could not have slipped into her bladder, but the answer was "no, never."

Remembering my patient with a willow twig seven inches long which I successfully removed from the bladder (see JOURNAL AMERICAN MEDICAL ASSOCIATION, Nov. 28, 1896), I stated my belief that, notwithstanding the denial of the girl, the nucleus of this large stone was most probably a foreign body that had "slipped" into the bladder through the urethra.

On Friday the 9th of April the patient, having been etherized, was brought into the operating room of the hospital, and before a large class of students and physicians the urethra was dilated; introducing my finger into the bladder, the stone was found to be a flattened oval, lodged transversely in the bas-fond. I then introduced a No. 23 Forbes lithotrite, and grasping the stone I attempted to lift it from its position in order to crush it, when it was found to have its poles firmly imbedded in the side walls of the bladder. Several times I seized the stone and endeavored to disengage it from its position, but could not do so without endangering the walls of the bladder.



Skialograph showing the protrusion of a crochet needle from the calculus in situ.

It was now manifest that if I opened the bladder above the pubes I would still have to divide that stone before I could safely remove its poles from their mortised position in the bladder walls. I therefore decided to operate through the urethra and attempt to crush the mass near its middle and then withdraw each extremity from its mortised position in the bladder wall. This I found was no easy matter.

The blades of my lithotrite were finally adjusted from above on the stone near its middle. In screwing down the male blade the resistance was great and my sense of touch informed me that there was something more resisting than the stone. The impression conveyed was that the mass was becoming more and more condensed as I screwed down the blade. At last, after great resistance, the division was accomplished and the lithotrite withdrawn. On introducing my finger several small fragments of stone were felt loose in the bladder, but the two poles were still in their original position.

The bladder was now washed out and the loose fragments removed by means of a large canula and the evacuator. In placing my finger again in the bladder I found it had contracted and that the fissured surfaces of the mass were in juxtaposition: finding, however, that I could depress the right fragment below the plane of its neighbor, I introduced a female catheter beneath my finger which was still in the bladder, and depressing the fragment on the right side of the bladder, with my finger nail I dislodged the left fragment from its mortise and brought its pole around to and through the external meatus of the urethra. It proved to be the white pointed extremity of a foreign body. I then seized it with a strong pair of dressing forceps, but could not withdraw it on account of a large piece

The bladder was then well washed out with a warm borated solution and the patient was carried to her bed.

Much of the debris from the crushed calculus was lost during the operation. I should say at least one-half of it, that collected, weighed 315 grains. The crochet needle was broken into seven fragments.

The patient was under ether one hour and twenty-five minutes. She was walking about the ward of the hospital on the fifth day, and went home perfectly well on the seventh day after the operation.

I have now operated by this method twenty-seven times, in patients from 4 to 82 years of age. In three of these cases, aged from 60 to 70, death followed the operation from suppression of urine.

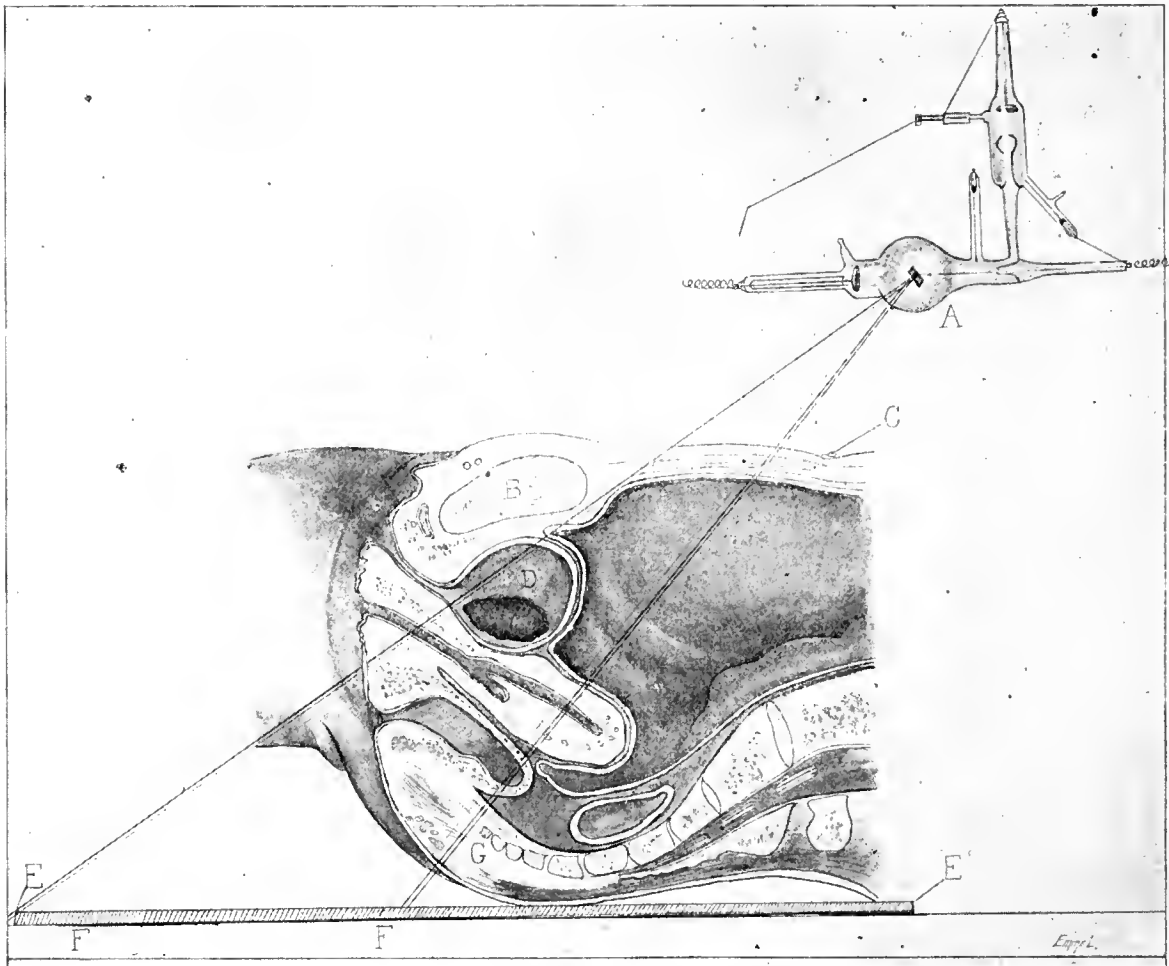


Diagram showing the relation of the X-ray tube and focus-point so arranged as to secure the shadow of the bladder contents upon the photographic plate in an area not having any bone shadow. A, platinum plate from which the rays are being given off; B, os pubis; C, umbilicus; D, bladder showing contained stone; E E, X-ray plate (photographic plate) upon which between the points, F F, the shadow of the stone is projected through the floor of the pelvis in a field free from any bony obstruction; G, tip of coccyx.

of calcareous matter, which projected from its side like the fluke of an anchor. This I broke off with the forceps, and then withdrew easily a part of foreign body, which was found to be the extremity of a crochet needle. One large piece still remained in the original position on the right side of the bladder; I dislodged it with my finger and broke it up with a pair of forceps.

In bringing out one large piece of the crochet needle on which there was a projecting piece of encrustation, the external meatus of the urethra was divided to a very slight extent with a bistoury.

The accompanying skiagraph was taken the day before the operation by Professor Coplin. It is interesting to note the manner in which the exposure to the X-rays was made. By placing the patient in a supine position and arranging the Crooke's tube in the manner shown in the diagrammatic sketch, the rays are given such obliquity that they pass through the pelvis without meeting any bony obstruction, escaping above the os pubis (B) and below the tip of the coccyx (G).

901 Pine Street.

SURGERY ONE HUNDRED YEARS AGO.

AN HISTORICAL STUDY

BY DR. GEORGE FISCHER.

DEDICATED TO THE GERMAN SURGICAL ASSOCIATION.

TRANSLATED FOR THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION
BY CARL H. VON KLEIN, A.M., M.D.

(Continued from page 1187.)

VIII.—PROFESSORS OF SURGERY AND PRACTICAL SURGEONS
(WUNDAERZTE).

Van Swieten's reforms; Joseph II and Maria Theresa; The Medico-Surgical Josephsakademie at Vienna: Masters and Doctors of Surgery; Institute for surgical operations; Austrian surgeons: Brambilla, Leber, Plenk, Steidele, Hunczovsky, Mohrenheim, Wrabetz and others; C. C. von Siebold; J. B. von Siebold, Brünninghausen, Hesselbach; Henckel, A. F. Pallas, Zenker; Loder, Köhler; Arnemann, Wardenburg, Michaelis; Rougemont, Isenflamm, Weidmann, Metzger, Sommer, Löber, Sprengel, E. Platner; The practitioners Thilenius, Brückner, Ehrlich, Eckoldt, A. F. Vogel, Schneider, Jäger, Fielitz, Böttcher, Bernstein and others; The oculists Barth, Schmidt, Beer, Lobstein, Hellman and others.

"Ten ducats to the Vienna Medical Faculty, that they may dine in pleasant memory of their deceased colleague," was the last direction of Dr. Franz Emerich of Troppau, the first professor of surgery appointed in Austria (1537). In 1555 the imperial government commissioned the medical faculty to institute surgical lectures, to which they replied in the German language as follows: "That such a course was conducted with great diligence in all universities in foreign countries and were stipendiary, and although in the German universities it was not actually customary, yet such a course is given in this university by a doctor of our faculty (Emerich), for which he is paid 52 florins. For the reason that surgery must unavoidably involve the health of people, it is necessary that our surgeons be instructed in anatomy, which properly belongs to the professor of surgery. Much attention is given to the dislocation of limbs, to cauteries, to tortures, and to all kinds of good and useful plasters, which operations and explanations belong to a surgeon. Therefore we regard such a course as fitting, useful and necessary." (Hyrtl, *Vergangenheit und Gegenwart des Museums für menschliche Anatomie a. d. Wiener Universität*, 1869, p. 14.)

We can safely pass over two hundred years, during which period science in Austria was enveloped in darkness. Even in the first half of the eighteenth century, when at small, north-German universities certain great teachers had awakened medicine to active life, Vienna still lay in deep slumber. With *Gerhard van Swieten* there came, not only in the medical faculty, but also in the spirit of all instruction, a time of thorough-going reforms. The university was obliged to submit to a complete revolutionizing of its constitution; it lost its hitherto so carefully guarded anatomy and was from that time on no longer ruled by an self-elective consistory, but only by the will of the empress. The state seized its property, assumed the conduct of its finances and thereby extinguished the last spark of its corporate life. Only the external form remained; the university had become a state institution. For that which had been taken from it the empress gave it a new building, with adequate rooms for the faculties of medicine and jurisprudence (1756). Men quite independent of the faculties were placed at their head and they specified the substance and import of the public lectures. They were under the chancellor of the empress, and with him as chair-

man composed the academic court commission, afterward so lamentably degenerated, which reported directly to the monarch. The strong and unbending will of the court physician, van Swieten, who, loaded with favors, possessed the unbounded confidence of Maria Theresa, was the soul of these reforms. In his high place, and as a foreigner, he did not concern himself with Austrian traditions, and he was easily prepared for all the obstacles which he encountered. Austria honors him as the bold creator of a new era in medicine, which raised the Vienna school to a height never before anticipated.

While medicine was greatly enriched by him, and by de Haën, Störk and Stoll, surgery "went begging." The Vienna surgeons were without any scientific training or thorough education, and could not be compared with physicians by whom they were deposed. By reason of their close connection with the bath-keepers, a change for the better was hardly possible with them. The barber shop still remained their highest ambition. Van Swieten's regulations were scarcely able to help surgery much. In 1779 he elevated *Joseph Jaus*, who had at first been appointed demonstrator in the anatomic amphitheater, to the professorship of anatomy and surgery. In the summer Jaus gave lectures on theoretical and practical surgery, instruments and bandaging, and entrusted the teaching of anatomy to a young docent, Gasser, whose name has been immortalized by the Gasserian ganglion. Men of real culture, who devoted themselves to surgery, were quite isolated. The war between Austria and Prussia made the lack of good surgeons sorely felt. French surgeons were appointed in both armies, until finally the necessity in Austria became so great that Emperor Joseph resolved upon the founding of a medico-surgical academy for the better training of surgeons.

Joseph II. was a prince who, in spite of his many-sided knowledge and his keen understanding, was yet a theorist. Sanguine in undertaking, tirelessly active and ardent, he was often inconstant in execution, and in his youthful enthusiasm he would carry everything by storm. The emperor experimented much in all humane projects and all effort in behalf of townsman and peasant, undertook the most difficult things without consideration, and gave them up just as readily. He possessed, in common with Frederick the Great, a simple, homely mien, and, like him, enjoyed the worshipful veneration of the people, in spite of which they both suffered discontent in their old age. In his last years, Joseph complained that with all his care and patience he could accomplish nothing because most of his officers did not comprehend his plans and intentions, and when he died, in 1790, his last words contained the melancholy burden that he had seen all his undertakings wrecked.

If the two German princes, Joseph and Frederick, be compared with each other as statesmen, the result is to the advantage of the latter; to physicians the figure of the Emperor is more attractive. He extended to our science and to our profession far more sympathy than did the Prussian king. If, in Joseph's liberality and humanity there was concealed a good share of despotism and absolutism, yet in that he was only consistent with his century. The subject of public health lay close to his heart, and also to that of his mother, *Maria Theresa*, with whom he became joint ruler in 1765. The empress had given the kingdom of Bohemia (1753) a medical ordinance in which

all country, district and city physicians, doctors, *medicinæ practici*, surgeons, apothecaries, bathers, oculists, rupture surgeons, lithotomists and obstetricians must conform. Then followed (1770) detailed sanitary regulations for all hereditary estates, according to which sanitary commissions were everywhere instituted, to which all persons practicing medicine were subordinated. Let us notice certain "court resolutions" of both monarchs. The empress forbade young people to apply themselves too early to hard work, that growth might not be checked nor bodily injury be sustained; and in severe winter weather children in the country, from 8 to 10 years old, were obliged to attend school. She forbade entirely severe corporal punishment of school children, as "using a rawhide, dangerous slavish rude blows, boxing their ears, striking or beating them with the fist, pulling their hair or ears;" only the rod was permitted, and a very moderate use of that, so they should not be disgraced. Joseph hated the corset and ordered that no girl with a bodice be received in school, because this garment was detrimental to growth; he banished it from all monasteries and schools for girls. Dancing was put under police supervision; Maria Theresa had already forbidden waltzing in Bohemia, as injurious to the health and dangerous to morality. The magistrate in Basel later shared this view. Various sanitary police regulations for public intercourse were devised. Maria Theresa restrained pregnant women from going on the streets, because of the crowding there, and for the same reason would not allow roving beggars, who were frightfully crippled or deformed, in the alleys. The emperor ordered that in summer, on account of the dust, the streets of Vienna be sprinkled, and had communities build morgues in which the dead were kept till burial, which, just as in case of dissection, was not allowed till forty-eight hours after death. He also abolished the custom of entombing bodies in the Vienna churches and had them taken at night to the churchyards in the suburbs. His suggestion to bury them in a cloth sewed into a sack, and nothing further, met with no approval. General Potrosch, out of respect for his emperor, had himself buried in that way. The friars were admonished not to destroy their health through the loud singing of choruses. He ordered the strictest secrecy in the lying-in hospitals and removed the stain of illegitimate birth in all classes. His mother abolished torture, he, the death penalty, though he was obliged to restore the latter because of the increase of crime. We have mentioned that in Joseph's reign, any Protestant or Jew could for the first time become a doctor and that he made German the official language for lectures. The name of the emperor is indelibly associated with his benevolent institutions: The General Hospital, the Military Hospital in Vienna, the Foundling Hospital, the Deaf and Dumb Institute, the Medico-Surgical Academy and also various valuable collections and libraries which he bought.

The emperor showed a great partiality for surgery, although he had frequently been subjected to the surgical knife. Near the beginning of his reign he was operated on for a tumor on the head, while he often had hemorrhoids cut away, and six months before his death had an operation for a rectal abscess and fistula. Besides the ills mentioned, he suffered for a long time from his eyes. He from the first visited the hospitals frequently, rectified the mistakes which he discovered, and in spite of all dissuasion,

could not be deterred from endangering his life in the infected places. When the General Hospital was established, scarcely a week went by in which the emperor did not go through the wards and inquire closely into everything. He sometimes even discussed medical matters with the physicians in Latin. In Paris, whither he journeyed to visit his sister, Marie Antoinette, he inspected the hospitals as well as the academies and collections. On the journey there he went out of his way to see A. von Haller in Berne, in doing which he took no notice of Voltaire. He found the great scholar very weak, and when soon after his return to Vienna he sent him a quantity of wine and Peruvian bark, von Haller had died a few days before.

Joseph II. was the first German prince who took any interest in surgery, and rightly comprehended that its advance could only come to pass by uniting it with medicine. The honor of freeing from the bonds of slavery the science so long despised in Austria is unquestionably his. Like medicine, it should be a free art, and no longer a trade. On that account the emperor released the surgeons from the restraints of the guilds and the barber shops, so that one who had learned surgery thoroughly could practice it without belonging to a guild. To combine the study of the two sciences, he himself (1786) outlined a common course for physicians and surgeons. In the first semester he placed anatomy and chemistry, in the second general and special surgery and botany, and throughout the entire year special natural history; in the second year, physiology, higher anatomy, operations, instruments, bandaging and obstetrics; in the third year, pathology and materia medica; in the fourth year, medical and surgical instruction by the sick beds, with practical work in the lying-in hospital and in the General Hospital. Besides, a course was given for country surgeons who, on account of less complete education, could not take part in the above course of study. From that time on, whoever wished to become a doctor of medicine must attend the surgical lectures.

To the emperor, no amount of money was too great to be used in training skilful physicians and surgeons for his empire. A year after the founding of the General Hospital, the *medical and surgical Joseph's academy in Vienna* was established. It was the first institution in Austria in which surgery was thoroughly taught. It grew out of the medical and surgical school which Joseph had founded soon after his mother's death, upon the suggestion of Brambilla, in the military hospital at Gumpendorf (1781). In this institution were gathered thirty over-surgeons for two years' study, and they were divided, according to their attainments, into two classes. From the first the regimental surgeons were chosen; from the second, the district and county surgeons for the provinces. At the close of their studies thirty others were called, and as a general rule, no army surgeons were appointed who had not finished this course.

When the institution proved itself worthy, it was enlarged into the *Academia caes. reg. Josephina Medico-chirurgica Vindob.*, as Joseph said in its charter, "in order to express our especial regard for that part of the nation who expose their lives to every danger for the defense of the common fatherland, for the rights of our throne and the safety of their fellow citizens, and to contribute to lighten their honorable but burdensome duties." On Nov. 11, 1785, the inauguration took place. Field marshals, generals, ministers and professors, the medical faculties, offi-

cers, regimental surgeons, two hundred uniformed students—in short, about six hundred persons, gathered to hear the Latin address of the court surgeon, Alexander von Brambilla. After the ceremonies he presented, in the name of the emperor, to the five newly installed professors, Hunczovsky, Böcking, Streitt, Gabriely and Plenck, and to the staff surgeons, Göpfert and Beinl, a gold medal of the weight of forty ducats. The building of the academy, an open square with two stories, was one of the most beautiful in Vienna, and was adorned with many exquisite statues. Everywhere there was the greatest luxury. Six hundred cases of instruments and 250 of medicines were ready whenever war might break out. Besides mathematical and physical instruments, they had a large collection of anatomic and pathologic specimens, among them sixty-four of the rarest surgical diseases, which Hunczovsky had prepared from nature, in wax. In addition, there was the previously mentioned celebrated collection of wax specimens from Florence, which were kept in 300 gilded caskets of rosewood and Venetian plate glass. In cases of red leather, with gilt shields and clasps, were their instruments and bandages. The library, which was opened daily, contained 10,000 volumes; the hall of the amphitheater accommodated 600 persons. Two hundred students were received in the academy, and lived there with the professors. Each of the professors had six rooms, in two stories, with furniture, and stabling for two horses, and received a salary of 1,250 florins. Close behind the building, the emperor had erected a large military hospital for 1,200 patients, in order to combine theoretic and practical instruction. Alexander von Brambilla was director, and as such stood immediately under the monarch and gave the academy its statutes. Hunczovsky was vice-director and Plenck permanent secretary. The members were at first Gabriely, Streitt, Böcking, Göpfert, Anton von Brambilla, Jennat, Prochaska, Scarpa, Stahly; the foreign members were Anton Louis, von Kelchen, Malacarne and Cruikshank. The academy divided its members into three classes: Active, thirty; associate, twenty; corresponding, twenty. They taught anatomy and physiology, surgical pathology, operations, instruments, bandaging, legal surgery, obstetrics, practical medicine and materia medica, besides chemistry, botany, geometry and physics. Each course lasted a half-year; at its close, medals worth five and ten florins were distributed. Prizes of gold medals were offered for treatment of specified questions. Among those for the first year were the following: Which, cut or torn wounds, should be healed by joining together, which by suppuration? What is the best and safest method of healing gunshot wounds? What causes can make a slight wound from a sharp or a dull instrument dangerous or fatal? Besides these inducements for the young men, the most important means to place surgery in the same rank as medicine, was the right given to the academy of conferring the degree of *Master and Doctor of Surgery*. With privileges in every way equal to the physicians, the surgeons could practice their profession anywhere in the empire. This right the Academy had in advance of the medical faculties, for according to an earlier ordinance, they could graduate only six doctors of medicine a year. Whoever wished to become a Master must attend the Academy two years, practice four years in the hospitals, and finally pass a theoretic and practical examination. The same training was required of

the doctor of surgery, only he must practice in the hospitals six years. He must pass three examinations, the first in the sciences previously mentioned; then he must perform in public upon a cadaver an operation drawn by lot from a number specified by the professor, and must himself select the instruments for it. To this was added an examination concerning the indications and after-treatment of operations, and an anatomic demonstration. In the doctor's oath, he swore, among other things, to have weak newborn children immediately baptized, or baptize them himself, to produce no abortions, to employ no heroic remedies, such as arsenic preparations, to accept no money or gifts from apothecaries and to sell no antidotes or medicines. The fees for the degree of Doctor of Surgery amounted to 24 florins, for that of Master of Surgery to 12 florins, but they were abated for one without means, but having extraordinary talents. To the Latin diplomas, printed upon parchment, a seal was attached by a yellow and black cord; those for the Masters in wooden cases, for the Doctors in metal. The name *Feldscher* was abolished, under penalty. At the inauguration of the academy, the emperor conferred the degree of Doctor of Surgery upon Brambilla, Hunczovsky, Plenck and Göpfert, and gave the title without charge to all professors of surgery who were not already doctors. From that time on, only those military physicians who were Doctors or Masters were advanced. Older men suffered thereby, and one battalion surgeon shot himself (1788) and ascribed his suicide to Brambilla: "Only because the world scorned me do I do this deed. . . . Since Brambilla, by whom all these persecutions come, treats all men grown gray in the service of the master so finely. I advise all honorable men to be anything but a surgeon in the imperial army." Soon the new academic degree found a willing reception in other lands; but there were abuses connected with it.

Brambilla's inaugural address caused much bad feeling among the physicians. He extolled the superiority of surgery over medicine, decried the merits of the latter in an unjust way, and did not indicate that he wished to unite the two sciences. The doctors felt their dignity deeply wounded, thought they had not deserved such humiliations, and saw in advance how the doctor's title would turn the heads of the Vienna surgeons. It was not long till Brambilla was decried as the oppressor of medicine in Austria. Much greater was the joy in the camp of German surgeons, who greeted Brambilla as the restorer of the surgical profession in the Austrian states. A. G. Richter was quite enraptured over the establishment of a surgical academy in the fatherland. "All Germany," he said, "takes a certain part in the honor of this academy, in the successful advancement of its labors, in the choice of its members, since it is from them that the surgery of Germany will expect guidance, direction and enlightenment; according to the successful or unsuccessful outcome of their labors, will foreigners judge of the value of all German surgery; among them one will always seek the most renowned surgeons of Germany; to their proceedings we will look for the most important productions in German surgery." Richter deceived himself completely. *The Medico-Surgical Joseph's Academy contributed to raise the standard of surgical instruction and the position of surgeons, but it did nothing for the advancement of surgical science in Germany.* How was that possible when

the emperor had built the most magnificent institution, and had done more to elevate surgery than any prince before him, indeed, as an exuberant hymn says, more in six years than the kings of France had done in four hundred years? For the most part it lay in the fact that Joseph II, in the choice of Brambilla, a wholly incapable Italian, had made a far-reaching mistake. From now on progress was slow; the academy published its first volume of memoirs in the year 1787, and the second in 1801. With that it ceased! and what it offered was insignificant! Let one read the preface to the first volume and compare it with that of the memoirs of the Académie de Chirurgie in Paris, which was founded forty years earlier, in order to know the spirit which pervaded the Vienna institution. Brambilla first inquired into the age of surgery as compared to that of medicine, over which useless questions others were then worrying themselves; he began with Adam, the umbilical cord of whose children must have been cut, quoted further from the books of Moses, and discovered in Tubal Cain the first maker of surgical instruments. Even Christ was adduced, because he never employed internal remedies for the sick, but always surgical methods. Examples from Homer and Virgil were produced. Brambilla then showed the superiority of surgery over medicine, and finally burned incense to the Emperor Joseph.

Brambilla's weak policy soon showed itself. When shortly afterward the war with the Turks broke out, he ordered (he was at the same time surgeon-general of the army) that no physician who was not also a surgeon would be allowed to accompany the army; all matters were to be looked after by his medico-surgeons. There was loud and general complaint against this order. Even the aged Haudegen Laudon begged the emperor to appoint physicians to serve in the field-hospitals in the future as had formerly been done. But no change was made. The dissatisfaction grew, until finally Emperor Leopold (1795) deprived Brambilla of his office as surgeon-general, abolished the office, and committed the management of Joseph's Academy to a permanent military health commissioner. A chief military physician (Professor Mederer, of Freiburg) was appointed director of the personnel of the army physicians, with a salary of 3,000 florins.

In the beginning of this century a *Royal Imperial Institute for Surgical Operators*, was established (1807) for the advancement of surgery in Vienna. From those who had taken the two years public course of instruction, and distinguished themselves, six students without means, were chosen, to be trained as operators in this institution, under the private instruction of Professor Kern. The course lasted two years; in the second half the students were obliged to perform every operation publicly upon the patients. They received 300 florins a year and were preferred for public appointments.

Austria can lay no claim to honor for her surgeons of the last century. Almost everywhere obsolete opinions and orthodox views prevailed, and there was nothing to give a new impetus to science. Surgery slept until Rokitansky and Skoda came. Let us give the court physicians precedence.

Alexander von Brambilla (1728-1800), born in Pavia, lord of the barony of Carpiano in Austrian Lombardy, Associate of the Paris Académie de Chirurgie, filled the highest positions in the state, but

was nevertheless destitute of all scientific culture, even priding himself upon that fact. Himself a crude empiric, he would have nothing to do with theoretical knowledge because it was of no avail at the bedside. He comforted himself and others with the fact that great scholars had often declared patients incurable, who were afterward restored to health by physicians who were considered ignorant but who were practically skilful. His writings, disgustingly detailed, unintelligible, without order, containing nothing useful, and above all, full of boasting, are no longer read. These qualities characterize particularly his two-volume work on phlegmons, which had been translated from the Italian into a jargon of German. In the first volume of the proceedings of the academy, he presented some worthless articles on white swellings and lead colic; in another confused essay he contended against the abuse of oxycrates and dry lint. In operations for fistula of the anus he prescribed special instruments, which, however, found no acceptance. Besides, he composed various rules for the Austrian field surgeons.

(To be continued.)

SOCIETY PROCEEDINGS.

Medical Society of the State of Pennsylvania.

Minutes of the Forty-seventh Annual Session.

The meeting was called to order at 9:30 A.M. Tuesday, May 18, at the Alvin Theater, Pittsburg, by Dr. E. E. MONTGOMERY of Philadelphia, the President.

The address of welcome was delivered by T. DAVIS, Chairman of the Committee of Arrangements. The Secretary reported a steady improvement throughout the State among the County Medical Societies, so that the number of physicians in affiliation with the State body was much increased over the previous year. No new societies had been added nor had any fallen into decadence. There were now over 3,000 members of county societies.

In regard to the matter of synthetic preparations, the payment in the United States of such large excess for these articles over what is paid in Canada, in some twice and three times the amount required in Canada, the committee submitted the following:

Resolved, That we recognize in the contract existing between Messrs. Dickinson, Brown & Co., and the German government that the sale of many of the alkaloids is in our consideration a monopoly and neither in accordance with our Code of Ethics, nor humane; because the effect it has in making the price of such drugs so high as to be beyond the reach of the suffering, therefore be it

Resolved, That we refer the matter to the consideration of the AMERICAN MEDICAL ASSOCIATION with the request that that body use its influence to secure the repeal of all legislation recognizing such laws as will give any parties exclusive control over such drugs.

The resolution was unanimously adopted.

The Committee on Rush Monument reported little progress, and slight additions to that fund.

The Committee on Pharmacy reported: The main interest of the year centered in antitoxins; proof exists that these are of great value; Dr. Koch's new tuberculin was mentioned as of very great value; creosote is being further employed externally in fevers; it shortens the paroxysm and lessens the severity, does not depress the heart; there is urgent need of a form of this drug which will be better borne by the stomach; esote has been proposed by a Berlin manufacturer, a creosote valerianate, without toxic or caustic powers, odorless and tasteless, well borne even in large doses, and inexpensive. Bromoform for whooping-cough seems of positive value. Its use is better understood, and prejudice is disappearing; it is best administered in water, with care that the whole dose is swallowed, as its specific gravity causes it to sink to the bottom of the vehicle; generally, prompt in action, and flavor agreeable. Eucain, a rival of cocain, a local anesthetic, less toxic, and with no effect on the pupil. A 5 per cent. solution renders the eye sufficiently insensitive to operation. Also used in dentistry and laryngology with satisfaction. It is said to be fully equal

to cocaine but causes local hyperemia, but the latter causes anemia; doubtlessly it will supplant the other. Bromid of strontium has grown in favor. Severe epilepsies have shown better results with this remedy, it is acceptable to the stomach and does not interfere with appetite. Formaldehyde, a new antiseptic, is worthy of notice: non-irritating, non-toxic, general antiseptic for wounds, abscesses, and for clothing disinfection of rooms, etc., better than sulphur; applied in vapor or solution; in surgery $\frac{1}{4}$ to $\frac{1}{2}$ per cent. solution; for general antiseptics, $\frac{1}{2}$ to 2 per cent. or in vapor; for sterilizing and hardening catgut so that it may be boiled without injury, 4 per cent. Generators in form of lamps are sold; a solution called formalin, containing 40 per cent. formaldehyde is made. It is used for a number of skin diseases, soft chancre, and in 1 to 5 per cent. solution in acute, chronic gonorrheal and tubercular cystitis. Thyroid extract is said to be indicated in operative and spontaneous myxedema, obesity, non-cystic goiters, some mental diseases; it is exceptionally advantageous in special cases of exophthalmic goiter, but caution is necessary; also successful in some chronic affections of the skin, particularly psoriasis; in any event recurrences are frequent.

Thyroid-iodin from the thyroid of the sheep contains 9.3 per cent. iodine and 0.5 of phosphorus, its action is said to be similar to the regular thyroid extract. Tannoform is a condensation product of tannic acid and formic aldehyde. Its advantages are tastelessness, non-irritating when applied to the intestine without undergoing any change. It is a useful intestinal antiseptic and astringent in infantile diarrhea. Externally the antiseptic and drying effects are marked without irritation of the skin. Useful in numerous affections of the skin, as hyperidrosis of the palms and soles, indolent and infectious ulcers, ulcerated lupus, impetigo, eczema, etc. The proper attitude of the profession to the manufacturing pharmacist is still a subject of dispute. While the physician should be the foe of everything that smacks of ignorance, mystery or charlatanism, and the champion of candid, honest and humane therapeutics, there are many worthy men who believe that to the persevering efforts of the conscientious manufacturing pharmacist are due the great improvement made during the last score of years in the reliability and palatability of our remedies. The difficulty is to separate the wheat from the chaff which is offered the profession; and while we would denounce impostors whether manufacturing at wholesale or selling at retail, we would urge a careful discrimination in our denunciation, and while advising a more general use by the profession of the United States Pharmacopeia and the National Formulary as their guides in the selection of remedies where it is to the equal advantage of their patients, yet we believe it is proper and in accord with the ethics to use any remedy which may cure provided there is satisfactory evidence of candor, reliability and honesty in the manufacturer, and that there are such manufacturers it would be neither fair nor just to deny.

A resolution was adopted by unanimous vote asking the legislature to maintain the present law requiring vaccination as a prerequisite to admission to the public schools.

At the afternoon session the

ADDRESS IN SURGERY

was delivered by Dr. J. CHALMERS D'ACOSTA of Philadelphia. He reviewed recent changes. He selected certain changes as all would be a herculean task. Every change is not improvement. Mankind is apt to fall a prey to "pestilential novelty." Great discoveries suddenly made are rare in medicine. Such as the discovery of the circulation by Harvey; anesthesia by Morton; vaccination by Jenner; the germ theory by Pasteur. We must add the Roentgen ray made public in December 1895 in a paper notable for profound learning, scientific accuracy and logical force but also for its genius and beautiful modesty. At a time when not a few cry their wares in the thoroughfare, and many fail to distinguish between the golden trump of fame and the tin whistle of notoriety, it is pleasant to listen to this calm deep thinking German scientist, one of the nobility of the craft, one of those who follow science for its own sake and for mankind. Roentgen's discovery was made by a sort of accident, but the genius was present to take note of the accident, and interpret its events. Not in grand University, of costly equipment, but in a laboratory poorly equipped, containing a Ruhmkorff coil, a Crooke's tube and Roentgen himself. It is startling and unique. A pathway blazed through a jungle where no one thought of entering. It annihilates notions of centuries of time. Much is yet to be learned of it. The pathway is open, but there are yet dragons to conquer, giants to slay. No man knows what these rays are, but we are getting a clear comprehension as to what they can do. In doubtful cases we need a skiagraph, and one advantage is that special technical

knowledge is not requisite to use it successfully. Skiagraphs to be useful must be taken by an expert, trained in a knowledge of electricity to get the best results from an X-ray apparatus. Foreign bodies can be located with certainty in the tissues. A bullet can be detected in the lung substance or in one of the bronchi; yes, even in the brain. In cases of doubt pictures must be taken in different attitudes. Though a needle may be located, yet it is not always easy of extraction; a piece was visible, incision failed to find it, other skiagraphs were taken; experiments with a skeleton led to the belief that the needle lay in the sheath of the peroneus longus muscle. The sheath was incised without finding the needle. A guide needle was inserted; another operation failed. Foreign bodies in the abdomen may be recognized, but it is hard to determine the exact position. In dealing with bullets the X-rays often enable us to decide if it is lodged in a safe region, whence it is not necessary to remove it—if it is deep and difficult of access, etc. Von Bergman insists against meddling surgery, where bullets, etc., are doing no harm. Foreign bodies have been located in the esophagus, in the trachea and the larynx, in the eye, and Sweet has devised a most ingenious addition to the ordinary apparatus which enables us to locate the exact depth and position of the foreign body. Vesical calculi have been caused by a hairpin in the bladder; Forbes obtained a skiagraph of a stone with a long metallic nucleus, this proved to be a knitting needle. Gallstones transmit the X-rays and cast very faint shadows; they can not be found in the gall bladder. Stones in the kidneys and ureters have been skiagraphed. But a failure does not prove that a stone is not there. Henry Morris sets forth the following difficulties: depth of kidney, thickness of tissues over it, situation under the ribs and close to the vertebral column. In examining bones and joints the new process is of great value. Tuberculosis is plainly visible. The tuberculous area is much lighter than the adjacent sound bone; several have reported the detection of spinal caries. Again we may know the state of the bone in crushed limbs; thickening of the periosteum, of bone, tumors, deformities, etc. In fractures, the rays are a great aid in finding the fracture, its direction, kind of deformity, splintering and impaction, muscle between the fragments. If manipulation has reduced the fracture and our splints are keeping it in place, it is now unnecessary to make an exploratory incision to determine the condition as before.

The speaker had been impressed with the practical value by some of his own cases—a fracture of the ulna united, the radius not—a supposed case of gouty arthritis which proved to be a fracture of the head of a metacarpal bone—a fracture of the styloid of the ulna supposed to be a sprain; a dislocation of the humerus with an epiphyseal separation. There is no question that unscrupulous lawyers will try to put us to trouble by skiagraphs of fractures united at a slight angle or with trifling shortening. Pictures should be kept of all such, as they may prove useful later. Again we recognize obscure dislocations; the outlines of the heart may be defined, etc. A sinus may be pictured. Many absurd statements have been made in non medical journals, and wild theories put forth as to influence of the rays on vegetable life, etc. Nevertheless, this is one of the most marvelous discoveries of all time.

Ambulatory treatment of fractures. This is springing into popularity. Properly employed it is useful. It can be used even when the fracture is as high up as the middle of the femur; it is best for fractures of the leg. Apply a solid dressing or apparatus to reach below the sole of the foot and have a space between it and the sole. In thigh fracture the body weight should be transmitted from the lower end of the pelvis to the apparatus, and in leg fracture from the middle of thigh to the apparatus. In one week a thick soled shoe is placed upon the sound foot, and the patient permitted to walk about. Some say three days. It is claimed that walking is a stimulant to callus formation and fibrous union, that movement of the fragments which within certain limits is desirable and do not prevent union as with fracture of the ribs. Further, patients escape danger of lung trouble as in long confinement to bed. The muscles escape the usual atrophy; it is especially useful to children. Caution is needed. Do not use the method if there is great swelling, as this may be due to thrombus and give rise to emboli; even massage is dangerous in thrombus.

Toxins and antitoxins.—It is well to recall that human blood contains in health and in disease certain substances which may protect from bacteria and secure immunity of the organism. The alexins described by Buchner kill bacteria. The antitoxins antagonize bacterial poisons but do not kill bacteria. Healthy blood may contain antitoxins; the blood of a person who has acquired immunity to an infectious disease contains them. Blood serum has a lysogenic power upon bacteria which causes the organism to swell up, become granular and dis-

solve. Modern nature is endeavoring to use drugs of nature's own compounding. The value of serum therapy, etc., has been much debated this year. Some are enthusiastic, others are jeering doubters, the bulk of the profession are somewhat skeptical but aid and encourage the experimenters—look for proof but do not find it now. In streptococcus infection (erysipelas and puerperal fever) Marmorek feels sure that the serum is efficient. He treated 411 cases with a mortality of 3.4 per cent. Maragliano thinks this encouraging, but Germany doubts. We do not yet know with certainty the pith of the matter.

In tuberculosis, Richet and Hericourt have obtained no results from the injection of serum of animals refractory to consumption. Koch has modified his tuberculin and believes it is now a trustworthy agent. The new tuberculin is made thus: Dried cultures of bacilli are mixed with distilled water, the fluid is placed in a centrifugal and agitated. Two layers are separated. The upper is the old tuberculin (tuberculin O). The lower layer is the new tuberculin (tuberculin R).

This is given hypodermatically, first in very small doses, finally in doses as large as 20 mgs. Cases far advanced or with much fever are not treated. Koch does not claim cure but does claim great improvement.

In syphilis the serum of rams and dogs is alleged to have produced benefit. It is claimed that we can treat primary syphilis with the blood serum of an individual with tertiary syphilis and obtain early healing of chancres. In cancer serum has been useless. In tetanus we lack proofs of value. Again the diagnosis is not always sure. Inoperable malignant tumors have been treated. Some are enthusiasts; some, as Senn and Keen, disbelieve entirely.

Operations for insanity and idiocy: Drugs have been used in infinity. Superstitious rites, etc., every herb and plant has been pronounced the proper thing for these forms of disease. Trephining long was popular, one bored twenty-seven holes in the skull of a patient, today he would perform linear craniotomy. The comparative safety of operations has impaired the judgment of surgeons. Now most agree that if there is obvious injury of the head with cerebral symptoms and doubt as to the existence of fracture, the surgeon turns down a flap of the skull to see. But we no longer trephine in simple fracture without depression or cerebral symptoms. In children a moderate depression may bulge to the natural level by nature's processes. But when marked he trephines; this is known as preventive trephining. In discussing the question of traumatic origin of insanity we wish it to be distinctly understood that our belief is that traumatism can be a cause, but extremely rare. Traumatism, is often given as a cause by the relatives, usually it is only one of many causes, as heredity, inebriety, mental worry. It is probable that in the healthy brain an injury can produce insanity. This in several ways—concussion, fear; the lesions described as causative are sclerosis, pressure, inflammation, hyperemia, edema, congestion, etc. Symptoms may be early or late. But when late there are usually prodromics of change of character, irritability, moodiness, alteration of sentiments. Types vary; prognosis as a rule is bad. Some have apparently been cured by operation. Many have followed it. We should operate where there has been no obvious traumatism indicated by scar, depression, etc. We should not operate in paresis; improvement has been known to occur without. Again much want of care is seen in describing a case of insanity. My own conclusion is that while a certain proportion of insanities have been due to traumatism, in few is there a causative lesion. Many cases are not cures. Craniotomy for idiocy is now going out with the tide. Microcephalic idiocy is rare. Pressure is not the cause of idiocy. Much can be done by skilful training. It may safely be said this operation is a failure. "You may as well forbid the sea to roll, etc."

Among a multitude of ideas, facts, disputes and tendencies we may mention as worthy of thought and attention—the determination that operations for cure of epilepsy are rarely permanent in result, the great value of operations for meningeal hemorrhage, cerebral abscess and infectious sinus thrombosis, the slight value of most other operations upon the brain—the diagnostic usefulness of lumbar puncture by Quincke's method and its therapeutic usefulness. The great appendicitis controversy which is still under headway and undisturbed in viciousness and irascibility: When shall we operate? Shall we always remove the appendix in abscess cases? These are the questions which are in course of solution. The decadence of the supreme position of the chemie germicide and increased confidence in aseptis rather than antiseptis. The use of Bier's method of congestive hyperemia in tuberculosis lesions. Infiltration anesthesia as devised by Schleich: local anesthesia by eucain and the sloughing apt to follow it; Rosenberg's method

by cocainizing the nares before chloroform, the dangerous nasal reflex being abolished by the time the chloroform is inhaled; the mass of contradictory evidence as to ether and chloroform on the kidneys; the use of oxygen with ether and chloroform, etc. In general, of late, destructive radicalism has lessened its sway and scientific conservatism enlarged its domain. Conservatism, save without operation, does not mutilate. The spirit which animates the real leaders of modern surgery is the same spirit which was in the temple with Hippocrates and in the school with Herophilus; by the lonely lamp of Celsus and in the solitary study of Vesalius; which was with Harvey in the laboratory and Paré on the battlefield; which was in the lion heart of Abernethy and which filled the lordly soul of Hunter; which stimulated the labors of Gross and guided the scalpel of Agnew; a spirit which ennobles, elevates and dignifies the magnificent science of modern surgery.

The address in mental disorders was by Dr. THEO. DILLER, Pittsburg.

THE SCIENTIFIC EVOLUTION OF STATE HOSPITAL FOR THE INSANE.

Mental diseases must be studied from several standpoints, as that of the humanitarian, the anthropologist, the social scientist, the political economist, the alienist. Each overlaps the other. But small fragments can be treated in the limits of such an address, hence he chose to consider the hospital and asylum. These are greatly overcrowded. In them are over 1,200 more than can be accommodated. Hence they can not receive proper treatment. A scheme for the care of the chronic insane has been in successful operation in Wisconsin for sixteen years. Twenty-six hundred cases are cared for in twenty-three county asylums connected with farms. Each has a capacity of 100 to 123. The State pays them \$1.50 for the care of each case, and exercises strict supervision over them. Cases are admitted not directly, but sent from the State hospital when it is evident they will not be benefited by hospital treatment. They are placed nearest their homes, accessible to visits by relatives. Ample opportunity is secured for work out and in-door. Three thousand of the 5,600 cases in the State are incurable. If Pennsylvania were to adopt this plan the State would save \$300,000 yearly, leaving the hospitals filled only to two thirds their normal capacity. The State board of lunacy should be abolished. A commission of three members, well salaried, should devote their entire time to the work. All the haphazard work should cease. These insane hospitals need a central guiding power. Civil service should be established for all. Superintendents should meet the commissioners monthly for advice. A pathologic laboratory should be provided for all. Pennsylvania needs separate institutions for criminal insane. Inebriates need a separate place. Today the outlook is encouraging. He quoted largely the results of the Massachusetts hospitals. Internes are appointed after competitive examination, serve without pay other than lodging and board. Thus we may double the medical force with little expense. A neuropathologist of the highest grade is selected. Nurses should be trained for the care of the insane. In such places the clinical work is of the highest order. Pathology is done in a number of hospitals, and the number is growing. The friends of scientific evolution of insane hospitals can hope for much when we see what has already been done. Pennsylvania should take a step forward, imitate the example of New York.

Dr. C. W. DULLES gave "Some comforting Facts about Consumption." The disease is not contagious. By care much has been done to prevent the spread of this disease. We see a great decline in its prevalence.

Dr. S. M. SMITH, Philadelphia, read a paper on

CHRONIC SUPPURATIVE OTITIS MEDIA.

Here we have an enormous field for preventive medicine. Arrest the initial tympanic inflammation, give prompt relief should it advance to acute suppuration. There are several varieties of this disease: Inflammation confined to the lower part of middle ear cavity with opening in the membrane, granulations protruding, caries relatively infrequent. Or perforation may involve the entire membrane, the ossicles changed by necrosis, deafness marked, obstinate discharge and proneness to mastoid and brain complications. Prognosis of first mostly favorable, while attic disease is serious. We must relieve or modify the persistent discharge, remove masses of granulation, polypoid growths. Absolute cleanliness, general antiseptis; irrigation or syringing to be used only in selected cases. Cleanse the ear carefully by mopping with sterilized cotton saturated with hydrogen peroxid; then many are cured by applications within the tympanum of nitrate of silver or liq. plumbi subacetatis, loosely packing with iodoform gauze once or twice a week, gradually ceasing as the discharge ceases. Dusting the surfaces with acetanilid powder is also valuable. Granulation may be destroyed with strong solutions of chromic acid, but better with

instillations of absolute alcohol. Pain from this is reduced by a 50 per cent. solution of boroglycerid in the proportion of one dram to the ounce of alcohol. Pack the canal after each with iodoform gauze. Boracic packing is useless and objectionable, preventing free drainage. If no improvement in a few weeks, enlarge the tympanic opening, remove all inflammatory products, taking care not to disturb the ossicles, and again follow the line as above. Care of the naso pharynx and the general health is needed. Perforations high up with more or less necrosis of the ossicles and walls, indicate a more formidable disease, the dura mater may be infected and diffuse meningeal trouble occur. Here we must establish free drainage, remove the ossicles and all other pathologic products.

Dr. A. C. WENTZ of Hanover spoke on "The Umbilical Cord." Its affections are hemorrhage, vegetations from suppurative, tetanus, sepsis. Treatment of the cord is as various as the mind of the attendant. He quoted the plans adopted by the best minds, as Doktor, Noble, Boyd and others, in various institutions. After long unsatisfactory attempts in various methods he concluded that calomel, or that and boric acid, are the best that can be used for dressing the stump for both rich and poor alike, the city or the country, and for the reason that calomel is an antiseptic, keeps the surface of the skin free from urinary and fecal chafing; they are cheap, easily carried in the obstetric bag, easily applied, a teaspoonful being sufficient for a two weeks' dressing.

Dr. C. A. VEASEY of Philadelphia, read a paper on

THE TREATMENT OF COMPLICATED ULCERS OF THE CORNEA.

in which, after defining that he meant by a complicated corneal ulcer one that was more or less extensive and that showed a disposition to spread rapidly and involve other portions of the cornea than that first affected, he advocated the institution of the following treatment:

1. Examine thoroughly the conjunctiva, the lachrymal ducts, the nares and naso pharynx, as well as the cornea itself, and if any abnormal condition be found that is either the primary cause of the ulcer or that is keeping up the condition, direct the treatment against it as well as against the ulcer itself.

2. Employ moist heat by means of the local application of pieces of lint or flannel wrung out of hot water at a temperature of 120 F. from fifteen to sixty minutes at a time, repeating at intervals varying from two to four hours, according to the virulence of the disease.

3. Cleanse the ulcer and the conjunctival cul-de-sac with some warm antiseptic solution immediately after the employment of the moist heat, and between the times of its employment if there be much discharge. For this purpose may be used a saturated solution of boric acid, a solution of bichlorid of mercury (1 to 6000) or a solution of formaldehyde (1 to 4000).

4. Instil a drop or two of a solution of atropin (four grains to the fluid ounce) once or twice daily if the ulcer be central; but if it be peripheral, a solution of eserin (one-sixth of a grain to fluid ounce) may be employed from three to six times during the day and the atropin solution instilled once at night.

5. The eye must be protected by dark glasses or an evenly and lightly applied bandage. As a rule the former should be used in those cases in which there is considerable discharge, the latter in the cases in which very little discharge is present.

6. Should the above means fail to check the progress of the ulcer, it should be curetted and, after dusting on its surface some iodoform previously pulverized and sterilized, a bandage applied.

7. Should the ulcer continue to spread, after being curetted it should be touched with some of the chemical agents employed for the purpose. Of these the tincture of iodine, liquid carbolic acid and silver nitrate (the latter in the strength of ten to twenty grains to the fluid ounce) seem to be the best.

8. The actual cautery should be applied after the previously described remedies have been employed without beneficial result, or even before these have been used if it be seen that the ulcer has assumed a malignant type, that is if the cornea is becoming so rapidly involved that the destruction of all or a large portion of its tissue is threatened.

9. During the treatment of any case of corneal ulcer, be it ever so mild, if there be present any pathologic condition of the lachrymal passages, of the nares or naso pharynx, it should be very carefully treated at the same time that treatment is directed toward the ulcer itself.

10. Any unhygienic condition, dietetic error, or constitutional diathesis should be corrected.

Dr. W. J. K. KLINE of Greenburg, read a paper on

SCIENCE IN MEDICINE.

This paper discusses the uncertain and unsatisfactory methods of the treatment of disease as exhibited in the medical practice of the past, and endeavors to show that further

progress in ascertaining the properties and a chemical basis should be the paramount object in the labors of those who are especially engaged in analyzing the various articles of medicine by ascertaining their exact chemical formulas and so arrange them that their therapeutic properties would be readily ascertained and known.

A complete system on this basis would do away with the numberless varieties of medicinal agents and would not only simplify the practice but would vastly enhance the beneficial results of treatment and place upon a higher plane the whole professional character.

Some examples were given to indicate the direction of thought, and the method of overcoming difficulties was outlined.

Dr. J. C. LANGE of Pittsburgh read a paper on "Asphyxiation by Carbonic Acid as the Death Penalty." He spoke of the horrors of hanging, the dread of strangling, perhaps the breaking of the rope, the head being entirely jerked off, or the rope being too long, its failure to cause death, etc. All, however, acted as an element of punishment, while the easy, speedy death by carbonic acid would rob the law of its terrors.

Dr. E. B. BORLAND of Pittsburgh spoke on the subject of "Rheumatism." It is second only to tuberculosis. Less importance is attached to heredity. Many regard it as a germ disease. No specific germ has been isolated to prove its existence. The blood contains toxins, rarely germs; it is an intoxication rather than infection. The tonsils are believed by some to be the seat of entrance. Majority of sufferers have intestinal indigestion, fermentation; a sour odor is noticed from the stools and stomach, then in the urine and perspiration. He believed the depraved small intestine contained indigestible food, furnished the medium for culture germs, the toxins of which produce the rheumatic blood state. It is thought the pus-producing germs are the factors. Pathology: The toxins give rise to increased oxidation, fermentative acids are thus caused in the blood, nitrogenous waste is also increased by the presence of toxins. Red corpuscles are diminished, fibrin increased. The disease is associated with malnutrition, imperfect digestion, and its poisons have a special affinity for fibrous tissues. General febrile phenomena have little diagnostic significance, the sour, pungent stools, perspiration and urine, even sometimes acidity of alkaline fluids in the earlier stages of acute attacks; the metastasis to and involvement of parallel joints with inflammation of the larger articulations, heart lining and covering easily make the diagnosis. Under middle age the patient ought to get well; average lasts six weeks. Treatment consists in complete rest, hygienic surroundings, wool clothing and bed covering, easily digested food, abundance of water (five to twelve pints a day). Special treatment: Neutralize the acidity, remove the source of the poisons: move bowels well, administer alkalies till urine is neutral; quinin is valuable; soda salicylate acts partly as an intestinal antiseptic; methyl salicylate is better, not so depressing and a moderate blood and intestinal antiseptic; phenol salicylate (salol) is a decided advance, yet it irritates diseased kidneys, therefore the urine should be examined before using it, 10 grains every two hours. It is pleasant to take, splits into carbolic and salicylic acids in the small intestine, relieves pain, does not depress, lowers temperature. About one hundred grains should be given in divided doses in twenty four hours.

Dr. C. W. DULLES, Philadelphia, made a report on "Hydrophobia," which gave a history, as far as obtainable, of all cases published since his last report. He was, as usual, very emphatic in his belief as to this disease and provoked quite a discussion as to the reality of the disease.

The report of the special committee on the publication of the Transactions was read and it was agreed to publish in journal form, as several offers from journals had been presented. After some discussion the matter was postponed for a full report on each of these.

In the evening at Carnegie Hall the President delivered the annual address. His subject was the

ADVANTAGE OF MEDICAL ORGANIZATIONS TO THE PROFESSION.

He alluded to the originators of the Society with reverence, Alfred Stillé yet remaining. It was started by physicians of Chester and Lancaster Counties. This is the fourth meeting in this city. When it was organized the practice of medicine was largely empiric; blood letting and mercurialization were the accepted methods. Pathology was unknown, surgery was sacrificial, not conservative. The Atlees had but begun the revival of ovariectomy, which has now developed that important department, abdominal surgery. Communication was difficult, traveling slow, journals infrequent, new procedures in any branch were long doubted. Medical societies have stimulated the profession, we have concerted action, medicine has progressed; we have new drugs, new surgery; every part

of the body is reached with the knife, entire revolution has occurred. Old things have passed away, all things have become new. Now, every plan is heralded in all parts of the world, tried by every one; we find the cavities illuminated and explored; the individual can register the beauties of his own skeleton. The germ theory has given us scientific treatment. We will be occupied with the bacillus, but we will employ him to aid us in our work, one to destroy a malignant form. He alluded to the work of surgery in the region of the peritoneum, of the appendix and similar troubles. Medicinal agents are now manufactured by large establishments, made more useful, attractive to the eye and the palate. Many companies would almost persuade the patient by their explicit directions how, when and where to use these manufactures that the physician is no longer needed; they give the compounds under names which give no clue to the ingredients and resent his want of confidence and preference for articles better known. It is a question whether the facility with which elegant preparations are secured is an unmixed evil. The physician should insist upon a knowledge of the chemist and qualitative composition of every compound he dispenses. The importance of careful training was early recognized by this society. Licensing was at the first meeting proposed, a measure requiring forty years to accomplish. Longer periods of study were urged, four years was none too long then in the estimation of our founders. With the present year the first class of four-year men graduates at the university. The record of this society is glorious and the decision to publish a journal affords an opportunity to get to the members early all its doings and in a form most acceptable. We have 3,000 in affiliation, yet we expect of the 7,000 physicians in the State many will become subscribers to the journal as has been seen with the AMERICAN MEDICAL ASSOCIATION. Still it is a field in which labor may not fully succeed as in the AMERICAN ASSOCIATION, as yet only about eight thousand or more out of 70,000 physicians are subscribers. There should be no turning back, the journal must be a success or not be attempted. Subjects should be associated of a similar character, rather than have a paper and discussion on one day, then a similar paper next day. The ground is again to be threshed over, or this paper, perhaps a better one, left undiscussed. We can thus economize time. Encourage the ablest men to read papers or discuss them, thus we can add to the great value of the meetings. He felt it would be better to assign one day to surgery, another to obstetrics, etc., so that those who desired could attend and hear those papers in which they were interested. He suggested that in place of the present Committee on Scientific Business there be appointed a committee of three representing the three divisions of medicine, who shall arrange the program, that these three shall prepare addresses in their branches to be presented as the first article on the program, the order of subjects to change each year. This would make the president interested in and responsible for the success of the meeting over which he presides, insures the specialist one day adapted to his needs, affords the general practitioner opportunity to compare notes with men of authority and large experience and will be advantageous to all. It should be so well prepared that every member could not afford to miss a single meeting. A night session on the second day to consider some special subject would be useful. The subject to be opened by a speaker on either side and after the debate the conclusions closed by the principals. This would be extremely valuable and add much to the circulation of the journal. Within a few months we have lost three ex-presidents, Drs. Hiram Corson and Traill Green were long in the profession, had outlived the usual period allotted to man, were of strong, positive character and devoted to the profession. Dr. J. B. Murdoch of this city, the genial gentleman, skilful surgeon, the earnest teacher, whose years were shortened by his devotion to study. I can not close without reference to another whose gentlemanly, kindly manner has endeared him to all, I allude to William H. Pancoast.

On Wednesday the "Address in Hygiene," by Dr. A. P. BRUBAKER, was devoted to a consideration of the views of the day on hygienic matters.

Dr. T. J. ELTERICH of Allegheny reported

SIXTEEN CASES OF LARYNGEAL DIPHTHERIA TREATED BY ANTITOXIN AND INTUBATION.

Membranous croup is now regarded by most authorities as always diphtheritic, and while it is acknowledged that cases may occur which are non-specific, non-contagious in character, they are undoubtedly rare in number. The writer considers all cases of pseudo-membranous laryngitis, not of traumatic origin, as local manifestations of diphtheria, and bases the treatment on that diagnosis. Of course, the presence of the Klebs-Löffler bacillus is a definite criterion of diphtheritic pseudo-membrane.

Dr. P. J. EATON, Pittsburg, read a paper on the "Daily Medical Inspection of the Public Schools." He alluded to the need of understanding infection and contagion, explained the general views on these, the proper methods of preventing disease spreading by isolation, etc.; quoted largely from the work done by various health boards, in New York, Boston, etc. The first requisite is a board of health with power to enforce its decrees; then the appointment of school inspectors to examine all complaining scholars, sending home those sick, defining for each the disease, etc., gave the proper plan for disinfection, a series of cards and certificates to be used for the entire work; finally the plan for real isolation, that would prevent any possibility of contagion. He would divide a city into districts of convenient size, in each have a competent medical man as inspector, to visit each school daily, all complaining children to be mustered in a central office, there examined, a certificate given each, the health board notified where necessary, the family physician also.

Dr. X. O. WERDER, Pittsburg, read a paper, "Report of Two Interesting Cases of intestinal Resection and Anastomosis." In one a very large portion of the small bowel was resected with complete recovery.

Much discussion followed upon this paper as a subject of unusual interest.

Dr. F. BLUME of Pittsburg read a paper,

OVARIAN TUMOR COMPLICATING PREGNANCY; PORRO-CAESAREAN SECTION.

Mrs. C. S., 38 years old, mother of four children, was kindly referred to me by Dr. G. L. Bumgarner of Natrona, Pa., with the diagnosis: Pregnancy complicated by a tumor obstructing the birth canal. She entered the gynecologic service of the Allegheny General Hospital June 18, 1895.

On examination the uterus was found to correspond in size and position to an eight months' pregnancy. The pelvic cavity almost completely blocked with a dense ovarian tumor. The cervix uteri, high up and pushed to the right, could only with difficulty be reached by passing the finger between the tumor and the pubes.

An attempt to push the tumor back was not successful. The question arose: Could the tumor be removed without interrupting pregnancy? If so, immediate ovariectomy would probably be the safest method of procedure. Ovariectomy, however, before the uterus was emptied of its contents was deemed impossible on account of the location of the tumor and its inaccessibility. Condition of the patient being good, it seemed to be proper to postpone interference in the interests of the child. Advised the Porro operation with removal of the growth and decided to operate a week before term.

Operation July 12, 1895. Long incision. Uterus delivered from the abdominal cavity, the upper part of the incision closed to prevent escape of the intestines. A rubber ligature loosely applied around the cervix, to be tightened in case of hemorrhage. Uterus incised, membranes ruptured and the child delivered. The cord cut between forceps and the child handed to an assistant. Cervix constricted with the rubber ligature, transfixing pins applied, the placenta removed and the uterus amputated. The tumor, which arose from the left ovary and was bound down by adhesions, was enucleated, lifted out, ligatured and cut away. Peritoneum sewed around the stump below the rubber ligature. Abdominal incision closed and stump dressed with iodoform and iodoform gauze.

The tumor, which was larger than a child's head, proved to be a multilocular cyst.

The patient made a splendid recovery. The child, a fine boy weighing nine pounds, was put to her breast on the third day following the operation, and lactation continued uninterruptedly. She visited me with her boy last summer. Both were in excellent health. Upon examination I found the cervix uteri very small, attached to the abdomen and giving no inconvenience. No ventral hernia.

(To be continued.)

Chicago Pathological Society.

Regular meeting held March 8, 1897.

Dr. JAMES B. HERRICK, President, in the chair.

Prof. EDWIN KLEBS read a paper on "Some Remarks on Malignant Growths" (*vide JOURNAL* p. 575).

ICTERIC NECROSIS AND NATURAL INJECTION OF THE INTRACELLULAR PASSAGES IN THE LIVER.

Dr. GUSTAV FÜTTERER - The case from which these specimens were obtained was one of primary carcinoma of the gall bladder. The illustrations which I pass around show carcinoma of the wall of the gall bladder growing into the liver

substance and along the hepatic duct, and causing obstruction of the hepatic duct. It was a glandular carcinoma, and the first photograph shows this very nicely. The next illustration shows how carcinoma begins and grows into the liver substance. The obstruction of the bile duct caused a dilatation of all the bile ducts inside of the liver. When I came upon the bile ducts and opened them, they were filled with absolutely clear mucus. Their walls were thickened. A microscopic examination revealed necrosis around some of the gall ducts, which was due to pressure by the dilated duct. This pressure necrosis was only found in comparatively small spots. Inside of the acini icteric coloring was observed in every one of them, occupying a central zone around the central vein, increasing more and more the nearer it got to the central vein. All through the liver, the central vein was surrounded by an inner row of preserved liver cells, which leads me to conclude that the lymphatics have carried off the main part of the lymph. A more minute examination of the cells inside of the icteric necrotic portions showed the following: Surrounding the necrotic portions a great number of small, contorted, greenish masses were found inside of the cells, masses which were formed like corkscrews when they were rather small, but which became more and more straightened out as they grew larger. They were mostly found around the nuclei as concentric rings. It was seen that bile had been retained inside of the liver cells, and normal bile channels inside of the liver cells could thus be seen. How did this come about? The current of bile must have been reversed. For some reason or other, the bile has not entered the interlobular gall ducts. Whether the pressure of the mucus that filled the gall ducts prevented the bile from running in that direction, or whether it was caused by obstructions between capillaries and ducts, I am unable to say; the fact remains that the current has been reversed to the center, for there we find the icteric necrosis. The peripheral portions and the cells of the intermediate zone got rid of their bile almost as fast as it was produced, while the central portion was continually overloaded. Thus the cells in the central portion were not able to get rid of their bile, and in our microscopic specimens, which were well preserved in formalin, thickening of the bile had taken place, inside of intracellular channels. I exhibit a photograph showing a high degree of destruction of the liver cells which progresses to complete dissolution. I show a drawing which points out the connection between the extracellular and intracellular bile channels. If you will look closely at the drawing, you will see that one of the intracellular branches dives down under a nucleus and comes out again on the other side. I show you photographs of small channels that are contorted. Some of the photographs show how the cells become actually destroyed and the network dissolved. In one photograph we have a perfect network. Of course, we can not expect a clear, perfect picture, as the loops occupy different planes, and you would have to photograph a number of sections to get a proper view of the whole network of a certain cell. But if you will look at the photographs with a magnifying glass you will be able to see these channels very plainly. You probably know that experiments have been made by numerous investigators, who have succeeded in driving the fluids which are used for injection of the bile ducts into the cells, but it has always been a question whether these were artefacts or not. Here we have a natural injection of the intracellular channels with bile, which tends to prove that those who made artificial injections of the bile duct system have succeeded in driving the liquids used into the intracellular roots of the whole system.

My conclusions would be: A stenosis of the hepatic duct has caused stagnation of bile inside of the gall ducts, this causing a dilatation of the ducts, a thickening of their walls, and patches of necrosis of liver cells. The bile contained in the ducts was gradually replaced by mucus produced by the glands of the ducts. About two-thirds of the volume of the liver substance was apparently unchanged and the liver produced large quantities of bile, which, however, were not excreted by way of the gall ducts, probably because the thickening of the walls of the gall ducts caused obstruction of the entering capillaries. The reason why I would prefer to accept this explanation is because I find no dilatation of bile capillaries in the peripheral zones of the acini. Not only has the bile been prevented from running in the normal direction, but its current has been reversed and it has entered mainly the perivascular lymphatics which surround the central vein, but also to some extent the latter. Further, the constant overloading of the central zone of the acini with bile, prevented the cells of these portions from expelling the bile produced by themselves, thus enabling me to study the intracellular bile channels and even have them photographed with oil immersion. The study of those channels shows that they are very small, contorted, that

they surround the nuclei as rings or approach them in radial directions, that they form networks in the protoplasm of the cells, also around the nuclei, and that they communicate with intercellular ducts. These channels lose their contorted appearance as they become dilated more and more, and as they grow larger, the substance of the cell and the nucleus degenerate, until at last nothing but detritus tells of their former existence.

DISCUSSION.

Prof. EDWIN KLEBS—I have been very much interested in Dr. Fütterer's demonstration. The question is, What is it that fills up these canals? Can it be only bile? I think not. As bile is fluid and stains the liver cells diffusely in icterus, can it not be that hyaline masses, formed in the liver cell, are the cause of obstruction of these intracellular canals? Impregnated with bile, this suggestion seems to explain much more clearly the dilatation of the canals, than by fluid masses. A very similar process may be seen in phosphorus intoxication. There the intercellular canals are filled up with such hyaline masses (O. Wyss and Alter). New researches will show possibly also intracellular canals.

Dr. LUDVIG HEKTOEN—In addition to the artificial and natural injection of intracellular passages, there is another way of demonstrating them, namely, by means of Golgi's stain. I show you here the plates illustrating Erik Mueller's beautiful work on "Intracellular and Intercellular Passages." This plate represents the intracellular passages as revealed by Golgi's method in the liver.

THE FATE OF GIANT CELLS IN HEALING TUBERCULOUS TISSUE.

Dr. LUDVIG HEKTOEN presented a number of microscopic specimens from a case of healing tuberculous leptomenigitis and made the following remarks concerning the changes in the giant cells: The investigations into the nature and the importance of the giant cells of tuberculous tissue have not led to uniform results. Baumgarten, Weigert and others look upon them as necrobiotic from the inception. Metchnikoff and his school regard them as active, living, defensive cells. The mode of formation, the sources, the relation to bacilli, the degenerative changes of giant cells have all been studied, but the further definitive changes that occur when the bacilli are removed or their action neutralized before the giant cells become necrotic have received but very scant attention. Are the giant cells left capable of progressive changes, do they continue to exist as giant cells, or are they removed by way of disintegration? Manifestly a definite answer to some of these questions would throw some light upon the nature of the giant cells. D. J. Hamilton remarks that sometimes giant cells live on and organize, *i. e.*, secrete or form fibrous tissue. The numerous investigations into the healing of tuberculous peritonitis make no reference to the part played by the giant cells. The most extended statement occurs in the work of Professor Klebs on "Die Causale Behandlung der Tuberculose"; he states that giant cells in healing tuberculous tissue in guinea pigs subdivide into uninuclear cells and become part and parcel of the living tissue, more particularly of the endothelial lining of vascular channels and spaces.

In an unusually long case of tuberculous leptomenigitis in a 35-year-old man, the symptoms, consisting of headache, optic neuritis, occasional vomiting, extended over four months, death resulting from a pneumococcus pneumonia—the post-mortem showed a chronic tuberculous basal leptomenigitis, tuberculosis of the peribronchial lymph glands, chronic nephritis and lobar pneumonia. At the base of the brain there was much turbid fluid and a thick layer of firm translucent material containing pin-head sized and large nodules. In the exudate, tubercle bacilli were demonstrated by means of culture. Microscopic examination of the leptomeninx showed a chronic fibrous endarteritis, and the production of much loosely fibrillated young connective tissue with larger and smaller fibroblasts, young blood vessels and very many multinucleated giant cells. The giant cells—as seen in the specimens exhibited—present various changes in various degrees. There are giant cells that seem to be dividing, but this division is accompanied with much nuclear disintegration, vacuolation of the protoplasm, and phagocytosis; there are also some karyokinetic figures in single nuclei in the giant cells from the disintegrating cells. There are also giant cells that seem to be dividing into smaller cells without nuclear disintegration, but the fate of the smaller cells could not be made out; they did not appear to form new blood-vessels. The following reasons allow this case to be regarded as a chronic, healing tuberculous meningitis: 1, the process has reached the same stage throughout the whole area involved; 2, there is but very little caseation; 3, there is present a chronic endarteritis; 4, acute inflammatory changes are absent; 5, the presence of a fibrillated, vascular, embryonal tissue; 6, the changes in the giant cells. The fact that tuber-

cle bacilli grew from the fluid inoculated on glycerin agar show that the cells in the pia were, so to speak, immune to their action; while the mechanism of this immunity need not be discussed, it is plain that the cells survived the action of the bacilli and retained vitality enough to form new tissue. There is a large number of giant cells, many of which are splitting up and show progressive changes side by side with retrogressive; the nuclei in the giant cells present my independent foci of activity; they are independent centers. Whatever the mode of origin of the giant cells may have been—whether by fusion, mitosis or amitotic division of the nucleus without division of the protoplasm, the mode can not have been incompatible with viable descendants.

Conclusions.—In healing, non-degenerated tuberculous tissue the multinucleated giant cells may in part disintegrate and become absorbed, in part form small cells; both these changes usually affect the same cells, but in one class—presumably the older and weaker—the retrogressive changes predominate, while in a second—presumably the stronger and younger—the progressive changes are the more marked. The fact that giant cells in tuberculous tissue under some conditions undergo progressive changes and separate into small, living cells proves that they are not, as claimed by Baumgarten and others, necrobiotic elements that are predestined to destruction; it lends more strength to the teleologic view of Metchnikoff that they are living cells, defensive, formed for a distinct purpose.

DISCUSSION.

Prof. EDWIN KLEBS.—In a case of tuberculosis of the testicle I was very much surprised to find a great number of giant cells lying very close to each other. In places there were fresh tubercles, round cells, with a few tubercle bacilli, so that we can say that the process in this case showed the same feature of healing as in the case just described by Dr. Hektoen. In tuberculosis of the testes the giant cells as a rule contain no tubercle bacilli, but it was very curious that the greatest number of them, in my case, were found in connection with striated muscular fibers. Some of the cells surrounded the muscular fibers. Others could be seen in long rows along the muscular fibers. In some of the cells which were near the muscular tissue I observed small crest-like masses included in the giant cells. That the clear centers of the tuberculous giant cells are not necrotic, seems to be evident in those cells that originate from vascular tissue.

I am not inclined to accept the theory of Metchnikoff, that the giant cells are organs of destruction of microbes or of red blood corpuscles (Langhans) or of bone (the osteoclasts of Kölliker). This suggestion would seem acceptable if the giant cells had the force of contraction. But the many projections of their substance are absolutely immovable, as I have often observed in living giant cells of different origin. The same has been proven by the persistence of the rigid projections in the dead cells, whereas, the ameboid projections of leucocytes are retracted in death. Giant cells are not necrotic for they are continually developing fresh nuclei. I have seen such giant cells in cases of carcinoma in which we observe the production of new nuclei in successive generations. The same feature must characterize the formation of giant cells in healing tuberculous tissue. They are formed under every circumstance from the endothelial cells of the tissues under the influence of regenerative processes. That they contain in tuberculosis sometimes tubercle bacilli has no other signification than the inclusion of foreign bodies or tissue constituents.

The positive demonstration by Dr. Hektoen that they finally return to the normal tissue cells, or split up in their first constituents, is in conformity with my own observations ("Causal Treatment of Tuberculosis," 1894), and seems to me to be of the highest importance and shows clearly that they are in a living condition. If one might express a theory as to their formation, one could say that the hardened character of the protoplasm of giant cells constitutes a favorable condition for the new cell development in the struggle against destructive microbes or foreign bodies, or dead material of the body itself.

DIFFUSE SCLERODERMA ASSOCIATED WITH CHRONIC FIBROUS CHANGES IN THE THYROID AND GREAT DIMINUTION IN THE AMOUNT OF THYROIDIN; INCREASE IN THE CHROMOPHILE CELLS AND OF THE COLLOID IN THE HYPOPHYSIS.

Dr. LUDVIG HEKTOEN.—Through the courtesy of Dr. Noel an opportunity was given to study the organs of a case of diffuse scleroderma in a woman 51 years old. The clinical history, for which I am indebted to Dr. H. E. Brennecke, shows that the disease had lasted about one year and that it had pursued a typical course and rapidly become almost universal in its distribution. The patient died after having been unconscious for three days.

The anatomic diagnosis reads as follows, the postmortem having been made immediately after death: Diffuse scleroderma, atrophy of the thyroid, arterio-sclerosis, fatty and atrophic liver, chronic nephritis, interstitial myocarditis and hypertrophy of the heart, gummas (?) of the liver, chronic caseous tuberculosis of the retroperitoneal glands, edema of the lower extremities, adhesive pleuritis and pelvic peritonitis. The skin over the face, neck, chest, abdomen and parts of the extremities as well as of the back is hard and tight, smooth and without any wrinkles; it seems thin, but cuts with resistance. The thyroid is small and fibrous, weighing 14 grams, the isthmus is absent. The condition of the other organs is sufficiently well set forth in the anatomic diagnosis. The microscopic examination showed the brain and spinal cord to be quite normal. The areas in the liver that were thought to be gummatous are found to be aberrant or obstructed bile ducts. The thyroid is the seat of extensive fibrous changes with atrophy and destruction of the glandular portion, resulting in the formation of larger and smaller cysts, in which is inspissated colloid material. Normal follicles with normal lining and normal colloid contents are very rare. The arteries in the thyroid are the seat of a general and greatly advanced obliterative thickening. The hypophysis weighs .7 gram; it is consequently very large; the number of chromophile cells and the colloid material are increased, as can be seen in the sections under the microscope. The changes in the skin may be summarized as follows: There is a great hyperplasia of the collagenous intercellular substance in the corium with flattening of the papillary body, together with a breaking up and spreading asunder of the elastic fibers, obliterative thickening of the blood vessels, atrophy of the interpapillary epithelium as well as of the epidermis, the hair follicles and the coil glands. These changes are diffuse, practically universal, although not always of the same degree. The appearances were studied in sections prepared according to Benecke's, Unna's and other methods for demonstrating collagen and elastin.

The chemic examination of the thyroid was made by Mr. H. G. Wells and the following is his report:

"The thyroid gland in this case when fresh weighed 14 grams. This is very much below the normal weight, for sixty glands from persons between 25 and 65 averaged in weight 22 grams, over one-half more than did this gland. When dried, allowing for the portion removed for microscopic purposes, it weighed 3.23 grams, the average dry weight of twenty normal glands from the same series being 5.37 grams. This dried gland was analyzed to determine the amount of iodine it contained, using the colorimetric method advocated by Baumann in his original work on the iodine contents of the thyroid gland. The analysis was made in duplicate, both determinations agreeing closely, and it was found that in each gram of the gland was contained 0.91 mgr. of iodine, giving a total amount of 2.94 mgr. as the contents of the entire gland. Analysis of a series of twenty normal glands from residents of Chicago has given as the average amount of iodine in each gram of the dry gland 2.01 mgr. The average total contents of iodine in these cases was 10.79 mgr. Therefore in this gland the proportion of iodine was less than half the normal and the total quantity of iodine between one-fourth and one-third that usually contained in a normal gland. It is also far below that of any normal glands in the series quoted, for the smallest amount found there was 7.46 mgr. and in that case the amount of iodine in each gram was 1.98 mgr. From this it is evident that not only was the gland quantitatively atrophic but probably also functionally, for as a general rule, the smaller a normal gland the larger the proportion of iodine it contains, so bringing the total iodine contents up to a certain standard, which in this vicinity appears to be about 10 mgr, whereas in this case despite the small size of the gland, the proportion of iodine was much below that one would expect to find in a gland of much greater size. The hypophysis would seem to be correspondingly enlarged, for in a series of twenty-one glands the fresh weight was found to be but 0.4 gram, while in this case the weight was 0.7 gram. In the series mentioned but one gland was found of so high a weight and this was probably not a normal gland, for it contained an unusual number of cyanophile cells which greatly outnumbered the chief cells. It is probable that the iodine in the hypophysis is contained in the colloid material, just as Hutchinson has shown it to be in the thyroid. Analysis of fourteen normal hypophyses gave as the average amount of iodine in each gland 0.0036 mgr., which represents for each gram of dried hypophysis 0.04 mgr. This is but about one-fiftieth as large a proportion of iodine as is found in the thyroid gland, and corresponds to the relatively trifling amounts of colloid that the hypophysis contains. Unfortunately, the hypophysis from this case could not be examined chemically, as it was used for microscopic

purposes, but it is probable that because of the increased amount of colloid it contained that a comparatively large amount of iodine would have been found."

We have in this case the cutaneous changes characteristic of scleroderma associated with fibrous changes, atrophy and diminution of iodine in the thyroid and increase in the chromophile cells and colloid in the hypophysis. These changes in the hypophysis were found quite frequently by Schönemann in connection with goiter and their exact nature, whether degenerate or compensatory and hypertrophic, can not be stated because the writers are not in entire accord as to the significance of the chromophile cells, *i. e.*, cells with an eosinophile or cyanophile cytoplasm.

The causes of diffuse and other forms of scleroderma are not known. The neuropathic theory of Schürmmer remains to this day without any anatomic substratum. The chief objection to Dinkler's view, that the obliterative arteritis is the primary lesion in the process, is that it is difficult to understand how the arteritis can lead to such a degree of collagenous hyperplasia. Singer found the thyroid the seat of chronic fibrous changes in a case of scleroderma, and urges strongly the view that this disease as well as myxedema and exophthalmic goiter are due to dysthyreosis; but this present case is the first one in which an actual diminution of the active constituent of the gland has been demonstrated. Pisko, Marsh, Steglitz and Grünfeld obtained good results with thyroid treatment in various forms of scleroderma, and Marsh and Grünfeld saw in the sudden improvement something more than a mere coincidence. On the other hand, Franke, Unna and others have had negative results. In connection with this the relation of the thyroid to myxedema becomes significant. The changes in the skin in myxedema vary, but it seems established that the elastic tissue is increased and the collagenous tissue diminished. Now, if athyreosis can produce such changes there can be no inherent reason why dysthyreosis, due to various causes, may not lead to scleroderma. In this case it lies temptingly near to assume that the endarteritis of the thyroidal vessels may have been the essential cause of the changes in the thyroid and, in accordance with the suggestions already made, indirectly of the scleroderma. Arterio-sclerosis might, it would seem, lead to parenchymatous atrophy and fibrous growth in the thyroid as well as in other organs. Viewed from this point the arterio-sclerosis would seem to play an indirect but essential part in the genesis of the diffuse scleroderma of the old rather than the direct rôle advocated by Dinkler and others. The causes that may disturb the functions of the thyroid and the results thereof are various, and it seems warranted to suggest that the relations of arterio-sclerosis, dysthyreosis and scleroderma merit further study.

ACTINOMYCES-LIKE BODIES IN THE TONSILS.

Dr. J. W. ELLIS—While studying a series of tonsils in the pathologic laboratory of Rush College my attention was called to an article which appeared in the *Zeitschrift für klinische Medizin*, Vol. 30, parts 5 and 6, which in substance is as follows: "In the histologic examination of twenty-five tonsils from patients suffering from various diseases, as tuberculosis, syphilis, sepsis, chlorosis, broncho-pneumonia, acute tonsillitis, etc., he found in four cases from Gerhardt's clinic bodies which resembled actinomyces."

The diseases from which these patients suffered bore no relation to the tonsils. The ages of the patients varied from 7 to 22 years.

These bodies to the naked eye were small yellowish specks. The microscope revealed the fact that there were only a few in a section—never more than six—and that they were invariably found in the crypts of the tonsil. They stain with the ordinary hemotoxylon stain, and are round or oval and from .5 to 1 mm. in diameter. The center had the appearance of a tangled mass, while the periphery had a more or less clubbed appearance. By Gram's method the body was seen to be made up for the most part of longer or shorter threads, and distributed throughout the mass were seen cocci-like particles, which also retained the stain. The tangled mass of threads in the center under the highest power was seen to be composed of more or less curved staves, which were seen to be continuous but did not stain at the point between the staves. Toward the periphery the threads radiated, branched and stained more evenly, while the outer threads were stained throughout.

On counter-staining with a body stain the whole mass appeared to be bedded in a homogeneous mass with brighter spots.

The bodies did not stain by Günther's modification of Gram's method. In the vicinity of the bodies there was more or less round cell infiltration, but he did not think it was due to the presence of the bodies as the tonsil from the opposite

side showed the same round-cell infiltration, but he did not find the bodies. He concludes from their frequency—four cases in twenty-five and their not producing any change in the adjacent tissue—that they do not have any pathologic significance. He classified them among the ray fungi, and according to Tarni they are a form of actinomyces and are to be differentiated or distinguished from the actinomyces Horninis by not staining with Günther's modification of Gram's method. I have placed some sections of an apparently healthy tonsil which contains some bodies that answer the above description under the microscope for your inspection.

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Annals of Surgery, 1889, Aug.

Archives of Surgery, 1890, April.

Asclepiad, 1884, part 1; 1885, part 4; 1886, parts 1, 3; 1890, complete; 1892, part 1.

Australian Medical Gazette, 1889, Nov.; 1896, Feb. July, Sept.-Dec.

Australian Medical Journal, 1890, June.

Brain, 1889, Jan.; 1893, Spring Summer.

Birmingham Medical Review, 1887, Oct.; 1889, Feb.

British and Foreign Medico-Chirurgical Review, 1853, July; 1855, complete; 1873, July; 1876, Oct.; 1877, Jan.

British Journal of Dermatology, 1889, Jan.

British Medical Journal, 1873, vol. 2; 1874, vol. 2; 1879, vol. 1; 1880, vol. 2 (except Aug. 14); 1881 85; 1886 (except June 26); 1887; 1888 89; 1890, vol. 2; 1891.

Bulletins et Mémoires de la Société de Médecine et de Chirurgie pratiques de Paris, 1894, Fasc. 2, 3.

Canadian Practitioner, 1894 96.

Centralblatt für Chirurgie, 1894, März 17 Mai 26.

Clinical Journal, 1892 3, vol. 1, Nos. 4, 5, 8, 10, 16, 18, 22, 26; 1893, vol. 2, Nos. 3, 9; vol. 3, No. 8; 1895, vol. 5, No. 19.

Cincinnati Lancet-Clinic, 1884, July 5, 12, Oct. 18, 25.
 Dublin Med. Jour., 1887; 1889, Oct. Dec.; 1890, Jan.-Oct.
 Edinburgh Medical Journal, 1856, July Dec.; 1857-58; 1859 (except Feb.); 1860; 1861, Jan.-June; 1862, July Sept.; 1864, July Dec.; 1867, Oct.; 1871, July-Dec.; 1872; 1888, July Oct.; 1889, Feb.-June; 1890, July Dec.; 1891; 1892, Jan.-Nov.
 Fortschritte der Krankenpflege, 1891, April, Sept.
 Hospital, 1894, June 30; 1895, March 2, Oct. 5, Dec. 28; 1896, May 2, Oct. 3.
 Illustrated Medical News, 1888, Oct. 6, 13; 1889, June 15, Sept. 14, 21, 28; 1890, Jan. 4, 11, 25.
 Journal of Physiology, 1894, Jan.
 Index Medicus, 1889, Oct.-Dec.; Index; 1890, complete; 1891, Jan. Sept.; 1892, Sept. Dec.
 Journal of the Gynecological Society of Boston, 1871-72, vols 5-7.
 JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, 1890, Dec. 13; 1891, Aug. 15; 1892, Jan. 16; 1894, Feb. 17.
 Lancet, 1867; 1869, Jan. 2; 1877, April 7-Dec. 29; 1878 (except Jan. 5); 1882 (except Jan. 7); 1883; 1890, Jan. 4-March 29, April 12-May 10, Aug. 2, 9, 23-Sept. 6, Sept. 20 Dec. 6, 20, 27; 1891, Oct. 24; 1894, Dec. 1; 1895, Sept. 14, Nov. 16; 1896, March 28, April 18, June 20, Nov. 28.
 Liverpool Medico-Chirurgical Journal, 1886, Jan.; 1890, Jan.
 London Medical Record, 1884, Nov., Dec.; 1885, complete; 1887, Aug., Sept.
 London Medical Recorder, 1890, Jan.-March.
 Mathews' Medical Quarterly, 1894, Jan.-Oct. (vol. 1 complete).
 Medical and Surgical Reporter, 1890, May 24; 1893, April 8.
 Medical Chronicle, 1885-89, vols. 2-9; 1889, vol. 10, Nos. 1-4; 1890, Nov., Dec.; 1891, Jan., Dec.; 1892, Jan.-Oct.
 Medical Magazine, 1882, July, Oct.; 1893, April, Aug.; 1894, Jan.; 1896, Jan., March.
 Medical News, 1890, Jan. 4; 1892, Oct. 1; 1893, April 1.
 Medical Pioneer, 1894, Jan.-Sept.
 Medical Press and Circular, 1893, July 19, Sept. 13; 1894, April 18, 25, June 13, July 11, 25; 1895, April 3; 1896, Aug. 12, Nov. 25.
 Medical Record, 1891, Jan. 17.
 Medical Review, 1892, July 30, Aug. 6.
 Medical Temperance Journal, 1870, Jan., July.
 Medical Times and Gazette, 1868, Jan. 4; 1869, July 31; 1880, Jan. 3-Nov. 27; 1882, May 20; 1883, June 9, 30, Aug. 25; 1884, Jan. 5, March 22-June 7, July 5, Nov. 29, Dec. 6-20; 1885, Jan. 10, July 4.
 Medical Week, 1892, Dec. 16, 23; 1893, Dec. 15; 1895, Jan. 18.
 Medicinische Bibliographie, 1892, April 9, Dec. 10.
 Medico-Chirurgical Review and Journal, 1831, April.
 Montreal Medical Journal, 1896, Jan.
 Neurologisches Centralblatt, 1895, Jan. 1.
 New York Medical Journal, 1895, July 29.
 Nord Médical, 1894, Dec. 15.
 Nouvelle Iconographie de la Salpêtrière, 1895, Jan., Feb.
 Pediatrics, 1896.
 Pharmaceutical Journal, 1896, Feb. 29.
 Practitioner, 1868, Dec.; 1869 70; 1871, May, June; 1874, Nov., Dec.; 1875, July, Sept.; 1893, Jan.
 Progrès Médical, 1892, Nov. 5.
 Provincial Medical Journal, 1887, Jan.; 1889, Jan., May; 1890, Oct.; 1891, Jan.
 Quarterly Medical Journal, 1894, April.
 Revue Médical, 1894, Mai 20, Juin 3, Sept. 9-Nov. 18.
 St. Mary's Hospital Gazette, 1895, Jan.-March, May.
 St. Louis Medical and Surgical Journal, 1887, Sept.; 1889, Dec.; 1893, July, Aug., Nov., Dec.; 1894, May, June; 1895, Oct.
 Therapeutic Gazette, 1886; 1887, Feb., April Dec.; 1888, Jan., March Oct.
 Wiener klinische Wochenschrift, 1896, Mai 28.
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 Boston Medical and Surgical Journal, 1880-85, incomplete.
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 Medical World, 1888, incomplete.
 American Journal of Obstetrics, 1882-89, complete.
 New Orleans Medical and Surgical Journal, 1892-95, complete.
 Medical News, 1882, complete; 1883, one number missing; 1884-85, complete; 1886, three numbers missing; 1887, complete; 1888-90, incomplete; 1891, one number missing; 1893, incomplete; 1894, complete.
 Medical Record, 1879, incomplete; 1880-81, complete; 1888, complete; 1889-94, incomplete; 1895, complete.

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 International Medical Magazine, 1893, Jan.; 1894, Jan., Feb., March; 1895, Sept., Oct., Nov., Dec.
 Journal of Cutaneous and Genito-Urinary Diseases, 1891, Sept., Oct., Dec.; 1892, April; 1893, March, June.
 Archives of Pediatrics, 1890, March, April, May, July.
 Medical Bulletin, 1893, June.
 Annals of Hygiene, 1891, Jan.; 1893, July.
 Braithwaite's Retrospect, 1859, July-Dec.; 1875, Jan.-June; 1880, Jan.-June; 1881, July-Dec.; 1890, July to Dec.
 Virginia Medical Monthly, 1892, second half-year.
 Glasgow Medical Journal, 1894, March.
 Pharmaceutical Journal of Australasia, 1890, April, Sept., Oct.; 1895, Jan., Feb., Sept., Dec.
 British Medical Journal, 1889, Feb. 2, Aug. 17, Sept. 7, Nov. 23, 30, Dec. 7, 14, 21; 1890, Feb. 15, March 8, June 28, July 5, Sept. 6, Nov. 15, Dec. 13, 27; 1892, Jan. 7, June 25; 1894, Sept. 15.
 Medical News, 1890, Nov. 15.

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American Journal of Obstetrics, vol. 30, No. 2, Aug., 1894.
 Archives générales de Médecine, July, 1894.
 Centralblatt für Gynäcologie, vol. 18, No. 4, Jan. 27, 1894.
 Gazette médicale de Paris, 1894, Nos. 6, 15 and 41.
 JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, vol. 22, No. 11, March 17, 1894, and vol. 23, Nos. 20 and 26.
 Journal of Nervous and Mental Diseases, 1894, Nos. 1, 3 and 8.
 Medical Record, 1894, vol. 45, Nos. 1, 2 and 21; vol. 46, Nos. 18 and 20.
 American Journal of Obstetrics, vols. 1-23.
 American Medical Recorder, vols. 1-3.
 Archiv für Hygiene, vols. 18, 19 and 20.
 Archiv für klinische Chirurgie, vol. 37-40.
 Virchow's Archiv, vols. 1-19, and after vol. 133.
 Archiv für Psychiatrie u. Nervenkr., vols. 1-5.
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 Beiträge zur klinischen Chirurgie, vols. 1-7.
 British and Foreign Medical Review, vols. 15-17, 19-21, and all after vol. 24.
 British Journal of Dermatology, vols. 1-3.
 British Medical Journal, all previous to 1878 (1878 vol. also missing).
 Centralblatt für Chirurgie, vols. 1-17.
 Centralblatt für innere (formerly klinische) Medizin, vols. 1-12.
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 Deutsche medicinische Wochenschrift, vols. 1-16.
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 Journal de l'Anatomie et de la Physiologie (Ed. C. Robin), after vol. 28.
 Journal of Nervous and Mental Diseases, vols. 1-9.
 Medical News, vols. 1-39.
 Medical Record, vols. 1, 35, 36, 39, 42.
 Neurologisches Centralblatt, vols. 1-9.
 New York Medical Journal, vols. 1-50.
 Practitioner, vols. 1-17, 42-50.
 Revue des sciences médicales en France et à l'étranger, vols. 1-8.
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 Schmidt's Jahrbücher, vols. 1-168.
 Zeitschrift für Biologie, after vol. 28.
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SATURDAY, JUNE 26, 1897.

ANTIVIVISECTIONIST SENTIMENTALITY AND
BRAIN DEFORMITY IN THE DEGENERATE.

A degenerate sexual pervert recently executed for lust murder, at Paxton, Ill., has had his mental soundness doubted because of his sentimental kindness toward animals. Sentimentality of this type is exceedingly common among criminals and other degenerates about whose legal responsibility no true alienist could entertain a doubt. They have both a knowledge of right and wrong with a power of self-control, which alone would be sufficient evidence of responsibility under the true legal test which depends on whether freedom of the will be impaired. Despite the assertions of the antivivisectionists, misanthropy is often associated with great love for the lower animals, and the races characterized by their great tenderness toward animals are the most cruel toward men. This was singularly well illustrated in the Sepoy rebellion, where fanatics indignant at the killing of cows, butchered men, women and children with horrible atrocity. The same thing is illustrated in the suspiciousal world-betterers who so marred the French Revolution. COUTHON, one of the most merciless of "the committee of public safety," was very much devoted to spaniels. CHAUMET exceeded female sentimentality in his tenderness to his birds. The murderous FOURNIER carried on his shoulders a pretty little squirrel attached by a silver chain. PANIS was intensely devoted to his pheasants. MARAT reared doves. SERGEANT, another

agent of the Reign of Terror, was also devoted to spaniels. A lady came to implore his protection for a relative confined under sentence of death. He scarcely deigned to speak to her. As she retired in despair she trod by accident on the paw of his favorite spaniel. SERGEANT, enraged and furious, exclaimed, "Madam, have you no humanity?" It may seem, as HAVELOCK ELLIS remarks ("The Criminal"), a curious contradiction of what has been set down concerning the criminal's moral insensibility, his cruelty and his incapacity to experience remorse when it is added that he is frequently open to sentiment. It is however true. Whatever refinement or tenderness of feeling criminals attain, reveals itself as what we should call sentiment or sentimentality. Their cynicism allies itself with sentiment in their literary productions. Their unnatural loves are often sentimental as revealed in the character of the tattoo marks. Two interesting examples of criminal sentiment have recently been recorded by Dr. LINDAN. A German criminal (it is perhaps as well to note that he was a German) having murdered his sweetheart most cruelly, went back to her house to let out a canary which might suffer from want of food. Another, after having killed a woman, stayed behind to feed her child which was crying. LACENAIRE, on the same day that he committed a murder, risked his own life to save that of a cat. BULWER recognized this principle when he depicted EUGENE ARAM as very indulgent to animals. WAINSWRIGHT was always very fond of cats. In his last days his sole companion was a cat, for which he evinced an extraordinary affection. One of the chief characters of WAINSWRIGHT'S essays is their sentimentality. Himself when in prison he described as the possessor of "a soul whose nutriment is love and its offspring art, music, divine song and still holier philosophy." All prisoners make a pet of birds or animals or flowers if they get the chance.

In the brain of the degenerate, to whom reference is made, the cerebrum was said to be abnormal because it did not cover the cerebellum. This condition of things was alleged by BENEDICT of Vienna ("Brains of Criminals") to characterize the brain of the criminal. It has been demonstrated, however, conclusively by SPITZKA (*American Journal of Neurology and Psychiatry*, Vol. I) that this non-covering of the cerebellum by the cerebrum in man and the anthropoid apes was due not to any condition of deformity but to careless manipulation. If therefore this condition be found in the degenerate to whom reference has been made, it is due purely to an erroneous necropsy and in no respect is an evidence of either irresponsibility or degeneracy.

SICKNESS AND WOUNDS IN THE SPANISH
ARMY IN CUBA IN 1896.

Inspector General DE LORADA of the sanitary corps of the Army of the Island of Cuba has instituted and

published a graphic comparison of the sanitary condition of the Spanish troops in Cuba in the years 1876-77 and 1896, which shows markedly in favor of the latter year. In the absence of satisfactory statistical data of the earlier campaign the first four months of 1876 and the second and third of 1877 were taken to make the comparison. The publication consists of a large sheet on which are fourteen tables showing by red and blue lines on a graduated scale the data for each month of the respective years. Excepting cases and deaths from yellow fever and wounds in relation to strength, the statistics indicate the existence of better conditions now than formerly. As regards yellow fever it is to be remembered that the greater part of the army in 1876-77 consisted of acclimated men, while the excess of wounds in recent campaigns is due to the greater activity of the troops in field service against the insurgents. It is difficult to read the exact figures from the numbers on the plates, but the following gives a close approximation: 1. Number of sick per 1,000 of strength. The rates in both years were relatively low from January to June and high during the remaining months. In 1896 the low monthly rates ran from 115 to 160 per 1,000 of strength as compared with 165 to 260 in 1876-77, and the high rates from 210 to 318 as compared with 325 to 392. The annual rate was about 2,400 per 1,000 in 1896 as compared with 3,400 during the earlier year. 2. The highest monthly death rate in the past year was 11.7, in August, while in 1877 this rate was greatly exceeded in each of the five months July to November, the highest rate being 28 in September. The annual death rate was about 74 in 1896 as compared with the former excessive rate of 160 per thousand of strength. 3. The fatality of disease or the number of deaths per thousand of sick varied in 1896 from a monthly minimum of 15 to a maximum of 54 as compared with a minimum of 22 and a maximum of 75.2 in 1877. 4. This diagram shows the greater prevalence of yellow fever in 1896, the monthly rate of cases per thousand of strength varying from 4 to 12 during the first half of the year and from 18.8 to 36.8 during the last half as compared with rates somewhat less than half as large in 1876-77. Aggregating these monthly rates the rate for the past year among the unacclimated recruits sent out from Spain was 211 as against 70 among the troops operating in the island twenty years ago. The 5th diagram represents the deaths from this fever, 51.9 per thousand of strength during the year 1896 and only 33.2 in 1876-77. But although the prevalence and mortality of this fever was greater among the unacclimated troops during the present campaign the virulence of the disease was not so active in individual cases, for the rates of deaths to cases are shown by table 6 to have been greater in 1876-77, the average fatality rate having been 40.1 per cent. as against 25.8 per cent. in 1896. Table 7

gives the wounds in monthly rates per thousand of strength and shows a very uniform occurrence in all the months of both years, as if active operations had been carried on in the unhealthy as well as in the healthy seasons. The annual rates amount to 47.7 per thousand of strength for the year 1876-77 and to 121.1 per thousand for 1896. The death rate from wounds in relation to strength also was greater in the present campaign; but the deaths therefrom, in relation to the number of wounded was considerably larger in 1876-77 and the term of hospital treatment for both sick and wounded was much more extended in that year than in 1896. These facts are shown in tables 8, 9 and 10. Tables 11 and 12 give the rates per thousand of strength and per thousand of sick returned to Spain for recuperation. In both instances the summary is distinctly in favor of the year 1896. The last two tables give the rates of discharge for disability per thousand of strength and per thousand of sick. In 1896 the annual rate of discharge was 14.6 per thousand of strength and in 1876-77 16.65; per thousand of sick the rates were respectively 81.7 and 65.9.

THE TWENTY-SECOND ANNUAL MEETING OF THE AMERICAN ACADEMY OF MEDICINE.

This meeting was held in Philadelphia, May 29 and 31. Large accessions were made to its membership, and an unusual number took an active part in the proceedings.

The work of the Academy is distinctively along lines of medical sociology. At first these lines related mainly to the one object of increasing the general mental culture of students desiring to enter upon the study of medicine. Medical societies and medical journals took up the work, until at present the Academy's primary object is largely attained; most medical colleges have some sort of entrance examination; some a high one, and one admits only those possessing a degree of A. B. Others announce that such a degree will be demanded in the near future. More will follow until a satisfactory preliminary training will be exacted of every medical student ere beginning the study of medicine. In this result the Academy as a whole and its individual members have been an important factor.

After some years it broadened its studies and efforts, so that it now includes the whole range of medical sociology. It is believed that definite laws regulate the relations of physicians to each other, to the public, to medical schools, to hospitals and dispensaries, to medical journals and medical publishers, to secular journals and secular publishers; to pharmacists, to retail and wholesale manufacturers; to the defective classes; to schools, from the kindergarten to the university, etc., in short the laws of medical sociology start from the physician as a center and ramify

throughout all professions, callings, enterprises, medical or secular.

When it is remembered that obedience to law brings profit, comfort and prosperity, and disobedience strife, loss, disease, death, untold misery and confusion, it is evident that a knowledge of the laws of medical sociology is of the highest practical moment. To the investigation of these the Academy has devoted itself, with some tangible results that have promoted the work of many individuals and some medical societies and institutions.

Among the subjects discussed at the late meeting were two groups: the first dealing with the "associated duties of the physician," the second "the relation of the college to the medical school." On the first were ten papers treating of "the true principles on which the medical profession should be associated," "physicians' mutual societies," "the rewards of medical work," "a sociologic inquiry of the up to date physician," "the relation of the physician to the public press," "some relations of author, publisher, editor and profession," "medical reviews," "the influence of a liberal education with reference to medical ethics," "the organization and support of medical libraries," etc.

The relation of the college to the medical school was discussed from the medical-school side by Dr. BAYARD HOLMES, from the side of the college by President WARFIELD of Lafayette College; and from the side of the university by Dr. PEPPER, Ex-Provost of the University of Pennsylvania. It is certain that these papers with the discussion following will materially aid such as are honestly seeking for light upon the best training of medical students. It was both broad and deep, beyond what is usually heard in medical societies, and along lines of scientific inquiry. Only when such lines are made to accord with the nature of existing things can the highest prosperity of the profession be expected.

From this brief statement it will be seen that the Academy is the rival of no existing medical society, but that it supplements and complements all, and so merits the support and consideration of such as are seeking for light on the intricate and obscure relations of the physician's vocation.

Its officers for the ensuing year are Dr. L. DUNCAN BULKLEY of New York, President; Dr. JOHN B. ROBERTS of Philadelphia, Dr. BOWDITCH of Boston, Dr. CHARLES DENNISON of Colorado, and Dr. F. T. ROGERS of Providence, Vice-Presidents; Dr. CHARLES MCINTIRE, Boston, Secretary and Treasurer; Dr. WALTER L. PYLE, Philadelphia, Assistant Secretary.

SECTION ON NEUROLOGY AND MEDICAL JURISPRUDENCE.

This is one of the younger Sections of the AMERICAN MEDICAL ASSOCIATION, which has already attained

prominence, and will no doubt in the near future rival all the other Sections in interest and popularity. Questions of neurology and jurisprudence are increasing in every department of practical medicine. The new researches of brain physiology give promise of therapeutic revolutions as startling as in any other field of medicine. At the Philadelphia meeting fifty-one papers were read by the authors and by title. Of these only three related to medical jurisprudence, three to the influence of alcohol on the brain and nervous system, and two to hypnotism. Seven papers were devoted to neurasthenia and its treatment, and three to insanity. The other papers were mostly devoted to diseases of the spinal chord and brain. The authors of the latter were very largely teachers of neurology, and were expected to present the latest and most authoritative facts on these topics. How far these papers together exceeded the papers read at previous meetings of the Section, can not be easily determined. Evidently they were more technical, and confined to the more obscure lesions of the brain and cord. Some of these papers had a pedagogic cast, indicating unfamiliarity with audiences of general practitioners, and inability to isolate and emphasize the central facts of the topic. Many excellent studies are covered up and made useless in all the Sections, by the inability of the reader to reach the level of his audience, and condense his facts so they can be understood without effort. The popularity of the Neurological Section has come from the fact that its wide range of topics have been presented by practical men and specialists, who avoided all effort to exhaust the subjects and sought rather to make prominent some particular facts. This has given a certain suggestiveness to the papers which were stimulating to all hearers. Several papers read at this meeting were prominent in this respect and will be read in the JOURNAL with great interest.

The officers and leading men in this Section have long ago recognized the need of more practical helpful papers to the general practitioner and members of the ASSOCIATION who yearly come to the meetings for facts and hints that can be used in a general every-day practice. It is proposed to have the same Secretary elected every year, so he can become familiar with the leading men of the country who are members of the ASSOCIATION, and able to contribute strong papers on the topics of the Section. This will be a great improvement over the present methods, and enable the Secretary to arrange and bring out certain topics more fully than in any other way. Symposiums of questions still unsettled can be arranged and carried out, and special topics can be presented by leaders not readily accessible to a new unknown Secretary. It was proposed to devote one or more sessions to medico-legal questions exclusively, and have certain topics uppermost in the

public mind discussed. This will give a certain solidity and permanence to the work of the Section, which will be followed by others.

There are probably more difficult unknown questions coming up in every branch of practice concerning neurology and jurisprudence than in any other field. The medical teacher will give general principles, but he is unable to go beyond certain narrow lines. The new problems that are ever coming up require the study of matured practical men, and discussion from all sides. This is often aptly illustrated in sectional meetings where live topics bring out most suggestive spirited discussions.

This Section, in common with other Sections, suffer from the reading of papers which are technical exhaustive studies of some narrow phase of the subject, which are of little interest, even to experts. Such papers always drive away the audience or put them to sleep. There are some quite prominent men whose papers are so minutely exhaustive, as to destroy all practical interest in the subject. Others equally learned have such an involved, obscure style, that it requires much effort to follow them. Often such writers present many original views which are covered up and lost except to some careful student who discovers them and announces them as his own. There follows an acrimonious debate of priority. The Neurological Section has started a movement to reform these errors, and at the next meeting will attempt to lead all other Sections in broad, practical studies and presentations of papers which will be both suggestive and helpful to all its hearers.

THE OCULAR MANIFESTATIONS OF MALARIAL INFECTION.

The general practitioner of medicine, accustomed as he is to the discovery of lesions in the spleen and liver as the result of acute or chronic malarial infection, is also apt to ascribe symptoms which seem difficult of explanation to the same causative factor when, in a certain proportion of cases the condition arises from very different causes. On the other hand it is possible that he is not ready enough to ascribe lesions of special organs to this cause and regards troubles arising in the eye or ear as coincidences rather than direct results.

One of the most interesting manifestations of malarial infection, aside from the pathognomonic types so well recognized, is the effects which may be found in the eye of certain susceptible individuals, and it is also of interest to note that in malarial disease the various tissues composing the eye may each or all of them become involved. This is but natural when we recall the fact that the ocular apparatus is composed of parts which represent almost every tissue found elsewhere in the human being.

While malarial disease affecting some part of the

eyeball is somewhat rare, and still more rarely recognized by the general practitioner, it is a condition of by no means recent observation, for as long ago as 1828 HUETER wrote two papers upon it and the next forty years brought forth ten other papers in the *Annales d'Oculistique*. In many instances the observers of the case, or cases, were ophthalmologists of note, such as LANDOIS, DERBY and PAGENSTECKER. Still more recently cases have been recorded by MILLER and other clinicians, and a classic paper giving a complete summary of the subject has been compiled and published by G. E. DE SCHWEINITZ of Philadelphia.

Ophthalmia is by no means infrequently met with in malarial subjects and is often associated with malarial neuralgia or brow ague, and PAGENSTECKER records cases which were sometimes associated with paralysis of accommodation. Again, it is evident that a malarial keratitis may arise in distinction from the inflammation of the cornea which is so apt to occur to persons whose general health is seriously impaired, although, of course the latter condition is often seen and, as well emphasized by KIPP of Newark, N. J., in 1880 and 1889, the malarial form of keratitis consists in a very large proportion of cases in a peculiar narrow, serpiginous, superficial ulcer with lateral offshoots, accompanied by much lachrymation and often beginning with great supra-orbital pain. The greatest number of these cases occurred in the summer and fall months of the year. KIPP's studies not only deserve careful reading because of their thoroughness, but in addition it is to be recalled that HOTZ of Chicago, MILLER of Providence, and NOYES of New York, and MINOR have largely confirmed his observations. The practical deduction to be drawn is that when keratitis takes place in a patient with a malarial history, even if no other malarial manifestation be present, quinin and arsenic are to be given with the object of combatting the malarial germ, if it be present, or at least improving the general health and overcoming cachexia.

Iritis while possibly produced by malaria is rare, and gout, rheumatism, syphilis, and particularly pyemia, should be excluded from the diagnosis before this form of inflammation is ascribed to infection by the hematozoon. It is, however, in connection with the subject of amblyopia and amaurosis and the changes which take place in the nervous portions of the eye that the influence of malarial infection develops the greatest interest. These symptoms are of great importance, too, because full doses of quinin may readily produce them, and it may be necessary for the physician to determine whether quinin is needed to combat a malarial amaurosis, or is contraindicated, because the doses which may already have been given have acted excessively on the optic nerve and the blood vessels of the eye on account of idiosyncrasy on the part of the patient. Again, it is not to

be forgotten that the amaurosis in such cases, even if a distinct malarial history be present, is perhaps more apt to be due to renal disease than directly to malaria. The examination of the urine will aid very greatly in excluding the renal possibility and the ophthalmoscopic appearances of the retinal arteries and color fields; the quinin amblyopia, from that due to malarial disease. In the latter condition we find edema of the end of the optic nerve, neuritis, optic atrophy, retinochoroiditis and finally hemorrhages into the retina and even into the vitreous. These hemorrhages may, however, be present without neuritis, as reported by JONES and by BRUNS of New Orleans, the hemorrhages being usually near the disc and by the side of the greater vessels. Actually optic atrophy is very rare but has been recorded by BULL of New York and by McNAMARA and CARTER.

The most common lesion in the vitreous and choroid is hemorrhage.

THE MEMBERSHIP LIST.

In our issue of June 12 we printed the list of members of the AMERICAN MEDICAL ASSOCIATION revised up to May 15, 1897. Many additions to this number were made at the Philadelphia meeting, and a supplementary list will be published as soon as these names are received. Those who have discovered any inaccuracy in the manner in which their names or date of joining the ASSOCIATION appeared in the record will confer a favor by sending in their corrections at once to this office, as a list of corrections will soon be published.

CORRESPONDENCE.

Medical Instruction of the Laity in the Lay Press.

ELMDALE, KAN., June 14, 1897.

To the Editor:—I have watched with some interest the comment on Dr. Shastid's letter as it appeared in Vol. 28, No. 17, of the JOURNAL. I can well see why it is a subject of no particular fascination to the profession, and why therefore it is so adversely criticised. It is not only in the columns of the professed advertiser, but also from the pens of men who from their positions successfully dispute the epithet of anything but leadership in the profession, that we have seen more than would be characterized by the term diplomacy. I refer to health officers of distinguished cities and heads of hospitals, public, endowed and private. However well meant some of these contributions (signed) to the lay press may be, they yet carry so much of the stigma of the advertiser that the profession can not fail to be insulted by their odium. And yet it takes no special effort on the part of the practitioner to see the great need of improvement in the conceptions of matters connected with medicine in the minds of the laity.

All know how common it is to see all sorts of filthy lotions and linens applied to the open wound. And who has not known the kindly intention of the would-be good Samaritan thwarted, as with unwashed hands and through septic parts she makes the digital examination of the parturient to at least show her good intentions. Labor over, the parts are again inspected with the same want of cleanliness, a filthy piece of linen applied to absorb the discharges, and to avoid

"taking cold" instructions given to not change the soiled linens of the bed for twenty-four to forty-eight hours, and not touch a drop of cold water with finger or lip. At the end of several days a chill, and with the heavy weight of remorse the patient confesses that being so uncomfortable she thought there would be no harm from it and after twelve to twenty hours she did put on fresh linens. How often are stimulants given in cases noted for their sthenic character or the congestion of middle-ear disease reinforced by agents that stimulate the cerebral circulation? A man with typhoid came under my care, who to cure the malady, had bought a gallon of brandy and consumed the greater part of it in two days during the stage of excitement. The over-stimulation resulted in exhaustion, so that in spite of the most vigorous efforts to support the heart it quickly failed and the patient, a strong man, died in a few days and about the fifth or sixth day of the fever. A child 7 years of age with pain in the right ear from inflammation of the middle ear was given ten grains of quinin and not only the right but both middle ears suppurated.

The use of medicine prescribed by the laity should be stigmatized as dangerous and the reasons for the same given. Quinin improperly used may be as potent for evil as properly used for good. We can not hope to make doctors of the laity and the plan of instruction must be principally toward restraint in self-medication.

The method of Dr. Shastid seems quite ingenious, though it is certainly necessary that the public understand that the literature thus supplied is by worthy authority. This could easily be so by signifying the authority of the AMERICAN MEDICAL ASSOCIATION, which would soon be understood to be the very highest possible authority, and an authority the honor of which every worthy physician may share. As to a point raised in one of the comments, I did not understand Dr. Shastid to mean that the literature thus supplied should be without remuneration to the writer, but that the press should not compensate the writer. And personally, I see no good reason why after remunerating the writer for his services, the articles then becoming the property of the ASSOCIATION, the ASSOCIATION should not through a duly authorized committee, as for instance, the editorial staff of the JOURNAL, receive a fair sum for the literature. But no individual names should ever be in any way connected with the articles. It is quite sufficient to know that they are authorized by the AMERICAN MEDICAL ASSOCIATION. This class of literature is not without value to the newspapers, and with the assistance of the Associated Press there would be no trouble to give it the widest possible distribution.

J. F. SHELLEY, M.D.

Railroad Transportation.

BROOKLYN, N. Y., June 15, 1897.

To the Editor:—I send the following clipping from the Brooklyn Times, June 15, 1897, to the JOURNAL, to call it to the attention of the Committee on Transportation: "SINGLE FARE FOR THE ROUND TRIP TO PHILADELPHIA VIA PENNSYLVANIA RAILROAD ON ACCOUNT OF THE NATIONAL SAENGERFEST. — The Pennsylvania Railroad Company announces that for the Eighteenth National Saengerfest, to be held in Philadelphia June 21 to 24, 1897, it will sell excursion tickets to Philadelphia from all points on its line June 19 to 23 inclusive, good to return until June 26, 1897, inclusive, at a single fare for the round trip. No rate, however, will be reduced to less than 50 cents." Respectfully,

N. W. L.

Twelfth International Medical Congress.

NEW YORK, June 14, 1897.

To the Editor:—The undersigned, chairman of the American National Committee which was established at the request and under the authority of the General Committee of the Twelfth International Medical Congress, begs to inform the numerous gentlemen who are constantly applying for information concerning certificates, trip, fares, hotels, etc., that he has none to give, not having heard from the General Committee these two months. Very respectfully, A. JACOB, M.D.

ASSOCIATION NEWS.

Report of the Rush Monument Committee.—Albert L. Gihon, A.M., M.D., Medical Director U. S. Navy (retired), Chairman of the Committee, submitted the following report at the recent meeting of the Association:

After what the President of the Association has said, a brief report from me as Chairman of the Rush Monument Committee is only necessary. In fact, what have we to report?—that \$75,000 have been subscribed for the erection of a monument in the city of Washington—that designs have been solicited from the most distinguished sculptors in the country and that one of these has been selected, which has met with universal praise for its beauty and artistic excellence, and that steps will soon be taken to put this design in marble and bronze? Alas! the name that will be engraved upon the pedestal of that monument will not be Benjamin Rush, but Samuel Hahnemann, and the future visitors to the Capital of the United States will look upon this exquisitely beautiful unrivalled work of art, and then when they go to visit the splendid U. S. Naval Museum of Hygiene, will see standing conspicuously at its approach, on a knoll in the park fronting it, at the site generously donated by the Government last year, an humble figure, a mere bust in bronze, the evidence of the liberality and measure of the appreciation of "the greatest physician this country has ever produced" by the hundred thousand and more members of the medical profession in the United States. Oh! brethren, pitiable contrast! What physician can ever go to Washington and look upon these two statues—the one costing \$1,000, the other \$75,000—the one the contribution of a hundred thousand men, the other of six or seven thousand; the one the result of thirteen years of ceaseless importunity, entreaty and personal appeal, the other originated and the funds spontaneously subscribed in less than four by a few sectarians, without a feeling of shame and humiliation? Today I ask you, shall this be? And it is the last appeal I shall make, for I am admonished of the uncertain tenure of life by my own desperate illness of last winter and this spring, and by the fact that six of the nine projectors of this monument already sleep the sleep that knows no waking. Only last week, a few thousand employees of the Manhattan Elevated Railway Company of New York, a few poorly paid ticket-sellers, guards and gate-men, dedicated a monument at Danville, Pa., to their late vice-president and general manager, Colonel Hain, which cost \$3,500 (only \$500 less than our own fund), which was raised by voluntary subscriptions during the twelve months after his death. If the Association did not intend to carry out this project in good faith, why did it deliberately and unanimously resolve at its meeting at Washington in 1884, "That this Association undertake to erect a statue to Dr. Benjamin Rush in the city of Washington by the members of the profession of medicine in the United States," and why has it, year after year, renewed with no less enthusiasm and unanimity its indorsement of the project? I hold the honor of the Association is at stake and the time has come for final decisive action. During the past winter, an appeal was issued in these terms, and I can not command language more direct and emphatic:

MY DEAR DOCTOR:—The remarkable success of the relatively small body of Homeopaths in the United States, in collecting \$75,000 for their monument to Hahnemann, to be erected in Washington, ought to make every reputable regular physician in the country keenly alive to the necessity for promptly subscribing to the fund for the long-delayed monument to Benjamin Rush.

The model for the monument to Hahnemann, which has been on exhibition in New York City, has attracted general admiration on account of its great beauty and artistic excellence, which will make it unrivalled as a work of this kind.

The regular medical profession, numbering over one hundred thousand more than the entire body of Homeopaths, has thus far subscribed less than \$4,000 toward the projected monument to Dr. Rush, for which the Navy Department has already generously designated a commanding site in the park fronting the U. S. Naval Museum of Hygiene, where it will be one of the most conspicuous features of the National Capitol.

Are the regular physicians of the United States willing that this illustrious Signer of the Declaration of Independence and the distinguished hero of the Revolution, shall be commemorated by an insignificant bust or a mediocre statue, in pitiable contrast with the splendid testimonial at their Capital city to a foreign theorist by a comparatively small body of his misguided followers?

The crowds of visitors to Washington can not fail to attach disparaging significance to the spectacle of these two monuments; and we appeal to you to aid the Committee in its endeavor to do justice to the memory of this great father of American Medicine, pure and unadulterated, by sending by return mail to either of the undersigned as large a contribution as you may be able to make.

Albert L. Gihon, M.D., Chairman R. M. C., 8 West 127th Street, New York City. George H. Rohé, M.D., Secretary and Treasurer, R. M. C.,

Sykesville, Md. W. Murray Weldman, M.D., Chairman of R. M. C. Committee for Pennsylvania, Reading, Pa. Henry D. Holton, M.D., Treasurer American Public Health Association, Brattleboro, Vt. Charles McIntire, M.D., Secretary-Treasurer American Academy of Medicine, Easton, Pa.

Thousands of copies of this appeal were distributed and the Committee earnestly hoped that thousands of dollars would be subscribed, but the fund which amounted to \$3,787.64 has only increased to \$4,006.19, and this partly from interest on the amount invested.

What is the explanation of this indifference? At the fortieth annual meeting of the Association at Newport, Rhode Island, Dr. William Pepper, then Provost of the University of Pennsylvania in his eloquent address on Medicine, made Rush his theme and eulogized his remarkable career. Those of you who were present on that occasion must remember the loudly expressed commendation of his statements and the hearty endorsement of the projected movement. A large part of the existing fund was subscribed at that time by members present. At the meeting in Baltimore in 1895, the report of the Committee was received with the most enthusiastic approval. It was then that Dr. Henry D. Holton of Brattleboro, Vermont, who deserves to be President of this body for that act alone, arose amid the applause that followed the reading of the report and warmly seconding the sentiments expressed in it, offered himself as one of one hundred members of the Association to subscribe \$100 each for the fund. His offer was quickly followed by similar tenders of \$100 each on the part of Dr. William H. Daily of Pittsburg, Dr. U. O. B. Wingate of Wisconsin, Dr. Henry O. Marey of Boston, Dr. James M. Keller of Arkansas, Dr. S. M. Free of Pennsylvania, Dr. Jerome Cochran of Alabama, Dr. Alonzo Garcelon of Maine, Dr. J. M. Ridge of New Jersey, Dr. I. N. Love of Missouri, Dr. B. D. Evans of New Jersey, Dr. Donald Maclean of Michigan and Dr. O. B. Will of Illinois. Dr. J. M. Reeves of Tennessee and Dr. A. C. Cotton of Chicago, gave \$50 each, and Dr. Patrick Espy of Norwich, Conn. gave \$25. Then Dr. John A. Wyeth of the city of New York arose and offered to be one of five other men to subscribe \$500 each, while your worthy President of today quietly slipped \$100 into my hand, begging me not to announce his name.

Is it the fact that there are not five other men in the profession able to meet Dr. Wyeth's gage? Are there eighty-seven others whose means permit them to follow Dr. Holton's and his twelve companions' lead in guaranteeing \$100 each? If there are, the matter is a *fait accompli*. Had these offers been met, or if they shall now be met, our fund will amount to \$17,000 instead of \$4,000. There ought to be at least fifty cities in the United States, whose physicians simply or in the aggregate are able to contribute from \$200 to \$500 each to this fund, and fifty others \$100 each. There are medical societies enough in the United States which can subscribe, if only a moderate sum each, an aggregate sufficient to send a creditable if not a magnificent statue.

The Committee has exhausted its own resources and it now appeals to the Association to determine at once and definitely what further steps shall be taken. It is not to be believed that the Association has been insincere in its approval of the project, or that it repudiates the indorsement it has annually given to it without a dissenting voice during the past thirteen years. That assumption would be unworthy the dignity and reputation of this, the great national representative body of the profession of medicine in the United States. Neither Marion Sims nor Samuel D. Gross—of whom statues have already been erected, that of the latter began since our own and unveiled and dedicated less than a month ago—had the claims of Rush to national recognition, and if their admirers, students and colleagues could so commendably commemorate them why should not the great body of the profession honor the memory of this illustrious medical hero of the Revolution?

I do not believe there is another profession, trade or occupation, which could claim such a man as its Revolutionary hero, which would not long ere this have honored him not in bronze or granite but in the purest marble ever quarried in Carrara. Benjamin Rush was first intended for the law, and had this choice been adhered to, to what high eminence might he not have attained? To the non medical reader of history, his brilliant attainments and life-long devotion to the public good, would seem to entitle him to the admiration and high regard of his professional brethren for all time, but what do we see in truth? A great Association professing this admiration and regard, resolving to render him the honor he deserves, appointing a Committee to execute their resolves, and then turning indifferent to that Committee's pleadings for the means to do.

Benjamin Rush was no ordinary man. He was not one among ten, nor one among a hundred, but one among a thousand of the patriotic sons of America, who sowed the seeds of

liberty in this country. He was *the one par excellence*—the illustrious, incomparable physician, who having made himself master of his craft by long study, devoted himself to its higher development and became famous as its expounder; who, when his country required his services, with equal alacrity and whole-souled purpose gave them to her and became famous as her defender; who, when the crisis was over and the new Republic became an established government, resumed his professional work and in a hundred ways and a hundred years in advance of his time sought to improve social and sanitary conditions, and became famous as a great reformer, philanthropist and sanitarian; who doing all this faithfully performed the duties of his calling as a practitioner of medicine and sought to minister to his suffering fellow citizens at the hazard of his own life, which he at last offered up a victim of the prevailing epidemic of typhus—and became famous for his heroic martyrdom.

But you all know this. Year after year you have listened to the recital of the incidents of his remarkable career. While it is enough in most men's lives to have one special class of individuals interested in their achievements, this man claims the homage of every lover of his country because of his courage in maintaining its liberties at the hazard of his life—of medical military men especially, because he was the surgeon general of the Revolutionary army and vigorously insisted upon the proper organization of its medical department—of practitioners of medicine because of his acquirements and skill as a practitioner—of the literary world because of his attainments as a chaste and elegant writer—of scholars and professors because of his ability as lecturer and teacher.

If, however, the members of the profession are unwilling to contribute to this memorial I do not see how they can be coerced into doing so, and since the project has gone too far to be abandoned, better legislate an annual subscription by the Association for a term of years, until a sufficient sum shall have accumulated to erect a monument worthy the subject and creditable to yourselves. Failing this, your Committee can only proceed to use the fund in hand, small as it is, for such a simple bust in bronze of heroic size upon a granite pedestal as can be procured for the money.

Your Committee reports the facts as herein stated and awaits your instructions. All of which is respectfully submitted,

ALBERT L. GIBON, M.D.

Chairman Rush Monument Committee.

[For action on this report see minutes, JOURNAL p.p. 1149-1.]

Competition for the Senn Medal.—Pursuant to a resolution adopted by the Section of Surgery and Anatomy of the AMERICAN MEDICAL ASSOCIATION, June 4, 1897, I have been appointed by the Chairman, Dr. Reginald H. Sayre, as Chairman of the Committee charged with the awarding of the Senn Medal for 1898. The other members of the Committee are Drs. H. O. Walker of Detroit, Mich., and S. H. Weeks of Portland, Me.

1. A gold medal of suitable design is to be conferred upon the member of the AMERICAN MEDICAL ASSOCIATION who shall present the best essay upon some surgical subject.

2. This medal will be known as the Nicholas Senn Prize Medal.

3. The award shall be made under the following conditions: *a.* The name of the author of each competing essay shall be enclosed in a sealed envelope bearing a suitable motto or device, the essay itself bearing the same motto or device. The title of the successful essay and the motto or device to be read at the meeting at which the award is made, and the corresponding envelope to be then and there opened and the name of the successful author announced. *b.* All successful essays become the property of the ASSOCIATION. *c.* The medal shall be conferred and honorable mention made of the two other essays considered worthy of this distinction, at a general meeting of the ASSOCIATION. *d.* The competition is to be confined to those who at the time of entering the competition, as well as at the time of conferring the medal, shall be members of the AMERICAN MEDICAL ASSOCIATION. *e.* The competition for the medal will be closed three months before the next annual meeting of the AMERICAN MEDICAL ASSOCIATION, and no essays will be received after March 1, 1898.

Competitors will address their essays to the undersigned

J. McFADDEN GASTON, M.D., Chairman.

1½ Edgewood Ave., Atlanta, Ga.

The Excursion to Atlantic City.—Among the enjoyable features of the Jubilee meeting was the trip on the last day to Atlantic City, where over a thousand availed themselves of the benefits of the excursion.

The members were met at the depot by a large delegation of

citizens, and about an hour later were assembled at the Brighton Casino, where a meeting in their honor was held, with Dr. Marvel in the chair. Dr. W. Blair Stewart escorted the speakers to the stage and presented Mayor Stoy, who welcomed them in a short but interesting address. Dr. Thomas K. Reed, the oldest resident practitioner of Atlantic City, delivered a formal address of welcome, which was listened to with close attention and much appreciated.

Dr. Stewart then introduced Dr. James North in flattering terms as the poet laureate of the city. Dr. North welcomed his fellows as follows:

Friends by the sea! Where once he loved to stray,
Great Esculapius, of our art divine
High Priest, doth from his silent bed of clay,
His greetings send by this weak tongue of mine,
And bids you seek, where purple billows roll
With majesty to meet the shore's embrace,
Those secrets hid within its troubled soul
And pregnant with the welfare of our race.

For since the gods from high Olympus fled,
And Epidaurus' temples ruined lie,
He dwells in silent chambers of the dead,
Nor looks upon the blue and arching sky.
But that great heart which throbbed for all mankind,
Doth silent yearn and hope for morals good;
And his disciples o'er the earth would bind,
In one great universal brotherhood.

"Physician blameless," as blind Homer sang,
Fruit of Apollo's loins and fair Celenus' womb,
Thy fame that through the hollow centuries rang
Were poor excuse to wake thee from the tomb
And drag thee forth into the garish light,
That Science turns on filial works of men;
How dense will be the darkness of thy night,
When I shall leave thee to thy grave again.

Peace to thine ashes! While I turn to greet
These noble ones on whom thy mantle rests,
Thy brotherhood of good, whose tireless feet
And sturdy arms protect the naked breasts
Of frail humanity against the darts
Of grim Disease, who in the crowded field
Would baffle all the virtue of their arts
But for thy daughter Hygiea's golden shield.

Here 'mid such scenes as poets sang of old
You meet Past Masters by the sounding seas,
To weld fraternal links, stronger than gold,
In that long chain of which Hippocrates
And Galen, 'mid the lesser lights, shine bright,
Like stars along the heaven's milky way,
Changing the darkness of the centuries' night
Into the splendor of the present day.

Nor 'neath Argolian skies, as oft of yore,
Where temples white her sacred groves begemmed;
But here beside the wavelet-wooling shore,
Where fair Health dons her brightest diadem,
And prints on careworn cheeks her rosy seal,
Her votaries lie, lulled by the summer breeze,
Tasting of joys that only gods could feel,
And dance like nymphs in far Hesperides,

Or glide like mermaids through the crystal waves,
Rocked for a moment in their giant arms,
While loving water amorously laves
The glowing beauties of unguarded charms;
'Till mad-cap breakers, with a rush and whirl
And flying spray, speed onward hand in hand,
To leave their burden, like a beauteous pearl,
Panting with pleasure on the shining sand.

Here, gazing o'er the ocean's broad expanse,
With heart attuned to Nature, thou shalt hear
The music of the spheres, as in a trance,
Which fell upon Apollo's listening ear.
Or see Aurora from her purple bed—
The fairest child of old Hyperion—
Throw back the rosy veil from off her head
To herald forth the coming of the sun.

And when brave Helios in flaming car
And fiery steeds speed up the azure skies,
The glory of the sun-god from afar
Is like the splendor-burst of Paradise;
And all around the spirits of the blest
Sweet converse hold, and then realized seem
The wondrous peace of Eden's perfect rest,
Of Dante's visions and of Milton's dreams.

And when the moon in the empyrean swings,
The shade of one Aurelius Celsus walks
And listens to the wavelet as it sings,
Or with the ghost of Ambrose Paré talks
Of Fame's sweet touch, as soft as kiss on brow,
By wooing winds of vineclad Ahydos,
Of golden palms and laurel's greenest bough,
To bind a wreath for our immortal Goss.

Not he alone whose marble statue, reared
By reverent hands, thy loving eyes have seen,
Close by the towering shaft of one revered
By all the world, whose laurels, ever green,
The deepening dust of centuries can not dim,
But other names which Fame claims as her own,
Dear to our hearts who led or followed him,
With graves unmarked or decked with costly stone.

'Tis well that in the city of his fame,
Of Physick's home, of Pancoast's memory dear,
The sheltering shrine of Agnew's honored name,
And Leidy's works, you celebrate this year,
Whose glad bell peals upon the startled air
Proclaimed throughout the land, sweet liberty,
'Neath the peace-angel's spreading pinions fair,
That you should hold your golden jubilee.

'Tis meet that now, your arduous labors done,
You seek relief in ocean's breath benign;
And while from glass of life the sand doth run
Drink deep ambrosial draughts of air divine
On this fair shore where fortune gladly came
To dwell in love with Hospitality,
We bid you welcome in her sacred name,
To our Queen City by the whispering sea.

Here at your councils may Athene preside,
While Bacchus crowns with bays your festive board,
May Lares guard your absent fireside
'Till your dear ones shall welcome back their lord.
In that blest meeting of the loved apart,
Forget not those who by the boundless sea
Clasped hands and spake with you as heart to heart,
And wished you well through God's eternity.

SOCIETY NEWS.

Washington State Medical Examining Board.—The Governor has appointed the following new members of the State Examining Board: Dr. J. H. Hoxsey, Spangle; Dr. J. P. Turney, Davenport; Dr. E. Van Zandt, New Whatcom.

Oregon State Medical Society.—The twenty-fourth annual meeting of the Oregon State Medical Society was held in the parlor of the Imperial Hotel, at Portland, June 8 and 9. The attendance was quite large, delegates from both the California and Washington State societies being present. The interest and discussion elicited by the papers was much more pronounced than usual. The following papers were presented, viz.: "Optical Illusions," Dr. R. Nunn, Portland; "Tuberculous Osteomyelitis and Bone Abscess," Dr. F. M. Robinson, Beaverton; "Are Women Doctored Too Much?" Dr. J. A. Fulton, Astoria; "Radical Cure of Hernia, with Report of Sixteen Cases," Dr. W. H. Saylor, Portland; "New Mexico as a Health Resort for Consumptives," Dr. F. Cauthorn, Portland; "Why Female Diseases," Dr. C. H. Hall, Salem; "Perforating Intestinal Ulcer of Typhoid Fever, with Report of a Case. Operation. Recovery," Dr. A. C. Pantou, Portland; "Peculiar Forms of Enteric Fever," Dr. J. A. Giesendorfer, Arlington; "Sanitary Plumbing," Dr. Mae H. Cardwell, Portland; "Chemical Analysis of the Urine and its Diagnostic Value," Dr. L. Victoria Hampton, Portland; "Asexualization of Criminals" Dr. T. C. Humphrey, Portland; "Inflammations of the Middle Ear, and their Relation to Nose and Throat Diseases," Dr. J. F. Dickson, Portland; "Bromin-Iodin Injections in Tuberculosis," Dr. W. H. Saylor, Portland; "Deflections of the Nasal Septum," Dr. Edward N. Wilson, Portland; "The Complexion," Dr. W. E. Maxwell, Portland; "Chorea," Dr. Henry W. Coe, Portland; "Differentiation between Epilepsy and Reflex Epileptiform Attacks," Dr. S. E. Joseph, Portland; "Treatment of Gonorrhea in Women," Dr. William F. Amos, Portland; "The Utility of Roentgen Rays in Detecting and Locating Metallic Particles in the Eye," Dr. A. B. Kibbe, Seattle; "Address of Retiring President," Dr. Andrew C. Smith, Portland.

The officers elected for next year were as follows, viz.: President, Dr. Wm. Jones, Portland; vice-president, Dr. C. H. Hall, Salem; secretary, Dr. W. F. Amos, Portland; treasurer, Dr. Mae H. Cardwell, Portland. The next annual meeting will be held at Portland in June 1898.

Twelfth International Medical Congress.—The Committee of Organization of the Congress has received from the Ministry 7,000 free tickets of first-class transportation, which have been placed at the disposal of the Congress for their trip to Moscow going and returning. These tickets have been issued to the Committee of Organization by the Russian Ministry under the following conditions:

1. The Committee of Organization in sending each ticket to the member of the Congress for whom it is destined, will inscribe his name and the station from where he will leave, and for foreign visitors, the first Russian station on the frontier, also the route by which they will go to Moscow and return.

2. Independently of this the Committee of Organization will furnish the members of the Congress with a certificate indicating that the bearer is a member of the Congress. This

certificate should be presented to the conductor of the train on demand.

3. These tickets will only be available for the return trip from Moscow when bearing the stamp indicating that the bearer has taken part in the International Congress.

4. The names of the members of the Congress will be inscribed according to the opinion of the Committee of Organization, not only in Russian but in foreign languages.

5. The tickets of going to Moscow should be presented at the station of departure, or the first Russian station on the frontier, and there application should be made to have the tickets stamped. On return these tickets will be presented at the depot in Moscow, where they will be stamped with the date of departure.

6. The return tickets are good up to the 1st (13th) of September of the present year.

7. Bearers of these tickets will have the right to free transportation of baggage to the amount of 16 kilogrammes.

8. As soon as the Committee of Organization will have given notice of the time and number of members crossing the frontier stations, the railway companies will make arrangements to permit them to get most conveniently, comfortably and promptly to Moscow, and they will take the same measures on their return from that city.

9. In conformity with these conditions, in order to have a free ticket, each member of the Congress should inform the Secretary General of the route by which he will go and return.

10. The Executive Committee have the honor also to give notice that ladies and other persons, who have no scientific title, accompanying the members of the Congress, under rule 3, can not be inscribed as taking part, nor pay any admission fee, nor can they receive gratuitous tickets on the Russian railroad lines.

BOOK NOTICES.

A New Classification of the Motor Anomalies of the Eye, based upon physiological principles, together with their symptoms, diagnosis and treatment. By ALEXANDER DUANE, M.D., Assistant Surgeon of Ophthalmic and Aural Institute, New York. J. H. Vail & Co. 1897.

This excellent little book consists of two parts; the first part reviews the normal movements of the eye, and the tests employed in their examination. The second part introduces the author's new classification of the muscular disorders and gives a very clear and comprehensive description of each of the six groups into which the motor anomalies are classified. Instead of subdividing these anomalies simply according to the deviations presented (which has been the usual plan adopted by writers heretofore) the author proposes the following classification: Disorders of individual muscles. 2. Disorders of associated parallel movements. 3. Disorders of convergence. 4. Disorders of divergence. 5. Disorders of sursumvergence. 6. Disorders of the rotation (or swivel) movements.

These divisions form groups, distinct in nature and symptoms, and frequently requiring widely different methods of treatment and readily distinguishable in practice by the signs they afford. The new classification therefore furnishes a good working basis for the diagnosis and management of motor anomalies; and we recommend the careful and repeated perusal of this brochure to every one who wishes to study and understand thoroughly this very interesting and important, but also very perplexing subject.

A Handbook of Medical Climatology, Embodying its Principles and Therapeutic Application, with Scientific Data of the Chief Health Resorts of the World. By S. EDWIN SOLLY, M.D., M.R.C.S., late President of the American Climatological Association. In one octavo volume of 470 pages, with engravings and colored plates. Cloth, \$4. Lea Brothers & Co., Publishers, Philadelphia and New York, 1897.

This work is intended to be a systematic treatise on Medical Climatology and essays to report the climates of the world. It is a subject which has engaged the author's attention for nearly thirty years.

Those who have the pleasure of personal acquaintance with the author will not fail to recognize in this work evidence of his fairness and cool judgment and in his description of various

climates and in the rules of climatotherapy there is not the slightest bias or variation from what he conceives to be the truth of the case. The book is divided into three sections. Section 1 having five chapters devoted respectively to the principles of Medical Climatology, Physiology, Ethology, Geographical distribution of diseases, and Classification of Climates.

Section 2 has an introduction and four chapters, viz., Phthisis, Forms of phthisis as influenced by climate, result of the treatment of phthisis by change of climate, forms of disease other than phthisis as influenced by climate.

Section 3 has an introduction and ten chapters, viz., North America, Eastern Climate, Southern Climate, Rocky Mountain Climate, Pacific Slope Region, Mexico, South America, Europe, Africa, Asia, Australasia and Island Climates.

There are various charts and relief maps explanatory of the text and altogether it is safe to say that Solly's Medical Climatology will be accepted as a fair and authoritative presentation of the existing knowledge of the subject for some time to come. The author has not attempted under the head of Climatology to prescribe special climate for particular diseases but has endeavored to lay down the broad principles of the subject leaving to the practitioner the duty of forming his own opinion in individual cases.

With some verbal changes the work will answer very well for class recitations. As a work of reference it will be valuable to every practitioner.

Lippincott's Medical Dictionary. A complete vocabulary of the terms used in Medicine and the allied Sciences, with their Pronunciation, Etymology and Signification, etc. By RYLAND W. GREENE, A.B., assisted by John Ashhurst, Jr., M.D., LL.D., George A. Piersol, M.D., and Joseph P. Remington, Ph.M., F.C.S. Philadelphia: J. B. Lippincott & Company. 1897. 8vo, cl., pp. 1154.

This dictionary in its general plan is based on the dictionary of Dr. Thomas. In spelling both old and new forms are used, but in the pronunciation the English method has been given precedence. At the same time it is admitted in the preface that the Roman pronunciation is increasing in use. A number of new words have been introduced and will be found very useful. While we object *in toto* to the English pronunciation of Latin words, we must concede that with the exception of pronunciation, there is little to criticise and much to commend.

By reason of changes in medical science, in order to keep pace therewith one must have the latest dictionary, and we can not have too many of them. The alleged phonetic system of pronunciation, of which this book is an exponent, presents a queer appearance at times, and in many instances one would need a translation of the phonetics; for example, the word "saline" has for its phonetic se-lain' or se'lain, and Samuel—which most people know how to pronounce in their mother tongue, looks rather unfamiliar in the phonetic, Sam'iu-el. Obtusion must according to this dictionary be pronounced "ob tiu'zhon," and the plain word "puke" is pronounced "piite."

We do not speak of this for the purpose of criticising unkindly those who believe that correct English pronunciation has been entirely lost by those living in the present century, but it certainly is very far from the tendency of the day to use needless letters anywhere, much less by way of making an explanation which does not explain. In other respects the dictionary is an excellent one.

A Compendium of Practical Medicine for the Use of Students and Practitioners of Medicine. By WILLIS WEBSTER GRUBE, A.M., M.D. Toledo, Ohio: The Hadley Publishing Co. 1897. 8vo, calf, pp. 664.

This is a catalogue of diseases arranged alphabetically, each accompanied by a short description: some of them give causes and all have a treatment. At the end of the work there is a

clinical index which is really a therapeutic index. The book is printed in large clear type, and is handsomely bound and on heavy paper. The old system of dosage has been used. The work is elementary and will no doubt be useful to medical students. But we question whether or not such books as this should be implicitly relied on even by students. For instance, page 35, the author says: "Pus when thick and clear is known as healthy or laudable pus or living pus; when thin and watery, puriform or dead pus; when blood stained, sanious gummy pus and contagious pus in smallpox, gonorrhea and venereal ulcers." On reading such a paragraph one is apt to rub his eyes and reëxamine the title page of the book to see if it is really printed near the close of the nineteenth century.

It must not be inferred that this book is a systematized treatise on medicine: it is in effect a dictionary of certain terms and concerning which the author has given more or less description according to his opinion of their relative importance. Viewed from this standpoint, much of the criticism that it would otherwise obtain falls to the ground.

Exactly why a fee bill has been placed at the end of the work, or whose fee bill it is, it would be difficult to state, as there is nothing in the book about it.

Transactions of the New York State Medical Association. Volume xiii. Edited by E. D. FERGUSON, M.D. Pp. 624. New York: Published by the Association, 1897.

This very welcome addition to our medical literature still maintains the standard erected at the start. Careful research, original views and lucid statement are prominent features of the contributions. Among the writers are the well known names of Drs. J. W. S. Gouley, Joseph D. Bryant, T. D. Crothers, J. E. Janvrin, John Shrady, J. Lewis Smith, George T. Harrison, Nathan G. Bozeman, H. O. Marcy of Boston, and the editor himself. The addresses of Dr. Darwin Colvin, the retiring President, and Dr. Charles Phelps, President elect, are thoughtful, chaste and suggestive. Dr. Reginald H. Sayre on "Roentgen's Discovery as Applied to Surgery," gives a masterly résumé of its present status, while the participants in the discussion of prostatic enlargement, all of whom deserve more than the usual meed of praise, certainly a passing note. These were, besides Dr. Gouley, Drs. Samuel Alexander, W. G. Bronson and Douglas Ayers. Drs. John G. Truax, Thomas H. Manley, T. M. Ludlow Chrystie, Nelson L. North, F. H. Wiggins, E. B. Dench, Frank S. Milbury, Sidney Yankaver, Robert Aberdeen, William M. Bemus, Alvin A. Hubbell, T. J. Acker, Florince O'Donohue, Z. J. Lusk, Samuel E. Milliken, E. H. Squibb and Irving D. LeRoy have also ably fulfilled the duties entrusted to them.

The Semi-Centennial of Anesthesia, Oct. 16, 1846 Oct. 16, 1896. Boston, Mass., General Hospital, 1897.

We have already adverted to the Semi-Centennial of Anesthesia as celebrated by the Massachusetts General Hospital in Boston in October last (See JOURNAL, Vol. xxvii, p. 768), and we now have a handsome book, printed on Japan paper, exquisitely finished, having for its frontispiece a picture of the old Hospital and immediately following the title a reduced copy of the invitation to attend the exercises and a reproduction of all papers read on that occasion, which were as follows:

1. Address of welcome by Charles H. Dalton, President of the Massachusetts General Hospital.
2. Reminiscences of 1846 by Robert T. Davis, M.D., Fall River.
3. Surgery before the days of anesthesia, by John Ashhurst, M.D., LL.D., of Philadelphia.
4. What has anesthesia done for surgery, by David W. Cheever, M.D., LL.D., of Boston.
5. Relation of anesthesia and obstetrics, by John P. Reynolds of Boston.
6. The influence of anesthesia upon medical science by W. H. Welch, M.D., LL.D., of Baltimore.
7. Surgery of the future by Charles McBurney, M.D., of New York.

8. The birth and death of pain, a poem, by S. Weir Mitchell, M.D., LL.D., of Philadelphia.

The portraits of Dr. J. C. Warren and William T. G. Morton are inserted, and as well an engraving showing the first public demonstration of surgical anesthesia, which occurred Oct. 16, 1846, and in which the portraits of those present are seen grouped about the patient (George Abbott), who is lying on the table at the period where Morton has completed the anesthesia and the patient is just ready for the knife of Dr. Warren. The figures present are those of Drs. H. J. Bigelow, A. A. Gould, J. C. Warren, J. Mason Warren, W. T. G. Morton, Samuel Parkman, George Hayward and S. D. Townsend. Of these, J. C. Warren was at the time professor of surgery in the Medical Department of Harvard University; J. Mason Warren and H. J. Bigelow afterward became such. Dr. Parkman was murdered by Webster; Dr. George Hayward was at the time the chief surgeon of the Massachusetts General Hospital; Dr. Townsend was then surgeon of the Marine Hospital at Chelsea, having succeeded his father, Dr. David Townsend, in that capacity.

As a souvenir of one of the most interesting events of modern medical history, the book will find a welcome in the library of every progressive surgeon who is fortunate enough to obtain it.

NECROLOGY.

WILLIAM THOMPSON LUSK, M.D., born May 23, 1838, in Norwich, Conn., died of cerebral apoplexy at his residence in New York city, June 12. Having entered Yale College in 1859 he left it after his freshman year to enlist in the Union army but in 1872 he received his honorary degree of A.M. from this institution and in 1893 that of LL.D. During the war he rose from the humble rank of private to that of Captain of the 79th Infantry N. Y. Volunteers, otherwise "the Highlanders" from which regiment he was mustered out Feb. 28, 1863. He was graduated from the Bellevue Hospital Medical College in 1864 and afterward pursued his studies in Heidelberg, Berlin, Edinburgh, Paris, Vienna and Prague. Dr. Lusk won his reputation from many pursuits, having been contributor and medical editor, lecturer and professor in the Long Island Hospital Medical College, the Harvard Medical School and the Bellevue Hospital Medical College, a visiting and consulting physician of many hospitals and an active member of several scientific bodies. His most enduring distinction in all likelihood is his treatise on "The Science and Art of Midwifery" (1880), which has been made familiar abroad in several languages. He leaves three daughters and two sons.

FREDERICK J. McNULTY, M.D., Georgetown Medical College 1860, died in Boston, Mass., June 14, at which date he was Superintendent of the Austin Farm Insane Asylum. He was born in Richmond, Va., in 1835 and was an officer with a record of a service under four flags, to-wit, the United States, the Confederate, the Chilian and the Cuban. Recovered from wounds in battle, with a diplomatic training and an experience in Ludlow Street jail under bonds not to enter the Cuban army he finally settled in Worcester, Mass., and in 1879 removed to Boston. He was a member of Camp Lee, Confederate Veterans of Richmond and the Massachusetts Medical Society.

HENRY LOEWENSTEIN, M.D. University Giessen, Germany, 1857, for many years a police surgeon, died at his home in Brooklyn, N. Y., June 10, aged 59 years.

SAMUEL S. TROTH, M.D., Jefferson, Philadelphia, 1849, died in that city June 11. He was long a member of the Pennsylvania Medical Society.

GEORGE KERR EDWARDS, M.D., son of a regular army surgeon, a Princeton graduate of class 1889, and an alumnus of the University of Pennsylvania, died in Princeton, N. J., June 14. After attaining his medical degree he spent a year in hospital work in Philadelphia and subsequently in the Johns Hopkins Hospital. After nine months devotion to duty in the latter institution tuberculosis manifested itself, since when in his own words he kept "chasing health and hope." A sojourn

in California was unavailing and in obedience to a sentiment of his own he was carried to die in his old college room not long after a speech made at a class reunion. His last residence was Newcastle, Delaware.

JOHN P. ATWATER, M.D., last surviving member of the class of 1834 at Yale College, died at his home in Poughkeepsie, on May 23. He was born in 1813 at Carlisle, Pa., where his father, the Rev. Jeremiah Atwater, after completing his professional studies, settled. In 1870 he removed to Poughkeepsie.

JOEL WASHINGTON SMITH, M.D., Charles City, Iowa, June 6, aged 72 years. Dr. Smith was a member of the AMERICAN MEDICAL ASSOCIATION, Iowa State Medical Society, Cedar Valley, and Wapsia Valley Medical Societies; International Medical Congress, Philadelphia 1876, and Washington 1887; American Public Health Association, American Association for the Advancement of Science, etc.

ALONZO D. TAGERT, M. D., June 16, aged 53 years; graduated in 1864 from Medical Department of the University of Vermont. He practiced in his native State until 1884, when he settled in Chicago and remained up to the time of his death.

—Wm. Allison Todd, M.D., Chariton, Iowa, March 24, at one time president of the Iowa State Medical Society. —Isaac Van Tyle Goltra, M.D., Springfield, Ill., June 12, aged 77 years.

—R. J. Goodman M.D., Sparks, Ga., June 16. —Victor S. Jourdon, M.D., St. Louis, June 13, aged 80 years. —Samuel M. Martin, M.D., Greenfield, Ind., June 14, aged 55 years. —M. M. Powell, M.D., Collinsville, Ill., June 19. —Nicholas Schenkel, M.D., Allegheny, Pa., June 9, aged 40 years. —Asa F. Pattee, M.D., (instead of Asa F. Potter, JOURNAL, p. 1202).

PUBLIC HEALTH.

The Scarlet Fever Epidemic in Plainfield, N. J.—The health authorities, aided by the city physicians, are investigating the sources of the epidemic, which seems to have been of a mild form and found to exist among all classes of the people. No favors have been shown in the general quarantine, and as a consequence the epidemic has so far abated as to allow a few days opening of the schools previous to the summer vacation.

Draining New Jersey Marshes.—The reclamation of the Passaic and Hackensack meadows is under discussion. The two are about eighteen miles long, extending from Elizabeth to Hackensack, and their width averages four miles. The surface is in general five feet above low water level and a trifle above high tide. The soil is either blue clay or peat, the depth of the former ranging for the most part from ten to fifteen feet and the depth of the latter being generally less than eight feet. Mr. C. C. Vermeule of the State Geological Survey in his report discusses the relative cost of plans, and averages the price at about \$47 an acre. The accruing advantages to commerce, manufacturing and agriculture would more than counterbalance the estimated outlay of \$1,268,400. The health and welfare of the whole meadow district and contiguous territory, it is suggested, can best be promoted by a single public authority planning to improve navigation and drain by the same work. The newspapers in their comments can not forego the tempting allusions to offensive odors, omnipresent malaria and "Jersey mosquitoes," but vote the proposition of redemption as feasible.

A Yellow Fever Menace.—A San Francisco telegram to the N. Y. Herald, dated June 13, reports the arrival of the *City of Para* flying the yellow flag. When one day out from Panama, a lady passenger died from yellow fever, and a few days thereafter the captain also succumbed. None of the twenty passengers showed symptoms of the disease, but a quarantine was very properly ordered. Health officer Dr. Doty maintains that a fever epidemic in New York is out of question and that the present menace, if such it may be called, began on the

Pacific side of the Isthmus of Panama; the cases originated in two sailors who deserted a ship from Peru. On the Atlantic side of the Isthmus, where the *Advance* shipped her cargo of fruit, there is no yellow fever. (JOURNAL, p. 1202). The steamer *Vigilancia*, with eleven second-cabin passengers, arrived at New York June 14 from Havana. These were sent to Hoffman Island for observation. Owing to the sudden death of a Chinese passenger on board the *Vigilancia*, and the lack of a satisfactory history of the case, Health Officer Doty decided to detain the steamer for disinfection. In the case of ships from Cuba, "white certificates" are used as permits to land in New York. The only class on board ship requiring surveillance are white passengers who may have contracted the disease ashore. The crew and natives are practically immune. Others without certificates are detained for a day and a half away from their surroundings and thereby they complete the period of incubation, which is five days, the voyage from Cuba being three days. In this way commerce, the local god, is propitiated.

MISCELLANY.

Determination of the Xanthin Bases in the Urine.—It is announced in the *Deutsche Med. Woch.* of June 3 that the universally adopted Krüger-Wulff method is not reliable. Comparative tables are given which show that the results attained with it are seven times too high in some cases, while this exaggeration is too variable to be accepted as a mathematical factor in computing the results.

Prof. Axel Key of Stockholm has been honored by his friends with a "Fest Band" on the occasion of the completion of his thirty-fifth year as professor of pathologic anatomy at the Karolinska Med. Kir. Institute. It forms two bulky volumes bound uniform with the *Nord. Med. Arkiv* of which he is editor, price 16 kronor. It contains thirty-seven able articles on important subjects, finely illustrated.

Moscow International Congress.—The Committee on Accommodations report 3,000 rooms at the disposal of the members of the Congress, ranging in price from 3 to 10 francs a day, which includes breakfast. A special committee has been appointed to attend to the entertaining of the ladies accompanying members, to render their stay in Moscow agreeable. —*Therap. Woch.*, May 30.

Floating Kidney in Children.—Comby asserts that the accepted causes of floating kidney must be erroneous in many cases, as he has found it occur quite frequently in children since he began looking for it recently. This shows that the condition in adults may date from the earliest years and may be congenital. The *Bull. Soc. Méd. des Hop.*, May 27, contains his observations of six cases, ranging from infants to girls of 14, and he urges others to coöperate in obtaining further information in regard to this condition in children.

Capacity of the Human Stomach. There were removed from the stomach of Harry Whallen, "the human ostrich," who underwent an operation June 12 at the German Hospital, Kansas City, Mo., two pocket knives, three knife blades, three ounces of fine glass, and tacks, nails, screws and staples to the number of seventy. He died a martyr to his latest miracle not quite two days thereafter.

The Statue to Charcot.—Germane to the thought expressed by Governor Hastings at the last convention, we find that the French people are not omitting their artistic duties toward those who work for preventive medicine. The New York *Herald* says that the sculptor Falguière is putting the finishing touches to a magnificent statue of Dr. Charcot, which will be placed at the Salpêtrière. The Pasteur monument fund has reached the sum of \$60,000, nearly. At the request of

Paul Dubois, who was first asked to execute the monument, the work has been intrusted to Falguière.

Explanation of the Variations in the Intracellular Secretion of Bile in the Liver.—Professor Browicz announces that he has established a fact that explains his former announcement of the peculiar differences in the chemie constitution of the bile secreted at one time by a liver cell in certain abnormal conditions. He finds that there is a connecting system of delicate intranuclear and intraprotoplasmic passages in the chromatin of the nucleus of the hepatic cells, connecting closely with the intercellular biliary passages. This discovery shows that the biliary passages commence in the nucleus, and also explains the pathologic vacuolization in certain pathologic conditions. —*Deutsche Med. Woch.*, June 3.

The New York Medical League puts the Brake on More Dispensaries.—We glean from the press of New York that the New York Medical League has commenced active operations in the matter of medical charities abuses. On April 19, a committee of the League appeared before the New York State Board of Medical Charities in opposition to the application for a charter for the St. Bartholomew Dispensary, claiming that the institution of a new dispensary in a neighborhood already amply provided for by medical and surgical services, was unnecessary and tending to promote pauperism. The Board accepted the views of the League and refused the grant of charter. The Pasteur Institute also applied for a license to open another dispensary, and the League objecting, urged the refusal of recognition by the Board. Here, as in the preceding case, the League was sustained by the State Board of Charities and the charter was not granted. Let the good work go on.

Lesions of the Spinal Cord in Cases of Amputations of the Fingers.—The necropsy of a recent case has strikingly confirmed the modern assertion that the section of a nerve determines lesions at a distance, in the nerve's originating center. In this case, described and illustrated in the *Presse Méd.* of June 2, the lesions in the spinal cord corresponded in every particular and almost exclusively to the innervation of the parts amputated. An interesting feature of the case was that the amputation was congenital. The woman was 60 and a cancer was located in the cervix uteri.

Estate of Deceased Insane Person not Liable. In Missouri the duty of supporting the indigent insane is devolved by statute upon the counties of which they are inhabitants. Section 5557, of the Revised Statutes of that State of 1889 provides that "in all cases of appropriations out of the county treasury for the support and maintenance of confinement of any insane person, the amount thereof may be recovered by the county from any person who, by law, is bound to provide for the support and maintenance of such person, if there be any of sufficient ability to pay the same." But because there is no express statutory provision therefor, the supreme court of Missouri holds, in *Montgomery County v. Gupton*, March 9, 1897, if a county has paid for the support of an insane person at the State Lunatic Asylum, it can not recover the amount from such person's estate after his death. There is no principle of statutory construction, it declares, that will warrant the assumption that, a legal liability being upon others, if they are able pecuniarily to pay for the patient's support, the law will imply a promise on the part of the patient to pay for it himself, if able pecuniarily. At common law, it explains, it is well settled that the provision made by law for the support of the poor is a charitable provision, from which no implication of a promise to repay arises, and moneys so expended can not be recovered of the pauper in the absence of fraud, without a special contract for repayment.

Societies.

THE midsummer meeting of the Madison County Medical Society was held at Huntsville, Ala., June 15. —Seventy-five physicians and surgeons of the Santa Fé Hospital Association,

which is maintained by the A. T. & S. F. Ry., have organized as the Santa Fe Medical and Surgical Society. Dr. J. P. Castor, Topeka, Kan., was chosen president.—The Sioux Valley Medical Association met in annual convention at Rock Rapids, Iowa, June 15.—The South Dakota State Medical Association met at Mitchell, June 9.—The Kansas City District Medical Society held a meeting June 10.—The Manchester (N. H.) Medical Association held its first annual session June 11.—The annual meeting of the Delaware State Medical Society was held at Rehoboth, June 10.—The Franklin County (N. Y.) Medical Society held its session at Malone, June 8.—The Ontario Medical Association held its seventeenth annual meeting at Toronto recently.

Colleges.

INDEPENDENT MEDICAL COLLEGE THREATENED.—Attorney-General Akin of Illinois has been asked by the Board of Health of Milwaukee to have the charter of the Independent Medical College of Chicago revoked.—Harvey Medical College, Chicago, graduated nine new physicians June 15.—At the thirteenth annual commencement of the National University, Washington, D. C., June 10, ten received the degree of Doctor of Medicine.—The medical department of Hamline University, Minnesota, held its fourteenth annual commencement June 10.

Hospitals.

THE STATEN ISLAND HOSPITAL, "Greater New York," is to hold a "birthday party" on June 19. A little silk bag accompanies an invitation to the lawn, this article being for the reception of pennies indicating the contributor's age in years. Music and refreshments are the temptations.

MARY O'MALLEY, M.D., Niagara University, 1897, has been appointed on the resident staff of the Buffalo (N. Y.) Hospital of the Sisters of Charity.—Finley Hospital, Dubuque, Iowa, reports 120 patients for the year ending March, 1897. Of these sixty-four were surgical, forty-nine medical. Seventy-eight were cured, twelve improved and fourteen died.

Washington.

HEALTH OF THE DISTRICT. From the report of the Health Officer for the week ended June 12, we find the mortality of the District continues below the average. The total number of deaths during the week was 82, while those of the previous week were 94, of which 48 were white and 36 colored; total death rate per thousand 15.2. Diseases of the nervous system caused 13 deaths, those of the circulatory organs 6, those from the kidneys 9. There were 3 deaths from diphtheria, 3 from whooping cough, 3 from acute lung diseases, 1 from typhoid fever. Of the 6 deaths by violence 3 were by suicide.

MEDICAL SOCIETY.—At the recent meetings of the Society the following papers have been presented: Dr. Nordhoff-Jung, "The Thure-Brandt System in Gynecology Practically Applied"; Dr. Forwood, "Fracture of the Skull, case and specimen"; Dr. Kleinschmidt, "Thoughts on Modern Physiology: Its Aim and Limits"; Dr. Lamb, "Ulcerative Endocarditis."

WASHINGTON OBSTETRICAL SOCIETY.—The Washington Obstetrical and Gynecological Society at its meeting June 18 adjourned until October next, when President Dr. J. B. Harrison will read the annual address.

BOARD OF MEDICAL EXAMINERS.—The Commissioners of the District have appointed Dr. John H. McLain to succeed himself as a member the Board of Medical Examiners.

NEW QUARANTINE STATION.—A quarantine station has been established at Alexandria, Va. Dr. Arthur Snowden, formerly of Washington, has been appointed officer in charge.

TO PROTECT THE MEDICAL LICENSING BILL.—The Commissioners of the District, on the advice of Health Officer Woodward, have reported adversely on Senate Bill 1134, to restore medical "freedom" to the District of Columbia. They append to their report a criticism by the health officer which clearly shows the wisdom of their adverse recommendation.

TRAINED NURSES FOR THE POOR.—A number of very prominent trained nurses in this city recently organized an association among themselves for the purpose of supplying first-class nurses to the poor and middle classes. The nurses, when off duty, propose to nurse the poor by daily or nightly visits for a nominal fee per visit. Where an operation is to be performed one or more will attend during the actual time of the operation for a fee of \$3 to \$5, during actual labor and delivery \$5, and subsequent visits \$1 for the first and 50 cents for subsequent visits. These reductions are to be made only on the certificate of the attending physician that the families are unable to pay the regular fees. The association will do a great deal of good to the poor classes by thus permitting them to have the services of nurses, whose high prices formerly barred them. The advantage to the physicians will be incalculable.

A FAITH CURE DOCTRESS IN TROUBLE.—Quite recently a patient ill with diphtheria died while under the care of a faith-cure doctress. The Health Department and Board of Medical Examiners assert that she thus violated the Medical Practice Act and have accordingly issued a warrant for her arrest, so charging her. Her personal bonds have been accepted, pending the trial before the police court. She claims not to practice medicine nor to have violated the Medical Practice Act, and alleges exercising a religion by prayer.

THE PUBLIC SERVICE.

Army Changes. Official List of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from June 12 to June 18, 1897.

First Lieut. Charles Lynch, Asst. Surgeon, is granted leave of absence for one month, with permission to apply for an extension of one month, to take effect upon his relief from duty at Ft. Robinson, Neb. First Lieut. Benjamin Brooke, Asst. Surgeon (Ft. Thomas, Ky.), is granted leave of absence for four months, on surgeon's certificate of disability. Major William C. Shannon, Surgeon U. S. A. (Jackson Bks., La.), is granted leave of absence for one month, on surgeon's certificate of disability, with permission to apply for an extension of one month. Capt. William F. Lipplitt, Jr., Asst. Surgeon (Ft. Leavenworth, Kan.), is granted leave of absence for one month, to take effect about July 24, 1897.

CHANGE OF ADDRESS.

Barlow, Edwin B., from Urbana to 293 E. Bancroft Street, Toledo, Ohio; Barr, G. Walter, from Quincy, Ill., to Keokuk, Iowa. Drake, G. W., from Chattanooga to Monticello, Tenn.; Davidson, Frank S., from 528 Morse Avenue to Alexian Brothers Hospital, 559 to 569 N. Market Street, Chicago, Ill. Fales, L. H., from Madison, Wis., to St. Luke's Hospital, Chicago, Ill. Heddens, C. H., from 816 Congress Street to 138 Wells Street, Chicago, Ill. Overton, T. V., from 314 Wood Street to 56 N. Ann Street, Chicago, Ill. Scott, R. G., from Sandwich to Oswego, Ill.; Searle, C. H., from 39 Roslyn Pl., to 166 North Avenue, Chicago, Ill. Warren, Wadsworth, from 32 Adams Avenue W. to 51 W. Fort Street, Detroit, Mich.; Wilkinson, A. D., from Room 28 to 24 and 25 Burr Block, Lincoln, Neb.

LETTERS RECEIVED.

American Sports Publishing Co., New York, N. Y.; Armstrong, James L., Hoboken, N. J. Bansch & Lomb Optical Co., (2) Rochester, N. Y.; Barnes Medical College, St. Louis, Mo. Columbus, The, Phaeton Co., Columbus, Ohio; Clarke, Augustus P., Cambridge, Mass.; Camac, C. N. B., Baltimore, Md.; Chambers, J. H. & Co., St. Louis, Mo.; Creighton Medical College, Omaha, Neb. Dufield, Geo., Detroit, Mich. Egan, J. A., Springfield, Ill. Fairchild, Bros. & Foster, New York, N. Y.; Fessenden Mfg. Co., The Pittsburgh, Pa.; Furay, C. E., Chadron, Neb.; Flint, Austin, New York. Graham, D. W., Chicago, Ill.; Gaston, J. McFadden, Atlanta, Ga. Hummell, A. L., Advertising Agency, New York, N. Y.; Hare, H. A., Philadelphia, Pa. Johns Hopkins Press, The, Baltimore, Md. Loeb, H. W., St. Louis, Mo.; Lentz, Charles & Sons, Philadelphia, Pa. Maloney, J. C. F., Shawnee, Kan.; Mulford, H. K. Co., Philadelphia, Pa.; MacCurdy, John, Youngstown, Ohio; May, W. L., Union, Ala.; McFarland, Joseph, Philadelphia, Pa.; Mathewson, E. H., Chicago, Ill. Norris, J. A., Okeene, O. T.; New Table Co., St. Louis, Mich.; Nordhoff-Jung, Sophie A., Washington, D. C.; New York Pharmaceutical Association, Yonkers, N. Y. Pfeiffer, James E., Columbus, Ohio; Parkinson, James H., Sacramento, Cal.; Paquin, Paul, St. Louis, Mo.; Page, Henry, Baltimore, Md. Roussel, A. E., Philadelphia, Pa.; Reed & Carrick, New York, N. Y.; Rosse, Irving C., Washington, D. C.; Ranney, George E., Lansing, Mich.; Reed, R. Harvey, Columbus, Ohio; Reimund, B. F., Galesburg, Ill. Scheppergell, W., New Orleans, La.; Stevens, C. L., Athens, Pa.; Styer, D. W., Churchtown, Pa.; Saxlehner, Andrews, New York, N. Y.; Snively, I. N., Philadelphia, Pa.; Sebago Summer Resort, The, Sodus, Mich. Trowbridge, L. S., Detroit, Mich. University College of Medicine, Richmond, Va. Webb, J. A., Providence, R. I.; Watkins, T. J., Chicago, Ill.; Wingate, U. O. B., Milwaukee, Wis.; Wilkinson, A. D., (2) Lincoln, Neb.



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